Final
Human Health Risk Assessment for On-Site Soils

Omega Chemical Superfund Site
Whittier, California

November 9, 2007

Submitted to:

U.S. Environmental Protection Agency
Region IX

Prepared for:

Omega Chemical Site
PRP Organized Group

Prepared by:

CDM
111 Academy, Suite 150
Irvine, California 92617

Project No. 10500-37240-T2.0SS.RISK

CDM CAMP DRESSER & McKEE INC.
environmental engineers, scientists, planners & management consultants

TRANSMITTAL SHEET

111 Academy, Suite 150
Irvine, California 92617
949 / 752-5452

Date November 14, 2007

Job Omega Chemical Site

10500-37240-T2.OSS.RISK

10500-5.2.1 (file)

To U.S. Environmental Protection Agency, Region 9

Superfund Division (SFD-7-4)

75 Hawthorne Street

San Francisco, California 94105-3901

Attn: Mr. Chris Lichens

We are sending:

herewith X
under separate cover .....
by messenger .....

3 print(s) each of the following:

Change pages (report cover, ES-3, 1-6, 3-2, 3-3, 4-3, 4-4, and 4-14) to the Final Human Health Risk Assessment, (CDM, November 9, 2007)

which are:

approved
approved as noted .....
for your review. .....
for your files. x

Hi Chris,

While incorporating EPA's October 18, 2007 comments to the On-Site Soils Remedial Investigation Report, I noticed that there was a comment pertaining to the HHRA Executive Summary (Comment 4, Section 5.4 - Section ES.3, last paragraph) that also applied to the Final HHRA. This comment was not included in EPA's October 11, 2007 or October 29, 2007 final comments to the HHRA, therefore, this change was not incorporated in the Final HHRA that was transmitted to you Nov. 9th. I have made the change to the HHRA (and other sections where it applied) and 3 sets of change pages are attached for your insertion into the Final HHRA. Change pages will also go to DTSC & CH2M Hill. Please feel free to call if you have questions.

By: Sharon

Sharon Wallin, P.G.
Project Manager

cc: Lori Parnass, DTSC (1 set)
Tom Perina, CH2M Hill (1 set)

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November 9, 2007

Mr. Chris Lichens
Remedial Project Manager
U.S. Environmental Project Manager Agency-Region IX
75 Hawthrone Street (SFD-7-4)
San Francisco, CA 94105

Re: Final Human Health Risk Assessment Report,
Omega Chemical Superfund Site, Whittier, California

Dear Mr. Lichens:

Enclosed is the final Human Health Risk Assessment (HHRA) for the Omega Chemical Superfund Site, Whittier, California. The HHRA incorporates the comments that were provided in the conditional approval letter submitted by the USEPA on October 11, 2007.

Should you have any questions, regarding the above, please contact me.

Sincerely,
Omega Chemical Site PRP Organized Group

Edward Modiano
Project Coordinator

Cc: Tom Perina, CH2MHIL
Lori Paranass, DTSC
Dave Chamberlin, CDM
Sharon Wallin, CDM

CDM

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November 9, 2007

Chris Lichens, Superfund Project Manager
USEPA REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Subject: Response to EPA Comments dated October 11, 2007 and October 29, 2007 on Human Health Risk Assessment for On-Site Soils, Omega Chemical Superfund Site (CDM, October 1, 2007)

Dear Mr. Lichens:

Below are OPOG's responses to EPA comments dated October 11, 2007 and October 29, 2007 to the Human Health Risk Assessment for On-Site Soils, Omega Chemical Superfund Site, CDM, dated October 1, 2007. The response to comments is organized by repeating the original EPA comment in italics followed by OPOG's response in regular text.

EPA COMMENTS – October 11, 2007

1. Section 4.4.1.6, Page 4-11, Exposure Time. *Change the residential exposure time assumption to 24 hours indoors. Although the existing exposure time of 26 hours is a conservative assumption, it is not a reasonable assumption given that there are only 24 hours in a day. The change in daily exposure from 26 to 24 hours is not expected to result in a substantial change in the overall risk estimates for residents, and will improve the defensibility of the report.*

Residential exposure was modified to include 24 hours of indoor air exposure and 0 hours of outdoor air exposure.

Location of Revisions: Text revisions on pages 4-9 and 4-11. Table changes made to Tables 4-1, 4-2, and 6-2 in the text and Appendix A3 RAGSD Tables A3-4.1, 7.5A&B, 7.6A&B, 7.7A&B, 9.5A&B, 9.6A&B, and 9.7A&B. Figure changes were made to Figures ES-3 and 4-1.

2. Table 7-2, Comparison of Modeled and Measured Air Concentrations. *Remove or modify this table since it does not appear to incorporate the most recent agency comments regarding the outdoor air emission calculations. If the table is modified, remove the reference to the RBCA toolkit, list the corrected modeled air concentrations, and compare modeled results for the above ground receptor (as opposed to trench worker) to measured results above ground.*

This table already includes the updated values modified per the EPA's comments. However, the title of the table and the footnote were not updated. The title has been revised to "Comparison of Modeled Ambient Air with Measured Ambient Air Concentrations"to remove references to the construction worker and excavation. The footnote has been modified to read: "(1) Exposure point concentrations for soil gas were modeled using box model calculations to determine outdoor air concentrations. These concentrations are the EPC Outdoor Air values for industrial workers listed in Table 4-20." (Note that since the last version of the text, all of the table numbers after Table 4-5 have been renumbered to account for deleted Table 4-6.) Footnote for "NC" was also removed from Table 7-2. Associated text was also revised to remove references to the construction worker and excavation on page 7-5.

Location of Revisions: Revision to Table 7-2 and associated text on page 7-5.

3. Section 8, Page 8-2, Summary and Conclusions. *Delete Section 8, which appears to be redundant. The report already contains an Executive Summary which summarizes results and presents conclusions. The Executive Summary is also more comprehensive in its presentation of findings.*

Other modifications were made per EPA Comments – October 29, 2007.

Location of Revisions: See EPA Comments – October 29, 2007

4. Appendix D Site-Specific PRG Calculations.

PRG Estimates Based on Central Tendency (CTE) Remove the CTE based PRGs from the report. EPA previously requested that the cleanup goals be consistent with Superfund's concept of a reasonable maximum exposure (RME) (see EPA's comment letter dated 8/31/07). The subject document presents various possible cleanup goals, which avoids potential problems with omissions. However, with so many numbers presented in this Appendix, it is difficult to navigate through the various lists. Removing CTE estimates would reduce the Appendix size by about 50%.

CTE-based PRGs were removed from the report.

Location of Revisions: Deletion of Appendix D Tables D-1.1, 1.3, 1.5, 2.1, 2.3, and 2.5. Revisions made to Appendix D Tables D-3.1, 3.2, 3.3, and 4.1. Tables in Appendix D were renumbered accordingly.

Define "Ambient" Air or Replace with "Outdoor" Air Change the term "ambient" to "outdoor" air to contrast it with "indoor" air in the RAGS D type tables. This will improve the readability and consistency of the document. Without this change, it could be argued that the term "ambient" applies to indoor air for an indoor worker. Alternatively, it would be acceptable to define the term ambient air as "outdoor air" in a footnote.

The word "ambient" was revised to "outdoor" in the RAGS D tables in Appendix D3. Some tables and figures throughout the text were revised to replace "ambient" with "outdoor"; however, not all instances in the text were revised. Instead, a footnote stating, "Throughout the text, tables, and appendices of this report, "ambient air" is defined to be "outdoor air." The two terms are used interchangeably throughout this report." was added on page ES-2 of the executive summary and page 1-5 of the introduction.

Location of Revisions: Revisions made to Appendix A3 RAGS D tables and various tables and figures in the text. Footnotes added to pages ES-2 and 1-5.

Table D-4.2A Check this table for errors. The receptor population specified in the box, "Industrial Worker and Construction Worker", is not the same population that is indicated in the title for the table; namely, "Residential".

The receptor population stated in the box has been revised to state "Resident" and that the Receptors are "Adult, Adult/Child, Child". Values in table were correct as is.

Location of Revisions: Revision to text in Table D-4.2.

EPA COMMENTS – October 29, 2007

As a follow-up to our 10/29/07 conversation regarding the subject reports, please note that EPA will accept Section ES-6 of the 10/1/07 Human Health Risk Assessment (HHRA) as the conclusion section in the final HHRA, with the following modifications.

- *Section ES.6, the second bullet – Delete "The site is still surrounded by commercial industrial land use, is located on a major arterial, and possesses no characteristics that would suggest that would make it desirable for residential development." Note that this statement is incorrect since there is a residential area across the street from the former Omega property, and that EPA previously requested that OPOG delete this sentence (EPA letter of 4/9/07, page 4).*

Sentence was deleted.

Location of Revisions: Deletion of sentence on pages ES-6 and 8-2.

- *Section ES.6, the fifth bullet- Delete this bullet. The statement was invalidated by the results of the SVE pilot test.*

Bullet was deleted.

Location of Revisions: Deletion of bullet on pages ES-6 and 8-2.

- *Section ES.6, the last bullet- Revise this bullet to read "if the site is deemed by EPA to pose an unacceptable risk."*

Bullet was revised.

Location of Revisions: Revision of bullet on pages ES-7 and 8-3.

- *Add the third paragraph of Section ES.5.1 to the final HHRA conclusions section ("Total cancer risk estimates for future commercial/industrial indoor air worker based on data...").*

These revisions, if accepted by OPOG, would modify comment 3 of EPA's 10/11/07 conditional approval letter regarding the HHRA, and the fourth bullet under comment 4 in EPA's 10/18/07 conditional approval letter regarding the On-Site Soils Remedial Investigation Report. No other aspects of either conditional approval letter would be changed by these revisions.

The indicated paragraph was added to Section 8 conclusions.

Location of Revisions: Addition of bullet on page 8-2.

Very truly yours,

Sharon Wallin

Sharon Wallin, P.G.
Project Manager
Camp Dresser & McKee Inc.

cc: Ed Modiano, Project Coordinator
Jim Lavelle, CDM
Kassandra Tzou, CDM

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Executive Summary

Executive Summary

This risk assessment presents an evaluation of potential human health risks and hazards associated with exposure to residual soil and groundwater contamination at the former Omega Chemical site (the Site). The Site is located at 12504/12512 East Whittier Boulevard (Figure ES-1). This Human Health Risk Assessment (HHRA) has been prepared in accordance with Task 2 of the Statement of Work in Consent Decree No. 00-12471 between the United States Environmental Protection Agency (USEPA) and the Omega Chemical Site PRP Organized Group (OPOG). The Consent Decree was lodged on November 24, 2000 and entered into the US District Court on February 28, 2001. This HHRA is consistent with the final On-site Soils Remedial Investigation/Feasibility Study Work Plan dated September 29, 2003.

Because the Site is located in an urban area that has been developed for decades, provides no suitable habitat, and contaminated subsurface soils are covered with buildings, asphalt, or concrete, ecological impacts from the facility are not expected and are not evaluated in this report. United States Environmental Protection Agency (USEPA) will be performing an evaluation of habitat and ecological receptors in a separate report.

ES.1 Approach

This HHRA follows risk assessment guidance from USEPA and with accommodations for consistency with similar guidance from California Environmental Protection Agency (CalEPA) as necessary.

The following tasks were performed as part of this risk assessment:

- Examined the history of the Omega Chemical site in Whittier, CA, and identified types of chemicals used and likely release mechanisms for these chemicals to enter the environment
- Evaluated data collected to characterize the site and existing contamination and used the most recent of these data to select chemicals of potential concern (COPCs) and to calculate exposure point concentrations
- Analyzed the potential for exposure to COPCs at the site though an evaluation of people that might be exposed, exposure pathways that might result in significant contact between these people and COPCs, and identification of exposure parameters appropriate for quantifying exposure resulting from this contact.
- Identified appropriate toxicity criteria for site COPCs
- Estimated risk to current and potential future receptors (people) that might contact contamination

- Evaluated uncertainties in data, exposure, toxicity and risk characterization aspects of the risk assessment

- Calculated health-based remediation goals (site-specific PRGs) for use in remediation decisions for the site

ES.2 Analytical Data

Data used in the HHRA were obtained from recent sampling events conducted by CDM. During the RI, samples were collected from surface soils, subsurface soils, soil gas, indoor air, and ambient air.[1] Sample locations are shown in Figures ES-2 and ES-2b and analytical summary tables for all samples collected during the RI are provided in the RI report. Selection of data used to support quantitative evaluation is based on quality, quantity, comparability (e.g., similar detection limits), and representativeness of data for current site conditions and potential exposures at the site. These data are then used in selection of COPCs and in estimation of exposure point concentrations used in the calculation of possible chronic daily intake. A more extensive discussion of data quality is provided in the pre-final On-Site Soils RI Report, which was submitted on June 20, 2007 (CDM, 2007).

ES.3 Exposure Pathways

Potentially exposed populations evaluated in the HHRA are future on-site residents, current and future on-site and off-site indoor industrial workers, future on-site outdoor industrial workers, and a future on-site construction worker. Currently, no plans exist for residential development at the Site, and the Site location suggests that residential development in areas adjacent to the Site is unlikely. The City intends to allow redevelopment that consists of commercial and retail uses with the construction of multi-level buildings. Specifically, City representatives have stated that it is unlikely that the Omega property will be redeveloped for residential uses (Adams, 2007), although the zoning of the site as the Whittier Boulevard Specific Plan-Workplace District allows for Live/Work units and multi-family housing. Therefore, although residential use of the site is not expected to occur in the future, quantitative analysis of future residential exposures is included to provide additional information to the risk manager. Section 4 provides a more detailed discussion of current and reasonable future land uses of the site.

The SCEM for soils at the Omega Site (Figure ES-3) includes theoretically feasible exposures and provides a basis for discussing the likelihood and importance of potential exposure pathways at the site. As illustrated in the SCEM, potential exposure pathways include:

- Oral/Dermal Contact with Surface Soil and Inhalation of Fugitive Dust - Current Industrial Worker

[1] Throughout the text, tables, and appendices of this report, "ambient air" is defined to be "outdoor air." The two terms are used interchangeably throughout this report.

- Inhalation of Indoor Air - Current Industrial Worker
- Inhalation of Ambient Air - Current Industrial Worker
- Oral/Dermal Contact with Regraded Surface/Subsurface Soil and Inhalation of Fugitive Dust – Future Residents, Future Industrial Indoor and Outdoor Workers, Future Construction Workers
- Inhalation of Indoor Air from Soil Gas – Future Residents and Future Industrial Indoor Workers
- Inhalation of Ambient Air from Soil Gas – Future Residents and Future Industrial Indoor Workers, Future Construction Workers, and Future Industrial Outdoor Workers

Currently, groundwater underlying the Site and in the immediate vicinity is not used for any purpose. Use for potable purposes within this area is also unlikely for the future due to the presence of high concentrations of total dissolved solids (TDS). TDS concentrations in groundwater samples from 2004 to 2006 ranged from 630 to 1,700 milligrams per liter (mg/L). The USEPA secondary standard for TDS in drinking water is 500 mg/L while the CalEPA maximum contaminant level (MCL) for drinking water ranges from 500 mg/L (recommended) to 1,000 mg/L (upper) with a short-term concentration of 1,500 mg/L. Use of groundwater at and downgradient of the site will be addressed in a separate report, and is not included in this risk assessment.

ES.4 Toxicity Assessment

The purpose of a toxicity assessment is to review and summarize available information on the potential for each COPC to cause adverse effects in exposed individuals. Risk characterization combines exposure information with toxicological criteria to estimate carcinogenic risks and non-carcinogenic hazards. Potential cancer risks and potential non-cancer hazards are separately calculated.

Cancer risks are estimated by multiplying exposure estimates for carcinogenic chemicals by corresponding cancer slope factors. The result is a risk estimate expressed as the odds of developing cancer. Commonly, risks (or odds) of developing cancer of one to 100 in one million (1×10^{-6} to 1×10^{-4}) or less are considered to fall within a potentially acceptable range, although decisions on the need for remediation or mitigation are made on a site-by-site basis. Lower risks are typically considered de minimis, while higher risks are often deemed unacceptable (EPA, 1992). In such instances, mitigation of risks may be considered necessary.

Chronic non-cancer hazard indices are calculated by dividing exposure estimates by reference doses. Reference doses are estimates of highest exposure levels that would not cause adverse health effects even if exposures continue over a lifetime. The ratio of exposure to reference dose is termed the hazard quotient (HQ). A HQ greater than one indicates an exposure greater than that considered safe. Impacts of exposure to multiple chemicals are accounted for by adding estimated HQs for non-carcinogenic chemicals that affect the same target organ or tissue in the body. Addition of HQs for COPCs that produce effects in similar organs and tissues results in a HI that reflects possible cumulative hazards.

ES.5 Risk Characterization

The risk assessment provides quantitative estimates of cancer risk and non-cancer hazard for people that might be exposed to exposure to residual soil and groundwater contamination.

ES.5.1 Cancer Risk

Total cancer risk estimates for current commercial/industrial worker on the Site parcel (Three Kings Construction CTE, 2E-5 to 9E-5 and RME, 4E-5 to 1E-4; Star City Auto Body CTE, 3E-5 to 6E-5 and RME, 4E-5 to 9E-5) are above the point of departure of one in one million but within the EPA risk range (Table ES-1). Cancer risks for the industrial/commercial indoor worker are primarily attributable to inhalation of indoor air. Figure ES-4 shows the cancer risks due to inhalation of indoor air for the different buildings. Inhalation of benzene accounts for 38 (Star City) to 46 (Three Kings) percent of the cancer risk. Onsite, sources at Star Auto Body and/or 3 Kings Construction could be responsible for some or all of the benzene detected in indoor air. Inhalation of methylene chloride accounts for 38 percent of the cancer risk for commercial/industrial workers at Three Kings, while inhalation of PCE accounts for 50 percent of the risk at Star City Auto Body (Figure ES-5).

For the other buildings, cancer risks were assessed only for the inhalation of vapors intruding into indoor air. Estimated inhalation cancer risks for these parcels were similar to, or lower than, those for the Site parcel, except for the West Parcel – Terrapave. All inhalation cancer risks were above the point of departure of one in one million but within the EPA risk range.

Total cancer risk estimates for future commercial/industrial indoor worker based on data from All Parcels (CTE, 9E-6 to 3E-4 and RME, 1E-5 to 5E-4) are above the EPA risk range (Table ES-2; Figure ES-6). Total cancer risk estimates for future commercial/industrial outdoor worker based on data from All Parcels (CTE, 1E-5 to 2E-5 and RME, 1E-5 to 2E-5) are above the point of departure of one in one million but within the EPA risk range. Cancer risks for the future industrial/commercial indoor worker are primarily attributable to inhalation of indoor air. PCE in soil gas accounts for 90 percent of the total inhalation risk. Cancer risks for future industrial/commercial outdoor worker are primarily attributable to exposure to COPCs in soil.

Total cancer risk estimates for the future construction worker (CTE, 2E-7 to 4E-7 and RME, 1E-06 to 2E-6) on the Site parcel; on the Others Parcels (CTE, 2E-7 to 4E-7 and RME, 1E-06 to 2E-6); and on All Parcels (CTE, 2E-7 to 3E-7 and RME, 1E-06 to 2E-6) are above the point of departure of one in one million but within the EPA risk range. Cancer risks for construction workers are primarily attributable to exposure to COPCs in soil. Benzo(a)pyrene accounts for about 44 to 48 percent of the cancer risk from soil exposure for construction workers (RME and CTE, respectively). PCB-1254 and total PCBs collectively accounts for about 25 to 28 percent of the cancer risk from soil exposure for construction workers (RME and CTE, respectively).

Total cancer risk estimates for future residents (adult, 5E-5 to 3E-3; adult+child, 8E-5 to 3E-3; and child, 4E-5 to 1E-3) on the Site parcel and on the Others Parcels (adult, 2E-5 to 4E-3; adult+child, 4E-5 to 5E-3; and child, 3E-5 to 2E-3) are above the EPA risk range(Figure ES-7). Cancer risks for residents are primarily attributable to inhalation of indoor air. Inhalation of PCE in soil gas accounts for 90 to 95 percent of the total inhalation risk.

ES.5.2 Chronic Non-Cancer Hazards

Chronic non-cancer hazards for the current commercial/industrial worker (Three Kings CTE, 0.4 to 1.2 and RME, 0.6 to 2; Star City Auto CTE, 0.5 to 5.1 and RME, 0.8 to 8) are above the threshold of 1. HIs for the current commercial/industrial worker are primarily attributable to inhalation of indoor air (Figure ES-8). HIs for the current commercial/industrial worker on the Site parcel at the Three Kings building are attributable to inhalation exposure to toluene (18 percent), m,p-xylenes (27 percent), methylene chloride (21 percent), PCE (12 percent), and benzene (12 percent).

Inhalation HIs for the five parcels are summarized as follows. HIs for the north parcel (Medlin and Sons, CTE, 0.09 to 0.6 and RME, 0.1 to 1; Medlin and Sons North, CTE, 0.05 and RME, 0.08) are primarily attributable to exposure to acetone (55 percent) with a lesser contribution from PCE (32 percent). HIs for the west parcel (TerraPave, CTE, 0.5 to 1.2 and RME, 0.7 to 1.8) are primarily attributable to exposure to PCE (90 percent). HIs for the south parcel - Bishop (CTE, 0.1 to 0.4 and RME, 0.2 to 0.6) are primarily attributable to exposure to PCE (76 percent) with a lesser contribution from 1,1-DCE (6 percent). HIs for the south parcel - LA Carts (CTE, 0.06 to 0.8 and RME, 0.1 to 1.3) are primarily attributable to exposure to toluene (74 percent) with a lesser contribution from acetone (15 percent). HIs for the south parcel - Oncology Care (CTE, 0.09 and RME, 0.14 to 0.15) are primarily attributable to exposure to toluene (20 percent), 1,2-DCA (23 percent), benzene (14 percent) and acetone (11 percent).

Total HIs for future residents (Site Parcel: adult, 0.7 to 30; adult+child 1.4 to 39; and child, 4.1 to 74; Other Parcels: adult, 0.4 to 45; adult+child 1 to 58; and child, 3.4 to 108) are above the target threshold (Figure ES-9). The highest HQs for residents are calculated from data from the Other Parcels and are attributable to inhalation exposure to PCE and 1,1-DCE, which account for 90 and 6 percent of HIs for the adult+child resident and 86 and 8 percent of HIs for the child adult+child resident on the Site Parcel.

Total HIs for future commercial/industrial indoor workers (CTE, 0.15 to 4 and RME, 0.3 to 7) based on data from All Parcels are above the target threshold (Figure ES-10). Inhalation of indoor air is attributable for most of this hazard. Similar to the resident, PCE and 1,1-DCE account for most of the hazard, contributing 84 and 9 percent, respectively. When the total HI is divided by target organ for the RME future commercial/industrial indoor worker, HI associated with liver is the largest portion (90 percent of the total HI, or an HI of 6.4). HIs for all other endpoints are less than the threshold of 1. Total HIs for future commercial/industrial outdoor worker (CTE, 0.2 to 0.3 and RME, 0.3 to 0.5) based on data from All Parcels are below the target threshold of one.

Total hazard indices for the construction worker (Site Parcel: CTE, 0.08 to 0.13 and RME, 0.8 to 1.2; Other Parcels: CTE, 0.08 to 0.12 and RME, 0.8 to 1.2; and All Parcels: CTE, 0.08 to 0.12 and RME, 0.08 to 1.1) are below or at the target HI of one. Roughly 30 percent of the hazards for the future construction worker are related to inhalation of ambient air. Hazards are higher on the Site Parcel than on the Other Parcels and All Parcels. HIs for all calculated endpoints (liver, body weight effects, and kidneys) are less than the threshold of 1.

ES.6 Conclusions

Important results of the risk assessment that follow from the HHRA can be summarized as follows:

- Field investigations since 2004 provide a recent and complete site characterization. High confidence can be assigned to use of these data to select chemicals of potential concern and to estimate exposure point concentrations.

- Commercial/industrial land use is an appropriate assumption for future site use. The site has been used for such purpose since it was developed from agricultural land in the 1950's. In addition, City representatives have stated that it is unlikely that the former Omega Chemical property will be redeveloped for residential uses (Adams, 2007), although the zoning of the site as Whittier Blvd. Specific Plan-Workplace District allows for Live/Work units and multi-family housing.

- Among receptors potentially exposed to site-related contaminants, the highest cancer risks and noncancer hazards are associated with exposure of hypothetical future residents, with risks above the EPA risk range and hazards above the target threshold.

- The pathway that suggests the highest potential for exposure involves intrusion of vapors into indoor air spaces. Inhalation of these vapors indoors results in the highest estimates of potential cancer risk and noncancer hazard.

- PCE is the primary COPC of concern at the site. For example, inhalation of indoor air suggests potential total inhalation cancer risks for current industrial workers ranging from 8E-6 to 7E-5. Cancer risk associated with inhalation exposure to

PCE alone ranges from 5E-7 to 4E-05. Estimated hazards for PCE were relatively low, however. HQs for exposure to indoor air for PCE ranged from 0.01 to 1.6 compared to a total inhalation HIs ranging from 0.06 to 8.

- Potential risks associated with exposure to ambient (urban background) concentrations of VOCs are as high as $3x10^{-5}$ and may account for 12 to essentially 100 percent of total risks estimated for indoor exposures, depending on parcel. LA Carts/Oncology Care may not be affected by site-related VOCs. Further, subsurface VOC contamination appears to be insufficient to sustain releases that would produce significant ambient air concentrations over extended periods of time.

- Ambient air risks for construction workers are within and near the lower end of the EPA risk range, and ambient air hazards are below the target threshold. . Subsurface VOC contamination appears to be insufficient to sustain releases that would produce significant ambient air concentrations over the one-year time period assumed for construction worker exposures.

- Hypothetical exposure to contaminants in soil is unlikely to occur, since soil is currently covered with buildings, asphalt, and concrete and such cover is likely to remain even if the site is redeveloped for other commercial/industrial purposes in the future. Even if the current property cover is replaced by green-belt type landscape, it is unlikely that contaminated soils would be exposed at the ground surface where direct contact (e.g., dermal contact or ingestion) could occur. Further, volatile COPCs, in particular PCE, acetone, and toluene, will not persist in non-volatile form in soils exposed during excavation, and direct contact exposures (incidental ingestion and dermal contact) for construction worker exposures via these pathways are expected to be minimal. These VOCs along with benzo(a)pyrene were associated with the bulk of risks and hazards estimated for direct contact exposure to surface soils.

- Uncertainties in the risk assessment suggest that site-related risks have been adequately characterized to support risk management decisions. In fact, the database is biased toward source/release areas and likely overstates levels of contamination for the site as a whole.

- Site-related risks involving exposure to PCE vapors in indoor air appear to be adequately assessed using available site-specific data.

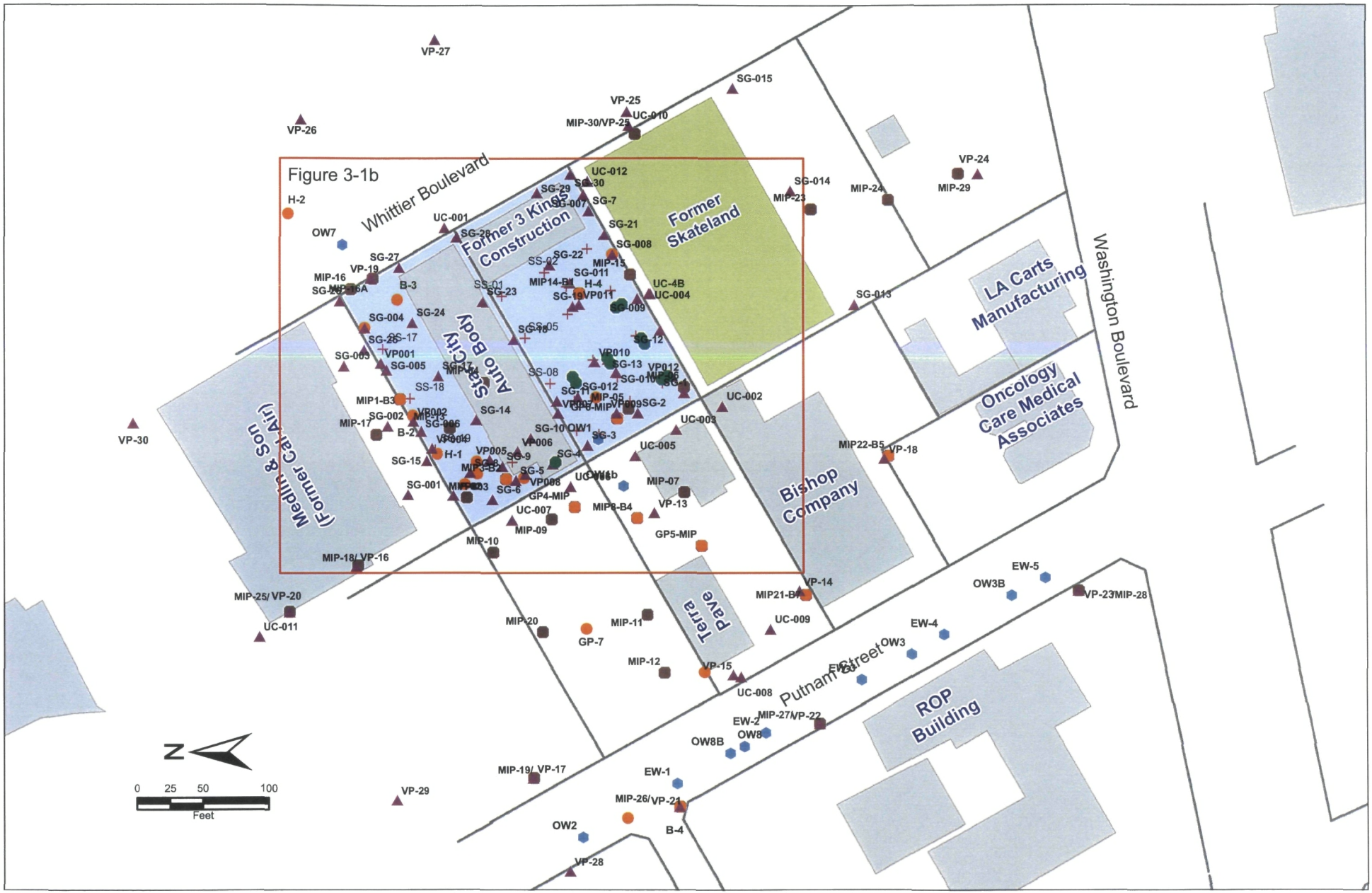
- Site-specific PRGs developed for PCE can be used upon approval by EPA with confidence in evaluating remedial alternatives, if the site is deemed by EPA to pose an unacceptable risk.

OMEGA CHEMICAL

SITE VICINITY MAP

CDM

FIGURE ES-1



Legend

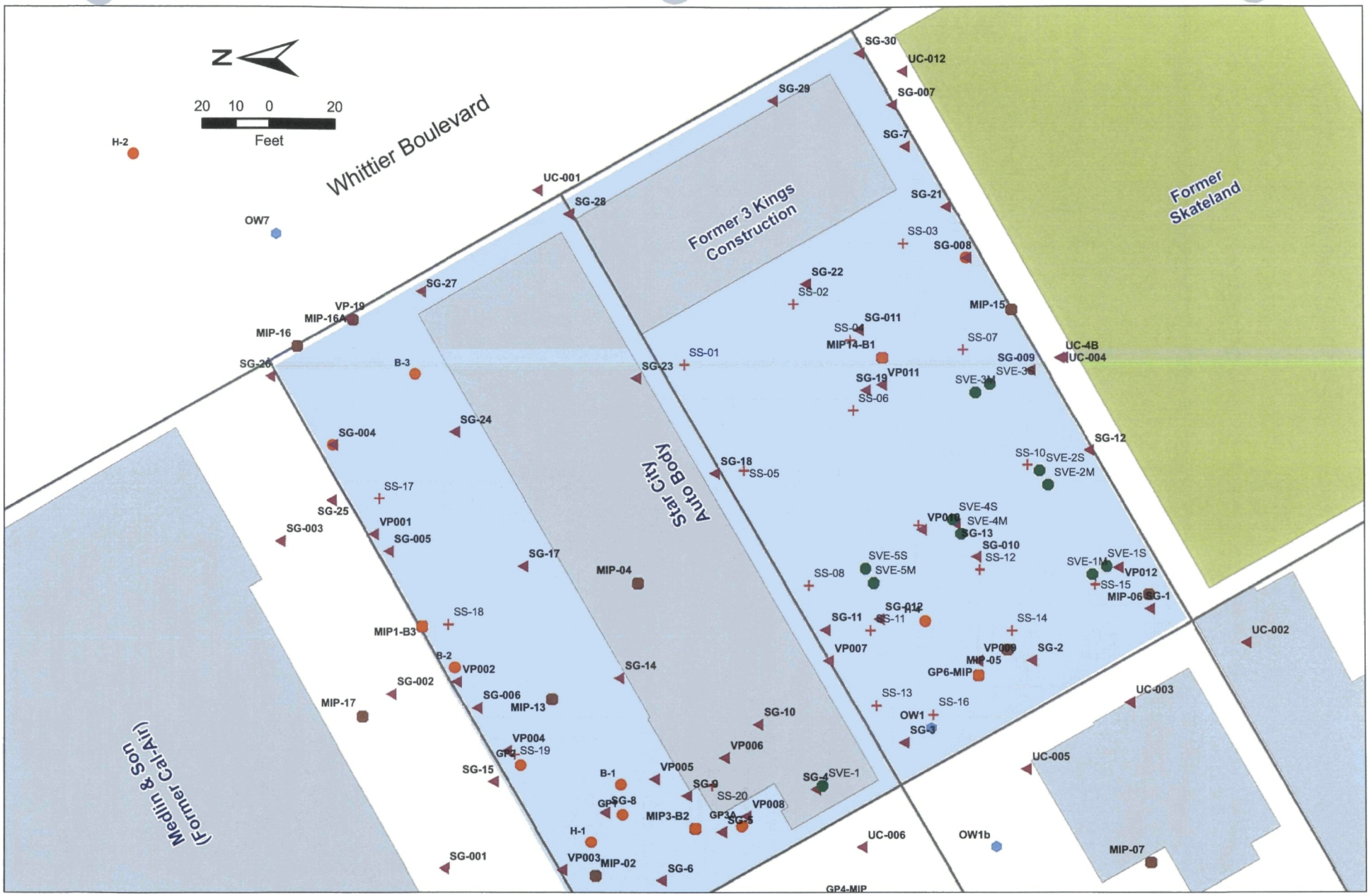
- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building
- Surface Soil Sample Location
- Subsurface Soil Sample Location
- Soil Vapor Sample Location
- Membrane Interface Probe (MIP)
- SoilVaporExtractionWells
- Groundwater Well Location

CDM

Omega Chemical

Sampling Locations

Figure ES-2



Legend

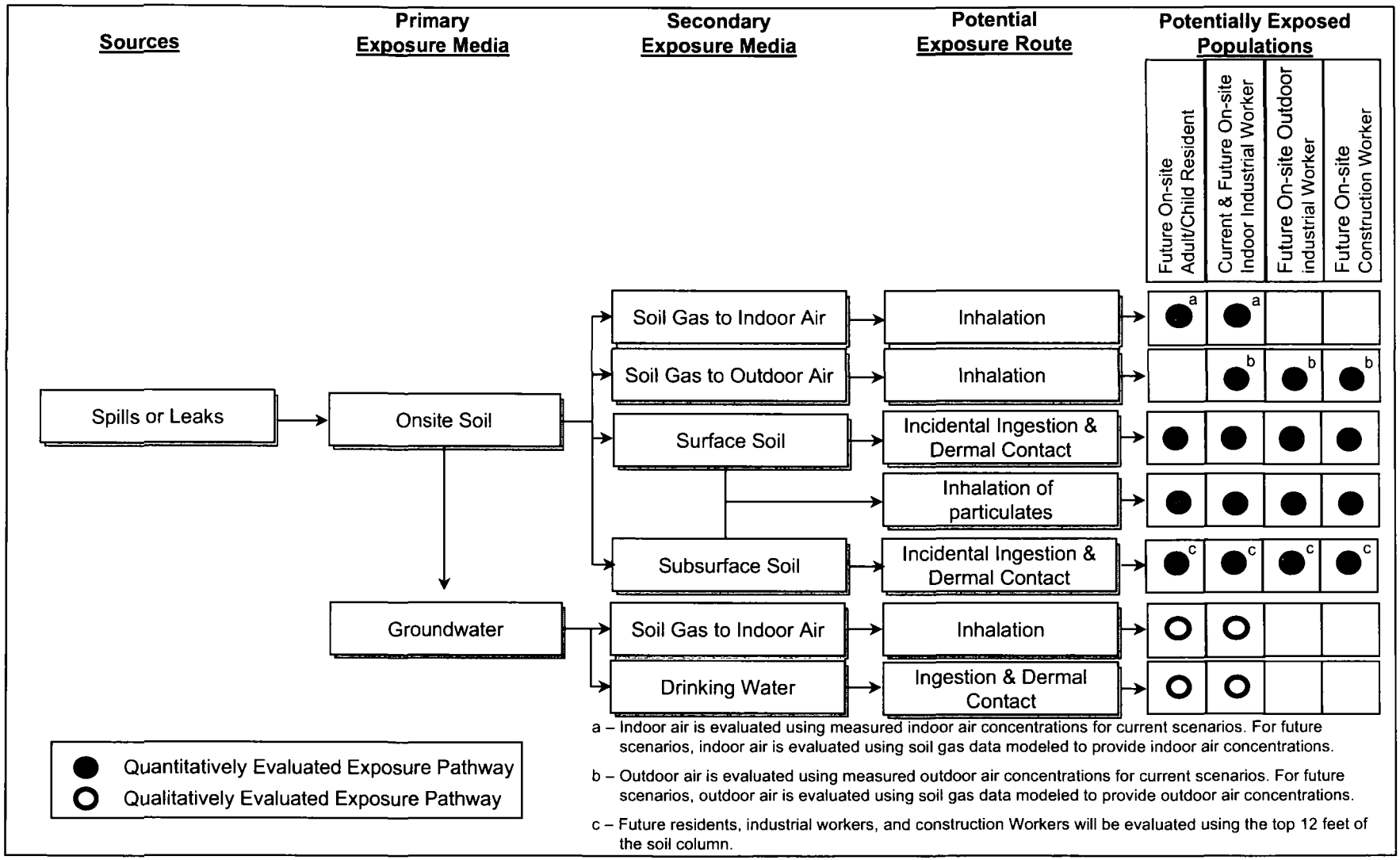
- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building
- Surface Soil Sample Location
- Subsurface Soil Sample Location
- Soil Vapor Sample Location
- Membrane Interface Probe (MIP)
- SoilVaporExtractionWells
- Groundwater Well Location

CDM

Omega Chemical

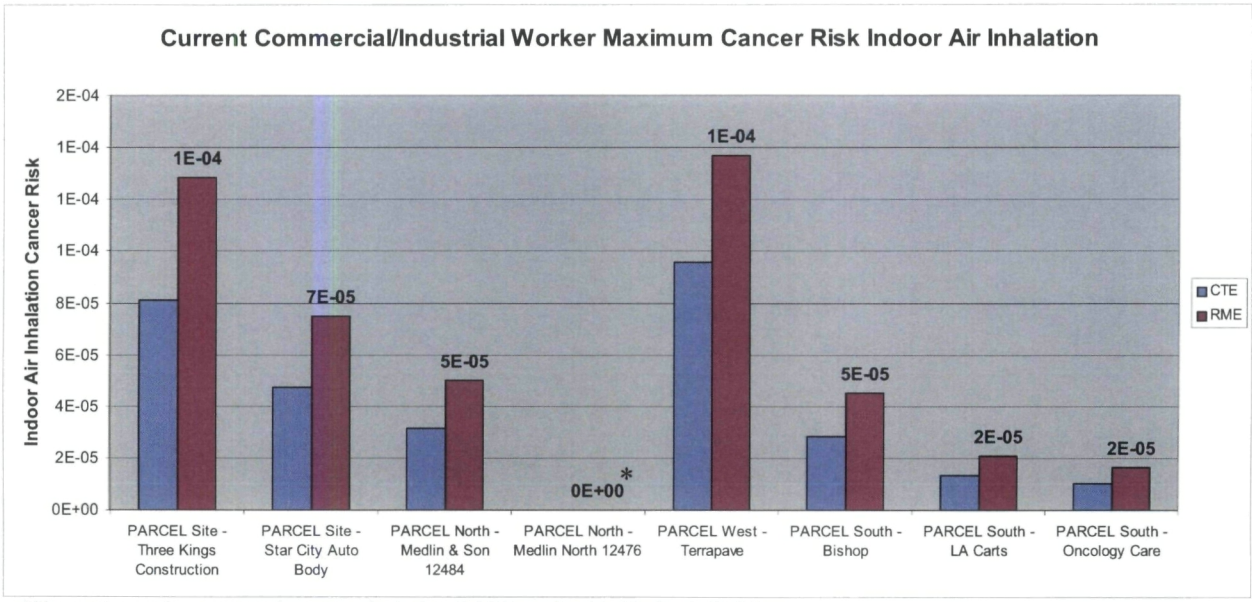
Sampling Locations (Inset)

Figure ES-2b



CDM

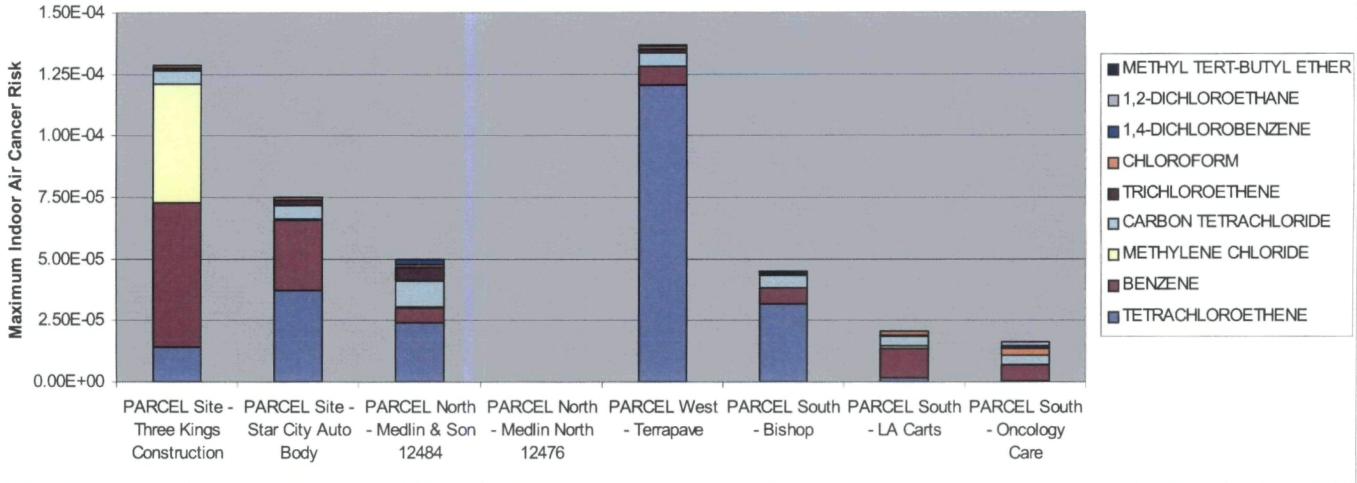
Figure ES-3
Site Conceptual Exposure Model – Omega Chemical Site
Whittier, California



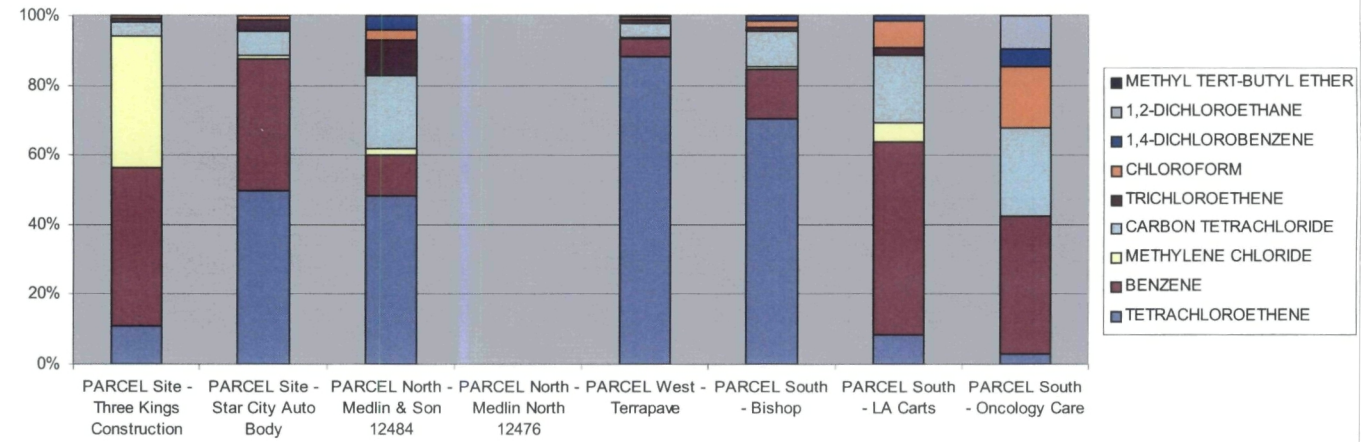
* No carcinogenic compounds were selected as COPCs at the Medlin North Building

Figure ES-4
Current Commercial/Industrial Worker
Maximum Indoor Air Cancer Risks

Current RME Commercial/Industrial Worker Cancer Risk by Chemical for Indoor Air Inhalation Pathway



Current RME Commercial/Industrial Worker by Chemical Percentage of Total Cancer Risk for Indoor Air Inhalation Pathway



Chemical	RME Commercial Industrial Worker Cancer Risk by Chemical for Indoor Air Inhalation Pathway							
	PARCEL Site - Three Kings Construction	PARCEL Site - Star City Auto Body	PARCEL North - Medlin & Son 12484	PARCEL North - Medlin North 12476	PARCEL West Terrapave	PARCEL South - Bishop	PARCEL South - LA Carts	PARCEL South - Oncology Care
1,2-DICHLOROETHANE								9.55%
1,4-DICHLOROBENZENE			4.0%		0.4%	1.5%	1.6%	5.1%
BENZENE	45.5%	37.6%	11.7%		5.4%	14.1%	55.5%	39.4%
CARBON TETRACHLORIDE	4.0%	7.1%	20.8%		3.9%	10.2%	19.7%	25.6%
CHLOROFORM	0.8%	1.1%	2.7%		0.7%	1.7%	7.5%	17.4%
METHYL TERT-BUTYL ETHER						0.1%		
METHYLENE CHLORIDE	37.6%	1.2%	1.9%		0.2%	0.7%	5.2%	
TETRACHLOROETHENE	11.1%	49.8%	48.4%		88.1%	70.5%	8.3%	3.0%
TRICHLOROETHENE	1.0%	3.2%	10.4%		1.2%	1.2%	2.1%	
Other	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure ES-5
Current RME Commercial/Industrial Worker Indoor Air Cancer Risks by Chemical

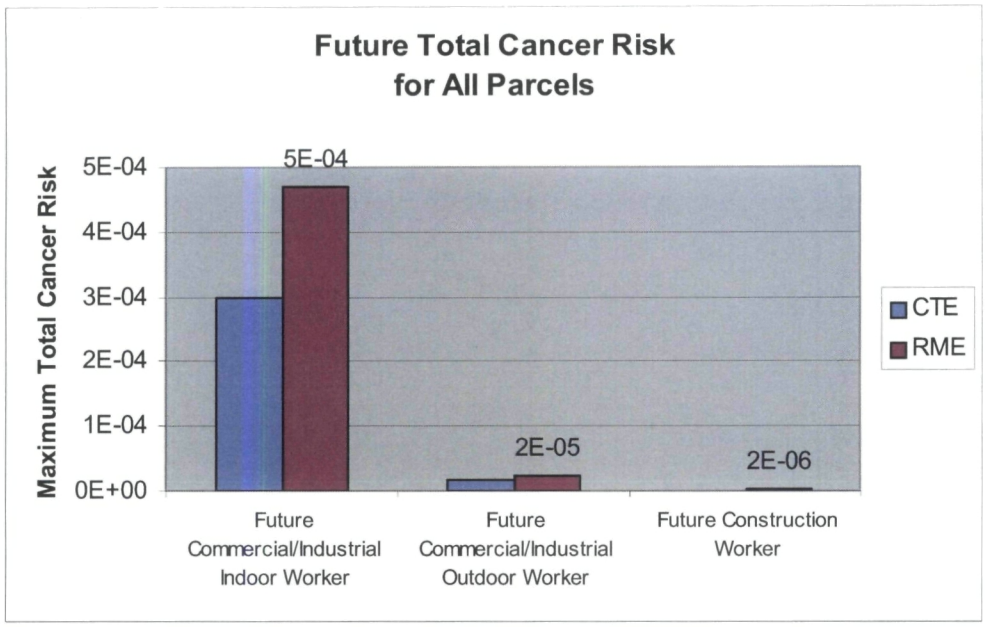


Figure ES-6
Future Commercial/Industrial Workers and Construction Workers
Total Cancer Risks

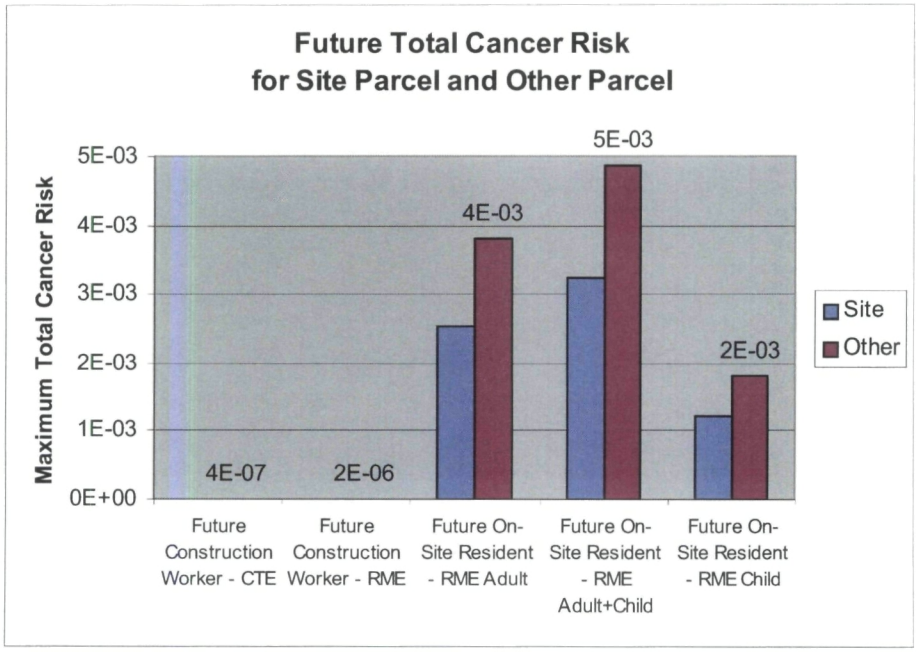


Figure ES-7
Future Residents and Construction Worker
Total Cancer Risks

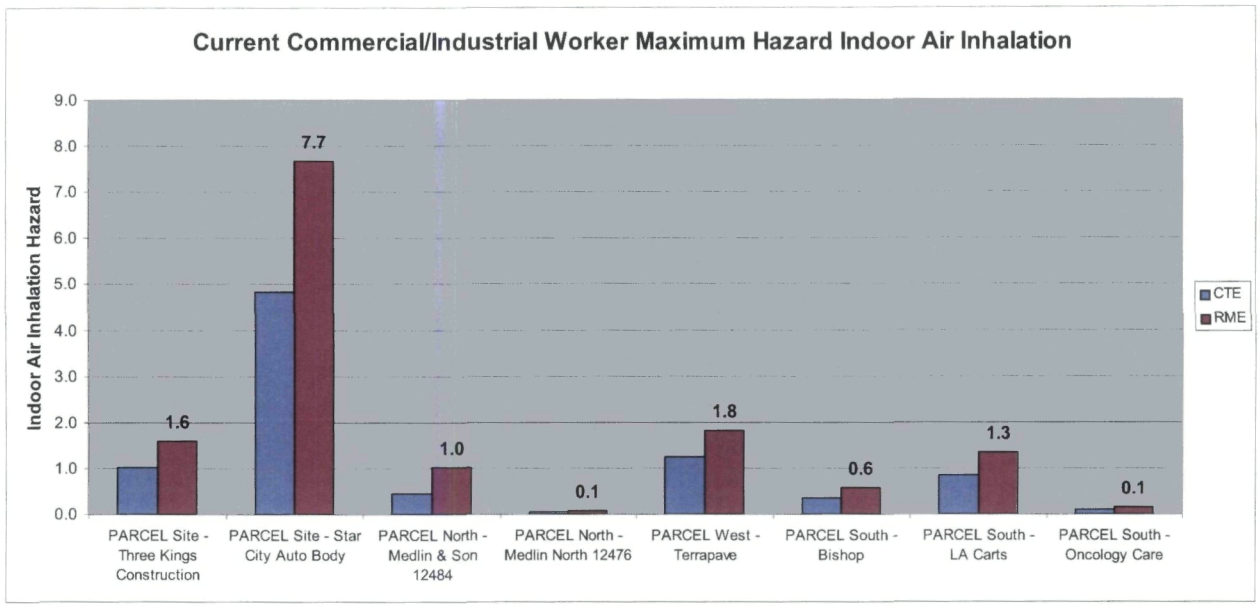


Figure ES-8
Current Commercial/Industrial Worker
Maximum Indoor Air Hazard

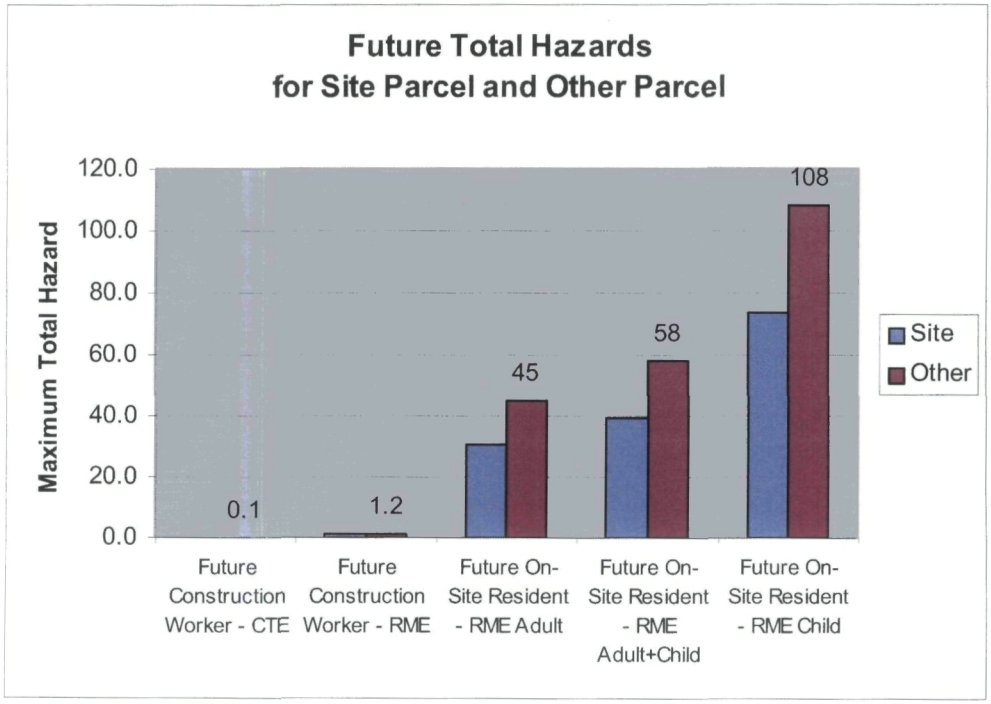


Figure ES-9
Future Residents and Construction Worker
Total Hazard

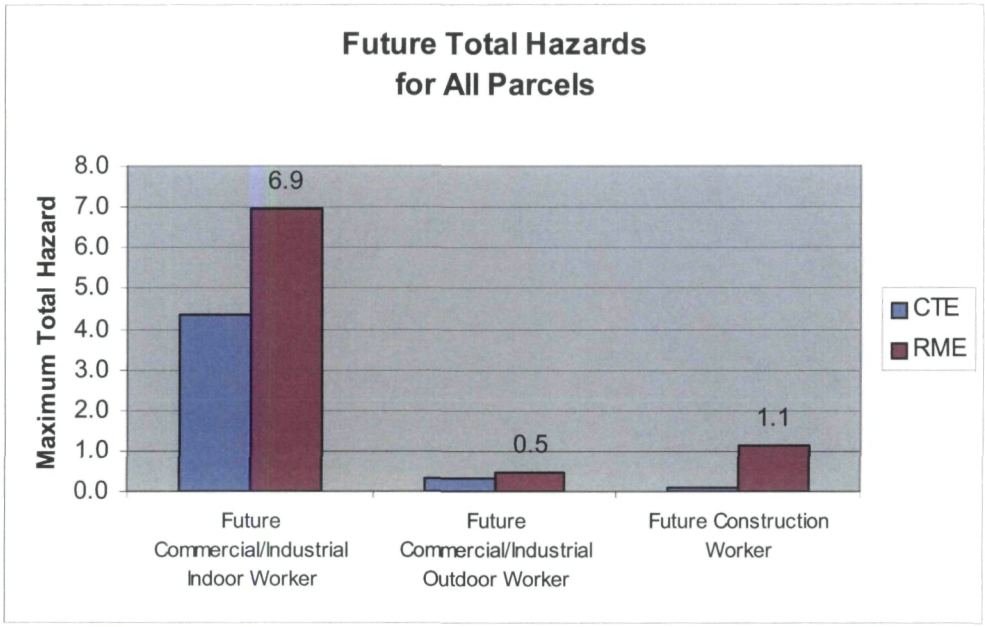


Figure ES-10
Future Commercial/Industrial Workers and Construction Workers Total Hazard

Table ES-1
Summary of Chronic Cancer Risks and Chronic Non-Cancer Hazards - Current Scenarios

Receptor	Exposure Pathway	PARCEL Site - Three Kings Construction				PARCEL Site - Star City Auto Body				PARCEL North - Medlin & Son 12484				PARCEL North - Medlin North 12476		PARCEL West - Terrapave				PARCEL South - Bishop				PARCEL South - LA Carts				PARCEL South - Oncology Care			
		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk	Total Chronic Non-Cancer Hazard	Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum			Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Current Commercial/Industrial worker CTE	**Surface Soil to 2.2 ft bgs – Oral/Dermal/Inhalation[3]**	9.E-06	9.E-06	0.15	0.15	9.E-06	9.E-06	0.15	0.15	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	Indoor Air – Inhalation Pathway[1]	*1.E-05*	*8.E-05*	*0.15*	*1.0*	*2.E-05*	*5.E-05*	*0.3*	*4.8*	*1.E-05*	*3.E-05*	*0.09*	*0.6*	*0.E+00*	*0.05*	*4.E-05*	*1.E-04*	*0.5*	*1.2*	*1.E-05*	*3.E-05*	*0.12*	*0.4*	*9.E-06*	*1.E-05*	*0.06*	*0.8*	*1.E-05*	*1.E-05*	*0.09*	*0.09*
	Outdoor Air – Inhalation Pathway	*1.E-06*	*1.E-06*	*0.06*	*0.06*	*1.E-06*	*1.E-06*	*0.00*	*0.06*	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	TOTAL	**2.E-05**	**9.E-05**	**0.4**	**1.2**	**3.E-05**	**6.E-05**	**0.5**	**5.1**	**1.E-05**	**3.E-05**	**0.1**	**0.6**	**0.E+00**	**0.05**	**4.E-05**	**1.E-04**	**0.5**	**1.2**	**1.E-05**	**3.E-05**	**0.12**	**0.4**	**9.E-06**	**1.E-05**	**0.06**	**0.8**	**1.E-05**	**1.E-05**	**0.09**	**0.09**
Current Commercial/Industrial worker RME	**Surface Soil to 2.2 ft bgs – Oral/Dermal/Inhalation[3]**	1.E-05	1.E-05	0.3	0.3	1.E-05	1.E-05	0.3	0.3	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	Indoor Air – Inhalation Pathway[1]	*2.E-05*	*1.E-04*	*0.2*	*1.6*	*3.E-05*	*7.E-05*	*0.4*	*7.7*	*2.E-05*	*5.E-05*	*0.14*	*1.0*	*0.E+00*	*0.08*	*6.E-05*	*1.E-04*	*0.7*	*1.8*	*2.E-05*	*5.E-05*	*0.2*	*0.6*	*1.E-05*	*2.E-05*	*0.10*	*1.3*	*2.E-05*	*2.E-05*	*0.14*	*0.15*
	Outdoor Air – Inhalation Pathway	*2.E-06*	*2.E-06*	*0.09*	*0.09*	*2.E-06*	*2.E-06*	*0.09*	*0.09*	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	TOTAL	**4.E-05**	**1.E-04**	**0.6**	**2.0**	**4.E-05**	**9.E-05**	**0.8**	**8.0**	**2.E-05**	**5.E-05**	**0.1**	**1.0**	**0.E+00**	**0.08**	**6.E-05**	**1.E-04**	**0.7**	**1.8**	**2.E-05**	**5.E-05**	**0.2**	**0.6**	**1.E-05**	**2.E-05**	**0.10**	**1.3**	**2.E-05**	**2.E-05**	**0.14**	**0.15**

(1) Indoor air inhalation pathway was calculated using measured indoor air data.
(2) Soil and Outdoor air pathways not calculated separately for the parcels
(3) Surface soil risks and hazards for Three Kings Construction and Star City Auto Body are the same for both buildings because there is only one set of soil data for the site.
(4) Outdoor air exposure concentrations calculated from measured outdoor air concentrations.

Table ES-2
Summary of Chronic Cancer Risks and Chronic Non-Cancer Hazards - Future Scenarios

Receptor	Exposure Pathway	PARCEL Site - Former Omega Property[1]				Parcels Other than the Former Omega Property				All Parcels			
		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Future Commercial/Industrial worker Indoor Worker CTE	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									8.E-06	8.E-06	0.14	0.14
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]									8.E-07	3.E-04	0.009	4.2
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									2.E-09	7.E-07	0.00002	0.010
	TOTAL									**9.E-06**	**3.E-04**	**0.15**	**4.4**
Future Commercial/Industrial worker Indoor Worker RME	*Surface and Subsurface Soil to 12 ft bgs* – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.3	0.3
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]									1.E-06	5.E-04	0.014	7
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									3.E-09	1.E-06	0.00003	0.02
	TOTAL									**1.E-05**	**5.E-04**	**0.3**	**6.9**
Future Commercial/Industrial worker Outdoor Worker CTE	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.23	0.23
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									2.E-08	8.E-06	0.0002	0.11
	TOTAL									**1.E-05**	**2.E-05**	**0.23**	**0.3**
Future Commercial/Industrial worker Outdoor Worker RME	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.3	0.3
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									3.E-08	1.E-05	0.0003	0.15
	TOTAL									**1.E-05**	**2.E-05**	**0.3**	**0.5**
Future Construction Worker CTE	*Surface and Subsurface Soil to 12 ft bgs* – Oral /Dermal, Inhalation of Fugitive Dust	2.E-07	2.E-07	0.08	0.08	2.E-07	2.E-07	0.08	0.08	2.E-07	2.E-07	0.08	0.08
	Outdoor Air (Soil gas 5 to 12 Feet bgs) - Inhalation Pathway - in Excavation (3)	1.E-09	1.E-07	0.0002	0.05	7.E-11	1.E-07	0.00006	0.04	5.E-10	1.E-07	0.00012	0.04
	TOTAL	**2.E-07**	**4.E-07**	**0.08**	**0.1**	**2.E-07**	**4.E-07**	**0.08**	**0.1**	**2.E-07**	**3.E-07**	**0.08**	**0.1**
Future Construction Worker RME	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	1.E-06	1.E-06	0.8	0.8	1.E-06	1.E-06	0.8	0.8	1.E-06	1.E-06	0.8	0.8
	Outdoor Air (Soil gas 5 to 12 Feet bgs) - Inhalation Pathway - in Excavation (3)	8.E-09	1.E-06	0.002	0.4	5.E-10	1.E-06	0.0005	0.3	4.E-09	8.E-07	0.0009	0.3
	TOTAL	**1.E-06**	**2.E-06**	**0.8**	**1**	**1.E-06**	**2.E-06**	**0.8**	**1**	**1.E-06**	**2.E-06**	**0.8**	**1**
Future On-Site Resident [4] RME - Adult	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	2.E-05	2.E-05	0.3	0.3	2.E-05	2.E-05	0.3	0.3				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	3.E-05	3.E-03	0.4	30	3.E-06	4.E-03	0.08	45				
	TOTAL	**5.E-05**	**3.E-03**	**0.7**	**30**	**2.E-05**	**4.E-03**	**0.4**	**45**				
Future On-Site Resident [4] RME - Adult+Child	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	4.E-05	4.E-05	0.9	0.9	4.E-05	4.E-05	0.9	0.9				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	4.E-05	3.E-03	0.5	38	4.E-06	5.E-03	0.11	57				
	TOTAL	**8.E-05**	**3.E-03**	**1.4**	**39**	**4.E-05**	**5.E-03**	**1.0**	**58**				
Future On-Site Resident [4] RME - Child	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	3.E-05	3.E-05	3.2	3.2	3.E-05	3.E-05	3.2	3.2				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	2.E-05	1.E-03	0.9	71	1.E-06	2.E-03	0.20	105				
	TOTAL	**4.E-05**	**1.E-03**	**4.1**	**74**	**3.E-05**	**2.E-03**	**3.4**	**108**				

(1) For future scenarios there is only one set of soil data for on-site.
(2) Indoor air pathway was calculated using soil gas data since future buildings are not expected to have the same characteristics as the current building where indoor air samples were measured
(3) Outdoor air exposure concentrations calculated from soil gas concentrations.
(4) Future residential development is unlikely for any area of the site. Calculations were only conducted on-site to provide a representative calculation for potential residential exposure.
(2) Indoor air pathway was calculated using soil gas data since future buildings are not expected to have the same characteristics as the current building where indoor air samples were measured.
(3) Ambient air exposure concentrations calculated from soil gas concentrations.
(4) Future residential development is unlikely for any area of the site. Calculations were only conducted on-site to provide a representative calculation for potential residential exposure.

Section 1

Section 1
Introduction

1.1 Scope and Objectives

This risk assessment presents an evaluation of potential human health risks and hazards associated with exposure to residual soil and groundwater contamination at the former Omega Chemical site (the Site). The Site is located at 12504/12512 East Whittier Boulevard (Figure 1-1). Because the Site is located in an urban area that has been developed for decades, provides no suitable habitat, and contaminated subsurface soils are covered with buildings, asphalt, or concrete, ecological impacts from the facility are not expected and are not evaluated in this report. United States Environmental Protection Agency (USEPA) will be performing an evaluation of habitat and ecological receptors in a separate report.

This Human Health Risk Assessment (HHRA) is consistent with the final On-site Soils Remedial Investigation/Feasibility Study Work Plan dated September 29, 2003 and follows risk assessment guidance from USEPA and with accommodations for consistency with similar guidance from California Environmental Protection Agency (CalEPA) as necessary. The following documents formed the basis for the HHRA:

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A).Interim Final.EPA/5401/1-891002.December 1989.
- USEPA Risk Assessment Guidance for Superfund: Volume I. Human Health Evaluation Manual. Part B, Development of Risk-Based Preliminary Remediation Goals. Interim. U.S. EPA. Washington, D.C. 1991.
- USEPA Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005. 2004.
- CalEPA Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities. August 1996.
- CalEPA Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities. Human and Ecological Risk Division Department of Toxic Substances Control. February 1997.
- CalEPA DTSC Preliminary Endangerment Assessment Guidance Manual (reprinted from 1994). January 1999.
- CalEPA DTSC Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air. 2005.
- USEPA User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings. March 14, 2003.

- USEPA Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. 2002.

Additional USEPA and CalEPA documents and databases consulted for this HHRA are cited in the text and listed in Section 8.

1.2 USEPA Consent Decree

This HHRA has been prepared in accordance with Task 2 of the Statement of Work in Consent Decree No. 00-12471 between the United States Environmental Protection Agency (USEPA) and the Omega Chemical Site PRP Organized Group (OPOG). The Consent Decree was lodged on November 24, 2000 and entered into the US District Court on February 28, 2001.

Task 2 requires OPOG to "Implement a Vadose Zone Remedial Investigation/ Feasibility Study (RI/FS) For Contaminant Releases On, At, or Emanating From The Omega Property". The Site location and vicinity are illustrated on Figure 1-1. The figure also illustrates the Phase 1a area, where a groundwater remedy is currently being implemented in accordance with Task 1 of the Consent Decree. The groundwater remedy is expected to be operational in mid-2007.

1.3 Site History

The following section is a summary of information regarding previous owners, operations, and known historical chemical use at and in the vicinity of the Site.

1.3.1 Owners and Operators

The subject Site located at 12504/12512 East Whittier Boulevard was first developed in 1951. The Site occupies Los Angeles County Assessor Tract No. 13486, Lots 3 and 4. The Site is approximately 41,000 square feet (~0.94 acres) in area (200 feet wide x 205 feet long) and contains two structures - an approximate 140 by 50 foot warehouse and an approximate 80 by 30 foot administrative building. A loading dock is also attached to the rear of the warehouse. The exterior areas are concrete-paved and the Site is secured with a perimeter fence and locking gate.

Prior to initial construction of buildings in July 1951, the Site was used for agriculture; apparently the site has never been used for residential purposes. The Site was operated by Sierra Bullets prior to 1963. During operation of the Sierra Bullet facility, a 500-gallon underground storage tank (UST) was utilized for storage of kerosene. The UST was subsequently removed in 1987 by Fred R. Rippy, Inc.

From 1976 to 1991 Omega Chemical Corporation operated a treatment and disposal facility for commercial and industrial solid and liquid wastes and a transfer station for storage and consolidation of wastes for shipment to other treatment and/or disposal facilities.

Van Owen Holdings LLC of Los Angeles, California purchased the property in 2003. Star City Auto Body occupies the warehouse (12504 Whittier Blvd.) and performs auto body repair and painting on the premises. The auto body shop also leases the small paved parking lot north of the warehouse building for automobile parking. The former administrative building (12512 Whittier Blvd.) and larger paved parking area south of the warehouse have had a variety of tenants since 2003. The former administration building is currently unoccupied, and the parking lot is used for temporary storage of wooden pallets by L&M Pallets on a month-to-month lease basis.

1.3.2 Facility Processes and Chemical Usage

Limited information regarding volumes and types of wastes handled by the Omega Chemical Corporation is available for review. According to the Phase II Close Out Report (Hargis and Associates, England and Associates, October 1, 1996), Omega Chemical Corporation operated the facility for recycling and treatment of spent solvents and refrigerants. Drums and bulk loads of waste solvents and chemicals (primarily chlorinated hydrocarbons and chlorofluorocarbons) from various industrial activities were processed to form commercial products which were returned to generators or sold in the marketplace. An Operation Plan, prepared by Omega Chemical Corporation in 1990 for proposed expansion of the facility, provided a summary of current and proposed facility processes, tank capacities, incoming and facility-generated waste stream characteristics and handling practices, etc.

The majority of the 11 treatment units were located in the general area of the warehouse loading dock. As indicated in the Operation Plan, a total of 27 storage tanks with a combined storage capacity of 109,400 gallons were present at the facility in 1990. Six large, vertical storage tanks were arranged in an L-shaped pattern in the southern corner of the Site. Five process tanks were located in the northern yard, and were arranged in a linear pattern along the side of the warehouse. The locations of the smaller storage tanks were not indicated in the Operation Plan.

Wastes accepted by Omega Chemical Corporation for recycling were broadly characterized as organic solvents and chemicals, and aqueous wastes with organic waste constituents. Sources of the incoming waste were a wide assortment of manufacturing and industrial processes (petroleum refining, rubber and plastics, chemicals, paper and allied products, furniture and fixture products, lumber and wood products, printing and publishing, textile mill products, food and kindred products, etc.).

The treatment and transfer activities at Omega resulted in releases of chemicals to soil, soil gas, and groundwater at the Site, as evidenced by the results of previous site investigations (the first conducted in 1985 by LeRoy and Crandall Associates regarding subsurface contamination at the tank farm). A removal action was performed at Terra Pave to address lead contamination in soil. It is possible that lead in airborne particulates from Terra Pave were deposited onto surface soils at the Site.

The principal VOCs detected in the soil gas at the Omega site and at the highest concentrations were Freon 113, Freon 11, 1,1,1-TCA and PCE. The most prevalent contaminants detected in soil and groundwater are volatile organic compounds (VOCs), primarily tetrachloroethylene (PCE) and related compounds, trichloroethene (TCE), and freons. Chlorinated methane compounds, including methylene chloride and chloroform, as well as acetone and toluene, are also detected at the downgradient Site boundary and off-Site. No indications of dense non-aqueous phase liquids (DNAPLs) were identified in vadose zone soil; although some groundwater concentrations are indicative of either non-aqueous phase liquids (NAPL) or residual saturation of VOCs within or above the capillary fringe.

Material found within the loading dock sump contained the high concentrations of VOCs. The Phase 2 Close Out Report (England & Associates, Hargis + Associates, Inc., October 1, 1996) included a plan (Technical Memorandum No. 5 [TM5], February 22, 1996) for removal and disposal of contaminated soils found inside a sump located on the elevated loading dock area. Soil gas sample SG10R was collected at a depth of 6 feet from the soils contained within this sump during November 1995. TM5 and a subsequent addendum in response to EPA comments (TM5A, June 26, 1996) indicated that the sump dimensions were 6 feet x 6 feet, the total probed depth was 6 feet, and the sump was concrete-lined on all sides. TM5a indicated that the contaminated soil would be removed in July 1996 following EPA approval of the TM. Documentation of the proposed removal action was not provided in the Close Out Report. Very high concentrations of the following compounds were detected in the SG10R sample: Freon 11 (38,428,000 ppb/v), Freon 12 (8,536,000 ppb/v), Freon 113 (107,577,000 ppb/v), PCE (104,000 ppb/v), and 1,1,1-TCA (16,012,000 ppb/v). By comparison, the following significantly lower concentrations were detected at nearby RI soil gas sample location VP007 at a depth of 6 feet: Freon 11 (8,800 ppb/v), Freon 12 (not detected at a detection limit of 78 ppb/v), Freon 113 (31,000 ppb/v), PCE (65,000 ppb/v), and 1,1,1-TCA (32,000 ppb/v). It is presumed that all loading dock sump material was excavated, transported to an USEPA-approved off-Site disposal facility, incinerated, and disposed.

In August 2000, two concrete-lined sumps located in the loading dock area were drained of accumulated rainwater, and the sumps were pressure-washed and backfilled with concrete slurry. The drained fluids were transported to Demenno/Kerdoon for disposal. One of the loading dock sumps measured 6 feet by 6 feet by 6 feet. Based on the dimensions of the concrete-lined sump and its location in the loading dock, it was assumed to be the former soil-filled sump. Because the sump was concrete-lined on all sides, the SG10R soil gas sample collected from within the sump is not considered to be representative of concentrations in Site soils and has not been included in the risk assessment calculations. No other exposed or near-surface grossly contaminated materials were identified.

1.4 Potential Risk Issues

This HHRA addresses potential risks and hazards associated with residual soil contamination at the site. The HHRA evaluates the current and future use of the site for commercial purposes. Risk issues at the Site may include partitioning of volatile organic compounds (VOCs) from the soil matrix into soil gas and subsequently into ambient[2] and indoor air. Because VOCs may accumulate to some extent indoors, inhalation of indoor air was quantitatively evaluated in the HHRA using measured indoor air vapor concentrations for current industrial workers. In addition to the Omega Site, potential for vapor intrusion was evaluated by building using indoor air data at the following areas:

- the parcel immediately to the north currently occupied by Medlin & Sons,
- the parcel immediately to the west currently occupied by TerraPave,
- the parcel to the south and west of the site (currently the occupied by the Bishop Company), and
- the parcel south of Bishop Company currently occupied by LA Carts and Oncology Care.

Minimum and maximum building concentrations were both evaluated to provide a potential range of risks and hazards. Measured concentrations of VOCs in indoor air from the parcel immediately to the south of the site (former location of the Skateland facility) were not included in the analysis since demolition of this building was completed on April 4, 2007. Because measured indoor air concentrations in current buildings may not represent future indoor air concentrations, indoor air exposure concentrations for future industrial workers and hypothetical residential receptors were evaluated using soil gas data modeled in a spreadsheet model to estimate indoor air concentrations.

Inhalation of ambient air was evaluated for current industrial workers using measured ambient air concentrations. However, because measured ambient air concentrations may not represent future ambient air concentrations, ambient air exposure for construction workers, industrial workers, and residents were estimated by modeling soil gas concentrations. Measured ambient air data were also compared to these modeled values in the uncertainties section.

In addition, construction workers at the Site may also be in direct contact with contaminated subsurface soil through incidental ingestion or dermal contact. These scenarios are evaluated in the HHRA for soil. The HHRA did not address these

[2] Throughout the text, tables, and appendices of this report, "ambient air" is defined to be "outdoor air." The two terms are used interchangeably throughout this report.

scenarios for soil at the above defined separate parcels. Soil sampling locations were concentrated on and along the border of the Omega site.

Currently, groundwater underlying the Site and in the immediate vicinity is not used for any purpose. Use for potable purposes within this area is also unlikely for the future due to the presence of high concentrations of total dissolved solids (TDS). As shown in Table 1-1, TDS concentrations in groundwater samples from 2004 to 2006 ranged from 630 to 1,700 milligrams per liter (mg/L). The USEPA secondary standard for TDS in drinking water is 500 mg/L while the CalEPA maximum contaminant level (MCL) for drinking water ranges from 500 mg/L (recommended) to 1,000 mg/L (upper) with a short-term concentration of 1,500 mg/L. Use of groundwater at and downgradient of the site will be addressed in a separate report, and is not included in this risk assessment.

Currently, no plans exist for residential development at the Site, and the Site location suggests that residential development in areas adjacent to the Site is unlikely. The City intends to allow redevelopment that consists of commercial and retail uses with the construction of multi-level buildings. Specifically, City representatives have stated that it is unlikely that the Omega property will be redeveloped for residential uses (Adams, 2007), although the zoning of the site as the Whittier Boulevard Specific Plan-Workplace District allows for Live/Work units and multi-family housing. Therefore, although residential use of the site is not expected to occur in the future, quantitative analysis of future residential exposures is provided to provide additional information to the risk manager. Section 4 provides a more detailed discussion of current and reasonable future land uses of the site.

1.5 Overview of Risk Assessment Findings

Results of the risk assessment suggest that contaminated soils at the site could present a significant threat to current and future commercial/industrial workers, future construction workers, and hypothetical future residents. Cancer risk estimates ranged from 4E-7 to greater than the upper end of the USEPA risk range of 1E-4. Hazard indices slightly exceeded one for current commercial/industrial workers at parcels other than the Site Parcel and were greater than one for future commercial/industrial workers, future construction workers, and future residents. Exposures to soil are unlikely under current conditions because of cover of most of the site with hardscape (buildings, concrete, and asphalt). However, future development could result in the removal of existing hardscape resulting in completed exposure pathways for future receptors. Risks and hazards are primarily attributable to inhalation of indoor air for current and future commercial/industrial indoor workers and future residents and ambient air for future outdoor commercial/industrial workers.

Possible risks associated with exposure to vapors intruding into indoor air spaces for current commercial/industrial workers are typically in the upper half of EPA's target

risk range of 1E-6 to 1 E-4 (9E-6 to 1E-4). HI estimates associated with current exposure for vapors intruding into indoor air spaces fell in the range of less than one to about 7.7. Possible risks associated with exposure to vapors intruding into indoor air spaces for future commercial/industrial workers are typically in the upper half of EPA's target risk range 8E-7 to 5E-4. HI estimates for vapors intruding into indoor air spaces for these receptors fell in the range of less than one to about 7. Risks associated with exposure to vapors intruding into indoor air spaces were highest for hypothetical future residents with risks ranging from 1E-6 to 5E-3, above EPA's target risk range. HI estimates for vapors intruding into indoor air spaces for these residents ranged from less than one to 108.

Risks and hazards were estimated for the Omega site and for surrounding parcels. VOCs in ambient air, as measured at the site, may account for 10 to 50 percent of these risks depending on the parcel.

The basis for these risk estimates is provided in detail in the remainder of this report.

1.6 Report Organization

Following a brief description of the site geology and hydrology in Section 2, this HHRA was conducted in four phases as defined in Cal EPA and U.S. EPA guidance, including:

- Identification of chemicals of potential concern (COPCs) that exist in sufficient quantities to present a public health risk (Hazard Identification, Section 3)
- Analysis of ways in which people might be exposed to COPCs (Exposure Assessment, Section 4)
- Evaluation of the toxicity of COPCs that may present public health risks (Toxicity Assessment, Section 5)
- Characterization of the magnitude and location of potential health risks for the exposed community (Risk Characterization, Section 6)

Uncertainties, summary and conclusions, and references are provided in Sections 7, 8, and 9, respectively. Risk calculations are provided in Appendix A.

OMEGA CHEMICAL

SITE VICINITY MAP

CDM

FIGURE 1-1

Table 1-1
Summary of Historical Total Dissolved Solids Concentrations

Sample Date	Number of Samples	CalEPA Maximum Contaminant Level (mg/L)	USEPA Secondary Standard (mg/L)	TOTAL DISSOLVED SOLIDS CONCENTRATION (mg/L)	
				Minimum Detected	Maximum Detected
June-1996	1	500 (recommended); 1,000 (upper); 1,500 (short–term)	500	5,900	5,900
March-2004	16			800	1,700
June-2004	25			630	1,600
September-2004	16			780	1,600
November-2004	2			860	970
December-2004	23			660	1,500
August-2005	1			1,200	1,200
March-2006	3			660	1,140
September-2006	5			950	1,150

mg/L = milligrams per liter

Section 2

Section 2
Physical Setting

A detailed description of the physical setting of the site including boring logs and cross-sections is provided in Section 2.4 of the pre-final On-Site Soils RI Report (CDM, 2007). This section provides a summary of the local geology and hydrogeology of the site.

2.1 Climate

The climate of the area is characterized as semi-arid, with an average annual precipitation of approximately 16 inches. Precipitation occurs mainly during the winter and spring months.

2.2 Surface Topography

The land surface at the former Omega Chemical property slopes to the southwest to south-southwest at approximately 0.016 feet per foot, and is situated at approximately 220 feet above mean sea level (msl).

2.3 Local Geology and Hydrogeology

In the vicinity of the former Omega Chemical property, groundwater is typically encountered between 70 and 80 feet bgs, and flows to the southwest. Table 2-1 summarizes water levels recorded in the Omega vicinity between 2001 and 2006. Well locations are shown on Figure 2-1.

Regional hydrogeologic information is inconclusive on the presence or absence of major regional named aquifers in this portion of the Whittier Area. A cross-section about 1.5 miles south of the former Omega Chemical property presented in Bulletin 104 (DWR, 1961) suggests that the uppermost aquifers present are the Gage and Jefferson Aquifers. The upper portion of the shallow aquifer may represent the Gage aquifer, while the lower aquifer is potentially the Hollydale or Jefferson aquifer. The Gage aquifer is the major water bearing member of the Lakewood formation in the Whittier area, where it consists of about 30 feet of sand with some interbedded clay. It can attain maximum depths of 150 feet. The Jefferson aquifer is part of the Lower Pleistocene San Pedro formation that underlies the entire Whittier Area. The formation is composed of sand and gravel with interbedded clay, likely of marine origin. It ranges in thickness from 20 to 40 feet and reaches a maximum depth of 350 feet.

Below the Gage and Jefferson aquifers are deeper members of the Lower Pleistocene San Pedro formation. From shallowest to deepest, they are the Hollydale, Lynwood, Silverado, and Sunnyside aquifers. The Hollydale aquifer may be located beneath the Site, as the Site is located in the western part of the Whittier Area. It ranges in thickness from 10 to 25 feet and reaches to a maximum depth of 100 feet, and merges with the overlying Gage near South Whittier. The Lynwood aquifer ranges in

thickness from 50 to 100 feet and extends to a maximum depth of 460 feet; the Silverado aquifer ranges in thickness from 110 to 300 feet, and extends to a depth of 750 feet; while the Sunnyside aquifer consists of 200 to 300 feet of sand and gravel and reaches a depth of 1,000 feet.

2.3.1 Vadose Zone

The vadose zone is generally comprised of clayey silts with occasional sand lenses. The shallower interbedded silty clays and clays are characterized by alternating layers of high and low soil conductivity materials. An important lithologic layer starting at an approximate depth of 30 feet bgs (hereinafter referred to as the 30-foot unit) was found dipping to the west and southwest. The 30-foot unit has a characteristic double peak signature on the MIP conductivity logs, with a lower conductivity interbed in the middle of the unit likely consisting of siltier materials. Nearly all borings show a 1- to 4-foot thick unit with lower conductance, interpreted to be a sandy to silty lithology with less clay overlying the marker bed. The "30-foot zone" itself is between 3.5 to 11 feet thick. The top of the zone slopes generally to the west-southwest with a southwesterly trough directly beneath the center of the Site.

2.3.2 Saturated Zone

Groundwater investigations performed to date have indicated the presence of the two aquifer zones present at the Site, separated by a low permeability confining zone. The first sandy zone is encountered near the first occurrence of groundwater. It originates a short distance southwest of the former Omega Chemical property and thickens dramatically to the west. MIP borings and soil borings advanced at the former Omega Chemical property indicate that the sandy unit does not exist beneath the former Omega Chemical property. The sandy unit was observed in borings along Putnam Street (west of the former Omega Chemical property) and is up to 35 feet thick at downgradient well OW-4/4B. In the MIP borings at the western edge of the former Omega Chemical property, the sandy zone is characterized by low conductivity between 45 and 60 feet bgs. The unit is characterized by fine to medium sands.

The shallow unconfined aquifer may also thin toward the north along Putnam Street, which is perpendicular to the general flow direction. The shallow aquifer configuration shows the presence of a lower permeability zone splitting the upper aquifer north of PZ1. The uppermost sand unit within the upper aquifer appears continuous below the water table elevation from H-7 at the northern end to EW-5 at the southern end of the section.

Based on water levels at the OW4 and OW8 locations, where both deep and shallow zone completions are available, the groundwater elevations are significantly higher in the shallow aquifer. A similar difference in water level, with an indicated downward gradient, was observed at the cluster at OW1/1b. This indicates that a significant confining zone limits flow between these zones.

Similar to the shallower unconfined aquifer, the deeper confined aquifer may also thin under the former Omega Chemical property and thicken to the west. Only the

deeper wells to the west penetrate into this unit; it was not observed at well OW-1B at Terra Pave. The deeper confined aquifer is characterized by sand with some silt.

2.3.3 Groundwater Flow and Aquifer Characteristics

Groundwater flow in the upper aquifer has been consistently towards the southwest based on depth to water and groundwater elevation data collected and contour maps prepared since mid-2001. Numerous aquifer tests have been performed on Omega wells over the past 7 years, as follows: slug tests ands step-drawdown testing on wells OW-1b, OW-2, and OW-3 in 1999; short-term (approximately 4 hours) constant discharge testing on wells OW-2, OW-3, OW4a, and OW8 in 2003; and more recently approximately 24-hours of constant discharge testing performed in September 2006 on five wells installed in mid-2006 (EW-1 through EW-5) that are proposed for groundwater extraction as part of the Phase 1a area groundwater remedy. A technical memorandum detailing testing procedures and an evaluation of the testing results was prepared and submitted to USEPA in late-2006 (CDM, November 7, 2006).

CDM

Omega Chemical
Groundwater Well Locations

Figure 2-1

Table 2-1
Omega Chemical Superfund Site
Groundwater Elevation Summary

Date	Well ID	EW-1	EW-2	OW-1	OW-1b	OW-2	OW-3	OW-3b	OW-4a	OW-4b	OW-5	OW-6	OW-7	OW-8	OW8b
	TOC Elev (ft MSL)			210.30	204.98	200.10	196.33	194.86	182.47	182.22	151.96	170.54	212.01	198.42	198.65
5/15/2001	DTW (ft btoc)			74.19	72.30	66.47	62.55		53.60	57.11	--	--	--	--	--
	GW Elev (ft MSL)			**136.11**	**132.68**	**133.63**	**133.78**		**128.87**	**125.11**	--	--	--	--	--
6/14/2001	DTW (ft btoc)			74.14	72.53	66.38	62.44		53.36	57.51	--	--	--	--	--
	GW Elev (ft MSL)			**136.16**	**132.45**	**133.72**	**133.89**		**129.11**	**124.71**	--	--	--	--	--
7/24/2001	DTW (ft btoc)			74.04	73.36	66.25	62.29		53.31	58.82	--	--	--	--	--
	GW Elev (ft MSL)			**136.26**	**131.62**	**133.85**	**134.04**		**129.16**	**123.40**	--	--	--	--	--
8/16/2001	DTW (ft btoc)			74.08	74.18	66.34	62.39		53.70	60.01	26.14	42.54	--	--	--
	GW Elev (ft MSL)			**136.22**	**130.80**	**133.76**	**133.94**		**128.77**	**122.21**	**125.82**	**128.00**	--	--	--
9/18/2001	DTW (ft btoc)			74.33	74.75	66.66	62.70		54.35	60.82	27.33	43.25	--	--	--
	GW Elev (ft MSL)			**136.97**	**130.23**	**133.44**	**133.63**		**128.12**	**121.40**	**124.63**	**127.29**	--	--	--
10/18/2001	DTW (ft btoc)			74.84	74.83	66.95	62.98		54.76	60.98	27.59	43.69	--	--	--
	GW Elev (ft MSL)			**136.46**	**130.15**	**133.15**	**133.35**		**127.71**	**121.24**	**124.37**	**126.85**	--	--	--
11/15/2001	DTW (ft btoc)			74.38	75.49	66.92	62.95		54.87	61.67	28.18	43.95	--	--	--
	GW Elev (ft MSL)			**136.92**	**129.49**	**133.18**	**133.38**		**127.60**	**120.55**	**123.78**	**126.69**	--	--	--
12/14/2001	DTW (ft btoc)			74.80	75.05	67.28	63.33		55.43	60.76	28.24	44.41	--	--	--
	GW Elev (ft MSL)			**136.50**	**129.93**	**132.82**	**133.00**		**127.04**	**121.46**	**123.72**	**126.13**	--	--	--
1/18/2002	DTW (ft btoc)			74.92	74.12	67.40	63.52		55.55	59.53	27.44	44.39	--	--	--
	GW Elev (ft MSL)			**136.38**	**130.86**	**132.70**	**132.81**		**126.92**	**122.69**	**124.52**	**126.15**	--	--	--
2/14/2002	DTW (ft btoc)			74.86	73.56	67.31	63.36		55.21	58.81	26.73	44.00	--	--	--
	GW Elev (ft MSL)			**136.44**	**131.42**	**132.79**	**132.97**		**127.26**	**123.41**	**125.23**	**126.54**	--	--	--
3/13/2002	DTW (ft btoc)			75.13	74.52	67.50	63.58		55.30	59.34	26.75	44.01	74.83	65.61	--
	GW Elev (ft MSL)			**136.17**	**130.46**	**132.60**	**132.75**		**127.17**	**122.88**	**125.21**	**126.53**	**137.18**	**132.81**	--
4/19/2002	DTW (ft btoc)			75.16	NM	67.52	63.61		55.35	60.02	27.12	44.12	74.93	65.69	--
	GW Elev (ft MSL)			**136.14**	**NM**	**132.58**	**132.72**		**127.12**	**122.20**	**124.84**	**126.42**	**137.08**	**132.73**	--
8/20/2002	DTW (ft btoc)			75.97	77.04	68.30	64.47		56.80	63.64	30.03	45.70	75.86	66.46	--
	GW Elev (ft MSL)			**134.33**	**127.94**	**131.80**	**131.86**		**125.67**	**118.58**	**121.93**	**124.84**	**136.15**	**131.96**	--
2/19/2003	DTW (ft btoc)			76.70	77.04	69.44	65.58		58.58	62.46	30.85	47.49	76.89	67.37	--
	GW Elev (ft MSL)			**133.60**	**127.94**	**130.66**	**130.75**		**123.89**	**119.76**	**121.11**	**123.05**	**135.12**	**131.05**	--
8/26/2003	DTW (ft btoc)			76.95	78.75	69.18	65.54		58.13	65.67	31.20	47.09	76.90	67.35	--
	GW Elev (ft MSL)			**133.35**	**126.23**	**130.92**	**130.79**		**124.34**	**116.55**	**120.76**	**123.45**	**135.11**	**131.07**	--
02/2004	DTW (ft btoc)			76.97	80.93	70.40	66.35		61.04	68.08	35.21	50.24	78.00	68.36	--
	GW Elev (ft MSL)			**133.33**	**124.05**	**129.70**	**129.98**		**121.43**	**114.14**	**116.75**	**120.30**	**134.01**	**130.06**	--
08/25-26/2004	DTW (ft btoc)			**78.84**	**82.80**	71.24	67.13		62.36	71.10	36.78	51.69	78.96	69.15	86.77
	GW Elev (ft MSL)			**131.46**	**122.18**	**128.86**	**129.20**		**120.11**	**111.12**	**115.18**	**118.85**	**133.05**	**129.27**	**111.88**
02/23-25/2005	DTW (ft btoc)			77.22	79.95	71.82	67.20		63.94	65.97	38.17	53.58	78.98	69.50	81.55
	GW Elev (ft MSL)			**133.08**	**125.03**	**128.28**	**129.13**		**118.53**	**116.25**	**113.79**	**116.96**	**133.03**	**128.92**	**117.10**
08/23-25/2005	DTW (ft btoc)			76.15	75.76	68.77	64.69		58.98	61.15	29.62	47.68	75.94	66.87	76.31
	GW Elev (ft MSL)			**134.15**	**129.22**	**131.33**	**131.64**		**123.49**	**121.07**	**122.34**	**122.86**	**136.07**	**131.55**	**122.34**
02/17-22/2006 [1]	DTW (ft btoc)			75.33	75.77	67.87	63.90	73.76	58.03	62.27	30.11	46.93	75.21	66.05	77.55
	GW Elev (ft MSL)			**134.97**	**129.21**	**132.23**	**132.43**	**121.10**	**124.44**	**119.95**	**121.85**	**123.61**	**136.80**	**132.37**	**121.10**
08/22-24/2006	DTW (ft btoc)			74.94	75.00	67.43	63.70	73.38	56.87	61.13	28.99	45.70	74.67	65.66	76.58
	GW Elev (ft MSL)			**135.36**	**129.98**	**132.67**	**132.63**	**121.48**	**125.60**	**121.09**	**122.97**	**124.84**	**137.34**	**132.76**	**122.07**
02/20-02/22/07 [2]	DTW (ft btoc)	66.96	65.87	75.35	75.47	67.97	64.24	73.94	57.77	62.10	30.17	46.16	75.28	66.28	77.29
	GW Elev (ft MSL)	**-66.96**	**-65.87**	**134.95**	**129.51**	**132.13**	**132.09**	**120.92**	**124.70**	**120.12**	**121.79**	**124.38**	**136.73**	**132.14**	**121.36**

TOC - Top of Casing
Elev - Elevation
ft MSL - feet mean sea level
DTW - Depth to Water
ft btoc - feet below top of casing
GW Elev - Groundwater Elevation

[1] OW3b installed March 6, 2006 and measured March 13, 2006.
[2] EW-1 and EW-2 installed on March 6, 2006.

Section 3

Section 3
Data Analysis and Identification of Chemicals of Potential Concern

This section presents a summary of data available for the HHRA, a summary of the data evaluation, and the selection of preliminary Chemicals of Potential Concern (COPCs). Chemicals selected as COPCs were evaluated quantitatively. Data used in the HHRA were obtained from recent sampling events conducted by CDM and include soil, soil gas, and indoor and ambient air samples. As previously discussed, groundwater underlying the Site and in the immediate vicinity is currently not used for any purpose nor is it likely to be used for potable use in the future due to high concentrations of TDS. Further, a groundwater remedy is expected to be operational in mid-2007. Groundwater exposure pathways are not directly evaluated in this risk assessment. However, any groundwater vapor off-gassing was considered by the direct collection of indoor air samples or, in the case of the former Skateland parcel, measured concentrations of VOCs in soil gas..

A preliminary data evaluation was performed to determine the usability of existing data for the HHRA. Selection of data used to support quantitative evaluation is based on quality, quantity, comparability (e.g., similar detection limits), and representativeness of data for current site conditions and potential exposures at the site. During data evaluation, a set of data appropriate for use in qualitative and quantitative risk assessment is compiled. These data are then used in selection of COPCs and in estimation of exposure point concentrations used in the calculation of possible chronic daily intake. A more extensive discussion of data quality is provided in the pre-final On-Site Soils RI Report, which was submitted on June 20, 2007 (CDM, 2007).

3.1 Data to Support Human Health Risk Assessment

During the RI, samples were collected from surface soils, subsurface soils, soil gas, indoor air, and ambient air. Sample locations are shown in Figures 3-1 and 3-1b and analytical summary tables for all samples collected during the RI are provided in the RI report. Please refer to the tables and text provided in the RI report for a summary of analytical results. Sampling objectives, rationale, methodology, and locations are described in Section 3 of the RI report.

Approximately 208 soil samples of which 8 were duplicates were collected during roughly 13 sampling events from 1995 to 2006. Soil samples were collected at approximately 66 locations at depths up to 120 feet below ground surface (bgs). Soil samples were analyzed for a comprehensive suite of analyses including VOCs, SVOCs, metals and pesticides. Although historic soil samples (samples collected in 1995 to 1999) were included in the analysis, historic soil results for VOCs were not included because current soil, soil gas and indoor air samples are likely more representative of current conditions for VOCs at the site.

In addition, during the implementation of Task 1 of the Consent Decree, approximately 298 groundwater samples of which 34 were duplicates were collected during roughly 32 sampling events from 1996 to 2006. Groundwater samples were analyzed for a comprehensive suite of analytes including VOCs, SVOCs, and metals. Only data from groundwater samples collected from October 2004 to September 2006 are used in the qualitative risk analysis. Although groundwater samples were collected as early as 1996, these earlier samples cannot be assumed to be representative of current conditions.

Soil gas samples were collected from a total of 97 locations at depths up to 71 feet bgs. Seven sampling events occurred from 2004 to 2006, and a total of 271 samples (of which 31 were duplicates) were collected. Soil gas samples were collected in Summa canisters and analyzed by an off-site laboratory for VOCs using EPA Method TO-15.

Historical soil gas sampling results were not included because evaluation of the historical soil gas sampling results provided in the Phase II Close Out Report (Hargis + Associates, Inc. and England & Associates, October, 1996) indicated several potential deficiencies with the data, as follows: a notation on the analytical results summary table provided in the document indicated that the soil gas results were "preliminary", copies of the analytical reports were not provided and so were not available for review, and the mobile laboratory used was not identified nor were analytical quality assurance/quality control procedures discussed. In addition, non-detections for all tested VOCS were reported for seven samples (SG1 at 6 and 12 feet, SG4 at 16.7 feet, SG8 at 6 feet, SG15 at 6 and 12 feet, and SG31 at 3.5 feet). Though detection limits were higher in 1996 than during the RI, these non-detections are suspect given the elevated concentrations found throughout the Omega property during the RI. Therefore, the historical pre-RI soil gas results were not included in the risk analysis. Historical sampling locations are shown on Figure 3-2. As shown on Figure 3-1 and 3-1b, a sufficient number of soil gas samples were collected during the RI to perform the risk analysis provided in this document.

2004 to 2006 soil gas data were used for quantitative risk analysis for future scenarios (hypothetical residential scenario and future construction scenario) on the site and most surrounding parcels. These data were also used to estimate a range of attenuation factors to assist in evaluation of a future commercial/industrial land use scenario.

Sixty-eight indoor air samples (of which 11 are duplicates) were collected from 25 locations during seven sampling events from 2004 to 2006. Thirteen ambient air samples (including one duplicate) were collected from nine locations during four of these sampling events. Air samples were collected in Summa canisters and analyzed by an off-site laboratory for VOCs using EPA Method TO-15, TO-15 SIM, or TO-14.

In conjunction with the soil vapor survey, soil conductivity profiling was performed during the RI using the Membrane Interface Probe (MIP) system. Evaluation of the soil conductivity and lithologic logs indicated the presence of a continuous finer-

grained unit underlying the Site and adjacent areas at an approximate depth of 30 feet bgs. This unit is identified in the RI report as the "30-foot unit". The 30-foot unit likely inhibits the vertical migration of contaminants from moving to greater depths. This unit is described at length in the RI report.

The protocol used and data generated from all of the sampling efforts are discussed in detail in the RI Report.

3.2 Data Evaluation

Chemical data were reviewed to determine overall usability, for assessing potential human health risks. Data were evaluated to assess precision, accuracy, representativeness, completeness, comparability (PARCC parameters) and sensitivity (blanks). Analytical results for data and details of the data quality assessment are presented in the RI Report. This assessment also includes a review of appropriateness of the reporting limits for risk assessment purposes. Data were found to be of high quality and are considered useable for risk assessment purposes.

Data representativeness is one of the most important criteria evaluated when selecting data for use in the quantitative HHRA. Representativeness is the extent to which available data characterize potential exposure conditions for human or ecological receptors. Proper selection of sampling locations, consideration of potential hot spots, assessment of background concentrations, and collection of a sufficient number of samples help maximize data representativeness. The RI data were collected in contaminated or potentially contaminated areas and in areas where human contact is possible either currently or in the future.

Soil samples were collected throughout the Omega parcel and from variable depths, providing extensive documentation of the nature and extent of contamination at the site. Sampling was somewhat biased toward areas of known or suspected releases, so that the database as a whole is likely to be somewhat biased toward higher levels of contamination. Any such bias should result in overestimation of potential risks. Soil samples were not collected from surrounding parcels. Concentrations of chemicals in site soil were considered a worst-case for site-related off site contamination.

Indoor air samples were collected in one to several rounds, depending on the parcel as defined in Section 1. Multiple rounds of indoor air sampling help to minimize impact of any seasonal impacts. Moreover, several indoor air samples were collected in each building, from different areas. Multiple samples within a building help to minimize impacts of ventilation on VOC concentrations and help determine if and where building sources (e.g. consumer products) may impact results. Indoor air samples can be characterized as reasonably representative of indoor air quality in buildings on and around the site. Indoor air data may also reflect building sources rather than or in addition to vapors intruding from the subsurface. Thus, indoor air

data may be biased by building sources unrelated to VOCs previously released at the Omega site.

3.3 Identification of Chemicals of Potential Concern

General methods for selection of COPCs followed basic USEPA and CalEPA policy of initially including chemicals observed at the site, regardless of potential for human health risk, and putting any risks due to exposure to chemicals at the site in perspective during the risk characterization. In keeping with this policy, all chemicals detected in media at the site were retained as COPCs, with the following few exceptions:

- Inorganic soil constituents that are essential minerals and/or are present only at concentrations consistent with local ambient conditions were eliminated.
- Chemicals detected with a frequency of less than 5 percent, provided that other criteria as described below were met, were eliminated.
- Chemicals without available toxicity criteria were not retained as COPCs.

The tables listing detected chemicals and their summary statistics provided in this section are the same as the RAGS Part D tables in Appendix A-3, Tables 2.1 through 2.6, as available. RAGS Part D tables were not created for media that were not identified as complete exposure pathways (e.g. groundwater), so tables summarizing these media have a different format. A summary of the selection of COPCs is described in text in the following sections.

3.3.1 Non-Toxic and Essential Minerals

Several metals that are generally recognized as non-toxic and are essential minerals will not be addressed in the risk assessment. Eliminated chemicals include calcium, sodium, potassium, magnesium, chloride, fluoride, nitrate, and nitrite. Nitrate and nitrite do not have screening criteria for soil and will not be COPCs for soil. Water concentrations are far below levels of concern, and potential exposure via drinking water is not evaluated in this HHRA. Since these constituents are not volatile, no potential exposure pathways exist and these chemicals will not be quantitatively evaluated. Fluoride does have soil screening criteria, but no soil data are available for fluoride. This chemical is also nonvolatile. Since groundwater exposure is not evaluated, fluoride also will not be quantitatively evaluated.

Some essential minerals, such as iron and manganese, were not eliminated in this step. Such metals, though essential, can be associated with adverse effects and were retained unless eliminated in subsequent COPC selection steps.

3.3.2 Analysis of Ambient Concentrations of Arsenic

Local ambient concentrations of arsenic in soil were assessed using guidance developed by the Department of Toxic Substances Control (DTSC) for selection of

inorganic constituents as chemicals of concern (DTSC 1997). For this analysis, soil data for the site are combined into a single data set and plotted on a normal probability plot. Typically, both untransformed and lognormally transformed data are plotted, because the distribution of environmental data often approximates lognormal. These plots and summary data statistics are then evaluated. Where one of the normal probability plots approximates a straight line, the total data range is about an order of magnitude or less, and the coefficient of variation is less than one (i.e., data variability is low), the data are likely to be part of a single, local ambient distribution. Where normal probability plots are clearly non-linear and show one or more "inflection points", more than one population is likely to be present, and only those data that fulfill the above criteria can be considered to represent local ambient conditions. Typically, when inflection points are identified in the plots, data range is greater than an order magnitude, and the coefficient of variation is greater than one and often much higher.

The probability plot of the arsenic soil data from the Omega site is a straight line suggesting a single population of arsenic concentrations. These data likely represent local ambient conditions, not arsenic releases from the site. This conclusion is bolstered by the relatively small data range (0.8 to 21 mg/kg), and the small coefficient of variation (about 0.65). The highest value of 21 mg/kg is over twice as high as the next highest arsenic concentration of less than 10 mg/kg. The distribution of sample locations (as presented in the RI) indicates substantial coverage of the Omega site (41 samples distributed over less than one acre) suggesting that the single higher value does not represent a substantial hotspot. This observation is consistent with the location of the single higher value at the northeast corner of the site parcel. Operations are not known to have been carried out in this location.

Evaluation of arsenic soil data for the site indicates that arsenic is present at local ambient levels. The single higher value in the data set is most likely a data artifact. Data are sufficiently robust to eliminate the possibility that this single value represents a significant hotspot at the site. On this basis, arsenic was eliminated as a COPC at the site. Results of the statistical analysis are provided in Appendix B.

3.3.3 Frequency of Detection

Chemicals that are detected very infrequently at a site are not likely, with few exceptions, to contribute significantly to overall risk. Many chemicals reported in samples collected from soils at the site were in fewer than 5 percent of samples. These chemicals may not represent a significant release at the site, and may not, in some cases, be site-related. Thus, elimination of these chemicals makes the risk assessment much less cumbersome and much more focused on significant releases at the site. However, prior to eliminating infrequently detected chemicals, several criteria must be met as described below.

Infrequently detected chemicals were not eliminated if they were: 1) known human carcinogens; 2) were detected at very high concentrations compared to minimum levels that could be associated with adverse effects (e.g. OEHHA soil California

Human Health Screening Levels [CHHSLs], 2005b); and/or 3) were found at the site in localized "hotspots." Hotspots are defined as relatively small areas with chemical concentrations that are significantly higher than those in surrounding areas. In most, but not all, cases, hotspots correlate with source areas.

Chemicals that were infrequently detected and do not fall into any of the above categories were eliminated from the quantitative assessment. Chemicals eliminated include:

- Benzyl alcohol, benzo(g,h,i)perylene, diethylphthalate, di-n-butylphthalate, di-n-octylphthalate, and endrin in soil, 0 to 2.2 feet bgs
- Acetone, benzo(g,h,i)perylene, and cis-1,2-dichlorothene in soil, 0 to 12 feet bgs
- 1,2-Dichlorobenzene, 1,4-dichlorobenzene, acetone, benzo(g,h,i)perylene, bromoform, cis-1,2-dichloroethene (cis-1,2-DCE), diethylphthalate, di-n-butylphthalate, di-n-octylphthalate, endrin, trans-1,3-dichloropropene, trans-1,2-dichloroethene (trans-1,2-DCE), total xylenes, and vinyl acetate in soil, 0 to 30 feet bgs
- 1,1,2-Trichloroethane, 2-butanone, n-hexane, and o-xylenes in all parcels and site parcel soil gas, 5 to 6 feet bgs
- 4-Ethyltoluene and 4-methyl-2-pentanone in all parcel soil gas, 5 to 30 feet bgs
- 1,2,4-Trimethylbenzene, 2-propanol, 4-Ethyltoluene, and ethanol in site parcel soil gas, 5 to 30 feet bgs
- 4-Methyl-2-pentanone in other parcels soil gas, 5 to 30 feet bgs
- 1,2,3-Trichloropropane; 1,2,4-trichlorobenzene; 4-chlorotoluene; carbon disulfide; fluorene; isophorone; pentachlorophenol (PCP); phenanthrene; and methyl acetate in groundwater

3.3.4 Chemicals without Toxicity Criteria

Toxicity criteria have not yet been established for all detected chemicals. Quantitative risks and hazards can not be calculated in the absence of these toxicity criteria. As such, these chemicals were removed from the quantitative analysis. Uncertainties regarding their removal are discussed in Section 6.4. The only chemical eliminated based on lack of toxicity criteria was:

- Benzo(g,h,i)perylene in soil for 0 to 2.2 feet bgs, 0 to 12 feet bgs, and 0 to 30 feet bgs

3.3.5 Selection of COPCs for Soil

Because some exposure pathways are limited to surface soil and others to subsurface soil, surface soil and subsurface soil were assessed separately. Surface soil includes

samples up to 2.2 feet bgs. Subsurface soil was divided into three categories - greater than 2.2 feet to 12 feet bgs, greater than 12 feet to 30 feet bgs and greater than 30 feet bgs. The 12-foot bgs limit was selected to represent the maximum depth to which a resident or a construction worker could be exposed following or during regrading at the site. Summary statistics for soil data are presented in Tables 3-1, 3-2, and 3-3. These tables show minimum and maximum concentrations, the range of reporting limits, and the detection frequency for detected constituents in soil. In Table 3-2, subsurface soil from greater than 2.2 to 12 feet bgs were combined with the surface soil data to create a soil data set that represents soil if the site were regraded, mixing surface soil with subsurface soil.

Samples from depths below 12 feet bgs (Table 3-3) were not used in the quantitative risk assessment; however, these samples were examined to help ensure that no constituents were being overlooked. Table 3-4 provides a comparison of the greater than 12 feet bgs data with the less than 12 feet bgs data. Chemicals in samples depths below 12 feet bgs that were detected at frequencies greater than 5% that were not included as COPCs in the 0 to 12 feet bgs data include: 1,1,2-trichloro-1,2,2-trifluoroethane, benzene, cis-1,2-DCE, methylene chloride, toluene, trans-1,2-DCE, and trichlorofluoromethane. However, none of the maximum detected concentrations of these chemicals exceeded one-tenth of the USEPA Region 9 PRG for residential soil. Therefore, none of these chemicals are likely to figure prominently in a risk assessment of the site. Thus, no additional COPCs were identified.

3.3.6 Selection of COPCs for Groundwater

Groundwater samples collected from October 2004 to September 2006 (the last two years) are considered to be more representative of current and future groundwater conditions than samples collected earlier. Summary statistics for groundwater data collected in 2004 through 2006 and presented in Table 3-5. This table shows minimum and maximum concentrations, the range of reporting limits, and the detection frequency for all detected constituents in groundwater. Similar statistics are also presented separately for data collected from 2001 to 2004 (Table 3-6). These statistics help show the variation in groundwater quality over time.

3.3.7 Selection of COPCs for Soil Gas

Soil gas samples were collected from depths of 2 feet bgs to 71 feet bgs in 1990, 1995, 1999, 2004, 2005, and 2006. Since the primary exposure pathway of concern is indoor air, only the more shallow gas samples, ~6 feet bgs, were used in the primary analysis. Because the site and surrounding parcels are almost completely paved, barometric pumping is not expected to be significant and soil gas collected at ~ 6 feet bgs soil gas is most appropriate for estimating indoor air concentrations. In addition, many soil gas samples were collected immediately adjacent to buildings to best characterize likely VOC concentrations beneath buildings.

The conclusion that shallow soil gas is representative for examining vapor intrusion is support by comparing concentrations from this depth interval with soil gas data from

the depth interval for 5 to 6 feet (Table 3-7a) to 30 feet bgs (Table 3-8a). In almost all cases, the highest maximum and median soil gas concentrations for PCE, TCE and Freon 113 are observed in the shallow interval. These chemicals were selected because they are obviously site related and occur at the highest concentrations observed at the site. Further, as reported in Section 5, risk characterization, PCE and TCE are responsible for the highest risks estimated for the site. The only exceptions were for TCE (but not PCE) for the South parcel, and for all chemicals in the West parcel - Terrapave. In no case were concentrations of PCE or TCE in the deep interval greatly higher than in the shallow. For example, shallow and deep soil gas concentrations for PCE in the west parcel-TerraPave were 1,600,000 and 1,800,000 $\mu g/m^3$, respectively for shallow and deeper soil gas. The largest difference was observed for Freon 113 in the west parcel-TerraPave, 500,000 versus 1,500,000 $\mu g/m^3$ for shallow and deeper soil gas respectively. Freon is not, however, an important risk driver for the site. Relative concentrations of the two more important risk drivers for this parcel are similar for both depth intervals. Overall, use of shallow soil gas for quantitative analyses in this risk assessment appears to be a reasonable approach.

Also, because soil gas concentrations are likely to change over time, only the more recent soil gas samples (2004 to 2006) are included in the analysis. Soil gas samples were collected April 2004, November 2004, August 2005, December 2005, March 2006, and May 2006. Soil vapor probes were installed using a direct push rig. Soil gas sampling and analysis were conducted in general accordance with the Advisory-Active Soil Gas Investigations dated January 28, 2003, jointly issued by the DTSC and the Los Angeles RWQCB (DTSC/LARWQCB Advisory). One-liter pre-cleaned and evacuated Summa ®canisters provided by a California- certified analytical laboratory were used to collect all soil vapor samples. Summa canisters were evacuated to 30 inches of mercury vacuum and a flow regulator was placed between the probe and the canister to ensure that the canister was filled at the appropriate flow rate of 200 milliliters per minute (ml/min). Following collection, Summa canisters were labeled with a laboratory-provided sample tag, and shipped to an off-site, fixed base analytical laboratory with a completed chain-of-custody form. The collection of soil gas samples followed the procedures specified in the DTSC/ LARWQCB Advisory (2003), which recommends purging and leak testing to ensure sample integrity, as appropriate for field conditions. Isobutane was used as a leak check compound, and the laboratory reported isobutane as a Tentatively Identified Compound (TIC). Isobutane was not detected in any of the soil gas samples. Detailed descriptions of the soil vapor sampling events and sampling methodology are provided in Sections 3.1.3 and 3.3 of the RI report, respectively.

For the risk evaluation, soil gas data were divided into three categories:

- All Parcels - This category includes the Omega site parcel as well as the parcels to the north (Medlin & Sons), south (LA Carts and Oncology Care), south/west (Bishop Company), and west (TerraPave).

- Site Parcel - This category only includes the former Omega site parcel where Star City Auto Body and the Three Kings Construction are currently located.

- Other Parcels – This category includes the parcels to the north (Medlin & Sons), south (LA Carts and Oncology Care), south/west (Bishop Company), and west (TerraPave).

Tables 3-7a, 3-7b, and 3-7c summarize the 5 to 6-foot bgs data for All Parcels, Site Parcel, and Other Parcels. Tables 3-8a, 3-8b, and 3-8c summarize the 5 to 30-foot bgs data for All Parcels, Site Parcel, and Other Parcels. Since PCE and TCE are the primary chemicals of concern at the site, Figures 3-3 and 3-4 show soil vapor plumes depicting PCE and TCE soil gas CHHSL exceedances for samples collected from 0 to 6 feet bgs, respectively. Figures 3-5, 3-6, and 3-7 present soil vapor concentrations for samples collected 0 to 30 feet bgs for total VOCs, PCE, and TCE, respectively.

As noted in Section 3.1, historical soil gas data were determined to be of insufficient quality for the HHRA. Moreover, locations of more recent sampling not only suitably represented by more recently collected samples, the current data provide much more extensive characterization, especially in surrounding parcels. Thus, omission of these historical soil gas data is appropriate for this site. Please refer to the RI for further discussion of the historic soil gas data.

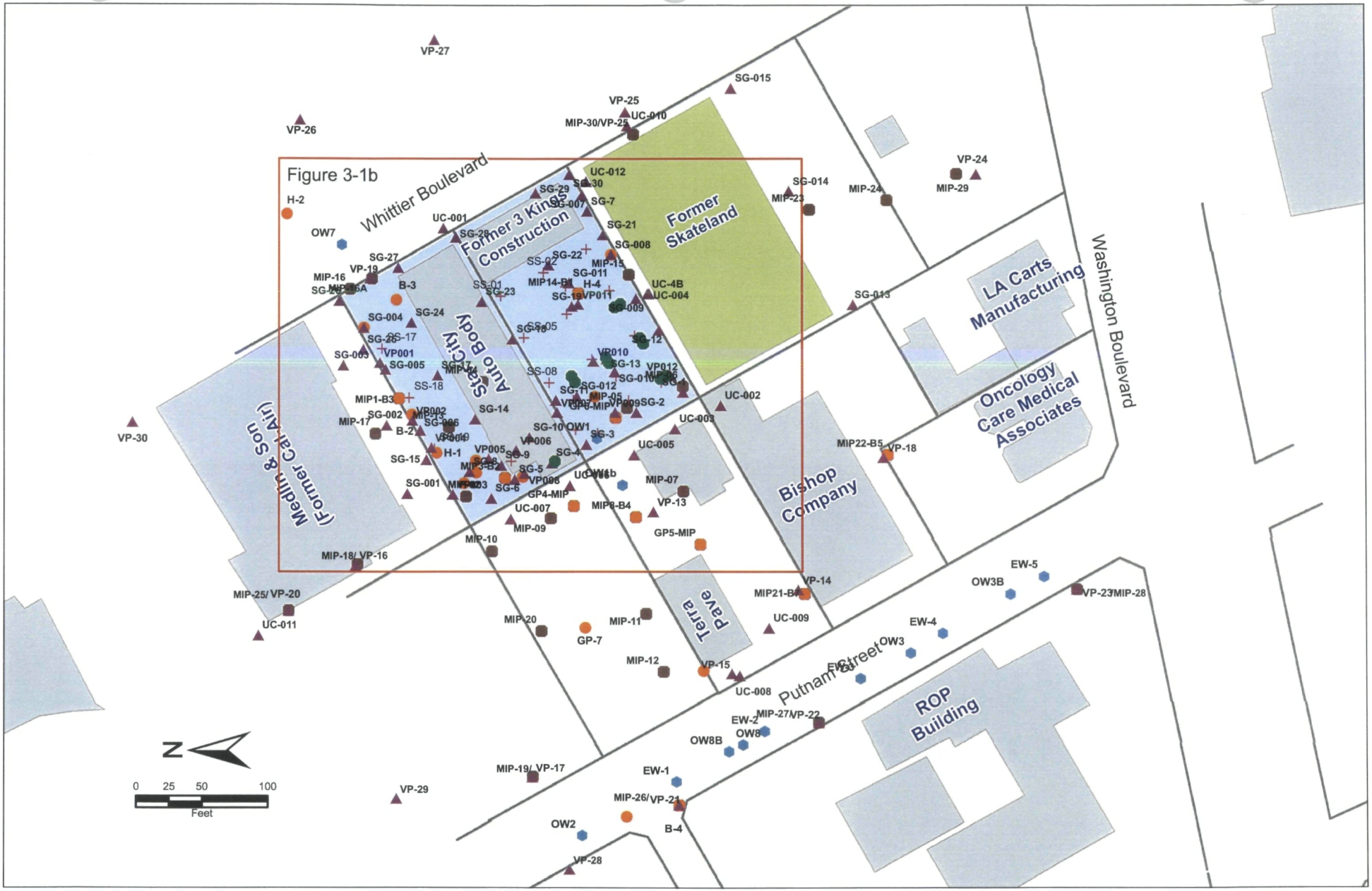
Measured indoor air data are used to evaluate all of the indoor air pathways for current scenarios for all of the buildings, except for the former Skateland facility because this building was demolished as of April 4, 2007. No houses currently exist onsite, therefore to estimate hypothetical future resident indoor air exposure, measured soil gas data ranging from 5 to 6-foot bgs for the Site Parcel and for Other Parcels summarized in Tables 3-7b and 3-7c were used in the J&E model to quantitatively evaluate this pathway for the hypothetical future resident and the future industrial worker. Measured soil gas data ranging from 5 to 30-foot bgs summarized in Tables 3-8a, 3-8b, and 3-8c were used in the J&E model to quantitatively evaluate the ambient air pathway for the construction scenario.

Because soil gas from deeper samples could in theory represent a source of VOCs at shallow depths, deeper soil gas samples, greater than 30 feet bgs, are presented in Table 3-9. These statistics help ensure that no detected constituent was overlooked in the shallower data. These deeper data were not used in the calculation of exposure point concentrations (Section 3.5).

3.3.8 Selection of COPCs for Indoor and Ambient Air

Indoor and ambient air samples were collected from May 2004 to September 2006. Sampling protocols, building surveys, and criteria used to choose indoor air sampling locations, and target analytes are described in the OSS RI Work Plan (CDM, 2003) and addenda (CDM 2004; 2005; 2006). Section 3.1.6 of the RI discusses locations and rationale for air sample locations. EPA reviewed and approved all sampling locations prior to sampling, and USEPA representatives were on-site during all indoor and

ambient air sampling events to oversee and document sampling procedures and collect split samples. Since indoor air data are evaluated separately by building, summaries of indoor air data by building are provided in Tables 3-10 through 3-17. Indoor air samples were collected from Medlin & Sons North Building, Oncology Care, LA Carts, and Bishop in September 2006; from Terrapave, Star City Autobody, Three Kings Construction, and Medlin & Sons in May 2004 and September 2005. Ambient air data are summarized in Table 3-18. Measured ambient air concentrations were used quantitatively to calculate ambient air exposure.



Legend

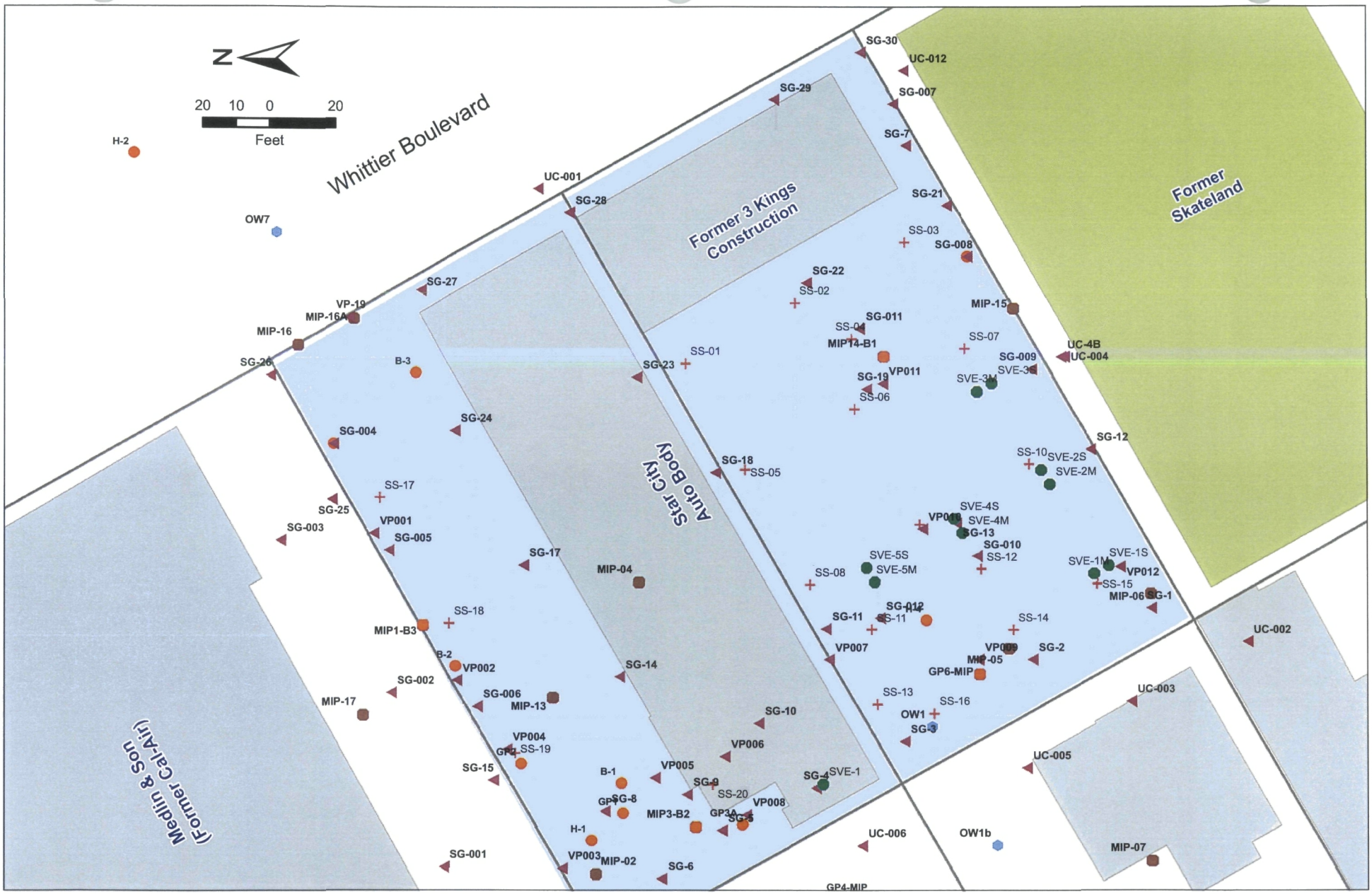
- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building
- Surface Soil Sample Location
- Subsurface Soil Sample Location
- Soil Vapor Sample Location
- Membrane Interface Probe (MIP)
- SoilVaporExtractionWells
- Groundwater Well Location

CDM

Omega Chemical

Sampling Locations

Figure 3-1



Legend

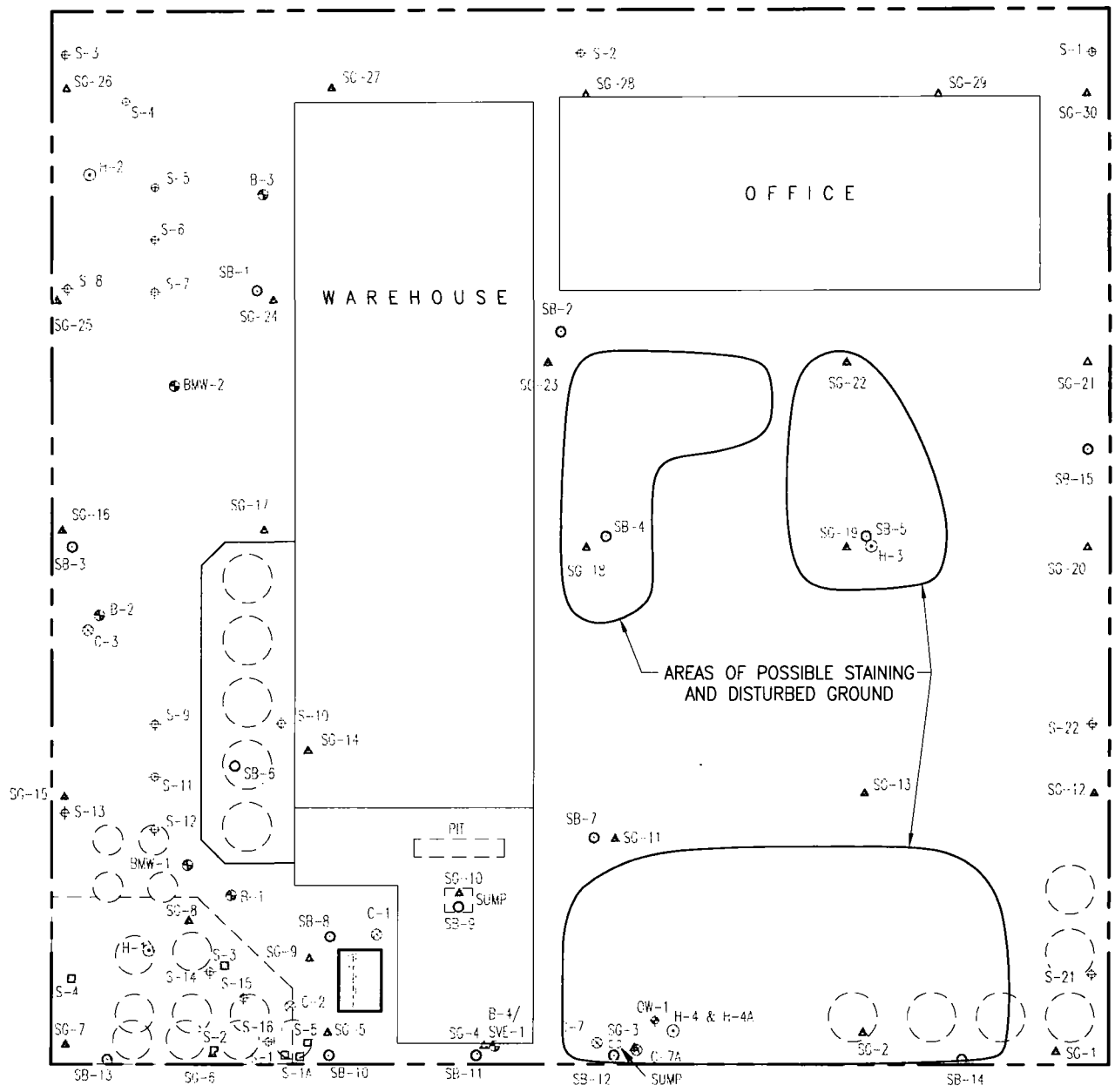
- Property Boundary
- Former Omega Chemical Property
- Existing Building
- Former Building
- Surface Soil Sample Location
- Subsurface Soil Sample Location
- Soil Vapor Sample Location
- Membrane Interface Probe (MIP)
- SoilVaporExtractionWells
- Groundwater Well Location

CDM

Omega Chemical

Sampling Locations (Inset)

Figure 3-1b



LEGEND

- Leroy Crandall Soil Boring (1985)
- ENSR Soil Boring (1988)
- ENSR Groundwater Monitoring Well (1988)
- England/Hargis Soil Boring (January 1996)
- England/Hargis Soil Gas Sample (December 1995)
- England/Hargis Monitoring Well (June 1996)
- England/Hargis Hydropunch (March 1996)
- England/Hargis Soil Boring (March 1996)
- ERT Soil Gas Sample (1988)
- Feature Removed

Fomer 500 Gallon UST Location

1" = 30'

15 0 30

Note: All locations approximate.

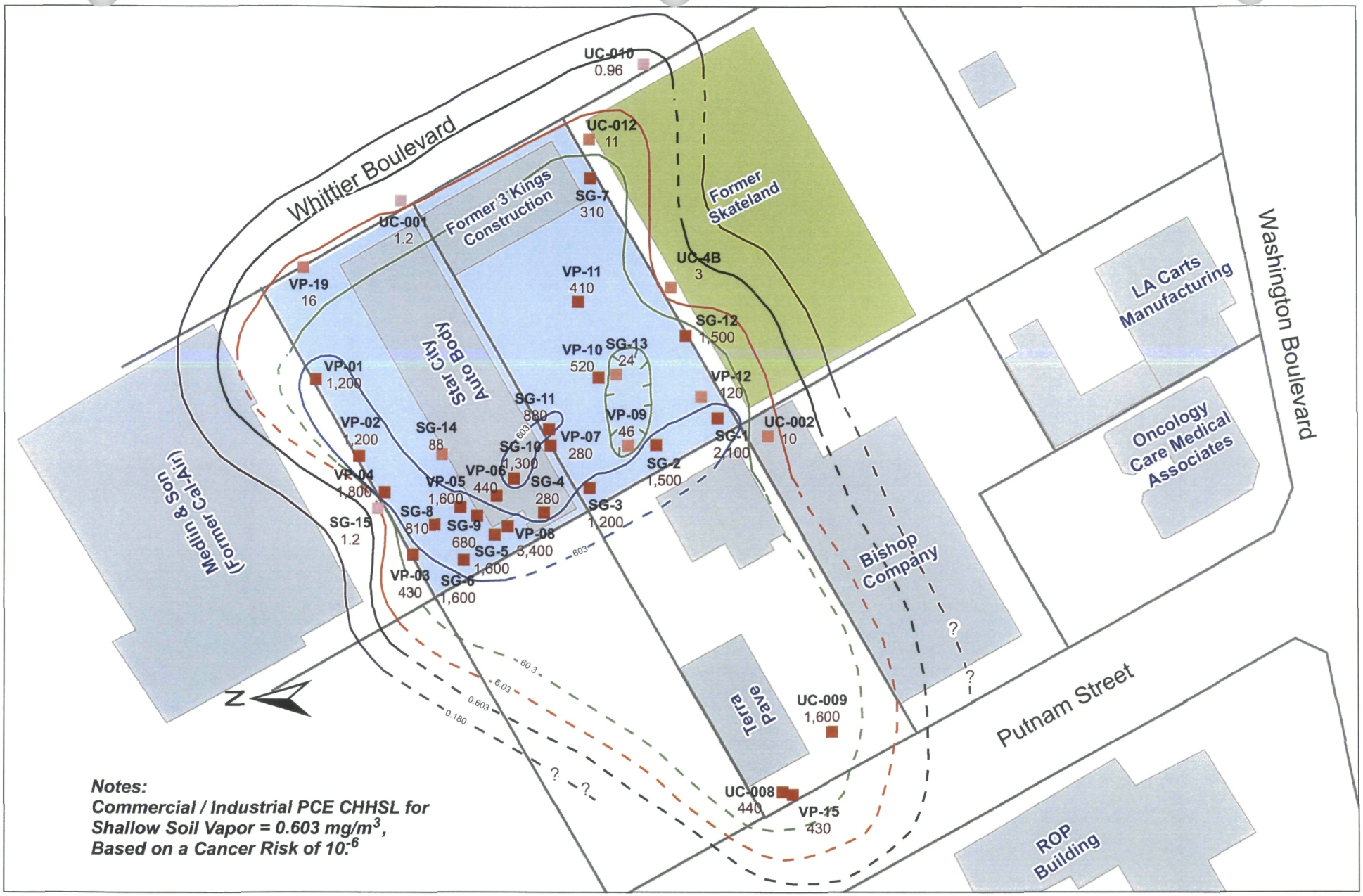
OMEGA CHEMICAL

Potential Source Areas And Historic Sample Locations

CDM

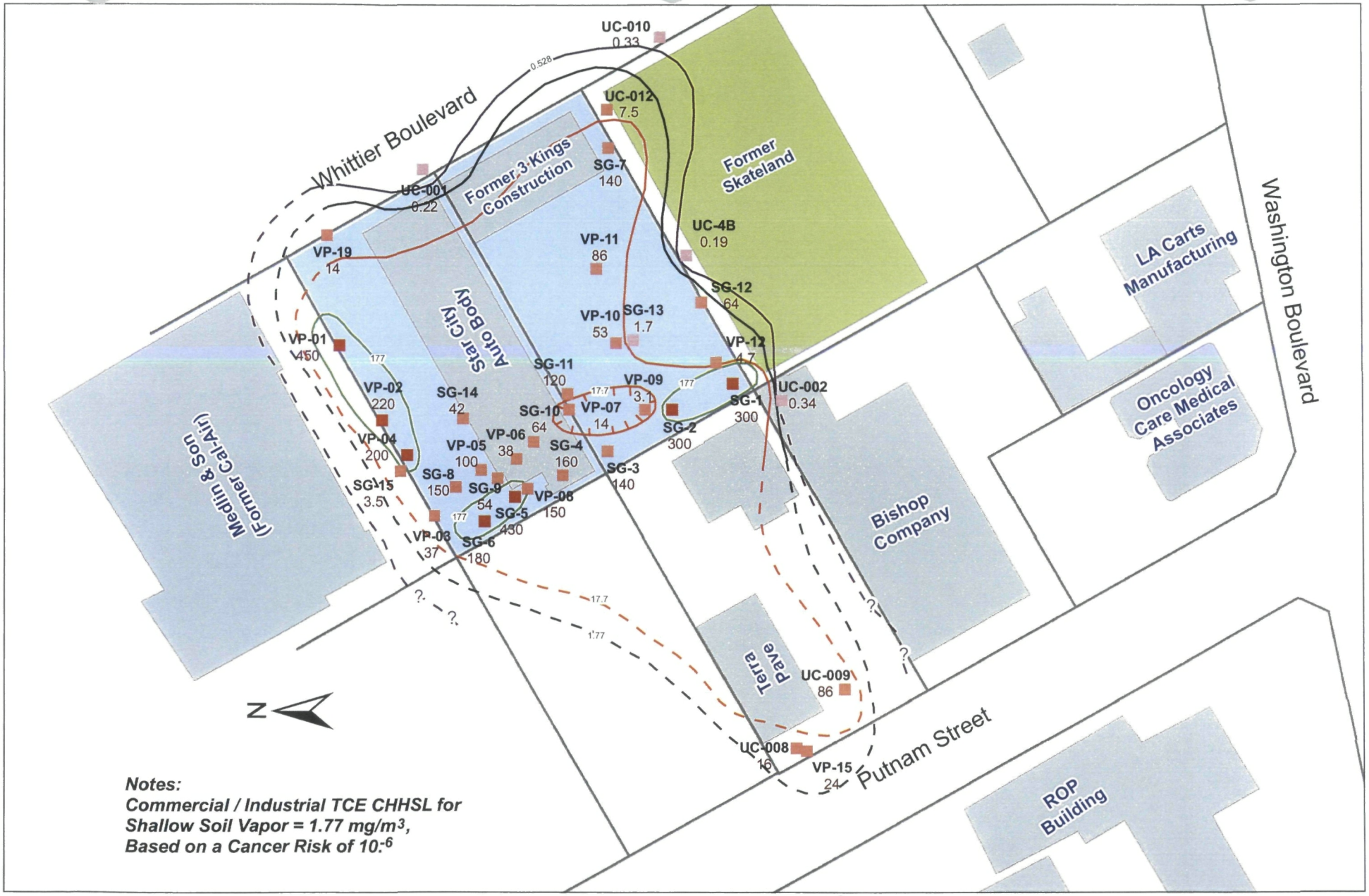
Figure 3-2

DATE: Dec 06, 2006 11:55am XREFS: PropSamp
DWG: C:\Documents and Settings\nguyens\Desktop\Omega\00-sheets\PSAO-HistPhot.dwg USER: nguyens



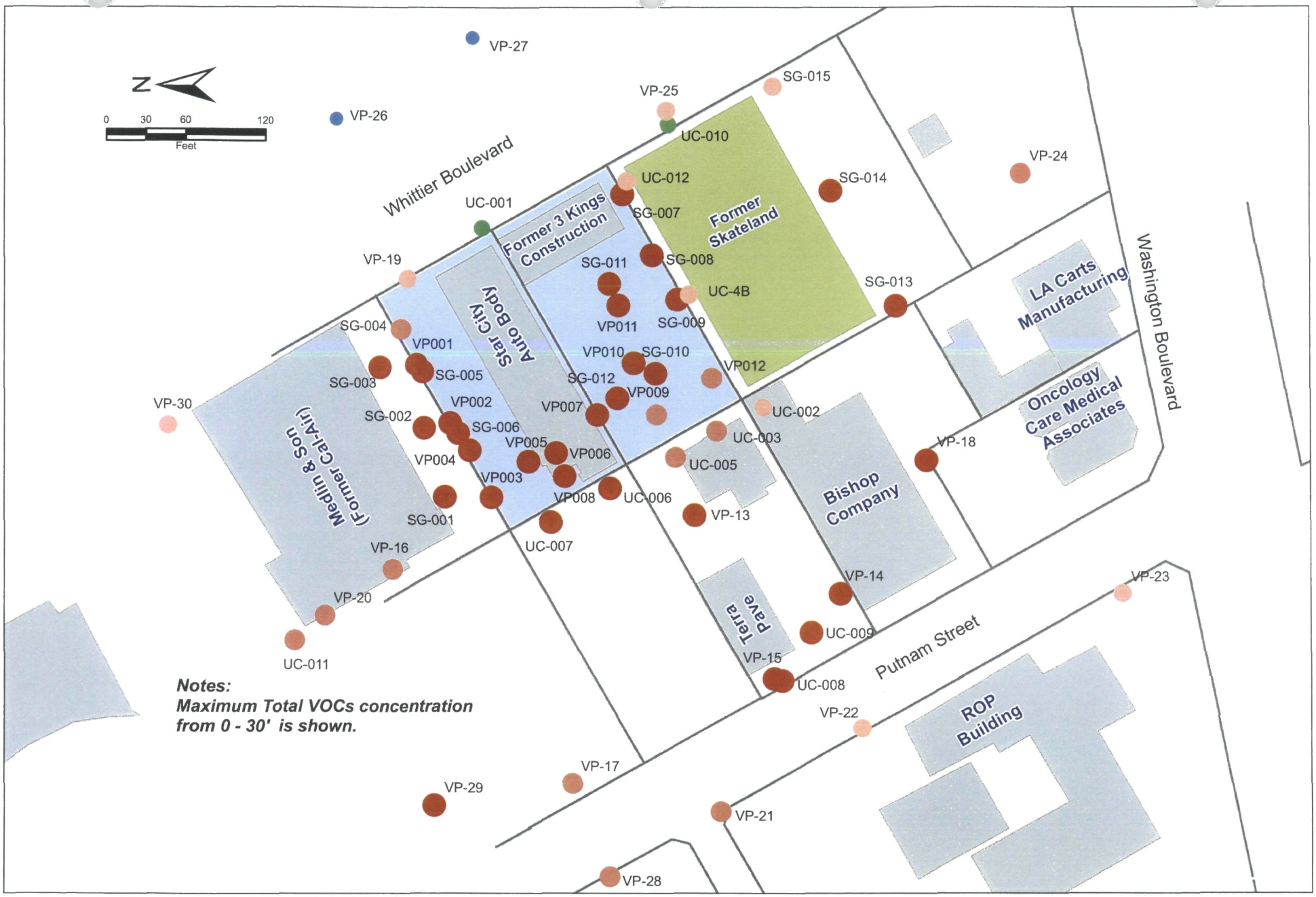
CDM

Omega Chemical
Locations with Soil Vapor PCE CHHSL Exceedances From 0 - 6 Feet
Figure 3-3



CDM

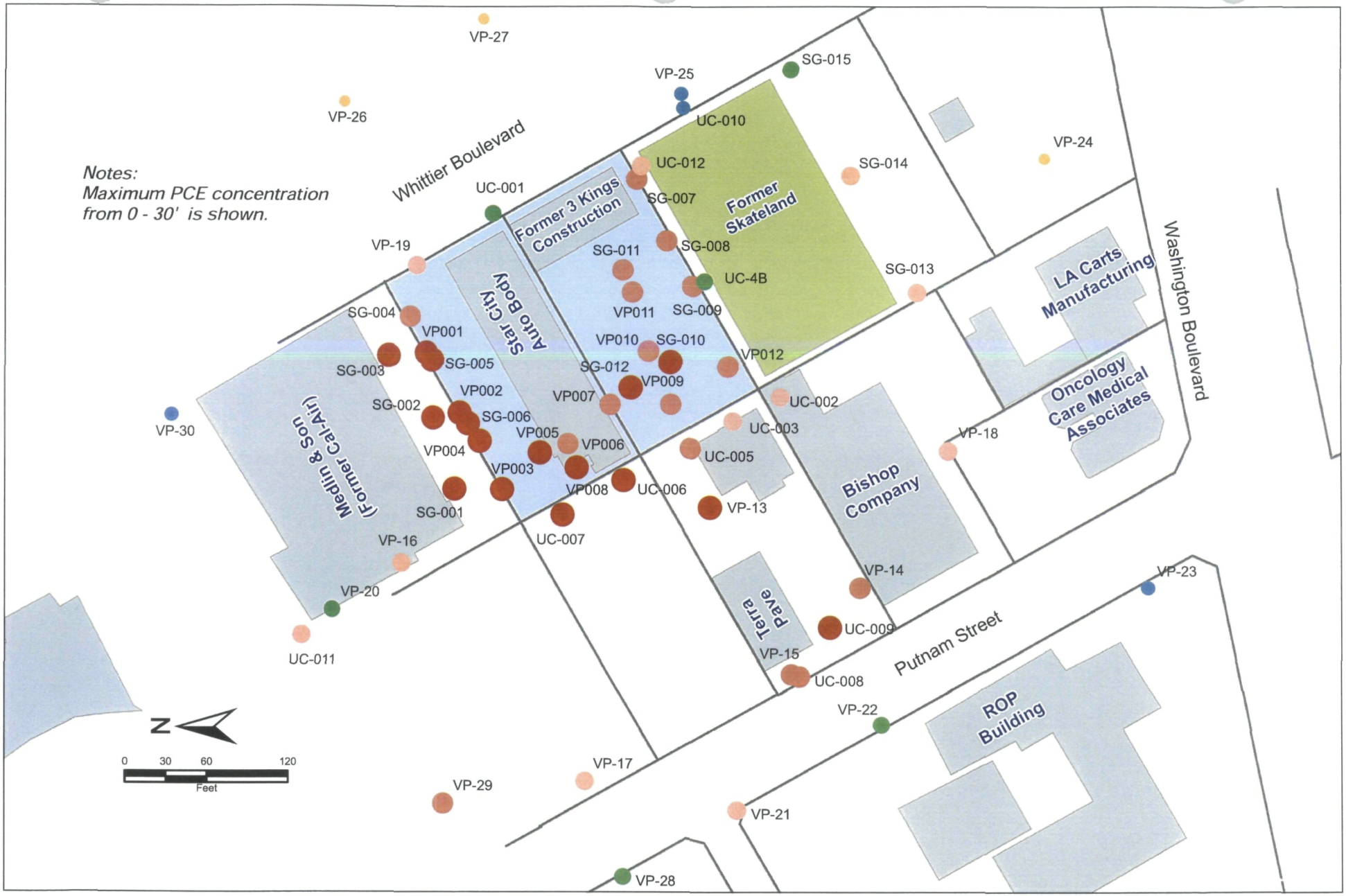
Omega Chemical
Locations with Soil Vapor
TCE CHHSL Exceedances
From 0 - 6 Feet
Figure 3-4



CDM

Omega Chemical

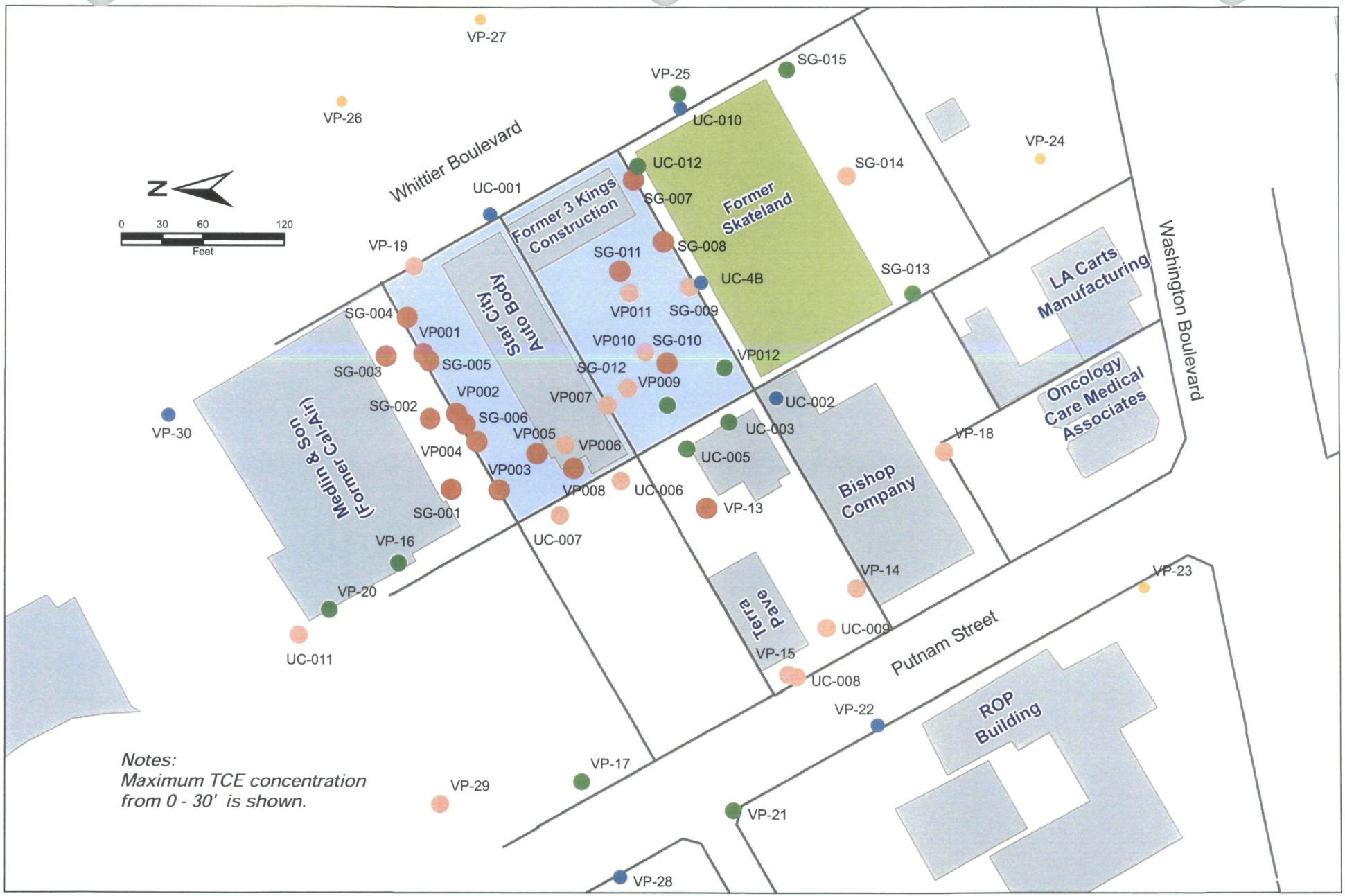
Soil Vapor Concentrations (0 - 30 feet)
Total VOCs
Figure 3-5



CDM

Omega Chemical

Soil Vapor Concentrations (0 - 30 feet)
Tetrachloroethene (PCE)
Figure 3-6



CDM

Omega Chemical

Soil Vapor Concentrations (0 - 30 feet)
Trichloroethene (TCE)
Figure 3-7

TABLE 3-1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface Soil
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil															
	95-50-1	1,2-DICHLOROBENZENE	0.083	0.24	mg/kg	SS-20	2 / 34	0.09 - 8	0.24	NA	6.0E+01 sat			Yes	FD
	123-91-1	1,4-DIOXANE	0.014	14	mg/kg	SS-20	10 / 19	0.03 - 0.2	14	NA	1.6E+01 ca			Yes	FD
	91-57-6	2-METHYLNAPHTHALENE	0.48	0.54	mg/kg	SB-15	2 / 36	0.09 - 8	0.54	NA				Yes	FD
	72-54-8	4,4'-DDD	0.0015	0.032	mg/kg	SS-15	3 / 36	0.005 - 8.005	0.032	NA	1.0E+00 ca			Yes	FD
	72-55-9	4,4'-DDE	0.001	0.3	mg/kg	SS-15	8 / 36	0.005 - 8	0.3	NA	7.0E-01 ca			Yes	FD
	50-29-3	4,4'-DDT	0.0017	0.15	mg/kg	SS-16	10 / 36	0.005 - 8	0.15	NA	7.0E-01 ca*			Yes	FD
	7429-90-5	ALUMINUM	9410	9830	mg/kg	SS-12	2 / 2	NR - NR	9830	NA	1.0E+04 max			Yes	FD
	7440-36-0	ANTIMONY	0.6	18	mg/kg	SB-13	10 / 36	10 - 10	18	NA	4.1E+01 nc			Yes	FD
	7440-38-2	ARSENIC	1.4	21	mg/kg	SS-01	36 / 36	1 - 1	21	NA	2.5E-02 ca			No	STAT
	7440-39-3	BARIUM	38	230	mg/kg	SB-13	36 / 36	1 - 1	230	NA	6.7E+03 nc			Yes	FD
	56-55-3	BENZO(A)ANTHRACENE	0.032	2.4	mg/kg	SB-15	2 / 34	0.09 - 8	2.4	NA	2.1E-01 ca			Yes	FD
	50-32-8	BENZO(A)PYRENE	1.6	1.6	mg/kg	SB-15	1 / 34	0.09 - 8	1.6	NA	2.1E-02 ca			Yes	ASL
	205-99-2	BENZO(B)FLUORANTHENE	0.91	0.91	mg/kg	SB-15	1 / 34	0.09 - 8	0.91	NA	2.1E-01 ca			Yes	ASL
	191-24-2	BENZO(G,H,I)PERYLENE	0.49	0.49	mg/kg	SB-15	1 / 34	0.09 - 8	0.49	NA				No	NTX1
	100-51-6	BENZYL ALCOHOL (PHENYLMETHANOL)	5.2	5.2	mg/kg	SB-09	1 / 34	0.09 - 8	5.2	NA	1.0E+04 max			No	IFD1
	7440-41-7	BERYLLIUM	0.18	0.75	mg/kg	SB-12	36 / 36	1 - 1	0.75	NA	1.9E+02 ca**			Yes	FD
	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.03	51	mg/kg	SS-20	11 / 34	0.2 - 20	51	NA	1.2E+01 ca			Yes	FD
	85-68-7	BUTYLBENZYL PHTHALATE	0.85	1.9	mg/kg	SS-01	2 / 34	0.09 - 8	1.9	NA	1.0E+04 max			Yes	FD
	7440-43-9	CADMIUM	0.25	2.1	mg/kg	SS-04, SS-07	23 / 36	1 - 1	2.10	NA	4.5E+01 nc			Yes	FD
	7440-23-5	CALCIUM	5910	7170	mg/kg	SS-12	2 / 2	NR - NR	7170.0	NA				No	NUT
	16065-83-1	CHROMIUM III	7.03	308.571	mg/kg	SS-09	36 / 36	1 - 1	308.6	NA	1.0E+04 max			Yes	FD
	18540-29-9	CHROMIUM VI	1.17	51.4286	mg/kg	SS-09	36 / 36	1 - 1	51.4	NA	6.4E+00 ca			Yes	FD
	218-01-9	CHRYSENE	0.038	6	mg/kg	SB-15	2 / 34	0.09 - 8	6	NA	2.1E+01 ca			Yes	FD
	7440-48-4	COBALT	4.7	16	mg/kg	SB-12	36 / 36	5 - 5	16	NA	1.9E+02 ca*			Yes	FD
	7440-50-8	COPPER	13	150	mg/kg	SB-12	36 / 36	2 - 2	150	NA	4.1E+03 nc			Yes	FD
	60-57-1	DIELDRIN	0.0084	0.05	mg/kg	SS-15	2 / 36	0.005 - 8.005	0.05	NA	1.1E-02 ca			Yes	FD
	84-66-2	DIETHYL PHTHALATE	0.037	0.037	mg/kg	SS-14	1 / 34	0.09 - 8	0	NA	1.0E+04 max			No	IFD1
	84-74-2	DI-N-BUTYLPHTHALATE	0.33	0.33	mg/kg	SS-20	1 / 34	0.09 - 8	0.3	NA	6.2E+03 nc			No	IFD1
	117-84-0	DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)	0.24	0.24	mg/kg	SB-11	1 / 34	0.09 - 8	0.24	NA	2.5E+03 nc			No	IFD1
	72-20-8	ENDRIN	0.032	0.032	mg/kg	SS-15	1 / 36	0.005 - 20.01	0.032	NA	1.8E+01 nc			No	IFD1
	206-44-0	FLUORANTHENE (IDRYL)	0.033	0.66	mg/kg	SB-15	2 / 34	0.09 - 8	0.66	NA	2.2E+03 nc			Yes	FD
	7439-89-6	IRON	22100	23300	mg/kg	SS-04	2 / 2	NR - NR	23300	NA	1.0E+04 max			Yes	FD
	78-59-1	ISOPHORONE	0.54	9.9	mg/kg	SB-09	2 / 36	0.09 - 8	9.9	NA	5.1E+01 ca*			Yes	FD
	7439-92-1	LEAD	5	890	mg/kg	SB-12	36 / 36	5 - 5	890	NA	8.0E+01 nc			Yes	FD
	7439-95-4	MAGNESIUM	5190	5590	mg/kg	SS-04	2 / 2	NR - NR	5590	NA				No	NUT

TABLE 3-1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface Soil
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	7439-96-5	MANGANESE	193	353	mg/kg	SS-12	2 / 2	NR - NR	353	NA	1.9E+03 nc			Yes	FD
	7487-94-7	MERCURY	0.029	0.85	mg/kg	SS-01	22 / 36	0.2 - 0.2	0.85	NA	3.1E+01 nc			Yes	FD
	7439-98-7	MOLYBDENUM	1.5	4.2	mg/kg	SB-13	14 / 34	5 - 5	4.2	NA	5.1E+02 nc			Yes	FD
	91-20-3	NAPHTHALENE	1.2	1.2	mg/kg	SS-20	1 / 36	0.09 - 8	1.2	NA	4.2E-01 ca			Yes	ASL
	7440-02-0	NICKEL	7.5	55	mg/kg	SB-12	36 / 36	1 - 1	55	NA	2.0E+03 nc			Yes	FD
	11097-69-1	PCB-1254 (AROCLOR 1254)	0.21	0.5	mg/kg	SS-16	2 / 36	0.01 - 0.05	0.5	NA	7.4E-02 ca*			Yes	FD
	85-01-8	PHENANTHRENE	0.013	5	mg/kg	SB-15	3 / 34	0.09 - 8	5	NA				Yes	FD
	12674-11-2	POLYCHLORINATED BI PHENYLS, TOTAL	0.5	0.5	mg/kg	SS-16	1 / 20	0.01 - 0.02	0.5	NA	2.1E+00 ca**			Yes	FD
	7440-09-7	POTASSIUM	4330	4520	mg/kg	SS-12	2 / 2	NR - NR	4520	NA				No	NUT
	129-00-0	PYRENE	0.018	3.1	mg/kg	SB-15	3 / 34	0.09 - 8	3.1	NA	2.9E+03 nc			Yes	FD
	7440-22-4	SILVER	0.55	1.2	mg/kg	SS-06	3 / 36	1 - 1	1.2	NA	5.1E+02 nc			Yes	FD
	7440-23-5	SODIUM	290	324	mg/kg	SS-04	2 / 2	NR - NR	324	NA				No	NUT
	7440-28-0	THALLIUM	0.9	2	mg/kg	SS-06, SS-07, SS-08, SS-13	14 / 36	10 - 10	2	NA	6.7E+00 nc			Yes	FD
	7440-62-2	VANADIUM	20	71	mg/kg	SB-05	36 / 36	1 - 1	71	NA	1.0E+02 nc			Yes	FD
	7440-66-6	ZINC	34	350	mg/kg	SB-12	36 / 36	5 - 5	350	NA	1.0E+04 max			Yes	FD

(1) Detection limits for detected chemicals in historical data were not available.
(2) Maximum detected concentration used for screening
(3) Maximum detected background concentration.
(4) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c) to account for additivity of multiple chemcials
(5) Not available.
(6) Chromium concentrations were divided between Chromium III and Chromium VI assuming a 1:6 ratio of Cr VI:Cr III
(7) Rationale Codes:

Selection Reason:
- ASL: Above Screening Level
- TOX: Chemical is a Class A Carcinogen
- DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
- NSL: No Screening Level
- FD: Frequent Detection
- CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason:
- BSL: Below Screening Level
- BSL1: Infrequent Detection and Below Screening Level
- NUT: Essential Nutrient
- NTX: No Toxicity Information Available
- NTX1: Infrequent Detection and No Toxicity Information Available
- IFD Infrequent Detection
- IFD1: Infrequent Detection and Below Screening Level
- STAT: Not a site contaminant according to separate statistical analysis, see text

Definitions:
- NA: Not Available.
- ND: Not Detected.
- nc: Screening Toxicity Value is based on noncancer effects.
- ca: Screening Toxicity Value is based on cancer effects.
- COPC: Chemical of Potential Concern.
- ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered.
- VOCs: Volatile Organic Compounds.
- ug/kg: microgram per kilogram.
- ca*: where: nc PRG < 100X ca PRG
- ca**: where nc PRG < 10X ca PRG

TABLE 3-2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface and Subsurface Soil to 12 feet bgs
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil															
	71-55-6	1,1,1-TRICHLOROETHANE	0.047	0.047	mg/kg	MIP3-B2	1 / 2	0.00084 - 0.085	0.047	NA	1.2E+02 sat			Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	0.0034	0.0034	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0034	NA	1.6E-01 ca*			Yes	FD
	75-34-3	1,1-DICHLOROETHANE	0.0084	0.0084	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0084	NA	6.0E-01 ca			Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.0039	0.0039	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.21	0.0039	NA	4.1E+01 nc			Yes	FD
	95-50-1	1,2-DICHLOROBENZENE	0.00088	0.24	mg/kg	SS-20	3 / 40	0.00084 - 8	0.24	NA	6.0E+01 sat			Yes	FD
	107-06-2	1,2-DICHLOROETHANE	0.0063	0.0063	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0063	NA	6.0E-02 ca*			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.0016	0.0016	mg/kg	MIP3-B2	1 / 40	0.0008 - 8	0.0016	NA	7.9E-01 ca			No	IFD1
	123-91-1	1,4-DIOXANE	0.014	28	mg/kg	MIP3-B2	12 / 21	0.03 - 2.5	28	NA	1.6E+01 ca			Yes	FD
	91-57-6	2-METHYLNAPHTHALENE	0.48	0.54	mg/kg	SB-15	2 / 40	0.09 - 8	0.54	NA				Yes	FD
	72-54-8	4,4'-DDD	0.0015	0.032	mg/kg	SS-15	3 / 60	0.005 - 8.005	0.032	NA	1.0E+00 ca			Yes	FD
	72-55-9	4,4'-DDE	0.001	0.3	mg/kg	SS-15	8 / 60	0.005 - 8	0.3	NA	7.0E-01 ca			Yes	FD
	50-29-3	4,4'-DDT	0.0017	0.15	mg/kg	SS-16	10 / 60	0.005 - 8	0.15	NA	7.0E-01 ca*			Yes	FD
	7429-90-5	ALUMINUM	9410	9830	mg/kg	SS-12	2 / 2	NR - NR	9830	NA	1.0E+04 max			Yes	FD
	7440-36-0	ANTIMONY	0.6	18	mg/kg	SB-13	10 / 40	10 - 10	18	NA	4.1E+01 nc			Yes	FD
	7440-38-2	ARSENIC	0.81	21	mg/kg	SS-01	40 / 40	1 - 1	21	NA	2.5E-02 ca			No	STAT
	7440-39-3	BARIUM	28	230	mg/kg	SB-13	40 / 40	1 - 1	230	NA	6.7E+03 nc			Yes	FD
	56-55-3	BENZO(A)ANTHRACENE	0.032	2.4	mg/kg	SB-15	2 / 38	0.09 - 8	2.4	NA	2.1E-01 ca			Yes	FD
	50-32-8	BENZO(A)PYRENE	1.6	1.6	mg/kg	SB-15	1 / 38	0.09 - 8	1.6	NA	2.1E-02 ca			Yes	ASL
	205-99-2	BENZO(B)FLUORANTHENE	0.91	0.91	mg/kg	SB-15	1 / 38	0.09 - 8	0.91	NA	2.1E-01 ca			Yes	ASL
	191-24-2	BENZO(G,H,I)PERYLENE	0.49	0.49	mg/kg	SB-15	1 / 38	0.09 - 8	0.49	NA				No	NTX1
	100-51-6	BENZYL ALCOHOL (PHENYLMETHANOL)	5.2	22	mg/kg	SB-09	2 / 38	0.09 - 8	22	NA	1.0E+04 max			Yes	FD
	7440-41-7	BERYLLIUM	0.18	0.75	mg/kg	SB-12	40 / 40	1 - 1	0.75	NA	1.9E+02 ca**			Yes	FD
	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.03	51	mg/kg	SS-20	13 / 38	0.2 - 20	51	NA	1.2E+01 ca.			Yes	FD
	85-68-7	BUTYLBENZYL PHTHALATE	0.85	1.9	mg/kg	SS-01	2 / 38	0.09 - 8	1.9	NA	1.0E+04 max			Yes	FD
	7440-43-9	CADMIUM	0.25	2.1	mg/kg	SS-04, SS-07	23 / 40	1 - 1	2.1	NA	4.5E+01 nc			Yes	FD
	7440-23-5	CALCIUM	5910	7170	mg/kg	SS-12	2 / 2	0 - 0	7170	NA				No	NUT
	67-66-3	CHLOROFORM	0.0047	0.0047	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0047	NA	2.0E-01 ca			Yes	FD
	16065-83-1	CHROMIUM III	4.8	308.571	mg/kg	SS-09	40 / 40	1 - 1	309	NA	1.0E+04 max			Yes	FD
	18540-29-9	CHROMIUM VI	0.8	51.4286	mg/kg	SS-09	40 / 40	1 - 1	51	NA	6.4E+00 ca			Yes	FD
	218-01-9	CHRYSENE	0.038	6	mg/kg	SB-15	2 / 38	0.09 - 8	6	NA	2.1E+01 ca			Yes	FD
	7440-48-4	COBALT	4.7	16	mg/kg	SB-12	39 / 40	5 - 5	16	NA	1.9E+02 ca*			Yes	FD
	7440-50-8	COPPER	13	150	mg/kg	SB-12	40 / 40	2 - 2	150	NA	4.1E+03 nc			Yes	FD
	60-57-1	DIELDRIN	0.0084	0.05	mg/kg	SS-15	2 / 60	0.005 - 8.005	0.05	NA	1.1E-02 ca			Yes	ASL
	84-66-2	DIETHYL PHTHALATE	0.037	0.037	mg/kg	SS-14	1 / 38	0.09 - 8	0.037	NA	1.0E+04 max			No	IFD1
	84-74-2	DI-N-BUTYLPHTHALATE	0.33	0.33	mg/kg	SS-20	1 / 38	0.09 - 8	0.33	NA	6.2E+03 nc			No	IFD1
	117-84-0	DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)	0.24	0.24	mg/kg	SB-11	1 / 38	0.09 - 8	0.24	NA	2.5E+03 nc			No	IFD1
	72-20-8	ENDRIN	0.032	0.032	mg/kg	SS-15	1 / 60	0.005 - 20.01	0.032	NA	1.8E+01 nc			No	IFD1
	206-44-0	FLUORANTHENE (IDRYL)	0.033	0.66	mg/kg	SB-15	2 / 38	0.09 - 8	0.66	NA	2.2E+03 nc			Yes	FD
	7439-89-6	IRON	22100	23300	mg/kg	SS-04	2 / 2	NR - NR	23300	NA	1.0E+04 max			Yes	FD
	78-59-1	ISOPHORONE	0.54	9.9	mg/kg	SB-09	3 / 40	0.09 - 8	9.9	NA	5.1E+01 ca*			Yes	FD
	7439-92-1	LEAD	5	890	mg/kg	SB-12	39 / 40	5 - 5	890	NA	8.0E+01 nc			Yes	FD
	7439-95-4	MAGNESIUM	5190	5590	mg/kg	SS-04	2 / 2	NR - NR	5590	NA				No	NUT
	7439-96-5	MANGANESE	193	353	mg/kg	SS-12	2 / 2	NR - NR	353	NA	1.9E+03 nc			Yes	FD
	7487-94-7	MERCURY	0.029	0.85	mg/kg	SS-01	22 / 40	0.2 - 0.2	0.85	NA	3.1E+01 nc			Yes	FD
	7439-98-7	MOLYBDENUM	1.5	4.2	mg/kg	SB-13	17 / 38	5 - 5	4.2	NA	5.1E+02 nc			Yes	FD
	91-20-3	NAPHTHALENE	1.2	1.2	mg/kg	SS-20	1 / 42	0.0084 - 8	1.2	NA	4.2E-01 ca			Yes	ASL
	7440-02-0	NICKEL	4.9	55	mg/kg	SB-12	40 / 40	1 - 1	55	NA	2.0E+03 nc			Yes	FD
	11097-69-1	PCB-1254 (AROCLOR 1254)	0.052	0.5	mg/kg	SS-16	3 / 40	NR - NR	0.5	NA	7.4E-02 ca*			Yes	FD

TABLE 3-2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface and Subsurface Soil to 12 feet bgs
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium	Surface & Subsurface Soil to 12'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	85-01-8	PHENANTHRENE	0.013	5	mg/kg	SB-15	3 / 38	NR - NR	5	NA				Yes	FD
	12674-11-2	POLYCHLORINATED BI PHENYLS, TOTAL	0.5	0.5	mg/kg	SS-16	1 / 20	0.01 - 0.05	0.5	NA	2.1E+00 ca**			Yes	FD
	7440-09-7	POTASSIUM	4330	4520	mg/kg	SS-12	2 / 2	0.09 - 8	4520	NA				No	NUT
	129-00-0	PYRENE	0.018	3.1	mg/kg	SB-15	3 / 38	0.01 - 0.02	3.1	NA	2.9E+03 nc			Yes	FD
	7440-22-4	SILVER	0.55	1.2	mg/kg	SS-06	3 / 40	NR - NR	1.2	NA	5.1E+02 nc			Yes	FD
	7440-23-5	SODIUM	290	324	mg/kg	SS-04	2 / 2	0.09 - 8	324	NA				No	NUT
	127-18-4	TETRACHLOROETHENE	3.2	4.3	mg/kg	MIP3-B2	2 / 2	1 - 1	4.3	NA	1.3E-01 ca			Yes	FD
	7440-28-0	THALLIUM	0.9	2	mg/kg	2, SS-02, SS-06, SS-07, SS-08, SS-13, S	14 / 40	NR - NR	2	NA	6.7E+00 nc			Yes	FD
	79-01-6	TRICHLOROETHENE	0.028	0.028	mg/kg	MIP3-B2	1 / 2	0.08 - 0.085	0.028	NA	6.5E-01 ca			Yes	FD
	7440-62-2	VANADIUM	20	71	mg/kg	SB-05	40 / 40	10 - 10	71	NA	1.0E+02 nc			Yes	FD
	7440-66-6	ZINC	34	350	mg/kg	SB-12	40 / 40	0.001 - 0.085	350	NA	1.0E+04 max			Yes	FD

(1) Detection limits for detected chemicals in historical data were not available.
(2) Maximum detected concentration used for screening.
(3) Maximum detected background concentration.
(4) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for Industrial soil (EPA 2004c) to account for additivity of multiple chemicals.
(5) Not available.
(6) Chromium concentrations were divided between Chromium III and Chromium VI assuming a 1:6 ratio of Cr VI:Cr III
(7) Rationale Codes:

Selection Reason:
- ASL: Above Screening Level
- TOX: Chemical is a Class A Carcinogen
- DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
- NSL: No Screening Level
- FD: Frequent Detection
- CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason
- BSL: Below Screening Level
- BSL1: Infrequent Detection and Below Screening Level
- NUT Essential Nutrient
- NTX: No Toxicity Information Available
- NTX1: Infrequent Detection and No Toxicity Information Available
- IFD: Infrequent Detection
- IFD1: Infrequent Detection and Below Screening Level
- STAT: Not a site contaminant according to separate statistical analysis, see text

Definitions:
- NA: Not Available.
- ND: Not Detected.
- nc: Screening Toxicity Value is based on noncancer effects.
- ca: Screening Toxicity Value is based on cancer effects.
- COPC: Chemical of Potential Concern.
- ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
- VOCs: Volatile Organic Compounds.
- ug/kg: microgram per kilogram.
- ca*: where: nc PRG < 100X ca PRG
- ca**: where nc PRG < 10X ca PRG

Table 3-3
Summary of Detected Chemicals in Subsurface Soil Samples (>12 feet bgs)

Chemical	Detections			Detection Frequency		Reporting Limits	
	Minimum mg/kg	Maximum mg/kg	Maximum Location	Number of Detections	Total Samples	Minimum mg/kg	Maximum mg/kg
1,1,1,2-TETRACHLOROETHANE	0.0013	0.005	MIP3-B2-66	3	67	0.00078	0.25
1,1,1-TRICHLOROETHANE	0.00097	0.34	OC-SB-GP4-MIP-068-012104	30	71	0.00078	3
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.0059	0.068	OC-OU1-5	18	71	0.005	5
1,1,2-TRICHLOROETHANE	0.0015	0.14	OC-SB-GP4-MIP-068-012104	21	71	0.00078	3
1,1-DICHLOROETHANE	0.0011	0.03	OC-OU1-2	37	71	0.00086	3
1,1-DICHLOROETHENE	0.01	0.52	MIP22-B5-36	43	71	0.00084	3
1,2-DIBROMO-3-CHLOROPROPANE	0.016	0.016	OC-OU1-3	1	71	0.0039	0.51
1,2-DICHLOROBENZENE	0.00093	0.0022	OC-OU1-2	2	71	0.00078	3
1,2-DICHLOROETHANE	0.0019	0.26	MIP3-B2-33	27	71	0.00078	3
1,4-DIOXANE	0.018	41	MIP3-B2-15	17	69	0.025	0.2
ACETONE	0.012	0.022	MIP3-B2-57	2	71	0.006	50
BENZENE	0.0011	0.00755	MIP3-B2-57	18	71	0.00078	3
BROMOFORM	0.013	0.025	MIP3-B2-33	2	71	0.0012	3
CHLOROBENZENE	0.0015	0.0015	OC-OU1-2	1	71	0.00078	3
CHLOROFORM	0.0014	0.6	OC-OU1-1	46	71	0.00086	3
CIS-1,2-DICHLOROETHENE	0.0012	0.036	OC-OU1-1	13	71	0.00078	3
DI-ISOPROPYL ETHER (DIPE)	0.00099	0.00099	MIP8-B4-56	1	36	0.00078	0.21
METHYLENE CHLORIDE	0.0065	0.22	OC-OU1-5	8	71	0.005	3
TETRACHLOROETHENE	0.002	48	OC-SB-GP4-MIP-068-012104	65	71	0.00094	1
TOLUENE	0.0013	0.0059	OC-OU1-1	6	71	0.00078	3
TOTAL ORGANIC CARBON	510	6000	C-2-15-SOIL-1/30/96	51	57	500	500
TRANS-1,2-DICHLOROETHENE	0.00091	0.06	MIP1-B3-69	20	71	0.00078	3
TRICHLOROETHENE	0.0022	1	OC-OU1-5	56	71	0.002	3
TRICHLOROFLUOROMETHANE (FREON 11)	0.0031	0.038	MIP-14-B1-26, MIP-14-B1-34	17	71	0.0039	3

mg/kg = milligram per kilogram

Table 3-4
Comparison of Detected Chemicals in Subsurface Soil Samples >12 feet bgs with COPCs selected from <12 feet bgs

Chemical	Detections Maximum mg/kg	1/10th PRG	Is Maximum Detected Greater than 1/10th Screening?	Detection Frequency			Potential COPC?	COPC in <12 ft Samples?	Should it be considered a COPC?
				Number of Detections	Total Samples	Detection Frequency			
1,1,1,2-TETRACHLOROETHANE	0.005	0.318717	No	3	67	4%	No IFD	No	No
1,1,1-TRICHLOROETHANE	0.34	120	No	30	71	42%	Yes	Yes	No
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.068	560	No	18	71	25%	Yes	No	No
1,1,2-TRICHLOROETHANE	0.14	0.072863	Yes	21	71	30%	Yes	Yes	No
1,1-DICHLOROETHANE	0.03	0.278718	No	37	71	52%	Yes	Yes	No
1,1-DICHLOROETHENE	0.52	12.35307	No	43	71	61%	Yes	Yes	No
1,2-DIBROMO-3-CHLOROPROPANE	0.016	NA	No screening level	1	71	1%	No IFD	No	No
1,2-DICHLOROBENZENE	0.0022	60	No	2	71	3%	No IFD	Yes	No
1,2-DICHLOROETHANE	0.26	0.027773	Yes	27	71	38%	Yes	Yes	No
1,4-DIOXANE	41	4.421641	Yes	17	69	25%	Yes	Yes	No
ACETONE	0.022	1412.657	No	2	71	3%	No IFD	No	No
BENZENE	0.00755	0.064315	No	18	71	25%	Yes	No	No
BROMOFORM	0.025	6.156889	No	2	71	3%	No IFD	No	No
CHLOROBENZENE	0.0015	15.06579	No	1	71	1%	No IFD	No	No
CHLOROFORM	0.6	0.094127	Yes	46	71	65%	Yes	Yes	No
CIS-1,2-DICHLOROETHENE	0.036	4.29419	No	13	71	18%	Yes	No	No
DI-ISOPROPYL ETHER (DIPE)	0.00099	NA	No screening level	1	36	3%	No IFD	No	No
METHYLENE CHLORIDE	0.22	0.910699	No	8	71	11%	Yes	No	No
O-XYLENE	0.0016	NA	No screening level	1	71	1%	No IFD	No	No
TETRACHLOROETHENE	48	0.048359	Yes	65	71	92%	Yes	Yes	No
TOLUENE	0.0059	52	No	6	71	8%	Yes	No	No
TOTAL ORGANIC CARBON	6000	NA	No screening level	51	57	89%	Yes	No	No
TRANS-1,2-DICHLOROETHENE	0.06	6.948963	No	20	71	28%	Yes	No	No
TRICHLOROETHENE	1	0.29441	Yes	56	71	79%	Yes	Yes	No
TRICHLOROFLUOROMETHANE (FREON 11)	0.038	38.58179	No	17	71	24%	Yes	No	No

mg/kg = milligram per kilogram
IFD = infrequent detection less than 5%

Table 3-5
Summary of Detected Chemicals in Groundwater October 2004 to September 2006

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
1,1,2,2-TETRACHLOROETHANE	ug/l	0.67	0.67	OW-GW-OW-1-082406	1	84	0.5	1,000
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/l	0.14	2,500	OC-GW-OW8-022305	65	84	0.5	6,300
1,1,2-TRICHLOROETHANE	ug/l	1.3	2,000	OC2-OW1A-W-0-90	11	84	0.5	630
1,1'-BIPHENYL	ug/l	0.8	1.8	OC2-OW4B-W-0-80	2	25	5	5
1,1-DICHLOROETHANE	ug/l	0.31	140	OC-GW-OW8-022305	33	84	0.5	1,000
1,1-DICHLOROETHENE	ug/l	0.28	5,100	OC-GW-OW1-082405	66	84	0.5	1,000
1,2,3-TRICHLOROPROPANE	ng/L	10	65	OC2-OW8-W-0-91	2	83	5	630,000
1,2,4-TRICHLOROBENZENE	ug/l	0.53	5	OC2-MW8D-W-0-110	2	84	0.5	1,000
1,2,4-TRIMETHYLBENZENE	ug/l	3.7	52	OC-GW-OW8-022305	4	58	1	630
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	5.5	5.5	OW-GW-OW-4A-082306	1	84	5	1,000
1,2-DICHLOROBENZENE	ug/l	3	39	OC-GW-OW8-022305	8	84	0.5	1,000
1,2-DICHLOROETHANE	ug/l	0.27	1,200	OC-GW-OW8-022305	33	84	0.5	1,000
1,3,5-TRIMETHYLBENZENE	ug/l	0.815	13	OC-GW-OW8-022305	4	58	1	630
1,3-DICHLOROBENZENE	ug/l	0.61	1.4	OC-GW-OW8-022305	4	84	0.5	1,000
1,4-DICHLOROBENZENE	ug/l	0.58	3.6	OC-GW-OW8-022305	5	84	0.5	1,000
1,4-DIOXANE	ug/l	0.47	13,000	OC2-OW1A-W-0-90	52	84	0.47	5,000
2-BUTANONE	ug/l	1.4	570	OC-GW-OW8-022305	4	30	5	13,000
2-CHLOROTOLUENE	ug/l	0.41	0.47	OW-GW-OW-1-082406	2	58	1	630
2-METHYLNAPHTHALENE	ug/l	0.3	7.9	OC2-OW4B-W-0-80	4	32	5	10
4-CHLOROTOLUENE	ug/l	0.46	0.46	OW-GW-OW-1-082406	1	58	1	630
ACETONE	ug/l	4.4	10,000	OC-GW-OW8-022305	19	84	5	13,000
ACETOPHENONE	ug/l	2.2	2.2	OC2-OW8-W-0-91	1	25	5	5
ANTIMONY	ug/l	1.6	1.9	OC2-OW2-W-0-89[(1)]	25	34	10	60
ARSENIC	ug/l	0.45	17	OC2-OW8-W-0-91	25	34	0.005	0.005
BARIUM	ug/l	19	105	OC2-MW8D-W-0-110	33	33	10	10
BENZENE	ug/l	0.053	180	OC2-OW1A-W-0-90	28	84	0.5	630
BICARBONATE ALKALINITY (AS CACO3)	mg/L	240	540	OW-1	33	33	1	2
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	0.62	4.6	OC2-MW7A-W-0-102	13	32	5	48
BOD 5 DAY (BIOCHEMICAL OXYGEN DEMAND)	mg/L	2	24	OC2-OW8-W-0-91	26	30	2	2
BORON	ug/l	290	310	OW-8	2	2	100	100
BROMIDE	mg/L	0.17	62	OC2-OW8-W-0-91	26	26	0.5	0.5
BROMODICHLOROMETHANE	ug/l	0.7	1	OC-GW-OW5-022405	3	84	0.5	1,000
BROMOFORM	ug/l	1.2	5.1	OC-GW-OW6-082405	4	84	0.5	1,300
BROMOMETHANE	ug/l	0.062	180	OC2-OW1A-W-0-90	7	84	0.5	1,300
CALCIUM	ug/l	62,300	285,000	OC2-OW8-W-0-91	26	26	100	100
CAPROLACTAM	ug/l	0.15	7.7	OC2-OW1B-W-0-83	2	25	5	5
CARBON DISULFIDE	ug/l	0.28	0.28	OC2-OW1B-W-0-83	1	28	0.5	1,000
CARBON TETRACHLORIDE	ug/l	0.094	0.6	OC-GW-OW1-022505	5	84	0.5	1,000
CHEMICAL OXYGEN DEMAND	mg/L	3.6	81	OC2-OW8-W-0-91	22	30	10	20
CHLORIDE	mg/L	40	370	OC2-OW8-W-0-91	31	31	5	10
CHLOROBENZENE	ug/l	1.6	7.6	OC-GW-OW8-022305	7	84	0.5	1,000
CHLORODIBROMOMETHANE	ug/l	0.54	16	OC-GW-OW5-082305	7	56	1	200
CHLOROFORM	ug/l	0.054	2,750	OC-GW-OW8-022305	63	84	0.5	630
CHLOROMETHANE	ug/l	0.63	8.7	OC2-MW8D-W-0-110	5	84	0.5	1,300
CHROMIUM	ug/l	0.28	146	OC2-MW8A-W-0-107	32	34	5	10
CHROMIUM VI	ug/l	1.9	160	OC2-MW8A-W-0-107	21	26	1	1
CIS-1,2-DICHLOROETHENE	ug/l	0.19	51	OC2-MW1A-W-0-98	37	84	0.5	1,000
COBALT	ug/l	0.15	5	OC2-OW4A-W-0-81	25	34	10	20
COPPER	ug/l	0.32	79	EW4-091406	25	34	2	10
CYANIDE	ug/l	1.9	5.4	OC2-MW1A-W-0-98	6	25	10	10
CYCLOHEXANE	ug/l	0.32	2.1	OC2-OW4B-W-0-80	3	26	0.5	1,000

Table 3-5
Summary of Detected Chemicals in Groundwater October 2004 to September 2006

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
DICHLORODIFLUOROMETHANE	ug/l	0.19	1.35	OC-GW-OW8a-082405	11	84	0.5	1,300
DIMETHYL PHTHALATE	ug/l	0.68	0.68	OC2-OW8-W-0-91	1	32	5	10
ETHYLBENZENE	ug/l	0.051	41	OC-GW-OW8-022305	12	84	0.5	1,000
FLUORENE (ALPHA-DIPHENYLENEMETHANE)	ug/l	0.31	0.31	OC2-OW4B-W-0-80	1	32	5	10
FLUORIDE	mg/L	0.17	0.55	OC2-OW4B-W-0-80	25	25	NR	NR
HARDNESS (AS CACO3)	mg/L	560	840	OW-8	8	8	1	4
IRON	ug/l	42	2,620	OC2-OW8-W-0-91	13	33	40	100
ISOPHORONE	ug/l	2.2	2.2	OC2-OW8-W-0-91	1	32	5	10
ISOPROPYL ALCOHOL (ISOPROPANOL)	ug/l	140	140	OC-GW-OW1B-022505	1	1	50	50
ISOPROPYLBENZENE	ug/l	0.095	6.7	OC-GW-OW8-022305	11	84	0.5	1,000
LEAD	ug/l	0.02	75	EW4-091406	18	34	1	5
M,P-XYLENES	ug/l	0.63	130	OC-GW-OW8-022305	6	58	1	630
MAGNESIUM	ug/l	38,200	95,200	OC2-OW8-W-0-91	26	26	20	20
MANGANESE	ug/l	0.31	4,010	OC2-OW8-W-0-91	29	33	10	20
MBAS (DETERGENTS) (SURFACTANTS)	mg/L	0.36	0.36	OC-GW-OW8a-082405	1	1	0.1	0.1
MERCURY	ug/l	0.03	0.22	OW-8	9	33	0.2	0.2
METHYL ACETATE	ug/l	1,300	1,300	OC2-OW8-W-0-91	1	26	0.5	1,000
METHYL CYCLOHEXANE	ug/l	0.47	2.4	OC2-OW4B-W-0-80	3	26	0.5	1,000
METHYL TERT-BUTYL ETHER	ug/l	0.18	5.7	OC2-MW5A-W-0-97	20	84	0.5	1,000
METHYLENE CHLORIDE	ug/l	0.25	9,150	OC-GW-OW8-022305	22	84	0.5	13,000
MOLYBDENUM	mg/L	0.073	0.073	OC-GW-OW3B-031306	1	9	20	20
NAPHTHALENE	ug/l	0.21	20	EW2-091306	13	83	1	200
NICKEL	ug/l	0.9	50.5	OC2-OW5-W-0-86	25	34	10	20
NITRATE (AS N)	mg/L	1.3	21	OC2-MW5A-W-0-97	27	27	0.15	0.30
NITRITE (AS N)	mg/L	0.24	0.5	OC2-OW8-W-0-91	4	25	0.1	0.25
N-NITROSODIMETHYLAMINE	ng/L	3.1	680	OC2-OW8-W-0-91	6	37	1.9	10,000
N-PROPYLBENZENE	ug/l	0.35	5.7	OC-GW-OW8-022305	6	56	1	200
O-XYLENE	ug/l	0.25	76.5	OC-GW-OW8-022305	9	58	1	630
PENTACHLOROPHENOL (PCP)	ug/l	0.3	0.3	OC2-OW8-W-0-91	1	32	5	20
PERCHLORATE	ug/l	1.3	7.6	OC2-MW7A-W-0-102	24	25	1	1
PH	SU	6.57	6.8	OW-1	3	3	1	1
PHENANTHRENE	ug/l	0.069	0.069	OC2-OW8-W-0-91	1	32	5	10
PHENOL	ug/l	8.5	11	OW-8	2	32	5	10
P-ISOPROPYLTOLUENE	ug/l	0.29	0.86	OC-GW-OW8-022305	4	58	1	630
POTASSIUM	ug/l	2300	8140	OC2-MW10A-W-0-104	8	26	500	500
SEC-BUTYLBENZENE	ug/l	0.29	0.39	OC-GW-OW8-022305	4	58	1	630
SELENIUM	ug/l	1	19	/8D-W-0-110, OC2-MW7A-	26	33	5	10
SODIUM	ug/l	61,500	176,001	OC2-MW7A-W-0-102	26	26	500	500
SPECIFIC CONDUCTANCE (UMHO/CM X 10-6)	umhos/cm	1,800	1,800	OC-GW-OW8a-082405	1	1	1	1
SULFATE	mg/L	150	660	OC2-OW6-W-0-82	28	28	2.5	10
TETRACHLOROETHENE	ug/l	0.21	170,000	OC-GW-OW1-022505	84	84	1	5,000
TETRAHYDROFURAN	ug/l	540	650	OC-GW-OW8-022305	2	2	50	50
THALLIUM	mg/L	0.028	0.028	OC-GW-OW8a-082405	1	34	1	10
TOLUENE	ug/l	0.073	1,300	OC-GW-OW8-022305	14	84	0.5	630
TOTAL ALKALINITY (AS CACO3)	mg/L	240	540	OW-1	32	32	1	2
TOTAL DISSOLVED SOLIDS	mg/L	660	1,500	OC2-MW7A-W-0-102[(2)]	34	34	10	50
TOTAL KJELDAHL NITROGEN (ORGANIC NITRO)	mg/L	0.16	1	OC2-OW8-W-0-91	10	25	0.15	0.15
TOTAL ORGANIC CARBON	mg/L	4.7	74	OC2-OW1A-W-0-90	27	31	1	1
TOTAL PHOSPHORUS	mg/L	0.32	0.32	OC2-OW1B-W-0-83	1	25	0.15	0.15
TOTAL XYLENES	ug/l	0.055	4.6	OC2-OW4B-W-0-80	4	26	0.5	1,000
TRANS-1,2-DICHLOROETHENE	ug/l	0.32	98	OC2-OW8-W-0-91	28	84	0.5	1,000

Table 3-5
Summary of Detected Chemicals in Groundwater October 2004 to September 2006

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
TRICHLOROETHENE	ug/l	0.16	10,000	OC-GW-OW1-082405	73	84	0.5	1,000
TRICHLOROFLUOROMETHANE (FREON 11)	ug/l	0.18	1,000	OC-GW-OW2-02206	63	84	0.5	1,300
VANADIUM	ug/l	0.35	10	OC-GW-OW3B-031306	26	34	10	10
VINYL CHLORIDE	ug/l	0.775	0.78	OC-GW-OW8-022305	2	84	0.5	1,000
ZINC	ug/l	0.45	570	EW4-091406	28	34	2	20

mg/l = milligram per liter
ug/l = microgram per liter
ng/l = nanogram per liter
NR - Not reported

(1) Also includes OC2-OW6-W-0-82, OC2-MW4C-W-0-95, OC2-MW5A-W-0-97
(2) Also includes OC2-OW6-W-0-82, OC2-OW8-W-0-91

Table 3-6
Summary of Detected Chemicals in Groundwater 2001 to September 2004

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
1,1,1,2-TETRACHLOROETHANE	ug/l	1.7	32	OC-GW-OW1-021903	10	95	0.2	400
1,1,1-TRICHLOROETHANE	ug/l	0.055	10,250	OC-GW-OW1-082704	58	153	0.2	1,000
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/l	0.35	2,800	OC2-OW8-W-0-29	118	153	0.5	2,000
1,1,2-TRICHLOROETHANE	ug/l	0.35	150	OC2-OW8-W-0-29	18	153	0.2	1,000
1,1-DICHLOROETHANE	ug/l	0.25	130	OW-GW-OW1-051601	47	153	0.2	1,000
1,1-DICHLOROETHENE	ug/l	0.23	2,700	OW-GW-OW1-051601	131	153	0.5	400
1,2,3-TRICHLOROPROPANE	ng/L	2.4	87	OC2-OW8-W-0-29	18	136	2	400,000
1,2,4-TRIMETHYLBENZENE	ug/l	0.8	11	OW8-112003	2	95	0.2	400
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/l	50	88	OC-GW-OW8-082202	4	3	25	50
1,2-DICHLOROBENZENE	ug/l	1.2	15	OC-GW-OW1-021903	10	153	0.2	1,000
1,2-DICHLOROETHANE	ug/l	0.24	805	OC-GW-OW8-031103	50	153	0.2	1,000
1,2-DICHLOROPROPANE	ug/l	0.62	1.6	OC2-MW4A-W-0-25	2	153	0.2	1,000
1,3,5-TRIMETHYLBENZENE	ug/l	2.4	2.4	OW8-112003	1	95	0.2	400
1,3-DICHLOROBENZENE	ug/l	0.48	0.77	OC-GW-OW1-022404	4	153	0.2	1,000
1,4-DICHLOROBENZENE	ug/l	0.089	3	OC-GW-OW1-021903	7	153	0.2	1,000
1,4-DIOXANE	ug/l	0.5	52,280	OC-GW-OW1-021903	88	129	0.5	5,050
2,6-DINITROTOLUENE	ug/l	0.18	0.18	OC2-MW1A-W-0-45	1	66	5	10
2-BUTANONE	ug/l	0.83	770	OC2-OW8-W-0-29	5	63	2	10,000
2-CHLOROTOLUENE	ug/l	0.28	0.6	OC1-OW1-W-0-3	3	95	0.2	400
4-NITROPHENOL	ug/l	1.6	1.6	OC2-MW4A-W-0-58, OC2-MW4B-W-0-59	2	66	20	100
ACETONE	ug/l	3	11,000	OC2-OW8-W-0-29	35	153	2	10,000
ACETOPHENONE	ug/l	6.9	6.9	OC2-OW8-W-0-29	1	58	5	10
ALUMINUM	ug/l	47	87	OC2-MW9B-W-0-43	4	58	10	200
AMMONIA NITROGEN (AS N)	mg/L	0.23	0.29	OC2-OW1A-W-0-34	2	58	0.15	0.15
ANTIMONY	ug/l	0.18	0.37	OC2-MW4B-W-0-23	4	66	0.19	60
ARSENIC	ug/l	0.53	65	OC2-OW8-W-0-29	53	66	0.5	4
BARIUM	ug/l	10	136	OW-GW-OW1-051601	65	66	1	4
BENZENE	ug/l	0.051	88	OC2-OW1A-W-0-34	46	153	0.2	200
BENZO(B)FLUORANTHENE	ug/l	0.13	0.13	OC2-MW7A-W-0-73	1	66	5	10
BENZO(K)FLUORANTHENE	ug/l	0.55	0.55	OC2-MW4C-W-0-39	1	66	5	10
BICARBONATE ALKALINITY (AS CACO3)	mg/L	200	570	OC2-OW1A-W-0-34	58	58	NR	NR
BIS(2-ETHYLHEXYL)PHTHALATE	ug/l	2.5	80	OC2-MW5A-W-0-41	32	66	5	50
BOD 5 DAY (BIOCHEMICAL OXYGEN DEMAND)	mg/L	2	77	OC2-OW8-W-0-29	25	58	2	2
BORON	ug/l	120	680	OC2-MW7A-W-0-20	17	17	NR	NR
BROMIDE	mg/L	0.14	70	OC2-OW8-W-0-29	58	58	NR	NR
BROMOFORM	ug/l	0.3	0.95	OC2-MW4C-W-0-39	3	153	0.2	1,000
BROMOMETHANE	ug/l	2.5	2.5	OC2-MW8D-W-0-72	1	153	0.2	1,000
CADMIUM	ug/l	0.075	2.7	OC-GW-OW1-081701	3	66	0.07	5
CALCIUM	ug/l	49,500	285,999	OC2-OW8-W-0-29	58	58	NR	NR
CAPROLACTAM	ug/l	2	28	OC2-OW1A-W-0-34	5	58	5	10
CARBON DISULFIDE	ug/l	0.02	240	OC2-OW1A-W-0-34	5	59	0.5	50
CARBON TETRACHLORIDE	ug/l	0.073	1.1	OC-GW-OW6-021502	21	153	0.2	1,000
CHEMICAL OXYGEN DEMAND	mg/L	3.8	301	OC2-OW8-W-0-29	35	58	5	10
CHLORIDE	mg/L	43	370	OC2-OW8-W-0-29	58	58	NR	NR
CHLOROBENZENE	ug/l	0.75	500	OC2-OW1A-W-0-34	15	153	0.2	400
CHLOROETHANE	ug/l	0.2	0.2	OC1-OW1-W-0-23	1	153	0.2	1,000
CHLOROFORM	ug/l	0.046	2,000	OC-GW-OW8-031103	114	153	0.5	400
CHLOROMETHANE	ug/l	0.4	8.55	OC2-MW1A-W-0-45	17	153	0.2	1,000
CHROMIUM	ug/l	0.55	160	OC2-MW8A-W-0-12	58	66	0.35	4
CHROMIUM (VI)	ug/l	0.65	177	OC2-MW8A-W-0-12	56	65	NR	1
CHRYSENE	ug/l	0.69	0.69	OC2-MW4C-W-0-39	1	66	5	10

Table 3-6
Summary of Detected Chemicals in Groundwater 2001 to September 2004

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
CIS-1,2-DICHLOROETHENE	ug/l	0.14	97	OC-GW-OW5-022103	68	153	0.2	1,000
COBALT	ug/l	0.08	8.2	OW-GW-OW1-051601	32	66	0.12	50
COPPER	ug/l	0.44	11.3	OC-GW-OW1-021402	37	66	0.5	25
CYANIDE	ug/l	3.4	3.4	OC2-OW1A-W-0-34	1	65	5	25
CYCLOHEXANE	ug/l	1	16	OC2-MW5A-W-0-66	2	59	0.5	1,000
DICHLORODIFLUOROMETHANE	ug/l	0.19	7.7	OW8-112003	14	153	0.5	2,000
DI-N-BUTYLPHTHALATE	ug/l	0.54	1	OC2-MW5A-W-0-9, OC2-MW4A-W-0-5	4	66	5	20
DISSOLVED ORGANIC CARBON	mg/L	1.1	52	OC-GW-OW1-021903	7	7	1	5
ETHANE	ng/L	41.5	3,200	OC-GW-OW1-021903	3	3	5	5
ETHENE	ng/L	1,200	1,500	OC-GW-OW1B-021903	3	3	5	5
ETHYLBENZENE	ug/l	0.085	15	OC2-OW8-W-0-29	10	153	0.2	1,000
FLUORIDE	mg/L	0.14	0.6	OC2-MW4B-W-0-23	58	58	NR	NR
IRON	ug/l	33	3,350	OC2-OW1B-W-0-33	17	58	50	100
ISOPHORONE	ug/l	4.9	4.9	OC2-OW8-W-0-29	1	66	5	10
ISOPROPYL ALCOHOL (ISOPROPANOL)	ug/l	350	940	OW-GW-OW4B-051601	4	4	200	200
ISOPROPYLBENZENE	ug/l	1	2.4	OC1-OW1-W-0-3	7	153	0.2	1,000
LEAD	ug/l	0.07	2.9	OW-GW-OW1B-051601	23	66	0.07	10
M,P-XYLENES	ug/l	0.3	44	OW8-112003	7	95	0.2	400
MAGNESIUM	ug/l	36,500	99,999	OC2-OW8-W-0-29	58	58	NR	NR
MANGANESE	ug/l	0.48	2,490	OC2-OW8-W-0-29	23	58	1	15
MERCURY	ug/l	0.02	0.2	OC-GW-OW1b-021402	11	64	0.015	0.4
METHANE	ug/l	4.6	2,400	OC-GW-OW1B-021903	3	3	0.015	0.015
METHYL TERT-BUTYL ETHER	ug/l	0.12	270	OW-GW-OW6-051601	37	152	0.2	1,000
METHYLENE CHLORIDE	ug/l	0.089	8,600	OC2-OW8-W-0-29	36	153	0.2	2,000
MOLYBDENUM	ug/l	1.4	136	OC-GW-OW1b-111601	24	25	0.5	6
NAPHTHALENE	ug/l	0.43	0.6	OC1-OW1-W-0-3	3	153	0.2	400
NICKEL	ug/l	1.2	75	OW-GW-OW1-051601	53	66	1	40
NITRATE (AS N)	mg/L	0.17	20	OC2-MW5A-W-0-66 (1)	64	65	0.11	0.55
NITRATE-NITRITE AS NITROGEN	mg/L	3.7	11	OC-GW-OW4A-022003(2)	6	7	0.15	0.75
NITRITE (AS N)	mg/L	0.06	1	OC-GW-OW1B-021903	5	65	0.05	0.75
N-NITROSODIMETHYLAMINE	ng/L	2.5	900	OC2-OW8-W-0-29, OC1-OW1-W-0-3	17	58	2	21
N-PROPYLBENZENE	ug/l	0.42	0.7	OC1-OW1-W-0-23	4	95	0.2	400
O-XYLENE	ug/l	0.55	27	OC-GW-OW8-082404	9	95	0.2	400
PERCHLORATE	ug/l	1.2	10	OC2-MW7A-W-0-20	58	73	1	4
PHENOL	ug/l	20	20	OC2-OW8-W-0-29	1	66	5	10
P-ISOPROPYLTOLUENE	ug/l	0.32	0.7	OC1-OW1-W-0-3	4	95	0.2	400
POTASSIUM	ug/l	1,860	5,420	OC2-MW11A-W-0-77	37	58	2500	2,500
SEC-BUTYLBENZENE	ug/l	0.26	1.4	OC-GW-OW6-021502	2	95	0.2	400
SELENIUM	ug/l	1.1	227	OC2-OW8-W-0-29	53	66	1	35
SILICA (SAME AS SI AS SIO2)	ug/l	25,000	46,000	OC2-MW1A-W-0-1	17	17	NR	NR
SODIUM	ug/l	57,000	167,501	OC2-MW7A-W-0-73	58	58	NR	NR
SULFATE	mg/L	95	670	OC2-MW7A-W-0-20	58	58	NR	NR
TETRACHLOROETHENE	ug/l	0.97	210,000	OC1-OW1-W-0-23	149	153	0.5	2,500
THALLIUM	ug/l	0.08	9.65	OC2-MW1A-W-0-45	14	66	1	4
TOLUENE	ug/l	0.092	880	OC-GW-OW8-031103	28	153	0.2	400
TOTAL ALKALINITY (AS CACO3)	mg/L	200	570	OC2-OW1A-W-0-34	58	58	NR	NR
TOTAL DISSOLVED SOLIDS	mg/L	630	1,700	OC2-MW7A-W-0-20	58	58	NR	NR
TOTAL INORGANIC CARBON	ug/l	1.1	1.1	OC1-OW1-W-0-23	1	1	NR	NR
TOTAL KJELDAHL NITROGEN (ORGANIC NITRO)	mg/L	0.16	0.46	OC2-OW1A-W-0-34	8	58	0.15	0.15
TOTAL ORGANIC CARBON	mg/L	1.1	70	OC2-OW8-W-0-29	44	58	1	1
TOTAL XYLENES	ug/l	75	75	OC2-OW8-W-0-29	1	58	0.5	1,000

Table 3-6
Summary of Detected Chemicals in Groundwater 2001 to September 2004

Chemical	Units	Detections			Detection Frequency		Reporting Limits	
		Minimum	Maximum	Maximum Location	Number of Detections	Total Samples	Minimum	Maximum
TRANS-1,2-DICHLOROETHENE	ug/l	0.495	130	OC2-OW8-W-0-29	30	153	0.2	1,000
TRICHLOROETHENE	ug/l	0.31	3,600	OC-GW-OW1-022404	138	153	0.5	400
TRICHLOROFLUOROMETHANE (FREON 11)	ug/l	0.15	995	OC-GW-OW8-022003	114	153	0.5	1,000
VANADIUM	ug/l	0.41	17.2	OC-GW-OW1-081701	33	66	1	10
VINYL CHLORIDE	ug/l	0.5	0.9	OC1-OW1-W-0-23	4	153	0.2	1,000
ZINC	ug/l	1	260	OC-GW-OW1b-021402	34	66	1.6	80

(1) Also includes OC-GW-OW2-021903 and OC-GW-OW1-021903
(2) Also includes OC-GW-OW2-021903, OC-GW-OW1-021903
NR - Not reported
mg/l = milligram per liter
ug/l = microgram per liter
ng/l = nanogram per liter

TABLE 3-7a All Parcels - 5 to 6 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 6 ft bgs
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	1,528,800	ug/m^3	OC-SG-006-VP08-081905	18 / 36	7.644 - 42042	1.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1,838	3,447,000	ug/m^3	OC-SG-06-01-041204	34 / 36	10.724 - 114900	3.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	1,420	1,420	ug/m^3	OC-SG-006-VP02-082205	1 / 36	7.644 - 10374	1.4E+03	NA				No	IFD1
	75-34-3	1,1-DICHLOROETHANE	36	105,300	ug/m^3	OC-SG-006-VP05-081705	17 / 36	5.67 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1,071,900	ug/m^3	OC-SG-06-03-041204	34 / 36	5.558 - 22232	1.1E+06	NA				Yes	FD
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4,613	93,750	ug/m^3	OC-SG-06-03-041204	4 / 4	NR - NR	9.4E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	93	10,125	ug/m^3	OC-SG-006-VP08-081905	5 / 36	5.67 - 7695	1.0E+04	NA	1.7E+01			Yes	FD
	540-84-1	2,2,4-TRIMETHYLPENTANE	36	56	ug/m^3	UC-10	3 / 23	5.538 - 7472	5.6E+01	NA				Yes	FD
	78-93-3	2-BUTANONE	103	103	ug/m^3	OC-SG-006-VP19-121305	1 / 35	4.13 - 4720	1.0E+02	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	97	ug/m^3	OC-SG-006-VP19-121305	1 / 1	NR - NR	9.7E+01	NA				Yes	FD
	67-64-1	ACETONE	81	21,182	ug/m^3	OC-SG-006-VP08-081905	15 / 35	13.804 - 15232	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	8	2,074	ug/m^3	OC-SG-006-VP05-081705	9 / 36	4.466 - 6061	2.1E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	373	26,124	ug/m^3	OC-SG-006-VP08-081905	10 / 35	4.354 - 4976	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	233	233	ug/m^3	OC-SG-006-VP11-081505	1 / 36	8.808 - 11951	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	73	14,640	ug/m^3	OC-SG-006-VP04-082205, OC-SG-006-VP05-081705	18 / 36	6.832 - 9272	1.5E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	285	36,828	ug/m^3	OC-SG-006-VP10-081505	9 / 36	5.544 - 7524	3.7E+04	NA	4.4E+03			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	18	9,405	ug/m^3	OC1-SG14A-G-0-28	7 / 36	6.93 - 7920	9.4E+03	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	11	11	ug/m^3	UC-10	1 / 23	4.928 - 5632	1.1E+01	NA				No	IFD1
		M,P-XYLENES	14	608	ug/m^3	OC-SG-006-VP11-081505	3 / 36	8.076 - 16492	8.1E+02	NA	8.9E+04			Yes	FD
	95-47-6	O-XYLENE	304	304	ug/m^3	OC-SG-006-VP11-081505	1 / 36	8.076 - 8246	3.0E+02	NA	8.8E+04			No	IFD1
	127-18-4	TETRACHLOROETHENE	949	3,390,000	ug/m^3	OC-SG-006-VP08-081905	34 / 36	9.492 - 52206	3.4E+06	NA	6.0E+01			Yes	FD
	108-88-3	TOLUENE	29	2,601	ug/m^3	SG-14-6FT	10 / 36	5.278 - 7163	2.6E+03	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	55	20,988	ug/m^3	OC-SG-006-VP04-082205	16 / 35	5.544 - 8336	2.1E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	328	472,560	ug/m^3	OC-SG-06-03-041204	34 / 36	7.518 - 29535	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	551	1,011,600	ug/m^3	OC-SG-06-03-041204	34 / 36	7.868 - 61820	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX Chemical is a Class A Carcinogen
DET. Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-7b Site Parcel - 5 to 6 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 6 ft bgs
Exposure Medium	Indoor Air/Outdoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	1,529	1,528,800	ug/m^3	OC-SG-006-VP08-081905	15 / 22	49.14 - 42042	1.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4,979	2,374,600	ug/m^3	OC-SG-06-11-041304	22 / 22	68.94 - 114900	2.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	1,420	1,420	ug/m^3	OC-SG-006-VP02-082205	1 / 22	49.14 - 8190	1.4E+03	NA				No	IFD1
	75-34-3	1,1-DICHLOROETHANE	36	105,300	ug/m^3	OC-SG-006-VP05-081705	16 / 22	36.45 - 16605	1.1E+05	NA				Yes	FD
	354-23-4	1,1-DICHLOROETHENE	6,749	992,500	ug/m^3	OC-SG-006-VP01-081905	22 / 22	35.73 - 22232	9.9E+05	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4,813	81,250	ug/m^3	OC-SG-06-05-041204	3 / 3	NR - NR	8.1E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	93	10,125	ug/m^3	OC-SG-006-VP08-081905	5 / 22	36.45 - 6075	1.0E+04	NA	1.7E+01			Yes	FD
	78-93-3	2-BUTANONE	103	103	ug/m^3	OC-SG-006-VP19-121305	1 / 22	26.55 - 4425	1.0E+02	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	97	ug/m^3	OC-SG-006-VP19-121305	1 / 1	NR - NR	9.7E+01	NA				Yes	FD
	67-64-1	ACETONE	105	21,182	ug/m^3	OC-SG-006-VP08-081905	12 / 22	57.12 - 14518	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	45	2,074	ug/m^3	OC-SG-006-VP05-081705	7 / 22	28.71 - 4785	2.1E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	373	26,124	ug/m^3	OC-SG-006-VP08-081905	10 / 22	27.99 - 4665	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	233	233	ug/m^3	OC-SG-006-VP11-081505	1 / 22	56.61 - 9435	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	93	14,640	ug/m^3	OC-SG-006-VP04-082205, OC-SG-006-VP05-081705	16 / 22	43.92 - 7320	1.5E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	285	36,828	ug/m^3	OC-SG-006-VP10-081505	9 22	35.64 - 5940	3.7E+04	NA	4.4E+03			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	64	941	ug/m^3	OC-SG-006-VP11-081505	2 / 22	44.55 - 7425	9.4E+02	NA				Yes	FD
		M,P-XYLENES	608	608	ug/m^3	OC-SG-006-VP11-081505	1 / 22	39.06 - 6510	6.1E+02	NA	8.9E+04			No	IFD1
		O-XYLENE	304	304	ug/m^3	OC-SG-006-VP11-081505	1 / 22	39.06 - 6510	3.0E+02	NA	8.8E+04			No	IFD1
	127-18-4	TETRACHLOROETHENE	16,272	3,390,000	ug/m^3	OC-SG-006-VP08-081905	22 / 22	81.02 - 52206	3.4E+06	NA	6.0E+01			Yes	FD
	108-88-3	TOLUENE	75	1,169	ug/m^3	OC-SG-006-VP05-081705	6 / 22	33.93 - 5655	1.2E+03	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	55	20,988	ug/m^3	OC-SG-006-VP04-082205	14 / 22	35.64 - 5940	2.1E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	3,081	451,080	ug/m^3	OC-SG-006-VP01-081905	22 / 22	48.33 - 29535	4.5E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	4,271	786,800	ug/m^3	OC-SG-06-11-041304	22 / 22	50.58 - 61820	7.9E+05	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-7c Other Parcels - 5 to 8 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 8 ft bgs
Exposure Medium:	Indoor Air/Outdoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	10,920	ug/m^3	OC-SG-06-02-041204	3 / 12	7.644 - 10374	1.1E+04	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1,838	3,447,000	ug/m^3	OC-SG-06-01-041204	12 / 12	10.724 - 12256	3.4E+06	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	1,053	1,053	ug/m^3	OC1-LC3-G-0-8	1 / 12	5.67 - 7695	1.1E+03	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1,071,900	ug/m^3	OC-SG-06-03-041204	12 / 12	5.558 - 6352	1.1E+06	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	93,750	93,750	ug/m^3	OC-SG-06-03-041204	1 / 1	NR - NR	9.4E+04	NA				Yes	FD
	354-23-4	2,2,4-TRIMETHYLPENTANE	36	56	ug/m^3	UC-10	3 / 10	6.538 - 7472	5.6E+01	NA				Yes	FD
	67-64-1	ACETONE	81	186	ug/m^3	SG-15-6FT	3 / 10	13.804 - 15232	1.9E+02	NA				Yes	FD
	540-84-1	BENZENE	8	16	ug/m^3	SG-15-6FT	2 / 12	4.466 - 6061	1.6E+01	NA	1.2E+01			Yes	FD
	67-66-3	CHLOROFORM	73	1,757	ug/m^3	OC1-LC3-G-0-8	2 / 12	6.832 - 9272	1.8E+03	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	18	9,405	ug/m^3	OC1-SG14A-G-0-28	5 / 12	6.93 - 7920	9.4E+03	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	11	11	ug/m^3	UC-10	1 / 10	4.928 - 5832	1.1E+01	NA				Yes	FD
		M,P-XYLENES	14	30	ug/m^3	SG-15-6FT	2 / 12	6.076 - 16492	3.0E+01	NA	8.9E+04			Yes	FD
		TETRACHLOROETHENE	949	2,101,800		OC-SG-06-01-041204	12 / 12	9.492 - 10848	2.1E+06	NA	6.0E+01				
	127-18-4				ug/m^3									Yes	FD
	108-88-3	TOLUENE	29	2,601	ug/m^3	SG-14-6FT	4 / 12	5.278 - 7163	2.6E+03	NA	3.8E+04			Yes	FD
		TRANS-1,2-DICHLOROETHENE	6,732	9,900		OC-SG-06-02-041204	2 / 10	5.544 - 6336	9.9E+03	NA	8.9E+03				
	156-60-5				ug/m^3									Yes	FD
	79-01-6	TRICHLOROETHENE	328	472,560	ug/m^3	OC-SG-06-03-041204	12 / 12	7.518 - 8592	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	551	1,011,600	ug/m^3	OC-SG-06-03-041204	12 / 12	7.868 - 8992	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-8a All Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	2,457,000	ug/m³	OC-SG-018-VP08-081905	66 / 127	4.368 - 51870	2.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	3,447,000	ug/m³	OC-SG-06-01-041204	144 / 146	7.66 - 145540	3.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	328	1,420	ug/m³	OC-SG-006-VP02-082205	9 / 118	4.368 - 22386	1.4E+03	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	24	105,300	ug/m³	OC-SG-006-VP05-081705	71 / 130	3.24 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1,905,600	ug/m³	OC1-SG11A-G-0-24	142 / 146	3.97 - 24217	1.9E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	9	33	ug/m³	OC-SG-018-VP19-121305	7 / 121	3.936 - 20172	3.3E+01	NA				Yes	FD
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3,000	93,750	ug/m³	OC-SG-06-03-041204	10 / 10	NR - NR	9.4E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	32	10,125	ug/m³	OC-SG-024-VP06-081605, OC-SG-006-VP08-081905	24 / 119	3.24 - 16605	1.0E+04	NA	1.7E+01			Yes	FD
	106-99-0	1,3-BUTADIENE	3	139	ug/m³	OC-SG-029-VP30-060106	10 / 70	2.21 - 3757	1.4E+02	NA				Yes	FD
	540-84-1	2,2,4-TRIMETHYLPENTANE	5	1,541	ug/m³	OC-SG-008-VP13-121205	15 / 74	4.67 - 7939	1.5E+03	NA				Yes	FD
	78-93-3	2-BUTANONE	4	174	ug/m³	OC-SG-029-VP30-060106	18 / 119	2.95 - 5015	1.7E+02	NA				Yes	FD
		2-PROPANOL	9,840	36,900	ug/m³	OC-SG-029-VP13-121205	4 / 68	9.84 - 18728	3.7E+04	NA				Yes	FD
		4-ETHYLTOLUENE	7	42	ug/m³	OC-SG-018-VP19-121305	5 / 116	4.92 - 8364	4.2E+01	NA				No	IFD1
		4-METHYL-2-PENTANONE	16	16	ug/m³	OC-SG-025-VP25-030606	1 / 112	4.1 - 6970	1.6E+01	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	112	ug/m³	OC-SG-012-VP19-121305	3 / 3	NR - NR	1.1E+02	NA				Yes	FD
	67-64-1	ACETONE	15	21,182	ug/m³	OC-SG-006-VP08-081905	71 / 125	9.52 - 16184	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	3	3,828	ug/m³	OC-SG-018-VP03-081805	42 / 126	3.19 - 13079	3.8E+03	NA	1.2E+01			Yes	FD
	75-27-4	BROMODICHLOROMETHANE	9	24	ug/m³	OC-SG-008-VP30-060106	4 / 113	6.7 - 11390	2.4E+01	NA				Yes	CARC
	75-25-2	BROMOFORM	13	13	ug/m³	OC-SG-010-VP26-053106	1 / 112	10.34 - 17578	1.3E+01	NA				Yes	CARC
	75-15-0	CARBON DISULFIDE	3	26,124	ug/m³	OC-SG-006-VP08-081905	44 / 116	3.11 - 5287	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	126	233	ug/m³	OC-SG-012-VP04-082205, OC-SG-006-VP11-081505	4 / 117	5.032 - 25789	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	7	107,360	ug/m³	OC-SG-029-VP13-121205	78 / 132	3.904 - 20008	1.1E+05	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	51	37,620	ug/m³	OC-SG-018-VP10-081505, OC-SG-012-VP10-081505	39 / 124	3.168 - 16236	3.8E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	4	963	ug/m³	OC-SG-008-VP13-121205	8 / 71	3.44 - 5848	9.6E+02	NA				Yes	FD
	124-48-1	DIBROMOCHLOROMETHANE	9	14	ug/m³	OC-SG-010-VP26-053106	2 / 112	8.52 - 14484	1.4E+01	NA				Yes	CARC
	75-71-8	DICHLORODIFLUOROMETHANE	11	9,405	ug/m³	OC1-SG14A-G-0-28	29 / 121	3.96 - 20295	9.4E+03	NA				Yes	FD
		ETHANOL	13	254	ug/m³	OC-SG-12-01-041204	8 / 69	7.52 - 12784	2.5E+02	NA				Yes	FD
	100-41-4	ETHYLBENZENE	6	30	ug/m³	OC-SG-018-VP19-121305	9 / 122	3.472 - 17794	3.0E+01	NA	0.0E+00			Yes	FD
		HEPTANE	5	127	ug/m³	OC-SG-018-VP19-121305	10 / 72	4.1 - 6970	1.3E+02	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	4	4,576	ug/m³	SG-8-18FT	19 / 73	3.52 - 5984	4.6E+03	NA				Yes	FD
		M,P-XYLENES	10	608	ug/m³	OC-SG-006-VP11-081505	22 / 124	4.34 - 35154	6.1E+02	NA	8.9E+04			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	19	21	ug/m³	OC-SG-029-VP25-030606	2 / 113	3.61 - 11191	2.1E+01	NA	1.3E+03			Yes	CARC

TABLE 3-8a All Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	75-09-2	METHYLENE CHLORIDE	8	23,249	ug/m^3	OC-SG-018-VP03-081805	14 / 120	2.776 - 14227	2.3E+04	NA				Yes	FD
	95-47-6	O-XYLENE	5	3,472	ug/m^3	OC-SG-018-VP08-081905	14 / 122	3.472 - 17794	3.5E+03	NA	8.8E+04			Yes	FD
		PENTANE	21,535	21,535	ug/m^3	OC-SG-008-VP13-121205	1 / 1	NR - NR	2.2E+04	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	12	3,390,000	ug/m^3	OC-SG-006-VP08-081905	143 / 146	6.78 - 64410	3.4E+06	NA	6.0E+01			Yes	FD
	109-99-9	TETRAHYDROFURAN	3	3,835	ug/m^3	SG-8-18FT	3 / 67	2.95 - 5015	3.8E+03	NA				Yes	CARC
	108-88-3	TOLUENE	8	15,080	ug/m^3	OC1-SG8A-G-0-25	57 / 130	3.77 - 15457	1.5E+04	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	35	24,552	ug/m^3	OC-SG-018-VP02-082205	54 / 119	3.96 - 6732	2.5E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	54	472,560	ug/m^3	OC-SG-06-03-041204	137 / 145	5.37 - 29535	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	6	1,236,400	ug/m^3	OC1-SG11A-G-0-24	145 / 146	5.62 - 61820	1.2E+06	NA				Yes	FD
	75-01-4	VINYL CHLORIDE	33	79	ug/m^3	OC-SG-012-VP04-082205	2 / 117	2.048 - 10496	7.9E+01	NA	4.5E+00			Yes	ASL

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions:
NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-8b Site Parcel - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	197	2,457,000	ug/m³	OC-SG-018-VP08-081905	58 / 77	17.472 - 51870	2.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2,604	2,910,800	ug/m³	OC1-SG11A-G-0-24	87 / 87	24.512 - 145540	2.9E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	328	1,420	ug/m³	OC-SG-006-VP02-082205	9 / 71	17.472 - 22386	1.4E+03	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	24	105,300	ug/m³	OC-SG-006-VP05-081705	65 / 82	12.96 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	1,528	1,905,600	ug/m³	OC1-SG11A-G-0-24	87 / 87	12.704 - 24217	1.9E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	17	33	ug/m³	OC-SG-018-VP19-121305	2 / 72	15.744 - 20172	3.3E+01	NA				No	IFD1
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3,000	81,250	ug/m³	OC-SG-06-05-041204	8 / 8	NR - NR	8.1E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	32	10,125	ug/m³	OC-SG-024-VP06-081605,OC-SG-006-VP08-081905	24 / 72	12.96 - 16605	1.0E+04	NA	1.7E+01			Yes	FD
	106-99-0	1,3-BUTADIENE	11	11	ug/m³	OC-SG-024-VP19-121305	1 / 23	7.072 - 3757	1.1E+01	NA				Yes	CARC
	540-84-1	2,2,4-TRIMETHYLPENTANE	458	701	ug/m³	OC-SG-024-VP19-121305	2 / 24	14.944 - 7939	7.0E+02	NA				Yes	FD
	78-93-3	2-BUTANONE	103	171	ug/m³	OC-SG-018-VP19-121305	4 / 71	9.44 - 5015	1.7E+02	NA				Yes	FD
		2-PROPANOL	13,284	13,284	ug/m³	SG-8-18FT	1 / 22	31.98 - 16728	1.3E+04	NA				No	IFD1
		4-ETHYLTOLUENE	20	42	ug/m³	OC-SG-018-VP19-121305	2 / 69	15.744 - 8364	4.2E+01	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	112	ug/m³	OC-SG-012-VP19-121305	3 / 3	NR - NR	1.1E+02	NA				Yes	FD
	67-64-1	ACETONE	105	21,182	ug/m³	OC-SG-006-VP08-081905	51 / 74	30.94 - 16184	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	31	3,828	ug/m³	OC-SG-018-VP03-081805	28 / 75	10.208 - 13079	3.8E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	249	26,124	ug/m³	OC-SG-006-VP08-081905	39 / 70	9.952 - 5287	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	126	233	ug/m³	OC-SG-012-VP04-082205,OC-SG-006-VP11-081505	4 / 70	20.128 - 25789	2.3E+02	NA	8.5E+00			Yes	FD
	67-66-3	CHLOROFORM	49	48,800	ug/m³	OC-SG-018-VP03-081805	61 / 80	15.616 - 20008	4.9E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	51	37,620	ug/m³	OC-SG-018-VP10-081505,OC-SG-012-	36 / 76	12.672 - 16236	3.8E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	17	24	ug/m³	OC-SG-018-VP19-121305	2 / 24	11.008 - 5848	2.4E+01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	59	1,238	ug/m³	OC-SG-024-VP02-082205	13 / 70	15.84 - 20295	1.2E+03	NA				Yes	FD
		ETHANOL	128	128	ug/m³	SG-9-24FT	1 / 22	24.44 - 12784	1.3E+02	NA				No	IFD1
	100-41-4	ETHYLBENZENE	17	30	ug/m³	OC-SG-018-VP19-121305	2 / 72	13.888 - 17794	3.0E+01	NA	0.0E+00			Yes	ASL
		HEPTANE	115	127	ug/m³	OC-SG-018-VP19-121305	2 / 24	13.12 - 6970	1.3E+02	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	197	4,576	ug/m³	SG-8-18FT	3 / 24	11.264 - 5984	4.6E+03	NA				Yes	FD
		M,P-XYLENES	61	608	ug/m³	OC-SG-006-VP11-081505	6 / 73	13.888 - 35154	6.1E+02	NA	8.9E+04			Yes	FD
	75-09-2	METHYLENE CHLORIDE	555	23,249	ug/m³	OC-SG-018-VP03-081805	7 / 72	11.104 - 14227	2.3E+04	NA				Yes	FD
	95-47-6	O-XYLENE	29	3,472	ug/m³	OC-SG-018-VP08-081905	6 / 72	13.888 - 17794	3.5E+03	NA	8.8E+04			Yes	FD
	127-18-4	TETRACHLOROETHENE	488	3,390,000	ug/m³	OC-SG-006-VP08-081905	67 / 87	21.696 - 64410	3.4E+06	NA	6.0E+01			Yes	FD
	109-99-9	TETRAHYDROFURAN	3,835	3,835	ug/m³	SG-8-18FT	1 / 22	9.44 - 5015	3.8E+03	NA				Yes	CARC
	108-88-3	TOLUENE	60	15,080	ug/m³	OC1-SG8A-G-0-25	33 / 77	12.064 - 15457	1.5E+04	NA	3.8E+04			Yes	FD

TABLE 3-8b Site Parcel - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	156-60-5	TRANS-1,2-DICHLOROETHENE	35	24,552	ug/m^3	OC-SG-018-VP02-082205	51 / 73	12.672 - 6732	2.5E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	199	451,080	ug/m^3	OC-SG-006-VP01-081905	87 / 87	17.184 - 29535	4.5E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1,068	1,238,400	ug/m^3	OC1-SG11A-G-0-24	87 / 87	17.984 - 61820	1.2E+06	NA				Yes	FD
	75-01-4	VINYL CHLORIDE	33	79	ug/m^3	OC-SG-012-VP04-082205	2 / 70	8.192 - 10498	7.9E+01	NA	4.5E+00			Yes	ASL

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX. No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3 microgram per cubic meter.

TABLE 3-8c Other Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	251,160	ug/m^3	OC-SG-018-VP08-081905	8 / 50	4.368 - 10374	2.5E+05	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	3,447,000	ug/m^3	OC-SG-06-01-041204	57 / 59	7.66 - 12256	3.4E+06	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	486	8,910	ug/m^3	OC-SG-006-VP02-082205	6 / 48	3.24 - 7695	8.9E+03	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1,071,900	ug/m^3	OC-SG-006-VP05-081705	55 / 59	3.97 - 6352	1.1E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	9	16	ug/m^3	OC1-SG11A-G-0-24	5 / 49	3.936 - 9348	1.6E+01	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	81,250	93,750	ug/m^3	OC-SG-018-VP19-121305	2 / 2	NR - NR	9.4E+04	NA				Yes	FD
	106-99-0	1,3-BUTADIENE	3	139	ug/m^3	OC-SG-06-03-041204	9 / 47	2.21 - 3536	1.4E+02	NA				Yes	FD
		2,2,4-TRIMETHYLPENTANE	5	1,541	ug/m^3	OC-SG-024-VP06-081605, OC-SG-006-VP08-081905	13 / 50	4.67 - 7472	1.5E+03	NA				Yes	FD
	78-93-3	2-BUTANONE	4	174	ug/m^3	OC-SG-029-VP30-060106	14 / 48	2.95 - 4720	1.7E+02	NA				Yes	FD
		2-PROPANOL	9,840	36,900	ug/m^3	OC-SG-008-VP13-121205	3 / 46	9.84 - 16236	3.7E+04	NA				Yes	FD
		4-ETHYLTOLUENE	7	17	ug/m^3	OC-SG-029-VP30-060106	3 / 47	4.92 - 7872	1.7E+01	NA				Yes	FD
		4-METHYL-2-PENTANONE	16	16	ug/m^3	OC-SG-029-VP13-121205	1 / 45	4.1 - 6560	1.6E+01	NA				No	IFD1
	67-64-1	ACETONE	15	500	ug/m^3	OC-SG-018-VP19-121305	20 / 51	9.52 - 15708	5.0E+02	NA				Yes	FD
	71-43-2	BENZENE	3	89	ug/m^3	OC-SG-025-VP25-030606	14 / 51	3.19 - 6061	8.9E+01	NA	1.2E+01			Yes	FD
	75-27-4	BROMODICHLOROMETHANE	9	24	ug/m^3	OC-SG-012-VP19-121305	4 / 46	6.7 - 10720	2.4E+01	NA				Yes	FD
	75-25-2	BROMOFORM	13	13	ug/m^3	OC-SG-006-VP08-081905	1 / 45	10.34 - 16544	1.3E+01	NA				Yes	CARC
	75-15-0	CARBON DISULFIDE	3	26	ug/m^3	OC-SG-018-VP03-081805	5 / 46	3.11 - 4976	2.6E+01	NA				Yes	FD
	67-66-3	CHLOROFORM	7	107,360	ug/m^3	OC-SG-008-VP30-060106	17 / 52	3.904 - 9272	1.1E+05	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	713	13,068	ug/m^3	OC-SG-010-VP26-053106	3 / 48	3.168 - 7524	1.3E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	4	983	ug/m^3	OC-SG-006-VP08-081905	8 / 47	3.44 - 5504	9.8E+02	NA				Yes	FD
	124-48-1	DIBROMOCHLOROMETHANE	9	14	ug/m^3	OC-SG-012-VP04-082205, OC-SG-006-VP11-081505	2 / 45	8.52 - 13632	1.4E+01	NA				Yes	CARC
	75-71-8	DICHLORODIFLUOROMETHANE	11	9,405	ug/m^3	OC-SG-029-VP13-121205	16 / 51	3.96 - 7920	9.4E+03	NA				Yes	FD
		ETHANOL	13	254	ug/m^3	OC-SG-018-VP10-081505, OC-SG-012-VP10-081505	7 / 47	7.52 - 12408	2.5E+02	NA				Yes	FD
	100-41-4	ETHYLBENZENE	6	20	ug/m^3	OC-SG-008-VP13-121205	7 / 50	3.472 - 8246	2.0E+01	NA	0.0E+00			Yes	FD
		HEPTANE	5	98	ug/m^3	OC-SG-010-VP26-053106	8 / 48	4.1 - 6560	9.8E+01	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	4	2,218	ug/m^3	OC1-SG14A-G-0-28	16 / 49	3.52 - 5632	2.2E+03	NA				Yes	FD
		M,P-XYLENES	10	126	ug/m^3	OC-SG-12-01-041204	16 / 51	4.34 - 16492	1.3E+02	NA	8.9E+04			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	19	21	ug/m^3	OC-SG-018-VP19-121305	2 / 46	3.61 - 5776	2.1E+01	NA	1.3E+03			Yes	CARC
	75-09-2	METHYLENE CHLORIDE	8	298	ug/m^3	OC-SG-018-VP19-121305	7 / 48	2.776 - 6593	3.0E+02	NA				Yes	FD
	95-47-6	O-XYLENE	5	24	ug/m^3	SG-8-18FT	8 / 50	3.472 - 8246	2.4E+01	NA	8.8E+04			Yes	FD
		PENTANE	21,535	21,535	ug/m^3	OC-SG-006-VP11-081505	1 / 1	NR - NR	2.2E+04	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	12	2,101,800	ug/m^3	OC-SG-029-VP25-030606	56 / 59	6.78 - 10848	2.1E+06	NA	6.0E+01			Yes	FD

TABLE 3-8c Other Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Ambient Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	109-99-9	TETRAHYDROFURAN	3	4	ug/m^3	OC-SG-018-VP03-081805	2 / 45	2.95 - 4720	4.1E+00	NA				Yes	CARC
	108-88-3	TOLUENE	8	12,441	ug/m^3	OC-SG-018-VP08-081905	24 / 53	3.77 - 7163	1.2E+04	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	673	9,900	ug/m^3	OC-SG-008-VP13-121205	3 / 46	3.96 - 6338	9.9E+03	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	54	472,560	ug/m^3	OC-SG-006-VP08-081905	50 / 58	5.37 - 8592	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	6	1,011,600	ug/m^3	SG-8-18FT	58 / 59	5.62 - 8992	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

Table 3-9
Summary of Detected Chemicals in Soil Gas 30+ feet bgs

Chemical	Detections			Detection Frequency		Reporting Limits	
	Minimum ug/m^3	Maximum ug/m^3	Maximum Location	Number of Detections	Total Samples	Minimum ug/m^3	Maximum ug/m^3
1,1,1-TRICHLOROETHANE	928	1,583,400	OC-SG-070-VP08-081905	43	82	4.26	60,060
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8.43	4,289,600	OC-SG-058-VP18-121505	79	82	7.66	222,140
1,1-DICHLOROETHANE	25.52	76,950	OC-SG-040-VP05-081705	47	82	3.16	10,125
1,1-DICHLOROETHENE	4.76	3,453,900	OC-SG-051-VP14-121505	76	82	2.78	59,550
1,2,4-TRIMETHYLBENZENE	8.36	30	OC-SG-060-VP30-060106	9	82	4.92	12,300
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	20,000	68,750.0	OC-SG-050-VP19-121305	4	5	NR	NR
1,2-DICHLOROETHANE	223	141,750	OC-SG-070-VP06-081605	15	82	3.16	10,125
1,3,5-TRIMETHYLBENZENE	9.84	128	OC-SG-060-VP11-081505	2	82	3.84	12,300
1,3-BUTADIENE	9.28	204	OC-SG-060-VP27-053106	14	43	2.21	5,525
1,4-DIOXANE	23.4	23	OC-SG-036-VP25-030606	1	43	14.40	35,640
2,2,4-TRIMETHYLPENTANE	9.81	14,477	OC-SG-050-VP15-121405	14	43	4.67	11,675
2-BUTANONE	5.02	413	OC-SG-040-VP19-121305	17	82	2.95	7,375
2-HEXANONE	2,706	2,706	OC-SG-040-VP04-082205	1	82	6.56	40,590
2-PROPANOL	13	29,520	OC-SG-060-VP17-121205, OC SG-056-VP13-121205, OC-SG 039-VP24-030606	10	43	9.84	24,354
4-ETHYLTOLUENE	6.4	24	OC-SG-070-VP19-121305	7	82	3.84	12,300
4-METHYL-2-PENTANONE	4.1	11	OC-SG-036-VP25-030606	2	82	4.10	10,250
ACETALDEHYDE	133	450	OC-SG-040-VP19-121305	3	3	NR	NR
ACETONE	24	34510	OC-SG-060-VP02-082205	55	82	2.38	23,562
BENZENE	12	7,975	OC-SG-040-VP05-081705	37	82	2.49	7,975
CARBON DISULFIDE	5.60	43,540	OC-SG-070-VP04-082205	46	82	2.43	7,775
CARBON TETRACHLORIDE	189	327.08	OC-SG-060-VP11-081505	2	82	4.91	15,725
CHLOROFORM	5.86	180,560	OC-SG-058-VP14-121505	53	82	3.81	19,520
CHLOROMETHANE	1.61	1.80	OC-SG-040-VP10-081505	2	82	1.61	20,493
CIS-1,2-DICHLOROETHENE	63	5,940	OC-SG-056-VP13-121205	13	82	3.09	9,900
CYCLOHEXANE	11	17544	OC-SG-050-VP15-121405	13	43	3.44	8,600
DICHLORODIFLUOROMETHANE	6.93	15,345	OC-SG-035-VP24-030606	11	82	3.86	12,375
ETHANOL	12	39	OC-SG-050-VP26-053106	9	43	7.52	18,612
ETHYLBENZENE	6.51	20	OC-SG-070-VP19-121305	7	82	3.39	10,850
HEPTANE	9.02	10,660	OC-SG-050-VP15-121405	17	43	4.10	10,250
HEXANE (N-HEXANE)	20	35,200	OC-SG-050-VP15-121405	20	43	3.52	8,800
M,P-XYLENES	13	694	OC-SG-060-VP11-081505	17	82	4.34	10,850
METHYL TERT-BUTYL ETHER	43	43	OC-SG-036-VP25-030606	1	82	3.61	10,469
METHYLENE CHLORIDE	4.86	62,460	OC-SG-060-VP03-082205	35	82	3.47	10,063
O-XYLENE	4.34	2,908	OC-SG-060-VP08-081905	14	82	3.39	10,850
PENTANE	268,450	268,450	OC-SG-050-VP15-121405	1	1	NR	NR
TETRACHLOROETHENE	11	6,102,000	OC-SG-058-VP14-121505	73	82	4.75	101,700
TOLUENE	4.9	7,163	OC-SG-056-VP13-121205	41	82	2.64	9,425
TRANS-1,2-DICHLOROETHENE	317	79,200	OC-SG-070-VP04-082205	36	82	3.09	9,900
TRICHLOROETHENE	35	590,700	OC-SG-058-VP14-121505	70	82	4.19	33,831
TRICHLOROFLUOROMETHANE (FREON 11)	7.87	843,000	OC-SG-050-VP02-082205	78	82	5.62	78,680
VINYL CHLORIDE	79	358	OC-SG-050-VP06-081605	3	82	2.00	6,400

NR - Not reported
ug/m^3 = microgram per cubic meter

TABLE 3-10 - Parcel Site - 3 Kings Construction
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.21	0.22	ug/m^3	OC-AA-FS-13-051104	2 / 4	0.180 - 0.51	2.2E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6	6.8	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.260 - 0.72	6.8E+00	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.7	9.2	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.066 - 0.18	9.2E+00	NA				Yes	FD
	67-64-1	ACETONE	24	50	ug/m^3	OC-IA-FS-14-091405	4 / 4	2.000 - 5.6	5.0E+01	NA				Yes	FD
	71-43-2	BENZENE	2.8	11	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.270 - 0.75	1.1E+01	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.57	0.65	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.210 - 0.59	6.5E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.25	0.25	ug/m^3	OC-AA-FS-13-051104	1 / 4	0.160 - 0.46	2.5E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.4	3.1	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.160 - 0.46	3.1E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	3.2	16	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.140 - 0.41	1.6E+01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	14	82	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.290 - 0.81	8.2E+01	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.8	260	ug/m^3	OC-IA-FS-14-091405	4 / 4	1.200 - 3.2	2.6E+02	NA				Yes	FD
	95-47-6	O-XYLENE	2.9	17	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.140 - 0.41	1.7E+01	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	1	13	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.230 - 0.63	1.3E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	34	170	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.120 - 0.35	1.7E+02	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	0.25	3.3	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.180 - 0.5	3.3E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	2	5.9	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.190 - 0.52	5.9E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1 Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-11 - Parcel Site - Star City Auto Body
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.32	0.33	ug/m^3	OC-IA-FS-07-091405	1 / 4	0.190 - 18	3.3E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.6	31	ug/m^3	OC-AA-FD-07-051104	3 / 4	0.270 - 28	3.1E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	1.6	18	ug/m^3	OC-AA-FD-07-051104	3 / 4	0.069 - 6.7	1.8E+01	NA				Yes	FD
	67-64-1	ACETONE	330	6000	ug/m^3	OC-IA-FD-09-091405	4 / 4	2.100 - 200	6.0E+03	NA				Yes	FD
	71-43-2	BENZENE	2.6	5.3	ug/m^3	OC-IA-FS-07-091405	2 / 4	0.280 - 27	5.3E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.66	0.67	ug/m^3	OC-IA-FS-07-091405	1 / 4	0.220 - 21	6.7E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.19	0.19	ug/m^3	FS-07-091405,OC-IA-FD-07-	1 / 4	0.170 - 16	1.9E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.9	2.7	ug/m^3	OC-AA-FD-07-051104	2 / 4	0.170 - 17	2.7E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	4.6	48	ug/m^3	OC-AA-FS-09-051104	3 / 4	0.150 - 14	4.8E+01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	21	270	ug/m^3	OC-AA-FS-09-051104	3 / 4	0.300 - 29	2.7E+02	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.5	4.8	ug/m^3	OC-AA-FD-07-051104	1 / 4	1.200 - 120	4.8E+00	NA				Yes	FD
	95-47-6	O-XYLENE	5.1	78	ug/m^3	OC-AA-FS-09-051104	3 / 4	0.150 - 14	7.8E+01	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	6	34	ug/m^3	OC-IA-FS-07-091405	3 / 4	0.240 - 23	3.4E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	36	2400	ug/m^3	OC-AA-FS-09-051104	4 / 4	0.130 - 13	2.4E+03	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	3.5	6.5	ug/m^3	OC-IA-FS-07-091405	2 / 4	0.190 - 18	6.5E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	11	14	ug/m^3	OC-AA-FD-07-051104	2 / 4	0.200 - 19	1.4E+01	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions:
NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-12 - Parcel North - Medlin & Sons 12484
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.21	0.21	ug/m³	OC-AA-FS-11-051104	1 / 4	0.180 - 0.46	2.1E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	17	40	ug/m³	OC-AA-FS-10-051104	4 / 4	0.250 - 0 65	4.0E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	2.9	10	ug/m³	OC-AA-FS-10-091405	4 / 4	0.064 - 0.17	1.0E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0 2	0.95	ug/m³	OC-AA-FS-10-051104	2 / 4	0.190 - 0.51	9.5E-01	NA				Yes	FD
	67-64-1	ACETONE	22	3400	ug/m³	OC-AA-FS-10-051104	4 / 4	1.900 - 5.1	3.4E+03	NA				Yes	FD
	71-43-2	BENZENE	0 91	1.1	ug/m³	OC-AA-FS-11-051104	4 / 4	0.260 - 0.68	1.1E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.67	1.3	ug/m³	OC-AA-FS-11-091405	4 / 4	0.200 - 0.54	1.3E+00	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.2	0.32	ug/m³	OC-AA-FS-11-091405	3 / 4	0.160 - 0 42	3.2E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.2	3.3	ug/m³	OC-AA-FS-11-051104	4 / 4	0.160 - 0.42	3.3E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.72	0.85	ug/m³	OC-AA-FS-11-051104	4 / 4	0.140 - 0.37	8.5E-01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	2.2	2.7	ug/m³	OC-AA-FS-11-051104, OC-AA-FS-11-091405	4 / 4	0.280 - 0.74	2.7E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.7	5.1	ug/m³	OC-AA-FS-11-051104	3 / 4	1 100 - 3	5.1E+00	NA				Yes	FD
	95-47-6	O-XYLENE	0.87	1	ug/m³	OC-AA-FS-11-051104	4 / 4	0.140 - 0.37	1.0E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	4.3	22	ug/m³	OC-AA-FS-10-091405	4 / 4	0.220 - 0.58	2.2E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	4.8	7.4	ug/m³	OC-AA-FS-10-091405	4 / 4	0.120 - 0.32	7.4E+00	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	2.3	14	ug/m³	OC-AA-FS-10-091405	4 / 4	0.170 - 0.46	1.4E+01	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	5.4	12	ug/m³	OC-AA-FS-10-091405	4 / 4	0.180 - 0.48	1.2E+01	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE 3-13- Parcel North - Medlin & Sons North 12476
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9	1.9	ug/m^3	IA-37	1 / 1	1.8 - 1.8	1.9E+00	NA				Yes	FD
	67-64-1	ACETONE	430	430	ug/m^3	IA-37	1 / 1	14 - 14	4.3E+02	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.6	2.6	ug/m^3	IA-37	1 / 1	1.2 - 1.2	2.6E+00	NA				Yes	FD
	108-88-3	TOLUENE	2.8	2.8	ug/m^3	IA-37	1 / 1	0.9 - 0.9	2.8E+00	NA	4.4E+01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.6	1.6	ug/m^3	IA-37	1 / 1	1.3 - 1.3	1.6E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD. Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-14 - Parcel West - Terrapave
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.45	0.49	ug/m^3	OC-AA-FS-06-051104	2 / 4	0.170 - 0.2	4.9E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.3	28	ug/m^3	OC-AA-FS-06-051104, OC-AA-FS-05-051104	4 / 4	0.240 - 0.28	2.8E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	5.5	23	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.063 - 0.072	2.3E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.23	0.27	ug/m^3	OC-IA-FD-05-091405	2 / 4	0.190 - 0.22	2.7E-01	NA				Yes	FD
	67-64-1	ACETONE	22	43	ug/m^3	OC-AA-FS-06-051104	4 / 4	1.900 - 2.2	4.3E+01	NA				Yes	FD
	71-43-2	BENZENE	1.1	1.4	ug/m^3	OC-AA-FS-06-051104	4 / 4	0.250 - 0.29	1.4E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.56	0.67	ug/m^3	OC-IA-FD-05-091405	4 / 4	0.200 - 0.23	6.7E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.21	0.24	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.150 - 0.18	2.4E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.5	2.9	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.160 - 0.18	2.9E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.93	1.6	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.140 - 0.16	1.6E+00	NA	0.0E+00			Yes	FD
		M,P-XYLENES	3.3	5.5	ug/m^3	OC-AA-FS-06-051104	4 / 4	0.270 - 0.32	5.5E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.2	1.5	ug/m^3	OC-AA-FS-05-051104	4 / 4	1.100 - 1.3	1.5E+00	NA				Yes	FD
	95-47-6	O-XYLENE	0.96	2.1	ug/m^3	OC-AA-FS-05-051104, OC-AA-FS-06-051104	4 / 4	0.140 - 0.16	2.1E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	39	110	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.210 - 0.25	1.1E+02	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	6.5	10.0	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.120 - 0.14	1.0E+01	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	1.6	4.4	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.170 - 0.2	4.4E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	3.4	7	ug/m^3	OC-AA-FS-05-051104	4 / 4	0.180 - 0.2	7.0E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-15 - Parcel South - Bishop
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.19	0.19	ug/m³	OC-IA-BIS-STORE-090806	1 / 3	0.160 - 0.34	1.9E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4	10	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.230 - 0.48	1.0E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	3.6	14	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.059 - 0.12	1.4E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.21	0.32	ug/m³	OC-IA-BIS-AO-090806	2 / 3	0.180 - 0.37	3.2E-01	NA				Yes	FD
	67-64-1	ACETONE	28	41	ug/m³	OC-IA-BIS-AO-090806	3 / 3	1.600 - 3.7	4.1E+01	NA				Yes	FD
	71-43-2	BENZENE	1.15	1.2	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.240 - 0.5	1.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.51	0.575	ug/m³	OC-IA-BIS-AO-090806	3 / 3	0.190 - 0.39	5.8E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.15	0.18	ug/m³	OC-IA-BIS-STORE-090806	2 / 3	0.140 - 0.3	1.8E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.7	3	ug/m³	OC-IA-BIS-AO-090806	3 / 3	0.150 - 0.31	3.0E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.81	1.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.130 - 0.27	1.7E+00	NA				Yes	FD
		M,P-XYLENES	2.7	4.9	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.260 - 0.54	4.9E+00	NA	1.0E+02			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	0.67	0.67	ug/m³	OC-IA-BIS-STORE-090806	1 / 3	0.540 - 1.1	6.7E-01	NA	1.6E+00			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1	1.7	ug/m³	OC-IA-BIS-STORE-090806	2 / 3	1.000 - 2.2	1.7E+00	NA				Yes	FD
	95-47-6	O-XYLENE	1.015	1.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.130 - 0.27	1.7E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	7.1	29.0	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.200 - 0.42	2.9E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	6.9	8.4	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.110 - 0.23	8.4E+00	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	0.44	1.5	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.160 - 0.33	1.5E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	2.2	3.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.170 - 0.35	3.7E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC. Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE 3-16 - Parcel South - LA Carts
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.7	14	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.200 - 1.2	1.4E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.06	3.6	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.053 - 0.32	3.6E+00	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.16	0.16	ug/m^3	OC-IA-LAC-AO-090806	1 / 3	0.160 - 0.99	1.6E-01	NA				Yes	FD
	67-64-1	ACETONE	74	1200	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	1.600 - 9.7	1.2E+03	NA				Yes	FD
	71-43-2	BENZENE	1.3	2.2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.210 - 1.3	2.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.5	0.52	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.170 - 1	5.2E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.14	0.37	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.130 - 0.8	3.7E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.6	3.2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.130 - 0.81	3.2E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.95	2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.120 - 0.71	2.0E+00	NA				Yes	FD
		M,P-XYLENES	2.9	7.3	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.230 - 1.4	7.3E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	5.2	5.9	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.930 - 5.7	5.9E+00	NA				Yes	FD
	95-47-6	O-XYLENE	1	2.6	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.120 - 0.71	2.6E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	0.24	1.6	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.180 - 1.1	1.6E+00	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	10	570	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.100 - 0.62	5.7E+02	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	1.2	1.2	ug/m^3	OC-IA-LAC-AO-090806	1 / 3	0.140 - 0.88	1.2E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.5	3.2	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.150 - 0.92	3.2E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD. Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE 3-17 - Parcel South - Oncology Care
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.2	1.6	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.480 - 0.49	1.6E+00	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.2	0.23	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.120 - 0.13	2.3E-01	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	0.32	0.32	ug/m³	OC-IA-ONC-NS-090806	1 / 2	0.260 - 0.26	3.2E-01	NA	2.0E-02			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.39	0.39	ug/m³	OC-IA-ONC-NS-090806	1 / 2	0.380 - 0.39	3.9E-01	NA				Yes	FD
	67-64-1	ACETONE	95	99	ug/m³	OC-IA-ONC-NS-090806	2 / 2	3.800 - 3.8	9.9E+01	NA				Yes	FD
	71-43-2	BENZENE	1.1	1.2	ug/m³	OC-IA-ONC-AO-090806	2 / 2	0.500 - 0.51	1.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.5	0.52	ug/m³	OC-IA-ONC-AO-090806	2 / 2	0.400 - 0.4	5.2E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.57	0.66	ug/m³	OC-IA-ONC-AO-090806	2 / 2	0.310 - 0.31	6.6E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.9	3.4	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.310 - 0.32	3.4E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.94	1	ug/m³	OC-IA-ONC-AO-090806	2 / 2	0.270 - 0.28	1.0E+00	NA				Yes	FD
		M,P-XYLENES	3	3.1	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.550 - 0.56	3.1E+00	NA	1.0E+02			Yes	FD
	95-47-6	O-XYLENE	1.2	1.3	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.270 - 0.28	1.3E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	0.44	0.44	ug/m³	OC-IA-ONC-NS-090806	1 / 2	0.430 - 0.44	4.4E-01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	16	17	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.240 - 0.24	1.7E+01	NA	4.4E+01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.7	1.8	ug/m³	OC-IA-ONC-NS-090806	2 / 2	0.360 - 0.36	1.8E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE 3-18 - All Parcels
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Ambient Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Ambient Air
Exposure Medium:	Ambient Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Ambient Air															
	71-55-6	1,1,1-TRICHLOROETHANE	1.1466	1.1466	ug/m³	OC-AA-FS-08-051104	1 / 12	0.158 - 0.9828	1.1E+00	NA	2.3E+02 nc			Yes	FD
	79-34-5	1,1,2,2-TETRACHLOROETHANE	0.3916	0.3916	ug/m³	OC-AA-FS-03-051104	1 / 12	0.199 - 1.2366	3.9E-01	NA	3.3E-03 ca			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.7124	1.7618	ug/m³	OC-AA-FS-08-051104	7 / 12	0.222 - 1.3788	1.8E+00	NA	3.1E+03 nc			Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.131	0.6352	ug/m³	OC-AA-FS-08-051104	6 / 12	0.060 - 0.36524	6.4E-01	NA	2.1E+01 nc			Yes	FD
	95-50-1	1,2-DICHLOROBENZENE	0.2945	0.2945	ug/m³	OC-AA-FS-03-051104	1 / 12	0.174 - 1.0818	2.9E-01	NA	2.1E+01 nc			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.3907	0.3907	ug/m³	OC-AA-FS-03-051104	1 / 12	0.174 - 1.0818	3.9E-01	NA	3.1E-02 ca			Yes	FD
	67-64-1	ACETONE	14.28	3808	ug/m³	OC-AA-FS-15-051104	8 / 11	1.737 - 10.948	3.8E+03	NA	3.3E+02 nc			Yes	FD
	71-43-2	BENZENE	0.7975	1.0846	ug/m³	OC-AA-FS-04-051104	7 / 12	0.233 - 1.4674	1.1E+00	NA	2.5E-02 ca			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.4906	0.629	ug/m³	OC-AA-FS-03-091405	7 / 12	0.182 - 1.1322	6.3E-01	NA	1.3E-02 ca*			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.8315	3.3165	ug/m³	FS-12-051104,OC-AA-FS-24-	8 / 12	0.144 - 0.891	3.3E+00	NA	2.1E+01 nc			Yes	FD
	100-41-4	ETHYLBENZENE	0.434	0.9548	ug/m³	OC-AA-FS-04-051104	8 / 12	0.126 - 0.7812	9.5E-01	NA	1.1E+02 nc			Yes	FD
		M,P-XYLENES	1.302	3.1248	ug/m³	OC-AA-FS-04-051104	8 / 12	0.252 - 1.6058	3.1E+00	NA				Yes	FD
	75-09-2	METHYLENE CHLORIDE	2.082	2.082	ug/m³	OC-AA-FS-12-051104	1 / 12	1.006 - 6.246	2.1E+00	NA	4.1E-01 ca			Yes	FD
	95-47-6	O-XYLENE	0.434	1.1935	ug/m³	OC-AA-FS-04-051104	8 / 12	0.126 - 0.7812	1.2E+00	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	0.5424	1.8	ug/m³	OC-AA-FS-08-091405	7 / 12	0.197 - 1.2204	1.8E+00	NA	3.2E-02 ca			Yes	FD
	108-88-3	TOLUENE	3.6946	15.8	ug/m³	OC-AA-BIS-090806	9 / 12	0.109 - 0.6788	1.6E+01	NA	4.0E+01 nc			Yes	FD
	79-01-6	TRICHLOROETHENE	0.2255	1.1	ug/m³	OC-AA-FS-08-051104	5 / 12	0.156 - 0.9666	1.1E+00	NA	9.6E-02 ca			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.5736	1.967	ug/m³	OC-AA-FS-08-091405	8 / 12	0.183 - 1.0116	2.0E+00	NA	7.3E+01 nc			Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for ambient air (EPA 2004c) to account for additivity of multiple chemcials.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

Section 4

Section 4
Exposure Assessment

Populations that may be exposed to contaminants at a site and pathways by which these populations may come into contact with site contaminants are identified in the exposure assessment. In addition, methods used to quantify potential exposures are presented. The goal of the exposure assessment is to estimate reasonable maximum exposure (RME) and central tendency exposure (CTE) for populations that may be exposed to chemicals at the site. RME typically falls within the 90th to 99.9th percentile of possible exposures (EPA, 1993b), and is designed to fall among the highest exposures that are reasonably expected to occur. Estimates for RME typically form the basis for remedial decisions. CTE is based on more typical human behavior patterns. Estimates of CTE are generally used to evaluate uncertainties and obtain insights into the range of exposures that may occur.

The reminder of this section discusses evaluation of RME and CTE for people that may use the site currently or in the future after redevelopment. This section is divided into several subsections, as follows:

- Exposure Assessment Process (Section 4.1)
- Site Setting (Section 4.2)
- Site Conceptual Exposure Model (SCEM) (Section 4.3)
- Exposure Parameter Assumptions (Section 4.4)
- Exposure Point Concentrations (Section 4.5)
- Chemical Intake Equations (Section 4.6)

4.1 Exposure Assessment Process

Exposure is defined as human contact with a chemical or physical agent (EPA, 1989). Exposure assessment is the estimation of magnitude, frequency, duration, and pathway(s) of exposure to a chemical. Assessment of exposure consists of three steps:

- Characterization of Exposure Setting
- Identification of Exposure Pathways
- Quantification of Exposure

The first step of the exposure assessment involves identifying physical characteristics of a site and the current and potential future use of the site by people. These characteristics, along with concentrations and distributions of COPCs, define the exposure setting for current and future human receptors.

Step two of the exposure assessment identifies pathways by which people might be exposed to site-related chemicals. Chemical sources, release and transport mechanisms, and inter-media transfer are evaluated. Exposure pathways are identified based on the location and activities of potentially exposed human receptors and on the types of potentially contaminated media.

The final step, exposure quantification, has two components: estimation of exposure point concentrations and calculation of chemical intake. Exposure point concentrations are chemical concentrations at the point of human contact with site media such as soil and soil gas. Site-specific chemical data from site investigations are used to estimate chemical exposure point concentrations. Summary statistics for available site data, exposure point concentrations, and equations for estimating these concentrations are presented in the HHRA.

Results of the exposure assessment are documented in RAGS Part D Tables A3-0 to A3-9.11, provided in Appendix A-3.

Chemical intake is the amount of chemical contacted per unit of body weight per unit of time, generally expressed as milligrams (mg) of chemical intake per kilogram (kg) body weight per day. Chemical intake is calculated by combining pathway-specific exposure assumptions, such as frequency and duration of exposure, with exposure point concentrations. Pathway-specific exposure assumptions are presented herein; chemical intake calculations are included in appendices to this document. Pathway-specific exposure assumptions used to calculate intake are based on site-specific data (when available) and USEPA and/or CalEPA default exposure assumptions.

4.2 Site Setting

Included in the characterization of the exposure setting is a description of physical characteristics of the site and identification of current and potential future human populations on and near the site as they pertain to potential human exposure.

As previously discussed, the Omega site is located in a commercial/industrial area in Whittier, California. From 1976 to 1991, Omega Chemical Corporation operated a treatment and disposal facility for commercial and industrial solid and liquid wastes and a transfer station for storage and consolidation of wastes for shipment to other treatment and/or disposal facilities. In 2003, Van Owen Holdings LLC of Los Angeles, California purchased the property. Currently, two buildings (an office building and a warehouse) are located at the relatively flat Site, with concrete paving covering exterior areas. Star City Auto Body occupies the warehouse (12504 Whittier Blvd.) and performs auto body repair and painting on the premises. The auto body shop also leases the small paved parking lot north of the warehouse building for automobile parking. The former administrative building (12512 Whittier Blvd.) and larger paved parking area south of the warehouse have had a variety of tenants since 2003. The former administration building is currently unoccupied, and the parking lot is used for temporary storage of wooden pallets by L&M Pallets on a month-to-month lease basis.

One commercial property (formerly Skateland) and two industrial properties (Medlin & Son and Terra Pave) are immediately adjacent to the Site (southeastern, northwestern, and southwestern boundaries, respectively). The northeastern boundary of the Site is bordered by Whittier Boulevard and a frontage road. The former Skateland facility, located at 12520 Whittier Boulevard, formerly had an indoor roller skating rink building that was demolished April 4, 2007. The Medlin & Son (former Cal-Air facility) facility, located at 12484 Whittier Boulevard, is operated as a machine shop (screw machines, lathes and mills, tapping and threading, saw cutting, welding, etc.).

The Terra Pave, Inc. facility, located at 12511 East Putnam Street, is utilized by a paving contractor. The property is utilized for temporary storage of asphalt paving materials for various job sites. Terra Pave also utilizes the property to park and maintain a variety of support vehicles and heavy-duty paving equipment. New England Lead Burning Company (NELCO), previously operated on the Terra Pave site in the mid-1950s. According to a Phase 1 Environmental Site Assessment (ESA) Report of the property prepared by Cardinal Environmental Consultants (Cardinal) on September 11, 1991, NELCO purchased lead in sheets, pipe and solid rods and fabricated the desired product by burning (welding) the lead to the required shape. NELCO subcontracted Vector Three Environmental Inc. of Brea, California, to clean the interior of all facilities and remove superficial lead from the topsoil. Remedial activities were monitored by Cardinal staff and confirmatory dust wipe and soil samples confirmed that remaining lead levels were very low. Environmental reports and sampling results were not available for review; therefore, lead levels prior to and after remediation and the depth of the soils removal are unknown.

Both current and future land use are evaluated in the selection of potential human receptors (EPA, 1991a). As described above, the Site is currently used for industrial purposes and will likely remain industrial or commercial in the future given the site surroundings of commercial/industrial use. The Site has never been used for residential purposes in the past, and given its zoning, it is unlikely that it will be used for residential purposes in the future. The City intends to allow redevelopment that consists of commercial and retail uses with the construction of multi-level buildings. Specifically, City representatives have stated that it is unlikely that the Omega property will be redeveloped for residential uses (Adams, 2007 – provided as Appendix C), although the zoning of the site as the Whittier Boulevard Specific Plan-Workplace District allows for Live/Work units and multi-family housing. Therefore, a residential scenario is included in the analysis to provide additional information to the risk manager.

During an August 2006 groundwater sampling event, groundwater underlying the Site was measured at a depth of approximately 75 feet below ground surface. A fine-grained unit exists starting at about 30 feet bgs. Currently, groundwater underlying the Site and in the immediate area is not used for domestic, industrial, or agricultural

purposes. The nearest active downgradient water supply wells are located more than one mile from the former Omega Chemical property. The closest active well (well 30R3) is located on Dice Road by Burke Street, approximately 1.25 miles downgradient of the former Omega Chemical property. This well is screened from 200 to 900 feet bgs and at least two aquitards appear to be present between the shallowest aquifer and the top of the well screen. Future use of groundwater for potable purposes is also unlikely due to high concentrations of TDS (Table 1-1). No evidence suggests that contamination extends to any potable aquifer that underlies the Gage unit.

4.3 Site Conceptual Exposure Model

The site conceptual exposure model (SCEM) presented in this HHRA is consistent with the final On-site Soils Remedial Investigation/Feasibility Study Work Plan dated September 29, 2003 and describes the potential exposure pathways associated with the site, including potential sources of contamination, transport mechanisms, exposure routes, and potentially exposed populations. An exposure scenario consists of a potentially exposed population and one or more exposure pathways by which the receptor population may contact contaminants associated with a site. Only exposure pathways likely to be complete and to contribute significantly to overall exposure are evaluated quantitatively in the HHRA.

A complete exposure pathway consists of the following four elements:

- A source and mechanism of release of chemicals to the environment
- A transport medium for the released chemical
- An exposure point (the point of potential contact between receptor and medium)
- An exposure route (e.g., inhalation, ingestion)

If one or more of these elements are missing, the pathway is incomplete. Incomplete pathways are not quantitatively evaluated. Potentially complete pathways that are unlikely to contribute significantly to overall exposure are also not quantitatively evaluated. Therefore, an analysis of exposure pathways is included to identify those complete and significant exposure pathways that may be important for risk management decisions.

Sources of contamination, mechanisms of contaminant release from sources, and subsequent transport of contaminants through the environment are examined in this section to identify potentially contaminated media at the site. Potential exposure pathways for human receptors are discussed in subsequent sections.

The SCEM for the site, illustrated in Figure 4-1, highlights pathways that are assumed potentially complete and significant. Chemical migration from soil to groundwater and subsequent exposure of people to chemicals in groundwater is not addressed.

Complete exposure pathways shown in the SCEM (Figure 4-1) are summarized in Table 4-1.

4.3.1 Potentially Exposed Populations

The overall scope of the analysis is graphically illustrated in the SCEM for soils at the Omega Site (Figure 4-1). The SCEM includes theoretically feasible exposures and provides a basis for discussing the likelihood and importance of potential exposure pathways at the site. As illustrated in the SCEM, potentially exposed populations are assumed to be a future on-site resident, current and future on-site and off-site indoor industrial workers, future on-site outdoor industrial workers, and a future on-site construction worker.

4.3.1.1 Hypothetical Future Residents

Hypothetical future residents that were evaluated include an adult resident, a child resident (ages 1 to 6 year old), and an adult+child resident to represent a child that remains in the area from childhood through adulthood. Potentially complete exposure pathways for residents consist of incidental ingestion of surface and subsurface soil (to 10 feet bgs) following direct contact and subsequent hand-to-mouth activities and/or dermal absorption of contaminants from soil adhered to skin surface as well as inhalation of airborne particulates from surface soil. Exposure may also occur via inhalation of VOCs in soil gas that intrudes into indoor air and in ambient air. All of these potential exposures are quantitatively evaluated for hypothetical future residents.

If the site were redeveloped for residential development, some subsurface soils may be brought to the surface during grading activities. However, typical construction in the area is slab-on-grade resulting in minimal disturbance of deeper soils. The assumption that soils as deep as 12 feet bgs might be brought to the surface during site redevelopment is likely to overestimate the degree of soil disturbance likely if new buildings are erected at the site.

4.3.1.2 Commercial/Industrial Workers

Potentially complete exposure pathways for current commercial/industrial workers consist of incidental ingestion of surface soil (to 2.2 feet bgs) following contact and subsequent hand-to-mouth activities[3], incidental ingestion of dust tracked from surface into buildings, and inhalation of contaminants released from soil into air through wind or dust-generating activities (e.g., use of vehicles).

[3] Under current conditions, much of the site is paved or otherwise covered by buildings or concrete. As such, this ingestion pathway is only applicable if the site is redeveloped in the future to remove buildings or pavement, thereby exposing commercial/industrial workers to bare soil.

Commercial/industrial workers could also be exposed through dermal contact with soil and interior dust and inhalation of soil gas accumulating indoors and inhalation of ambient air. Dermal exposure pathways are not expected to contribute significantly to overall exposure; however, this pathway is quantitatively evaluated. Incidental ingestion of surface soil and indoor dust and inhalation of soil gas in indoor air are also evaluated.

If the site were redeveloped in the future, some subsurface soils may be brought to the surface during grading activities. Although typical construction in the area is slab-on-grade resulting in minimal disturbance of deeper soils, future commercial/industrial workers were evaluated using deeper subsurface soils (to 12 feet bgs).

Because future development is unknown, a future outdoor industrial worker was evaluated to provide a range of potential exposures for the industrial worker. Future outdoor industrial workers were evaluated for the same exposure pathways as the indoor industrial worker with the exception of indoor air inhalation. Future outdoor industrial workers were assumed to spend all of their time outdoors.

4.3.1.3 Construction Workers

Potentially complete exposure pathways for construction workers consist of incidental ingestion of surface and subsurface soil following contact and subsequent hand-to-mouth activities, inhalation of fugitive dust through wind or dust-generating activities (e.g., use of vehicles, drilling, digging), and inhalation of contaminants released from soil gas into an excavation. Workers could also be exposed through dermal contact with soil and fugitive dust. All of these pathways are quantitatively addressed.

4.3.2 Potential Exposure Pathways

As discussed above, an exposure pathway generally consists of a chemical source, mechanism for release and transport, a point of exposure to the contaminated medium, and a route of exposure into the receptor. The absence of any one of these elements would result in an incomplete exposure pathway. Further, if one of these steps is very inefficient, exposure potential may be negligible, even though the pathway is theoretically complete. Potential exposure pathways are therefore identified in the SCEM and evaluated to determine whether they are complete and significant. The SCEM (Figure 4-1) identifies those complete pathways that may represent significant potential for exposure and are therefore the focus of the HHRA. As described above, receptors of concern include residents, commercial/industrial indoor and outdoor workers, and construction workers.

4.3.2.1 Ingestion and Dermal Contact with Groundwater

Currently, groundwater within the contaminant area (Gage unit) is not used for domestic, industrial, or agricultural purposes. Future use of groundwater for potable purposes is also unlikely due to high concentrations of TDS (Table 1-1). No evidence suggests that contamination extends to any potable aquifer that underlies the Gage

unit. If future data collection indicates that downward vertical migration has occurred, then future risk evaluations will need to address a potential drinking water pathway. Potential on-site contaminant migration to groundwater is evaluated in the On-Site Soils Remedial Investigation Report. Risks associated with potential domestic use of the contaminated groundwater plume will be evaluated in the EPA Site-wide Risk Assessment Report. Currently, this groundwater exposure pathway for ingestion is incomplete for all potential receptors.

Groundwater is 70 feet below ground surface and construction workers will not encounter groundwater in their excavations. Currently, this groundwater exposure pathway for dermal contact is also incomplete.

4.3.2.2 Incidental Ingestion and Dermal Contact with Contaminated Surface Soil and Inhalation of Particulates Released from Surface Soil

Soils at the site contain elevated levels of some chemicals as a result of past practices and activities. Currently, surface soils at the site, for the most part, are not exposed because the site is mostly covered with asphalt pavement, buildings, or other structures. Direct contact with contaminants in surface soils is likely minimal. However, for the purposes of the HHRA, the site is assumed to be uncovered (unpaved) and direct exposure to COPCs in surface soil could occur.

If areas with contaminated surface soils are left uncovered following theoretical future redevelopment, future on-site commercial/industrial workers and hypothetical future residents may contact surface soils. Potentially complete and significant pathways through which future on-site commercial/industrial workers and hypothetical future residents may contact surface soils consist of incidental ingestion, dermal contact, and inhalation of particulates released from surface soils into ambient air.

Furthermore, if the pavement and buildings at the site are removed during construction, contaminated soils may be uncovered. Future on-site construction workers may incidentally ingest and dermally contact contaminants in surface soils and may inhale particulates released from surface soils. Although these exposures are unlikely to be significant given the duration of construction activities, they will be evaluated to provide the risk manager with additional information.

4.3.2.3 Incidental Ingestion of Subsurface Soils, Dermal Contact with Subsurface Soils, and Inhalation of Particulates Released from Subsurface Soils

If the site is redeveloped in the future, future on-site construction workers, future industrial workers, and hypothetical future residents may contact contaminated subsurface soils. Construction workers may incidentally ingest and dermally contact contaminants in subsurface soils and may inhale particulates released from subsurface soils into ambient air. Hypothetical future residents and future industrial workers are assumed to be exposed to subsurface soils brought to the surface during site redevelopment and may inhale particulates released from subsurface soils.

4.3.2.4 Inhalation of Contaminants in Indoor Air

Contaminants released from contaminated soil into soil gas above the 30-foot unit may migrate below buildings and migrate indoors through foundation cracks. People working or recreating indoors in these buildings may inhale contaminants in indoor air. Because dilution of air inside buildings occurs less rapidly than that in ambient air, some accumulation of contaminants is possible where high concentrations of VOCs are present in the subsurface below buildings. In addition, heating systems can, in theory, create a negative pressure that can enhance flow of soil gas into buildings. The indoor air pathway is theoretically complete for current and future commercial/industrial workers and hypothetical future residents. Quantitative risk estimates for current commercial/industrial workers are based on measured VOC concentrations in indoor air in buildings onsite and adjacent to the site. Indoor air data collected from the former Skateland building were considered to be irrelevant since this building was demolished on April 4, 2007.

Future commercial/industrial workers were quantitatively evaluated for indoor air exposure using measured soil gas results collected from 5 to 6 feet bgs for All Parcels. Hypothetical future residents were quantitatively evaluated using this same approach except using the soil gas results from the Site Parcel and the Other Parcels. The methodology for this evaluation is further described in Section 4.4.2.4. VOCs in groundwater could also volatilize to soil gas and migrate to indoor air. Also, any VOCs originating from groundwater would be reflected in shallow soil gas samples collected at the site, and any VOCs intruding into buildings would be reflected in indoor air samples collected within these buildings.

4.3.2.5 Inhalation of Indoor Air – Volatilization during Groundwater Use

As noted above, groundwater underlying the Site and in the immediate vicinity is currently not used for any purpose nor is it likely to be used for potable use in the future due to high concentrations of TDS (Table 1-1). This groundwater exposure pathway is currently incomplete. Potential on-site contaminant migration to groundwater is evaluated in the On-Site Soils Remedial Investigation Report. Risks associated with potential domestic use of the contaminated groundwater plume will be evaluated in the EPA Site-wide Risk Assessment Report.

4.3.2.6 Inhalation of Ambient Air

Volatile COPCs in the subsurface could migrate to the surface and be released to ambient air. Construction workers and on-site industrial workers who are outdoors could inhale these chemicals. Release of vapors does not require excavation or exposure of contaminated soils to air. Vapors may migrate through the vadose zone to the surface and be released as a consequence of barometric pumping and diffusion.

Ambient air exposures for commercial/industrial workers, however, are greatly reduced by barriers to vapor migration such as buildings or pavement that currently

cover portions of the site, or could be placed on the site if redeveloped. Furthermore, because the atmosphere outside has no boundaries, any vapors that rise to surface and are released to ambient air will be quickly dispersed and concentrations would be low. Vapors migrating to indoor air are likely to present a more important exposure pathway for commercial/industrial workers and hypothetical future residents because they will spend large amounts of time indoors, and because the building and foundation represent a "trap" for migrating gases. However, commercial/industrial workers were evaluated for exposure to ambient air to provide information regarding the range of exposures. The inhalation of ambient air pathway was not evaluated for hypothetical future residents because 24-hour exposure to indoor air was assumed to provide a more conservative estimate of exposure.

Future excavation would not only remove this hardscape, but would also penetrate into the subsurface where the highest concentrations of VOCs in soil gas are observed. Release of VOCs to ambient air in an excavation is therefore also evaluated quantitatively for future construction workers.

Because measured ambient air concentrations are not likely to represent future ambient air concentrations, ambient air exposure was evaluated using measure soil gas concentrations modeled to provide ambient air concentrations. The methodology for this evaluation is further described in Section 4.4.2.4.

4.4 Exposure Parameter Assumptions

Exposure assumptions for the receptors and exposure pathways of concern are discussed below and presented in Table 4-2. A number of exposure assumptions apply to most or all exposure pathways and are discussed separately. The following sections provide pathway-specific and general exposure assumptions developed from site-specific and EPA default exposure information.

4.4.1 General Exposure Assumptions

4.4.1.1 Body Weight

In accordance with U.S. EPA guidance (1989), the value for body weight is the average weight of the receptor over the exposure period. For estimating exposures for adult residents, commercial/industrial workers and construction workers, a body weight of 70 kg is used as recommended by U.S. EPA (1989, 1991) and Cal EPA (1992, 2005c). A body weight of 15 kg is used for a child resident (CalEPA 1999).

4.4.1.2 Body Surface Area

An adult resident is assumed to wear a short-sleeved shirt, shorts and shoes, thereby exposing face, hands, forearms and lower legs. This results in a skin surface area available for contact of 5,700 cm^2/event (CalEPA, 2005c). A child resident is assumed to wear a short-sleeved shirt and shorts (no shoes), thereby exposing face, hands, forearms, lower legs, and feet. This results in a skin surface area available for contact of 2,900 cm^2/event (CalEPA, 2005d).

For commercial/industrial and construction workers, a total body surface area that is dermally exposed is assumed to be 3,300 cm^2/event (EPA, 2001; CalEPA, 2005c;). This surface area basically assumes that arms, hands and head will all be exposed at each event. Cooler weather or work that does not involve excavation, grading or other soil moving activities would likely result in lesser exposure. The dermal adherence factor or contact rate is assumed to be 0.8 mg/cm^2 for the construction worker(CalEPA, 2005e). The dermal adherence factor or contact rate for commercial/industrial workers is assumed to be 0.2 mg/cm^2 (CalEPA, 2005). These rates are estimates of soil adherence to skin and varies based on moisture content, part of the body, and type of activity.

4.4.1.3 Averaging Time

Averaging time is the period in days over which intake is averaged. For noncarcinogenic chemicals, intakes are averaged over the exposure duration (exposure duration [years] * 365 days/year). For carcinogens, intake calculations average the total cumulative dose over a lifetime (70 years * 365 days/year). Averaging times differ for carcinogens and noncarcinogens because the effects of carcinogenic chemicals are assumed to have no threshold. Therefore, any exposure to a carcinogen carries a finite risk of cancer during the individual's lifetime. Within reason, this means that a single large exposure to a carcinogen is expected to carry the same risk as the same dose divided into many small exposures. Therefore, carcinogen intakes are expressed in terms of lifetime exposures, regardless of the actual exposure duration (EPA, 1989).

4.4.1.4 Exposure Frequency

The exposure frequency is the number of days per year that an individual participates in a particular activity. For the residential scenario, the exposure frequency is 350 days per year. For the commercial/industrial indoor worker scenario, the exposure frequency is 250 days per year (EPA, 1989; CalEPA 2005c). For the commercial/industrial outdoor worker scenario, the exposure frequency is 225 days per year (EPA, 2002).

Given the relatively small size of the site (less than an acre), construction workers would not work in an excavation or with exposed soils for the entire duration of construction; therefore, the exposure frequency for CTE construction workers was assumed to be 60 days per year. This frequency is the equivalent to about 12 weeks or 3 months of construction time spent entirely within an excavation. However, to provide a range of potential exposure for the construction worker, the RME construction worker will be evaluated for an exposure frequency of 250 days.

4.4.1.5 Exposure Duration

Exposure duration is the number of years over which exposure may occur. For the residential scenario, the exposure duration is 30 years for an adult and 6 years for a child. For the adult+child scenario, the exposure duration is 24 years as an adult and 6 years as a child. For the commercial/industrial worker, an exposure duration of 25

years is used (EPA, 1997; CalEPA, 2005c). For construction workers, an exposure duration of 1 year was assumed. This duration is a typical construction period for a building or home and is reasonable for the 1-acre lot size.

4.4.1.6 Exposure Time

Exposure time is the number of hours per day spent at the site. For adult and child residents, the exposure time indoors is assumed to be 24 hours per day. For the commercial/industrial worker, an exposure time of 8 hours is used to represent the typical workday. Commercial/industrial indoor workers are assumed to spend an additional 1 hour outdoors inhaling ambient air. For the construction worker, an exposure time of 10 hours is used to represent the typical workday.

4.4.2 Pathway-Specific Exposure Assumptions

Several exposure parameters apply to specific exposure pathways and are described below.

4.4.2.1 Soil and Interior Dust Ingestion

A soil ingestion rate of 200 mg per day is used for the child resident. A soil ingestion rate of 100 mg per day is used for the adult resident and the RME commercial/industrial indoor worker scenario (CalEPA, 2005c). A CTE ingestion rate of 50 mg per day is used for the commercial/industrial indoor worker to address some potential variability in this factor (EPA 2002). Since commercial/industrial outdoor workers are likely to ingest more soil than indoor workers, a CTE ingestion rate of 100 mg per day (EPA 2002) and an RME ingestion rate of 150 mg per day is used for the commercial/industrial outdoor worker to provide a range of potential exposures.

There is no standard ingestion rate for construction workers. To address the potential variability in this factor, RME and CTE scenarios were developed. CTE and the RME soil ingestion rates of 100 and 330 mg per day, respectively, are used for the construction worker (EPA 1997; EPA 2002). The CTE ingestion rate of 100 mg per day is equivalent to the common default value used by both DTSC and EPA for an adult. The RME ingestion rate of 330 mg per day is the default ingestion rate used for a construction worker in the EPA soil screening level guidance (EPA 2002).

4.4.2.2 Inhalation of Fugitive Dust

The inhalation rate used for adult residents is 20 m^3 per day, which is equivalent to 0.83 m^3 per hour. The inhalation rate used for child residents is 10 m^3 per day, which is equivalent to 0.42 m^3 per hour (CalEPA, 2005d).

The inhalation rate used for adult commercial/industrial indoor workers under the RME scenario is 15.2 m^3 per work day, which is equivalent to 1.9 m^3 per hour over an 8-hour work day (EPA, 1997). This 1.9 m^3/hr represents the inhalation rate of an adult male involved in moderate activities, such as major indoor repairs and alteration and climbing stairs. It seems overly conservative to assume that all commercial/industrial

workers would be engaged in such a high level of activity for the entire 8-hour work day. To address some potential variability in this factor, an inhalation rate of 1.2 m^3 per hour, which is equivalent to light activity for an adult male (EPA 1997) is used for the commercial/industrial indoor workers under the CTE scenario.

Since commercial/industrial outdoor workers are likely to be more active than indoor workers, the inhalation rate for a commercial/industrial outdoor worker under the CTE scenario is 15.2 m^3 per work day, which is equivalent to 1.9 m^3 per hour over an 8-hour work day (EPA, 1997). This 1.9 m^3/hr represents the inhalation rate of an adult male involved in moderate activities, such as major indoor repairs and alteration and climbing stairs. Under the RME scenario, an inhalation rate of 2.5 m^3 per hour is used to provide a range assuming more activity.

No standard inhalation rates are available for construction workers. To address the potential variability in this factor, RME and CTE scenarios were developed. The CTE and RME inhalation rates used for adult construction workers are 2.5 and 4.8 m^3 per hour, respectively (EPA, 1997). This 2.5 m^3 per hour estimate is based on the inhalation rate of an adult male involved in moderate activities, such as major indoor repairs and alterations and climbing stairs. The 4.8 m^3 per hour estimate is based on the inhalation rate of an adult male involved in heavy activities, such as vigorous physical exercise and climbing stairs while carrying a load. Activities listed are only examples of the level of effort for different inhalation rates. Outdoor construction workers would be engaged in other tasks, but the level of effort implied is still appropriate. Since it is unlikely that a construction worker will be engaged in these levels of activities for their entire 10-hour workday for every workday of the year, use of these inhalation estimates is assumed to be conservative.

4.4.2.3 Inhalation of Indoor Air

Inhalation of indoor air was evaluated for current commercial/industrial workers using measured indoor air concentrations to directly estimate risk related to indoor air exposure. For future commercial/industrial workers and for hypothetical on-site future residents, risk estimates were based on measured concentrations of VOCs in soil gas modeled to represent indoor air concentrations. The USEPA advanced soil gas spreadsheet implementation of (Windows™ - Excel) the Johnson and Ettinger vapor intrusion model (SG_ADV_Feb04.xls last modified February, 2004) was used to estimate potential indoor air concentrations from soil gas concentrations by calculating flux of chemicals through a foundation, taking into account building size and ventilation. Site-specific criteria entered into the model are as follows (and summarized in Table 4-3):

- Soil gas data from only the shallow depths sampled (5 to 6 feet bgs) were used because soil gas from the shallow portion of the vadose zone would be the most likely to migrate into onsite buildings. For the model soil gas sample depth was assumed to be 5 feet bgs.

- An average soil temperature of 67°F (19.4°C) was assumed per Figure A-1 in DTSC Indoor Air Guidance (Feb. 2005)

- Site soil was assumed to be loam soil, to be conservative and health-protective.

- For a commercial/industrial worker, the model was adjusted to account for an exposure frequency and duration of 250 days per year and 25 years, respectively, to represent a typical commercial worker. Standard default values of exposure time of 24 hours per day, exposure frequency of 350 days per year, and exposure duration of 30 years were used for the residential scenario.

- For a commercial/industrial worker, the model was adjusted to account for an exposure time of 18.24 hrs to adjust the model for the commercial/industrial worker inhalation rate of 15.2 m^3/d compared to the 20 m^3/day that the model assumes for residents.

- Toxicity criteria were updated using the online Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database[4] and the online USEPA Integrated Risk Information System (IRIS)[5] database.

- For a commercial worker, the exchange rate was changed to a value of 1.0 air exchanges per hour. This value is consistent with the minimal ventilation requirements per the 2001 Energy Efficiency Standards for Nonresidential Buildings.[6] This ventilation rate is appropriate for a new commercial/industrial facility building. Standard default value for the exchange rate (0.5 air exchanges per hour) was used for the residential scenario.

- The enclosed space height for the commercial worker was assumed to be 276 cm to represent a 9-foot ceiling, while 244 cm was used for residents to represent an 8-foot ceiling.

Other model input parameters include the physical/chemical properties of COPCs. Chemical properties (such as air and water diffusivities and Henry's law constants) were either found in the model, researched for inclusion in the model or calculated using the references provided in the user's guide for the Johnson and Ettinger Model (USEPA, 2004). Model defaults were used when site specific values were not available. Johnson and Ettinger calculations are provided in Appendix A-4.

The building concentration ($C_{building}$) reported on the INTERCALCs sheet of the J&E model was used as the indoor air concentration that the receptor is exposed to indoors and was used in the RAGS D Tables.

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[4] http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
[5] http://www.epa.gov/iris/subst/index.html
[6] California Energy Commission 2001. Manual for Compliance with the 2001 Energy Efficiency Standards for Nonresidential Buildings, High-rise Residential Buildings, and Hotels/Motels). Document No P400-01-032. August.

4.4.2.4 Inhalation of Ambient Air

Ambient Air - Chronic Exposure Scenario

Karami, et al. (1987) along with the USEPA Draft Soil Screening Guidance (1994) were used to estimate ambient air concentrations for chronic exposure scenarios (residents and commercial workers). According to Karami, et al. (1987), assuming that the concentration at the surface is very small, vapor flux through soil can be estimated using the equation (see Table 4-4 for definitions of the variables in the following equations):

$$J = -D_s \times (-C_s)/L \qquad \text{(Eqn. 1-1)}$$

Where

$$D_s = D_i (P_a^{10/3}/P_t^2) \qquad \text{(Eqn. 1-2)}$$

$$P_a = P_t - P_w \qquad \text{(Eqn. 1-3)}$$

The emission rate of the site can then be calculated by:

$$E = J \times A_{site} \qquad \text{(Eqn. 1-4)}$$

Assuming a simple box model, the ambient air concentration can then be calculated using the following equation:

$$C_{air} = E / (L_s \times V \times D_H) \qquad \text{(Eqn. 1-5)}$$

Proposed parameters (default and site-specific) for use in the equations are provided in Table 4-4. Calculations for ambient air from soil gas for the chronic scenarios are provided in Appendix A-5, Tables A5-1 through A5-6. The results are provided in the exposure concentration tables presented in Section 4.5.

Ambient Air - Short-term Exposure Scenario

For estimating ambient air concentrations for short-term exposure scenario (construction worker), the same methodology used to calculate ambient air for the chronic exposure described above was used. For the construction worker, it was assumed that contamination extended from the surface to the 30-foot unit, therefore, the 95 UCL for soil gas concentrations ranging from 5 to 30 feet deep for samples were used. The low of the range (5 feet) was used as the depth of the soil layer in the flux calculation to be conservative.

Proposed parameters (default and site-specific) for use in the equations for the short term scenario are provided in Table 4-5. Calculations for ambient air from soil gas for the subchronic scenarios are provided in Appendix A-5, Tables A5-7 through A5-12. The resulting ambient air concentrations are provided in the exposure concentration tables presented in Section 4.5.

4.4.2.5 Exposure to Lead

Risks for lead were evaluated using EPA's Adult Lead Methodology for occupational exposures and the DTSC Leadspread model for residential exposures.

EPA Adult Lead Model

Risks for lead were evaluated using EPA's Adult Lead Methodology for occupational exposures and comparing to the threshold level of no more than 5 percent probability of blood lead levels exceeding 10 µg/dL. The EPA Adult Lead Methodology was used for occupational exposures instead of the DTSC Leadspread model because EPA Adult Lead Methodology includes a calculation for blood lead levels for an adult worker fetus.

Some key assumptions made in the EPA Adult Lead Methodology include:

- Exposure duration for commercial/industrial worker and the RME construction worker was revised to reflect 250 days per year.
- Exposure concentration for lead in soil was assumed to be 65.4 mg/kg (95% UCL for lead as shown in Table 4-6 for surface soil) for current commercial/industrial workers and 59.9 mg/kg (as shown in Table 4-7 for surface and subsurface soil to 12 feet bgs) for future commercial/industrial workers; and for the RME construction worker.

Default values were used for the remaining model parameters.

Lead calculations are presented in Appendix A-2A. Risks from lead exposure are not calculated for the CTE construction worker. A relatively constant lead intake over a minimum of 90 days, possibly more, is necessary to achieve a new quasi-steady state blood lead concentration and the exposure duration of the construction worker was estimated to be only 60 days. The Adult Lead Methodology is not capable of resolving such temporal effects. However, risks from lead exposure are calculated for the RME construction worker.

DTSC Leadspread Model

VOC transport from the subsurface to indoor air was modeled using the USEPA Lead concentrations in air and soil were evaluated using the most current available version of the Leadspread lead risk assessment spreadsheet (v. 7.0) provided by the DTSC (2000). The following assumptions were made for this model:

- Lead concentration in drinking water at the site was assumed to be equivalent to the California maximum contaminant level (MCL) (15 ug/L).
- Lead concentration in air was assumed to be 0.028 ug/m^3, the default average air concentration.

- Maximum lead concentration detected in the soil samples from this investigation was assumed to be the exposure concentration calculated for the lead in surface and subsurface soil from 0 to 12 feet bgs (59.9 mg/kg).

- Leadspread default values were used for the remaining model parameters.

Leadspread results for the hypothetical future residents are presented in Appendix A-2B.

4.5 Exposure Point Concentrations

Exposure point concentrations are estimated chemical concentrations a receptor will contact over an exposure period. Because of the uncertainty associated with any estimate of exposure, 95 percent upper confidence levels (UCLs) of the arithmetic mean are generally used as exposure point concentrations. Exposure point concentrations are calculated appropriately as 95 percent UCL of the arithmetic mean only when associated with an exposure unit within which exposures can reasonably be assumed to occur randomly. Exposure point concentrations are estimated using this approach for all COPCs for each exposure media identified for the site. EPA's statistical program *ProUCL*(EPA, 2001), were used to test data distributions and to compute UCLs of population means. For these calculations, non-detects were assumed to be equivalent to half of the detection limit. For datasets with less than 5 samples, the number of samples was too few to calculate a UCL and the maximum detected concentration was used as the exposure point concentration. Exposure point concentrations for all datasets assessed quantitatively are summarized in Tables 4-6 through 4-25.

Exposure point concentrations for measured indoor air concentrations were not determined using UCL calculations due to the small number of samples and nature of indoor air concentrations. Instead, minimum and maximum detections within each building were used as the indoor air exposure point concentrations. This approach assumes that some partitioning of air might occur within buildings and therefore that each data point might represent an exposure point concentration for workers in different locations within a building. Use of minimum and maximum concentrations might then be interpreted to provide a range of possible exposures and risks that might occur concurrently. Indoor air EPCs are provided on Tables 4-8 to 4-15.

Soil gas concentrations were used in the Johnson and Ettinger model to estimate indoor air exposure concentrations. The indoor air model results are provided in Tables 4-17 to 4-20. Johnson and Ettinger calculations are provided in Appendix A-4. Ambient air calculations are provided in Appendix A-6. These results are presented in Tables 4-21 to 4-25.

4.6 Chemical Intake

The amount of chemical that is taken into a person's body following exposure is referred to as chemical intake. Intake is expressed in units of milligrams of chemical

per kilogram of body weight per day (mg/kg-day), and is referred to as chronic daily intake (CDI). CDI depends on the concentration of chemicals in media at the point of human contact (exposure point concentration), and exposure assumptions specific to the receptor population, including frequency and duration of exposure, body weight, and contact rate. EPA guidance indicates that exposure assumptions should be chosen so that their combination results in an estimate of the reasonable maximum exposure (RME) for the exposure pathway. RME is the highest exposure that is within the range of possible exposures at the site (EPA, 1989). RME is designed to be conservative yet designed to prevent unrealistic, or "worst case" estimates from serving as the basis of risk management decisions. A range of exposure estimates is provided by estimating the central tendency exposure (CTE) for each exposure pathway. CTE uses exposure assumptions that predict an average exposure to an individual. Presentation of both the RME and CTE risks for the site provides the risk manager with a range of potential risks.

CDI are calculated using exposure point concentrations for the media of concern and the exposure assumptions described in Section 3. CDIs are estimated for each selected exposure pathway. The equations used to calculate CDIs for each exposure pathway are shown below.

4.6.1 Ingestion of Soils and Interior Dust

To determine CDIs associated with incidental ingestion of chemicals in solid media (e.g., surface soils and interior dust), the following equation is used (EPA, 1989).

$$CDI\ (mg/kgday) = \frac{CS \times IR \times CF \times FI \times EF \times ED \times BAF}{BW \times AT}$$

Where:

CDI	=	Chronic Daily Intake ((mg/kg)/day)
CS	=	Chemical Concentration in Soil or Dust (mg/kg)
IR	=	Ingestion Rate (mg/day)
CF	=	Conversion Factor (10^{-6} kg/mg)
FI	=	Fraction Ingested from Contaminated Source (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
BAF	=	Bioavailability Factor for COPC in Soil or Dust (unitless)
BW	=	Body Weight (kg)

AT = Averaging Time (days)

4.6.2 Dermal Contact with Soils and Interior Dust

To determine CDIs associated with dermal contact with chemicals in solid media (e.g., surface soils and interior dust), the following equation is used (EPA, 1989).

$$CDI\ (mg/kgday) = \frac{CS\ x\ SA\ x\ AF\ x\ ABS\ x\ CF\ x\ EF\ x\ ED}{BW\ x\ AT}$$

Where:

CDI = Chronic Daily Intake ((mg/kg)/day)

CS = Chemical Concentration in Soil or Dust (mg/kg)

SA = Skin surface area exposed (cm^2)

AF = Soil to skin adherence factor (mg/cm^2)

ABS = Absorption fraction of chemical from soil

CF = Conversion Factor (10^{-6} kg/mg)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

4.6.3 Inhalation of Fugitive Dust, Indoor Air, or Ambient Air

To determine CDIs associated with inhalation of COPCs in fugitive dust, indoor air or ambient air, the following equation is used (EPA, 1989).

$$CDI\ (mg/kgday) = \frac{CA\ x\ IhR\ x\ ET\ x\ EF\ x\ ED}{BW\ x\ AT}$$

Where:

CDI = Chronic Daily Intake ((mg/kg)/day)

CA = Chemical Concentration in Air (mg/m^3)

ET = Exposure Time (hours/day)

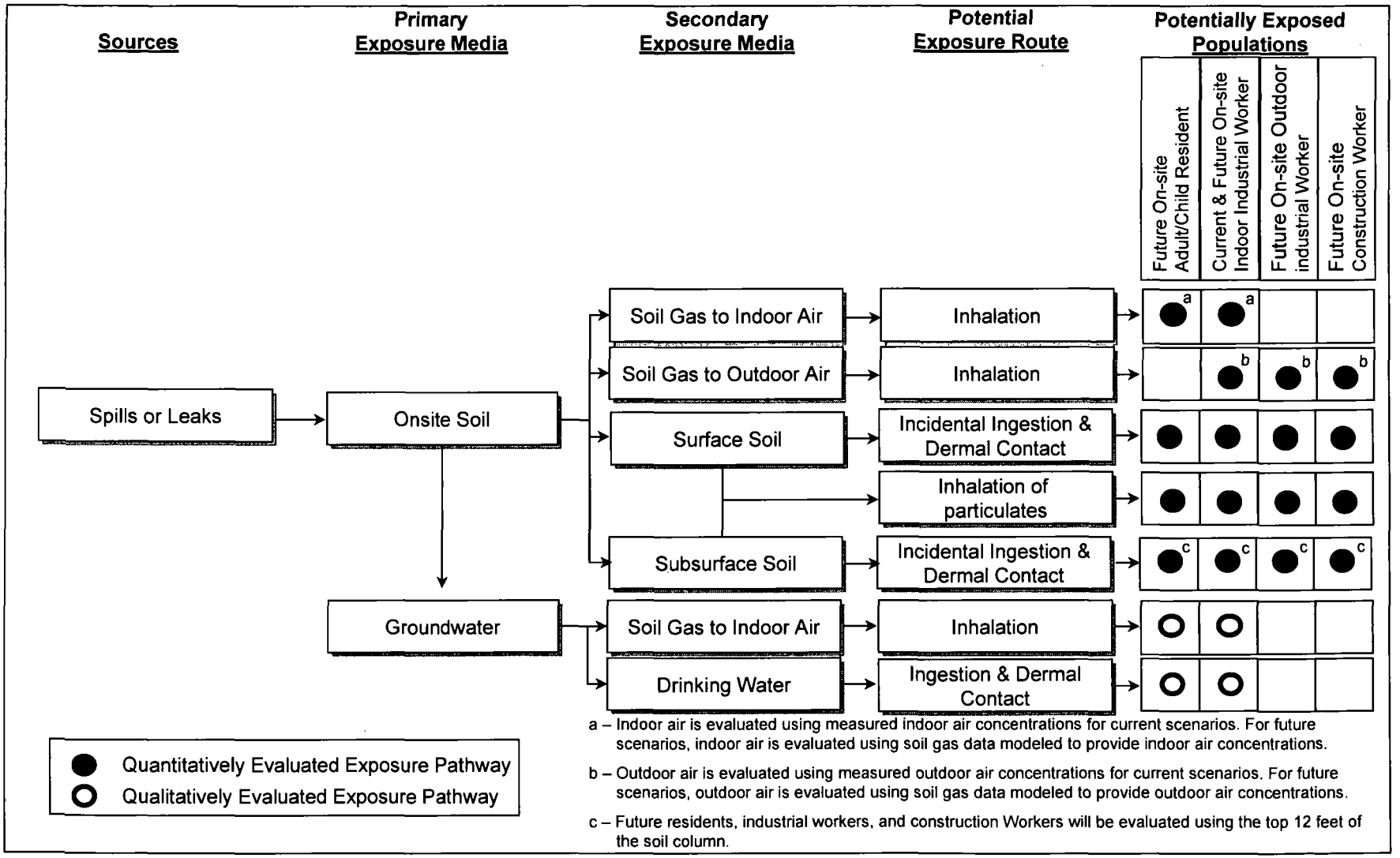
IhR = Inhalation Rate (m^3/hour)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)



CDM

Figure 4-1
Site Conceptual Exposure Model – Omega Chemical Site
Whittier, California

Table 4-1
Summary of Receptors and Pathways of Concern

Exposure Pathway	Receptors of Concern				
	Future Industrial/ Commercial Workers		Current Industrial/ Commercial Workers	Future Construction Workers	Future Residents
	Indoor	Outdoor			
Indoor Air	Inhalation		Inhalation		Inhalation
Ambient Air	Inhalation	Inhalation	Inhalation	Inhalation[a]	
Surface Soil – 0 to 2.2 feet bgs	Ingestion and Dermal Contact	Ingestion and Dermal Contact	Ingestion and Dermal Contact	Ingestion and Dermal Contact	Ingestion and Dermal Contact
Subsurface Soil – 2 to 12 feet bgs	Ingestion and Dermal Contact	Ingestion and Dermal Contact		Ingestion and Dermal Contact	Ingestion and Dermal Contact

[a] Ambient air and exposure to fugitive dust.

Table 4-2
Exposure Parameters

Exposure Parameter	Hypothetical Future Resident	Current and Future Industrial/Commercial Workers		Future Construction Worker
		Indoor	Outdoor	
Body Weight (kg)	Adult = 70 [a,d] Child = 15	70 [a,d]	70 [a,d]	70 [a,d]
Averaging Time - Carcinogenic (days)	25,500 [a,d]	25,550 [a,d]	25,550 [a, d]	25,550 [a,d]
Averaging Time - Noncarcinogenic (days)	Adult = 10,950 [a,d] Child = 2,190	9,125 [a,d]	9,125 [a, d]	365 [a]
Exposure Frequency (days/yr)	350 [d]	250 [d]	225 [g]	RME = 250 [b] CTE = 60
Exposure Duration (years)	Adult = 30 [e] Child = 6	25 [d]	25 [g]	1 [b]
Exposure Time (hrs/day)	Indoor = 24 [a,d]	Indoor = 8 [e] Outdoor = 1	8 [e]	10 [b]
Soil Ingestion Rate (mg/day)	Adult = 100 [e] Child = 200	RME = 100 [b, g] CTE = 50	RME = 150 [b, g] CTE = 100	RME = 330 [c,g] CTE = 100
Air Inhalation Rate (m^3/hr)	Adult = 0.83 [e] Child = 0.42	RME = 1.9 [b, d] CTE = 1.2	RME = 2.5 [b, d] CTE = 1.9	RME = 4.8 [b,c] CTE = 2.5
Skin Surface Area Available for Contact (cm^2/event)	Adult = 5,700 [e] Child = 2,900	3,300 [d]	3,300 [g]	3,300 [d]
Contact Rate (mg/cm^2)	Adult = 0.07 [f] Child = 0.2	0.2 [d]	0.2 [g]	0.8 [h]

RME – reasonable maximum exposure
CTE – central tendency exposure
NA – not applicable
Sources: a – USEPA, 1989a. Risk Assessment Guidance for Superfund. Volume I - Human Health Evaluation Manual, Part A. EPA/540/1-89/002. Office of Emergency and Remedial Response. Washington D.C.
b – Site-specific. Professional judgment. See text.
c – USEPA, 1997. Exposure Factors Handbook. EPA/600/P-95/002Fa
d – CalEPA, 2005, Human Exposure Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil. Appendix C. January revision.
e – CalEPA/DTSC, 2005, Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Military Facilities. October 25.
f – EPA, 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.
g – EPA, 2002, Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.
h - CalEPA/DTSC, 2005e: DTSC/HERD Human Health Risk Assessment (HHRA) Note Number 1. October.

Table 4-3
Johnson and Ettinger Model Input Parameters for Site-Specific Screening

Variable	Description	Default Value	Proposed Site-Specific Value	Source
C_{sg}	Soil gas concentrations	Site-specific	Chemical-specific	95 UCL for soil gas concentrations ranging from 5 to 6 feet deep for samples collected on the Omega site parcel
θ_t	Soil total porosity	Site-specific	0.399	Model default for Loam soil
θ_w	Soil water-filled porosity	Site-specific	0.148	Model default for Loam soil
θ_a	Soil air-filled porosity	Site-specific	0.251	Model default for Loam soil
ρ_s	Soil dry bulk density	Site-specific	1.59	Model default for Loam soil
k	Soil intrinsic permeability	Site-specific	2.29E-09	Model default for Loam soil
° T	Soil and groundwater temperature	Site-specific	67°F (19.4°C)	Figure A-1 from DTSC 2005
ΔP	Indoor – outdoor pressure differential	40 g/cm-s^2	Default	USEPA 2004
η	Crack-to-total area ratio	0.005	0.0004	Calculated based on recommended 0.1 cm crack width (USEPA 2003). (1)
E_b	Indoor air exchange rate - residential	0.5 / hour	Default	USEPA 1997
	Indoor air exchange rate - commercial	1.0 / hour	Default	CEC 2001
L_{crack}	Foundation slab thickness	Site-specific	15 cm	
L_b,W_b	Building dimensions – length x width	1000 cm x 1000 cm	Default	DTSC 2005
H_b	Building dimension – height - residential	244 cm (8 ft)	Default	DTSC 2005
	Building dimension – height - commercial	none	276 cm (9 ft)	
L_f	Foundation depth below grade – building with no basement	15 cm	Default	USEPA 2004
L_s	Soil gas sampling depth below grade	Site-specific	152.4 cm (5 ft)	Site data
ED, EF, ET	Exposure Duration, Exposure Frequency, Exposure Time – residential	30 years, 350 days/yr, 24 hrs/day	Default	USEPA 1997
ED, EF, ET	Exposure Duration, Exposure Frequency, Exposure Time - commercial	none	25 years, 250 days/yr, 18.24 hrs/day (2)	USEPA 1997

USEPA = United States Environmental Protection Agency
DTSC = Department of Toxic Substances Control
CEC = California Energy Commission
cm = centimeters
ft = feet
g/cm-s^2 = grams per centimeter – seconds squared

(1) For future buildings, a soil gas advection rate of 5 liters per minute should be used, as proportionally increased for future building size, rather than the defaults for indoor – outdoor pressure differential, crack-to-total area ratio, and foundation thickness.

(2) Exposure time of18.24 hrs to adjust the model for the commercial/industrial worker inhalation rate of 15.2 m^3/d compared to the 20 m^3/day that the model assumes for residents.

Table 4-4
Input Parameters for Estimating Ambient Air Concentrations for Chronic Exposure Scenarios (Residents and Commercial Workers)

Variable	Description	Default Value	Proposed Site-Specific Value	Source
L	Depth of the soil layer	Site-specific	1.524 m (5 ft)	Site data
D_i	Vapor diffusion coefficient in air	Chemical-specific	Chemical-specific	J&E model values (USEPA 2004)
P_t	Total porosity	Site-specific	0.399 m^3/m^3	J&E model value for loam (USEPA 2004)
P_w	Water-filled porosity	Site-specific	0.148 m^3/m^3	J&E model value for loam (USEPA 2004)
P_a	Air-filled porosity	Site-specific	0.251 m^3/m^3	Calculated from USEPA 2002 Eqn 1-3
C_s	Concentration in the air at depth	Site-specific	Chemical-specific	95 UCL for soil gas concentrations ranging from 5 to 6 feet deep
A_{site}	Site area	0.5 acres	1 acre (4046.873 m^2)	Site specific
D_s	Apparent steady state vapor diffusion coefficient	Site-specific	Chemical-specific	Calculated from Millington and Quirk (1961) Eqn 1-2
J	Vapor flux through soil	Site-specific	Chemical-specific	Calculated from Eqn. 1-1
E	Emission rate	Site-specific	Chemical-specific	Calculated from Eqn. 1-4
L_s	Length of side	Site-specific	63.6 m	Site–specific - Square root of 1 acre site
V	Average wind speed	Site-specific	1.65 m/s	Average annual wind speed in Whittier (1)
D_H	Diffusion Height	Site-specific	2 m	Breathing zone
C_{air}	Concentration in Ambient Air	Site-specific	Chemical-specific	Calculated from Eqn. 1-5

m^3/m^3 = cubic meter per cubic meter
$kg/m^2/s$ = = kilograms per square meter per second
ft = feet
m = meter
m^2 = square meters
m/s = meters per second
USEPA = United States Environmental Protection Agency
(1) http://www.whittier-weather.com/)

Table 4-5
Input Parameters for Estimating Soil Concentrations from Soil Gas Concentrations for Sub-chronic Exposure (Construction Worker)

Variable	Description	Default Value	Proposed Site-Specific Value	Source
L	Depth of the soil layer	Site-specific	1.524 m (5 ft)	Site data
D_i	Vapor diffusion coefficient in air	Chemical-specific	Chemical-specific	J&E model values (USEPA 2004)
P_t	Total porosity	Site-specific	0.399 m^3/m^3	J&E model value for loam (USEPA 2004)
P_w	Water-filled porosity	Site-specific	0.148 m^3/m^3	J&E model value for loam (USEPA 2004)
P_a	Air-filled porosity	Site-specific	0.251 m^3/m^3	Calculated from USEPA 2002 Eqn 1-3
C_s	Concentration in the air at depth	Site-specific	Chemical-specific	95 UCL for soil gas concentrations ranging from 5 to 6 feet deep
A_{site}	Site area	0.5 acres	100 m^2	10 m by 10 m subsurface foundation excavation for future building
D_s	Apparent steady state vapor diffusion coefficient	Site-specific	Chemical-specific	Calculated from Millington and Quirk (1961) Eqn 1-2
J	Vapor flux through soil	Site-specific	Chemical-specific	Calculated from Eqn. 1-1
E	Emission rate	Site-specific	Chemical-specific	Calculated from Eqn. 1-4
L_s	Length of side	Site-specific	10 m	10 m by 10 m subsurface foundation excavation for future building
V	Average wind speed	Site-specific	0.165 m/s	$1/10^{th}$ of average annual wind speed in Whittier (1) assumed for inside excavation
D_H	Diffusion Height	Site-specific	2 m	Breathing zone
C_{air}	Concentration in Ambient Air	Site-specific	Chemical-specific	Calculated from Eqn. 1-5

m^3/m^3 = cubic meter per cubic meter
$kg/m^2/s$ = = kilograms per square meter per second
ft = feet
m = meter
m^2 = square meters
m/s = meters per second
USEPA = United States Environmental Protection Agency
(1) http://www.whittier-weather.com/)

TABLE 4-6 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY - Surface Soil 0 to 2.2 ft bgs

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
Surface Soil									
	1,2-DICHLOROBENZENE	mg/kg	0.13	0.45	0.24	0.24	mg/kg	Max	UCL is greater than Max
	1,4-DIOXANE	mg/kg	1.73	9 62	14	9.62	mg/kg	95% UCL-T	
	2-METHYLNAPHTHALENE	mg/kg	0.19	0 39	0.54	0.39	mg/kg	UCL-NP	
	4,4'-DDD	mg/kg	0.00	0 02	0.032	0.02	mg/kg	UCL-NP	
	4,4'-DDE	mg/kg	0.02	0.17	0 3	0.17	mg/kg	UCL-NP	
	4,4'-DDT	mg/kg	0.02	0.11	0.15	0.11	mg/kg	UCL-NP	
	ALUMINUM	mg/kg	9,707.50	No UCL	9830	9830.00	mg/kg	Max	UCL is greater than Max
	ANTIMONY	mg/kg	4.39	13.71	18	13.71	mg/kg	UCL-NP	
	BARIUM	mg/kg	150.54	161.51	230	161.51	mg/kg	UCL-NP	
	BENZO(A)ANTHRACENE	mg/kg	0.29	1 93	2.4	1.93	mg/kg	UCL-NP	
	BENZO(A)PYRENE	mg/kg	0.25	0.76	1.6	0.76	mg/kg	UCL-NP	
	BENZO(B)FLUORANTHENE	mg/kg	0.19	0.49	0.91	0.49	mg/kg	UCL-NP	
	BERYLLIUM	mg/kg	0.48	0.51	0.75	0.51	mg/kg	UCL-NP	
	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	3.26	27.15	51	27.15	mg/kg	UCL-NP	
	BUTYLBENZYL PHTHALATE	mg/kg	0.31	0.90	1 9	0.90	mg/kg	UCL-NP	
	CADMIUM	mg/kg	0.88	1 34	2 1	1.34	mg/kg	UCL-NP	
	CHROMIUM III	mg/kg	34 23	76.09	308.5714286	76.09	mg/kg	UCL-NP	
	CHROMIUM VI	mg/kg	5.70	12.68	51.42857143	12.68	mg/kg	UCL-NP	
	CHRYSENE	mg/kg	0.55	4.73	6	4.73	mg/kg	UCL-NP	
	COBALT	mg/kg	8.95	9.51	16	9.51	mg/kg	UCL-NP	
	COPPER	mg/kg	32.65	40.02	150	40.02	mg/kg	UCL-NP	
	DIELDRIN	mg/kg	0.00	0.04	0 05	0.04	mg/kg	UCL-NP	
	FLUORANTHENE (IDRYL)	mg/kg	0.16	0.37	0.66	0.37	mg/kg	UCL-NP	
	IRON	mg/kg	22,650.00	No UCL	23300	23300.00	mg/kg	Max	UCL is greater than Max
	ISOPHORONE	mg/kg	0.95	9.05	9.9	9.05	mg/kg	UCL-NP	
	LEAD	mg/kg	55.72	65.38	890	65.38	mg/kg	95% UCL-T	
	MANGANESE	mg/kg	296.00	No UCL	353	353.00	mg/kg	Max	UCL is greater than Max
	MERCURY	mg/kg	0.15	0.30	0.85	0.30	mg/kg	UCL-NP	
	MOLYBDENUM	mg/kg	2.93	3.38	4.2	3.38	mg/kg	95% UCL-N	
	NAPHTHALENE	mg/kg	0.22	0.60	1.2	0.60	mg/kg	UCL-NP	
	NICKEL	mg/kg	22.51	24.93	55	24.93	mg/kg	% UCL-G assur	
	PCB-1254 (AROCLOR 1254)	mg/kg	0.06	0.43	0.5	0.43	mg/kg	UCL-NP	
	PHENANTHRENE	mg/kg	0.44	3.69	5	3.69	mg/kg	UCL-NP	
	POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	0.50	No UCL	0.5	0.50	mg/kg	Max	UCL is greater than Max
	PYRENE	mg/kg	0.32	2.31	3.1	2.31	mg/kg	UCL-NP	
	SILVER	mg/kg	0.56	0.65	1.2	0.65	mg/kg	UCL-NP	

TABLE 4-6 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY - Surface Soil 0 to 2.2 ft bgs

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	*Surface Soil 0' to 2.2'*
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
	THALLIUM	mg/kg	2.42	3.34	2	2.00	mg/kg	Max	UCL is greater than Max
	VANADIUM	mg/kg	44.10	47.09	71	47.09	mg/kg	95% UCL-N	
	ZINC	mg/kg	81.53	97.28	350	97.28	mg/kg	UCL-NP	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The anthmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

NA: too few detections to calculate a UCL

mg/kg: milligram per kilogram.

TABLE 4-7- Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY - Surface and Subsurface Soil 0 to 12 ft bgs

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
Surface/Subsurface									
	1,1,1-TRICHLOROETHANE	mg/kg	58.19	456 46	0.047	0.047	mg/kg	Max	UCL is greater than Max
	1,1,2-TRICHLOROETHANE	mg/kg	2.68	14.44	0.0034	0.0034	mg/kg	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	mg/kg	2.68	14.44	0.0084	0.0084	mg/kg	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	mg/kg	3.53	21.58	0.0039	0.0039	mg/kg	Max	UCL is greater than Max
	1,2-DICHLOROBENZENE	mg/kg	0.76	7.11	0.24	0.24	mg/kg	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	mg/kg	2.73	14.47	0.0063	0.0063	mg/kg	Max	UCL is greater than Max
	1,4-DIOXANE	mg/kg	4.27	43.42	28	28	mg/kg	Max	UCL is greater than Max
	2-METHYLNAPHTHALENE	mg/kg	0.20	0.37	0.54	0.37	mg/kg	UCL-NP	
	4,4'-DDE	mg/kg	0.01	0.14	0.3	0.14	mg/kg	UCL-NP	
	4,4'-DDT	mg/kg	0.01	0.09	0.15	0.09	mg/kg	UCL-NP	
	ALUMINUM	mg/kg	9,707.50	No UCL	9830	9830	mg/kg	Max	UCL is greater than Max
	ANTIMONY	mg/kg	4.48	12.30	18	12.30	mg/kg	UCL-NP	
	BARIUM	mg/kg	146.44	157.66	230	157.66	mg/kg	UCL-NP	
	BENZO(A)ANTHRACENE	mg/kg	0.27	0.84	2.4	0.84	mg/kg	UCL-NP	
	BENZO(A)PYRENE	mg/kg	0.24	0.64	1.6	0.64	mg/kg	UCL-NP	
	BENZO(B)FLUORANTHENE	mg/kg	0.20	0.44	0.91	0.44	mg/kg	UCL-NP	
	BENZYL ALCOHOL (PHENYLMETHANOL)	mg/kg	1.89	15.58	22	15.58	mg/kg	UCL-NP	
	BERYLLIUM	mg/kg	0.48	0.51	0.75	0.51	mg/kg	UCL-NP	
	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	3.07	23.13	51	23.13	mg/kg	UCL-NP	
	BUTYLBENZYL PHTHALATE	mg/kg	0.29	0.76	1.9	0.76	mg/kg	UCL-NP	
	CADMIUM	mg/kg	0.82	1.25	2.1	1.25	mg/kg	UCL-NP	
	CHLOROFORM	mg/kg	2.68	14.44	0.0047	0.0047	mg/kg	Max	UCL is greater than Max
	CHROMIUM III	mg/kg	32.87	70.82	308.57	70.82	mg/kg	UCL-NP	
	CHROMIUM VI	mg/kg	5.48	11.80	51.43	11.80	mg/kg	UCL-NP	
	CHRYSENE	mg/kg	0.47	3.72	6	3.72	mg/kg	UCL-NP	
	COBALT	mg/kg	8.72	9.31	16	9.31	mg/kg	UCL-NP	
	COPPER	mg/kg	33.74	40.47	150	40.47	mg/kg	UCL-NP	
	DIELDRIN	mg/kg	0.00	0.03	0.05	0.03	mg/kg	UCL-NP	
	FLUORANTHENE (IDRYL)	mg/kg	0.18	0.36	0.66	0.36	mg/kg	UCL-NP	
	IRON	mg/kg	22,650.00	No UCL	23300	23300	mg/kg	Max	UCL is greater than Max
	ISOPHORONE	mg/kg	1.15	8.17	9.9	8.17	mg/kg	UCL-NP	
	LEAD	mg/kg	51.02	59.89	890	59.89	mg/kg	95% UCL-T	
	MANGANESE	mg/kg	296 00	No UCL	353	353	mg/kg	Max	UCL is greater than Max
	MERCURY	mg/kg	0.14	0.28	0.85	0.28	mg/kg	UCL-NP	
	MOLYBDENUM	mg/kg	2.84	3.91	4.2	3.91	mg/kg	UCL-NP	
	NAPHTHALENE	mg/kg	0.19	0.79	1.2	0.79	mg/kg	UCL-NP	

TABLE 4-7- Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY - Surface and Subsurface Soil 0 to 12 ft bgs

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
	NICKEL	mg/kg	22.28	24.51	55	24.51	mg/kg	UCL-NP	
	PCB-1254 (AROCLOR 1254)	mg/kg	0.06	0.34	0.5	0.34	mg/kg	UCL-NP	
	PHENANTHRENE	mg/kg	0.40	2.96	5	2.96	mg/kg	UCL-NP	
	POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	0.50	No UCL	0.5	0.5	mg/kg	Max	UCL is greater than Max
	PYRENE	mg/kg	0.30	1.88	3.1	1.88	mg/kg	UCL-NP	
	SILVER	mg/kg	0.54	0.61	1.2	0.61	mg/kg	UCL-NP	
	TETRACHLOROETHENE	mg/kg	85.68	922.68	4.3	4.3	mg/kg	Max	UCL is greater than Max
	THALLIUM	mg/kg	2.56	3.41	2	2	mg/kg	Max	UCL is greater than Max
	TRICHLOROETHENE	mg/kg	7.56	51.89	0.028	0.028	mg/kg	Max	UCL is greater than Max
	VANADIUM	mg/kg	43.89	46.95	71	46.95	mg/kg	95% UCL-N	
	ZINC	mg/kg	80.23	94.57	350	94.57	mg/kg	UCL-NP	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

NA: too few detections to calculate a UCL

mg/kg: milligram per kilogram.

TABLE 4-8 - Parcel Site - 3 Kings Construction - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.20	No UCL	0.2	0.2	ug/m^3	0.2	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	4.18	No UCL	6.8	1.6	ug/m^3	6.8	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	4.38	No UCL	9	0.7	ug/m^3	9.2	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	34.75	No UCL	50.00	24.0	ug/m^3	50.0	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	6.23	No UCL	11.00	2.8	ug/m^3	11.0	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.60	No UCL	0.65	0.6	ug/m^3	0.7	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.16	No UCL	0.25	0.3	ug/m^3	0.3	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.45	No UCL	3	1.4	ug/m^3	3.1	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	6.85	No UCL	16	3.2	ug/m^3	16.0	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	33.50	No UCL	82.0	14.0	ug/m^3	82.0	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	78.23	No UCL	260	1.8	ug/m^3	260.0	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	7.63	No UCL	17.0	2.9	ug/m^3	17.0	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	6.20	No UCL	13.0	1.0	ug/m^3	13.0	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	70.00	No UCL	170.0	34.0	ug/m^3	170.0	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	1.67	No UCL	3.3	0.3	ug/m^3	3.3	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	3.68	No UCL	5.9	2.0	ug/m^7	5.9	ug/m^7	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE 4-9 - Parcel Site - Star City Auto Body - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	2.92	No UCL	0.33	0.32	ug/m^3	0.33	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	16.65	No UCL	31	5.6	ug/m^3	31	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	9.61	No UCL	18	1.6	ug/m^3	18	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	3222.50	No UCL	6000	330	ug/m^3	6000	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	6.11	No UCL	5.3	2.6	ug/m^3	5.3	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	3.47	No UCL	0.67	0.66	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	2.58	No UCL	0.19	0.19	ug/m^3	0.19	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	3.70	No UCL	2.7	1.9	ug/m^3	2.7	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	17.15	No UCL	48	4.6	ug/m^3	48	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	88.38	No UCL	270	21	ug/m^3	270	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	19.70	No UCL	4.8	1.5	ug/m^3	4.8	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	25.94	No UCL	78	5.1	ug/m^3	78	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	16.88	No UCL	34	6	ug/m^3	34	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	735.25	No UCL	2400	36	ug/m^3	2400	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	5.13	No UCL	6.5	3.5	ug/m^3	6.5	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	9.01	No UCL	14	11	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE 4-10 - Parcel North - Medlin & Sons 12484 - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium.	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.16	No UCL	0.21	0.21	ug/m^3	0.21	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	31.75	No UCL	40	17	ug/m^3	40	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	6.15	No UCL	10	2.9	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.34	No UCL	0.95	0.2	ug/m^3	0.95	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	997.75	No UCL	3400	22	ug/m^3	3400	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.00	No UCL	1.1	0.91	ug/m^3	1.1	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.90	No UCL	1.3	0.67	ug/m^3	1.3	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.25	No UCL	0.32	0.2	ug/m^3	0.32	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.23	No UCL	3.3	1.2	ug/m^3	3.3	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	0.79	No UCL	0.85	0.72	ug/m^3	0.85	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	2.53	No UCL	2.7	2.2	ug/m^3	2.7	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	2.84	No UCL	5.1	1.7	ug/m^3	5.1	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	0.94	No UCL	1	0.87	ug/m^3	1	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	9.28	No UCL	22	4.3	ug/m^3	22	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	6.20	No UCL	7.4	4.8	ug/m^3	7.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	5.40	No UCL	14	2.3	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	8.75	No UCL	12	5.4	ug/m^3	12	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE 4-11 - Parcel North - Medlin & Sons North 12476 - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3		No UCL	1.9	1.9	ug/m^3	1.9	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3		No UCL	430.0	430.0	ug/m^3	430	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3		No UCL	2.6	2.60	ug/m^3	2.6	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3		No UCL	2.8	2.80	ug/m^3	2.8	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3		No UCL	1.6	1.6	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE 4-12 - Parcel West - Terrapave - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.28	No UCL	0.49	0.45	ug/m^3	0.49	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	16.28	No UCL	26	6.3	ug/m^3	26	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	13.88	No UCL	23	5.5	ug/m^3	23	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.18	No UCL	0.27	0.23	ug/m^3	0.27	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	35.75	No UCL	43	22	ug/m^3	43	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.25	No UCL	1.4	1.1	ug/m^3	1.4	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.62	No UCL	0.67	0.56	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.22	No UCL	0.24	0.21	ug/m^3	0.24	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.25	No UCL	2.9	1.5	ug/m^3	2.9	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.25	No UCL	1.6	0.93	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	4.43	No UCL	5.5	3.3	ug/m^3	5.5	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	1.35	No UCL	1.5	1.2	ug/m^3	1.5	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.54	No UCL	2.1	0.96	ug/m^3	2.1	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	73.50	No UCL	110	39	ug/m^3	110	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	8.03	No UCL	10	6.5	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	2.93	No UCL	4.4	1.6	ug/m^3	4.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	5.18	No UCL	7	3.4	ug/m^3	7	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP), 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE 4-13 - Parcel South - Bishop - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,1-TRICHLOROETHANE	ug/m3	0.12	No UCL	0.19	0.19	ug/m^3	0.19	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	5.78	No UCL	10	3.4	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	7.72	No UCL	14	3.6	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.21	No UCL	0.32	0 21	ug/m^3	0.32	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	33.33	No UCL	41	28	ug/m^3	41	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.18	No UCL	1.2	1.15	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.54	No UCL	0.575	0.51	ug/m^3	0 575	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.14	No UCL	0.18	0.15	ug/m^3	0.18	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.87	No UCL	3	2.7	ug/m^3	3	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.17	No UCL	1.7	0.81	ug/m^3	1.7	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	3.77	No UCL	4.9	2.7	ug/m^3	4.9	ug/m^3	Max	Too Few Samples for UCL
	METHYL TERT-BUTYL ETHER	ug/m3	0.41	No UCL	0.67	0.67	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	1.08	No UCL	1.7	1	ug/m^3	1.7	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.37	No UCL	1.7	1.015	ug/m^3	1 7	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	15.42	No UCL	29	7.1	ug/m^3	29	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	7.47	No UCL	8 4	6.9	ug/m^3	8.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	0.82	No UCL	1.5	0.44	ug/m^3	1.5	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.75	No UCL	3.7	2.2	ug/m^3	3.7	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max), 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP), 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE 4-14 - Parcel South - LA Carts - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	7 80	No UCL	14	0.70	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	2.05	No UCL	3.6	0 06	ug/m^3	3.6	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.29	No UCL	0.16	0.16	ug/m^3	0.16	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	584.67	No UCL	1200	74.00	ug/m^3	1200	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.70	No UCL	2.2	1.30	ug/m^3	2.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.51	No UCL	0.52	0.50	ug/m^3	0.52	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.30	No UCL	0.37	0.14	ug/m^3	0.37	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.90	No UCL	3.2	2.60	ug/m^3	3.2	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.38	No UCL	2	0.95	ug/m^3	2	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	4.90	No UCL	7.30	2.90	ug/m^3	7.3	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	4.65	No UCL	5.9	5.20	ug/m^3	5.9	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.77	No UCL	2.6	1.00	ug/m^3	2.6	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	0.80	No UCL	1.6	0.24	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	263.33	No UCL	570	10.00	ug/m^3	570	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	0.61	No UCL	1.2	1.20	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.53	No UCL	3.2	1.50	ug/m^3	3.2	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max), 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE 4-15 - Parcel South - Oncology Care - Indoor Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1.40	No UCL	1.6	1.2	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	0.22	No UCL	0 23	0.2	ug/m^3	0.23	ug/m^3	Max	Too Few Samples for UCL
	1,2-DICHLOROETHANE	ug/m3	0.23	No UCL	0.32	0.32	ug/m^3	0 32	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.29	No UCL	0.39	0.39	ug/m^3	0 39	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	97.00	No UCL	99	95	ug/m^3	99	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.15	No UCL	1.2	1.1	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.51	No UCL	0.52	0.5	ug/m^3	0.52	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.62	No UCL	0.66	0.57	ug/m^3	0.66	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	3.15	No UCL	3.4	2.9	ug/m^3	3.4	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	0.97	No UCL	1	0.94	ug/m^3	1	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	3.05	No UCL	3.1	3	ug/m^3	3.1	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.25	No UCL	1.3	1 2	ug/m^3	1.3	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	0.33	No UCL	0.44	0.44	ug/m^3	0.44	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	16 50	No UCL	17	16	ug/m^3	17	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	1.75	No UCL	1.8	1.7	ug/m^3	1.8	ug/m^3	Max	Too Few Samples for UCL

Statistics. Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE 4-16 - All Parcels - Ambient Air
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Ambient Air
Exposure Medium:	Ambient Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Ambient Air											
	1,1,1-TRICHLOROETHANE	ug/m3	1.14	10 3	1.1466	1.1466	ug/m^3	1.1466	ug/m^3	Max	UCL is greater than Max
	1,1,2,2-TETRACHLOROETHANE	ug/m3	1.36	12.9	0.39159	0.39159	ug/m^3	0.39159	ug/m^3	Max	UCL is greater than Max
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	2.56	7.8	1.7618	0.71238	ug/m^3	1.7618	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	0.99	2.3	0.6352	0.13101	ug/m^3	0.6352	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROBENZENE	ug/m3	1.32	11.4	0.29449	0.29449	ug/m^3	0.29449	ug/m^3	Max	UCL is greater than Max
	1,4-DICHLOROBENZENE	ug/m3	1.20	11.3	0.39065	0.39065	ug/m^3	0.39065	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	374.11	3,791.1	3808	14.28	ug/m^3	3791.05403	ug/m^3	UCL-NP	
	BENZENE	ug/m3	1.54	3.6	1.0846	0.7975	ug/m^3	1.0846	ug/m^3	Max	UCL is greater than Max
	CARBON TETRACHLORIDE	ug/m3	1.61	6.1	0.629	0.49062	ug/m^3	0.629	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3.33	4.6	3.3165	1.8315	ug/m^3	3.3165	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	1.44	4.4	0.9548	0.434	ug/m^3	0.9548	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	2.91	3.9	3.1248	1.302	ug/m^3	3.1248	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1.69	4.1	2.082	2.082	ug/m^3	2.082	ug/m^3	Max	UCL is greater than Max
	O-XYLENE	ug/m3	1.58	4.5	1.1935	0.434	ug/m^3	1.1935	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	2.00	6.7	1 7628	0.5424	ug/m^3	1 7628	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	6.33	8.1	15.834	3.6946	ug/m^3	8.12826571	ug/m^3	UCL-NP	
	TRICHLOROETHENE	ug/m3	1.23	10.1	1.074	0.22554	ug/m^3	1.074	ug/m^3	Max	UCL is greater than Max
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.61	6.1	1.967	1.5736	ug/m^3	1.967	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE 4-17 - All Parcels, Future Industrial Worker Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	*Soil Gas 5 to 6 feet bgs*
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Indoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic [3]	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	70,537	352,624	1,528,800	352,624	ug/m^3	1.2E+02	ug/m^3	141.96	ug/m^3	4.6E-02	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,076,274	1,611,795	3,447,000	1,611,795	ug/m^3	5.3E+02	ug/m^3	1838.40	ug/m^3	6.0E-01	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	7,140	38,423	105,300	38,423	ug/m^3	1.2E+01	ug/m^3	36.45	ug/m^3	1.1E-02	ug/m^3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	436,872	659,877	1,071,900	659,877	ug/m^3	2.4E+02	ug/m^3	83.37	ug/m^3	3.0E-02	ug/m^3	95% UCL-G assumed	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	54,172	102,378	93,750	93,750	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	ug/m3	1,453	2,253	10,125	2,253	ug/m^3	8.9E-01	ug/m^3	93.15	ug/m^3	3.7E-02	ug/m^3	95% UCL-G	
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,869	3,105	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	4.3E-02	ug/m^3	97.20	ug/m^3	4.3E-02	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,114	5,971	21,182	5,971	ug/m^3	2.7E+00	ug/m^3	80.92	ug/m^3	3.6E-02	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	961	1,418	2,074	1,418	ug/m^3	5.0E-01	ug/m^3	8.29	ug/m^3	2.9E-03	ug/m^3	95% UCL-G assumed	
	CARBON DISULFIDE	ug/m3	2,973	5,132	26,124	5,132	ug/m^3	2.0E+00	ug/m^3	373.20	ug/m^3	1.5E-01	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,716	2,629	233	233	ug/m^3	7.6E-02	ug/m^3	232.73	ug/m^3	7.6E-02	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,858	5,726	14,640	5,726	ug/m^3	2.3E+00	ug/m^3	73.20	ug/m^3	2.9E-02	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,537	17,957	36,828	17,957	ug/m^3	5.6E+00	ug/m^3	285.12	ug/m^3	8.9E-02	ug/m^3	UCL-NP	
	DICHLORODIFLUOROMETHANE	ug/m3	1,628	2,478	9,405	2,478	ug/m^3	7.2E-01	ug/m^3	18.32	ug/m^3	5.3E-03	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,469	2,173	608	608	ug/m^3	1.8E-01	ug/m^3	13.89	ug/m^3	4.2E-03	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	811,528	1,225,830	3,390,000	1,225,830	ug/m^3	3.8E+02	ug/m^3	949.20	ug/m^3	2.9E-01	ug/m^3	95% UCL-G assumed	
	TOLUENE	ug/m3	1,113	1,586	2,601	1,586	ug/m^3	5.6E-01	ug/m^3	29.41	ug/m^3	1.0E-02	ug/m^3	95% UCL-G	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,000	6,704	20,988	6,704	ug/m^3	2.0E+00	ug/m^3	55.44	ug/m^3	1.7E-02	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	122,697	184,300	472,560	184,300	ug/m^3	6.1E+01	ug/m^3	327.57	ug/m^3	1.1E-01	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	319,226	485,399	1,011,600	485,399	ug/m^3	1.7E+02	ug/m^3	550.76	ug/m^3	1.9E-01	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected. The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix A-4.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-18 - Site Parcel, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Indoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic [3]	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	107,610	553,427	1,528,800	553,427	ug/m^3	4.1E+02	ug/m^3	1528.80	ug/m^3	1.1E+00	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	855,013	1,100,465	2,374,600	1,100,465	ug/m^3	8.1E+02	ug/m^3	4979.00	ug/m^3	3.7E+00	ug/m^3	95% UCL-N	
	1,1-DICHLOROETHANE	ug/m3	10,223	19,662	105,300	19,662	ug/m^3	1.4E+01	ug/m^3	36.45	ug/m^3	2.6E-02	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHENE	ug/m3	397,162	626,769	992,500	626,769	ug/m^3	5.1E+02	ug/m^3	6749.00	ug/m^3	5.5E+00	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	40,979	No UCL	81,250	81,250	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	No UCL
	1,2-DICHLOROETHANE	ug/m3	1,473	2,496	10,125	2,496	ug/m^3	2.2E+00	ug/m^3	93.15	ug/m^3	8.3E-02	ug/m^3	95% UCL-G	
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9.7E-02	ug/m^3	97.20	ug/m^3	9.7E-02	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,576	7,001	21,182	7,001	ug/m^3	7.0E+00	ug/m^3	104.72	ug/m^3	1.1E-01	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	877	1,362	2,074	1,362	ug/m^3	1.1E+00	ug/m^3	44 66	ug/m^3	3.6E-02	ug/m^3	95% UCL-G	
	CARBON DISULFIDE	ug/m3	3,872	7,008	26,124	7,008	ug/m^3	6.3E+00	ug/m^3	373.20	ug/m^3	3.3E-01	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,454	2,374	233	233	ug/m^3	1.7E-01	ug/m^3	232.73	ug/m^3	1.7E-01	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,960	7,482	14,640	7,482	ug/m^3	6.7E+00	ug/m^3	92.72	ug/m^3	8.3E-02	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	4,712	14,326	36,828	14,326	ug/m^3	1.0E+01	ug/m^3	285.12	ug/m^3	2.0E-01	ug/m^3	95% UCL-T	
	DICHLORODIFLUOROMETHANE	ug/m3	1,180	1,882	941	941	ug/m^3	6.2E-01	ug/m^3	64.35	ug/m^3	4.2E-02	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	920,601	1,355,479	3,390,000	1,355,479	ug/m^3	9.5E+02	ug/m^3	16272.00	ug/m^3	1.1E+01	ug/m^3	95% UCL-G	
	TOLUENE	ug/m3	936	1,392	1,169	1,169	ug/m^3	9.3E-01	ug/m^3	75.40	ug/m^3	6.0E-02	ug/m^3	Max	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,756	8,064	20,988	8,064	ug/m^3	5.6E+00	ug/m^3	55.44	ug/m^3	3.8E-02	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	125,451	190,082	451,080	190,082	ug/m^3	1.4E+02	ug/m^3	3060.90	ug/m^3	2.3E+00	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	274,527	430,192	786,800	430,192	ug/m^3	3.4E+02	ug/m^3	4271.20	ug/m^3	3 4E+00	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix A-4.

ug/m^3: microgram per cubic meter.

ND: Not determined Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-19 - Other Parcels, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Indoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic [3]	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	4,106	7,744	10,920	7,744	ug/m^3	5.7E+00	ug/m^3	141.96	ug/m^3	1.0E-01	ug/m^3	95% UCL-G	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,481,920	4,797,958	3,447,000	3,447,000	ug/m^3	2.5E+03	ug/m^3	1838 40	ug/m^3	1.4E+00	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	ug/m3	1,053	2,231	1,053	1,053	ug/m^3	7.5E-01	ug/m^3	1053.00	ug/m^3	7.5E-01	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	509,674	729,033	1,071,900	729,033	ug/m^3	5.9E+02	ug/m^3	83.37	ug/m^3	6.8E-02	ug/m^3	95% UCL-N	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	93,750	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	93750.00	ug/m^3	ND	ug/m^3	Max	No UCL
	2,2,4-TRIMETHYLPENTANE	ug/m3	48	3,856	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	117	7,834	186	186	ug/m^3	1.9E-01	ug/m^3	80.92	ug/m^3	8.1E-02	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	12	2,770	16	16	ug/m^3	1.3E-02	ug/m^3	8.29	ug/m^3	6.7E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	915	2,727	1,757	1,757	ug/m^3	1.6E+00	ug/m^3	73.20	ug/m^3	6.5E-02	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3,112	7,408	9,405	7,408	ug/m^3	4.9E+00	ug/m^3	18.32	ug/m^3	1.2E-02	ug/m^3	95% UCL-G	
	HEXANE (N-HEXANE)	ug/m3	11	4,175	11	11	ug/m^3	1.4E-02	ug/m^3	10.56	ug/m^3	1.4E-02	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	22	5,535	30	30	ug/m^3	2.1E-02	ug/m^3	13.89	ug/m^3	9 5E-03	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	611,562	2,167,531	2,101,800	2,101,800	ug/m^3	1.5E+03	ug/m^3	949.20	ug/m^3	6.6E-01	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	682	3,253	2,601	2,601	ug/m^3	2.1E+00	ug/m^3	29.41	ug/m^3	2.3E-02	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	8,316	10,748	9,900	9,900	ug/m^3	6.8E+00	ug/m^3	6732.00	ug/m^3	4.6E+00	ug/m^3	Max	UCL is greater than Max
	TRICHLOROETHENE	ug/m3	117,648	393,490	472,560	393,490	ug/m^3	2.9E+02	ug/m^3	327.57	ug/m^3	2.4E-01	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	401,176	1,316,299	1,011,600	1,011,600	ug/m^3	8.0E+02	ug/m^3	550.76	ug/m^3	4.4E-01	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix A-4.

ug/m^3: microgram per cubic meter.

ND: Not determined Indoor air concentration could not be calculated because physical parameters for constituent were not available

TABLE 4-20 - All Parcels, Future Industrial Worker Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Outdoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	70,537	352,624	1,528,800	352,624	ug/m^3	2.2E+00	ug/m^3	141 96	ug/m^3	8.8E-04	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,076,274	1,611,795	3,447,000	1,611,795	ug/m^3	3.7E+00	ug/m^3	1838.40	ug/m^3	4.2E-03	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	7,140	38,423	105,300	38,423	ug/m^3	2.3E-01	ug/m^3	36.45	ug/m^3	2.1E-04	ug/m^3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	436,872	659,877	1,071,900	659,877	ug/m^3	4.7E+00	ug/m^3	83.37	ug/m^3	5.9E-04	ug/m^3	95% UCL-G assumed	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	54,172	102,378	93,750	93,750	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	ug/m3	1,453	2,253	10,125	2,253	ug/m^3	1.9E-02	ug/m^3	93.15	ug/m^3	7.7E-04	ug/m^3	95% UCL-G	
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,869	3,105	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9.6E-04	ug/m^3	97.20	ug/m^3	9.6E-04	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,114	5,971	21,182	5,971	ug/m^3	5 9E-02	ug/m^3	80 92	ug/m^3	8.0E-04	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	961	1,418	2,074	1,418	ug/m^3	9.9E-03	ug/m^3	8.29	ug/m^3	5.8E-05	ug/m^3	95% UCL-G assumed	
	CARBON DISULFIDE	ug/m3	2,973	5,132	26,124	5,132	ug/m^3	4.2E-02	ug/m^3	373.20	ug/m^3	3.1E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,716	2,629	233	233	ug/m^3	1 4E-03	ug/m^3	232.73	ug/m^3	1.4E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,858	5,726	14,640	5,726	ug/m^3	4.7E-02	ug/m^3	73.20	ug/m^3	6.0E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,537	17,957	36,828	17,957	ug/m^3	1.0E-01	ug/m^3	285.12	ug/m^3	1.7E-03	ug/m^3	UCL-NP	
	DICHLORODIFLUOROMETHANE	ug/m3	1,628	2,478	9,405	2,478	ug/m^3	1.6E-02	ug/m^3	18 32	ug/m^3	1.2E-04	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,469	2,173	608	608	ug/m^3	3.4E-03	ug/m^3	13.89	ug/m^3	7.7E-05	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	811,528	1,225,830	3,390,000	1,225,830	ug/m^3	7.0E+00	ug/m^3	949.20	ug/m^3	5.4E-03	ug/m^3	95% UCL-G assumed	
	TOLUENE	ug/m3	1,113	1,586	2,601	1,586	ug/m^3	1.1E-02	ug/m^3	29.41	ug/m^3	2.0E-04	ug/m^3	95% UCL-G	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,000	6,704	20,988	6,704	ug/m^3	3.8E-02	ug/m^3	55.44	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	122,697	184,300	472,560	184,300	ug/m^3	1.2E+00	ug/m^3	327.57	ug/m^3	2.1E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	319,226	485,399	1,011,600	485,399	ug/m^3	3.3E+00	ug/m^3	550.76	ug/m^3	3.8E-03	ug/m^3	95% UCL-G	

Statistics Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate Outdoor air concentrations from soil gas. See Appendix Tables A6-1 and A6-2.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-21 - Site Parcel, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Outdoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	107,610	553,427	1,528,800	553,427	ug/m^3	3.4E+00	ug/m^3	1528.80	ug/m^3	9.5E-03	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	855,013	1,100,465	2,374,600	1,100,465	ug/m^3	2.5E+00	ug/m^3	4979.00	ug/m^3	1.1E-02	ug/m^3	95% UCL-N	
	1,1-DICHLOROETHANE	ug/m3	10,223	19,662	105,300	19,662	ug/m^3	1.2E-01	ug/m^3	36.45	ug/m^3	2.1E-04	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHENE	ug/m3	397,162	626,769	992,500	626,769	ug/m^3	4.5E+00	ug/m^3	6749.00	ug/m^3	4.8E-02	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	40,979	No UCL	81,250	81,250	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	No UCL
	1,2-DICHLOROETHANE	ug/m3	1,473	2,496	10,125	2,496	ug/m^3	2.1E-02	ug/m^3	93.15	ug/m^3	7.7E-04	ug/m^3	95% UCL-G	
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9.6E-04	ug/m^3	97.20	ug/m^3	9.6E-04	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,576	7,001	21,182	7,001	ug/m^3	6.9E-02	ug/m^3	104.72	ug/m^3	1.0E-03	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	877	1,362	2,074	1,362	ug/m^3	9 5E-03	ug/m^3	44.66	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	CARBON DISULFIDE	ug/m3	3,872	7,008	26,124	7,008	ug/m^3	5.8E-02	ug/m^3	373.20	ug/m^3	3.1E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,454	2,374	233	233	ug/m^3	1.4E-03	ug/m^3	232.73	ug/m^3	1.4E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,960	7,482	14,640	7,482	ug/m^3	6.2E-02	ug/m^3	92.72	ug/m^3	7.6E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	4,712	14,326	36,828	14,326	ug/m^3	8.4E-02	ug/m^3	285.12	ug/m^3	1.7E-03	ug/m^3	95% UCL-T	
	DICHLORODIFLUOROMETHANE	ug/m3	1,180	1,882	941	941	ug/m^3	6.0E-03	ug/m^3	64.35	ug/m^3	4.1E-04	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	920,601	1,355,479	3,390,000	1,355,479	ug/m^3	7.7E+00	ug/m^3	16272.00	ug/m^3	9.3E-02	ug/m^3	95% UCL-G	
	TOLUENE	ug/m3	936	1,392	1,169	1,169	ug/m^3	8.1E-03	ug/m^3	75.40	ug/m^3	5.2E-04	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,756	8,064	20,988	8,064	ug/m^3	4.5E-02	ug/m^3	55.44	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	125,451	190,082	451,080	190,082	ug/m^3	1.2E+00	ug/m^3	3060.90	ug/m^3	1.9E-02	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	274,527	430,192	786,800	430,192	ug/m^3	3.0E+00	ug/m^3	4271.20	ug/m^3	2.9E-02	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate Outdoor air concentrations from soil gas See Appendix Tables A6-3 and A6-4.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-22 - Other Parcels, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Value	Units	EPC Outdoor Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	4,106	7,744	10,920	7,744	ug/m^3	4.8E-02	ug/m^3	141.96	ug/m^3	8.8E-04	ug/m^3	95% UCL-G	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,481,920	4,797,958	3,447,000	3,447,000	ug/m^3	7.9E+00	ug/m^3	1838.40	ug/m^3	4.2E-03	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	ug/m3	1,053	2,231	1,053	1,053	ug/m^3	6.2E-03	ug/m^3	1053.00	ug/m^3	6.2E-03	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	509,674	729,033	1,071,900	729,033	ug/m^3	5.2E+00	ug/m^3	83.37	ug/m^3	5.9E-04	ug/m^3	95% UCL-N	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	93,750	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	93750.00	ug/m^3	ND	ug/m^3	Max	No UCL
	2,2,4-TRIMETHYLPENTANE	ug/m3	48	3,856	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	117	7,834	186	186	ug/m^3	1.8E-03	ug/m^3	80.92	ug/m^3	8.0E-04	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	12	2,770	16	16	ug/m^3	1.1E-04	ug/m^3	8.29	ug/m^3	5.8E-05	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	915	2,727	1,757	1,757	ug/m^3	1.4E-02	ug/m^3	73.20	ug/m^3	6.0E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3,112	7,408	9,405	7,408	ug/m^3	4.7E-02	ug/m^3	18.32	ug/m^3	1.2E-04	ug/m^3	95% UCL-G	
	HEXANE (N-HEXANE)	ug/m3	11	4,175	11	11	ug/m^3	1.7E-04	ug/m^3	10.56	ug/m^3	1.7E-04	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	22	5,535	30	30	ug/m^3	1.7E-04	ug/m^3	13.89	ug/m^3	7.7E-05	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	611,562	2,167,531	2,101,800	2,101,800	ug/m^3	1.2E+01	ug/m^3	949.20	ug/m^3	5.4E-03	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	682	3,253	2,601	2,601	ug/m^3	1.8E-02	ug/m^3	29.41	ug/m^3	2.0E-04	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	8,316	10,748	9,900	9,900	ug/m^3	5.5E-02	ug/m^3	6732.00	ug/m^3	3.8E-02	ug/m^3	Max	UCL is greater than Max
	TRICHLOROETHENE	ug/m3	117,648	393,490	472,560	393,490	ug/m^3	2.5E+00	ug/m^3	327.57	ug/m^3	2.1E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	401,176	1,316,299	1,011,600	1,011,600	ug/m^3	7.0E+00	ug/m^3	550.76	ug/m^3	3.8E-03	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate Outdoor air concentrations from soil gas. See Appendix Tables A6-5 and A6-6.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-23 - All Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	68,256	422,993	2,457,000	422,993	ug/m3	4.1E+00	ug/m3	142	ug/m3	1.38E-03	ug/m3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	729,843	902,171	3,447,000	902,171	ug/m3	3.2E+00	ug/m3	13	ug/m3	4.67E-05	ug/m3	95% UCL-G assumed	
	1,1,2-TRICHLOROETHANE	ug/m3	1,073	1,339	1,420	1,339	ug/m3	1.3E-02	ug/m3	328	ug/m3	3.18E-03	ug/m3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	6,163	18,874	105,300	18,874	ug/m3	1.7E-01	ug/m3	24	ug/m3	2.25E-04	ug/m3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	352,491	439,581	1,905,600	439,581	ug/m3	4.9E+00	ug/m3	83	ug/m3	9.35E-04	ug/m3	95% UCL-G assumed	
	1,2,4-TRIMETHYLBENZENE	ug/m3	1,024	1,268	33	33	ug/m3	3.13E-04	ug/m3	9	ug/m3	8.27E-05	ug/m3	Max	UCL is greater than Max
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	35,444	76,525	93,750	76,525	ug/m3	ND	ug/m3	3,000	ug/m3	ND	ug/m3	95% UCL-G	
	1,2-DICHLOROETHANE	ug/m3	1,418	1,803	10,125	1,803	ug/m3	2.3E-02	ug/m3	32	ug/m3	4.09E-04	ug/m3	95% UCL-G	
	1,3-BUTADIENE	ug/m3	513	686	139	139	ug/m3	1.70E-03	ug/m3	3	ug/m3	3.51E-05	ug/m3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,056	1,407	1,541	1,407	ug/m3	ND	ug/m3	5	ug/m3	ND	ug/m3	95% UCL-G	
	2-BUTANONE	ug/m3	563	683	174	174	ug/m3	1.94E-03	ug/m3	4	ug/m3	4.93E-05	ug/m3	Max	UCL is greater than Max
	2-PROPANOL	ug/m3	3,312	4,675	36,900	4,675	ug/m3	ND	ug/m3	9,840	ug/m3	ND	ug/m3	95% UCL-G	
	ACETALDEHYDE	ug/m3	105	No UCL	112	112	ug/m3	1.7E-03	ug/m3	97	ug/m3	1.50E-03	ug/m3	Max	UCL is greater than Max
	ACETONE	ug/m3	2,890	4,791	21,182	4,791	ug/m3	7.4E-02	ug/m3	15	ug/m3	2.39E-04	ug/m3	UCL-NP	
	BENZENE	ug/m3	699	1,232	3,828	1,232	ug/m3	1.4E-02	ug/m3	3	ug/m3	3.15E-05	ug/m3	UCL-NP	
	BROMODICHLOROMETHANE	ug/m3	1,138	1,427	24	24	ug/m3	9.0E-05	ug/m3	9	ug/m3	3.48E-05	ug/m3	Max	UCL is greater than Max
	BROMOFORM	ug/m3	1,772	2,225	13	13	ug/m3	ND	ug/m3	13	ug/m3	ND	ug/m3	Max	UCL is greater than Max
	CARBON DISULFIDE	ug/m3	2,218	2,881	26,124	2,881	ug/m3	3.7E-02	ug/m3	3	ug/m3	4.03E-05	ug/m3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,189	1,487	233	233	ug/m3	2.3E-03	ug/m3	126	ug/m3	1.22E-03	ug/m3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,741	5,987	107,360	5,987	ug/m3	7.8E-02	ug/m3	7	ug/m3	9.48E-05	ug/m3	95% UCL-G	
	CIS-1.2-DICHLOROETHENE	ug/m3	2,742	8,819	37,620	8,819	ug/m3	8.1E-02	ug/m3	51	ug/m3	4.72E-04	ug/m3	UCL-NP	
	CYCLOHEXANE	ug/m3	794	1,075	963	963	ug/m3	9.60E-03	ug/m3	4	ug/m3	4.11E-05	ug/m3	Max	UCL is greater than Max
	DIBROMOCHLOROMETHANE	ug/m3	1,460	1,832	14	14	ug/m3	1.6E-04	ug/m3	9	ug/m3	1.12E-04	ug/m3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	1,124	1,393	9,405	1,393	ug/m3	1.4E-02	ug/m3	11	ug/m3	1.13E-04	ug/m3	95% UCL-G	
	ETHANOL	ug/m3	1,758	2,375	254	254	ug/m3	ND	ug/m3	13	ug/m3	ND	ug/m3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	785	983	30	30	ug/m3	2.8E-04	ug/m3	6	ug/m3	5.27E-05	ug/m3	Max	UCL is greater than Max
	HEPTANE	ug/m3	922	1,244	127	127	ug/m3	ND	ug/m3	5	ug/m3	ND	ug/m3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	864	1,144	4,576	1,144	ug/m3	2.8E-02	ug/m3	4	ug/m3	9.65E-05	ug/m3	95% UCL-G	
	M,P-XYLENES	ug/m3	988	1,210	608	608	ug/m3	5.3E-03	ug/m3	10	ug/m3	8.71E-05	ug/m3	Max	UCL is greater than Max
	METHYL TERT-BUTYL ETHER	ug/m3	912	1,500	21	21	ug/m3	2.1E-04	ug/m3	19	ug/m3	1.91E-04	ug/m3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1,168	1,451	23,249	1,451	ug/m3	1.8E-02	ug/m3	8	ug/m3	1.05E-04	ug/m3	95% UCL-G	
	O-XYLENE	ug/m3	817	1,523	3,472	1,523	ug/m3	1.3E-02	ug/m3	5	ug/m3	4.16E-05	ug/m3	UCL-NP	
	PENTANE	ug/m3	21,535	No UCL	21,535	21,535	ug/m3	ND	ug/m3	21,535	ug/m3	ND	ug/m3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	451,697	574,757	3,390,000	574,757	ug/m3	5.2E+00	ug/m3	12	ug/m3	1.09E-04	ug/m3	95% UCL-G	
	TETRAHYDROFURAN	ug/m3	751	1,038	3,835	1,038	ug/m3	1.3E-02	ug/m3	3	ug/m3	3.60E-05	ug/m3	95% UCL-G	

TABLE 4-23 - All Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
	TOLUENE	ug/m3	965	1,362	15,080	1,362	ug/m^3	1.5E-02	ug/m^3	8	ug/m^3	8.17E-05	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	3,392	4,402	24,552	4,402	ug/m^3	3.9E-02	ug/m^3	35	ug/m^3	3.10E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	69,849	87,149	472,560	87,149	ug/m^3	8.6E-01	ug/m^3	54	ug/m^3	5.29E-04	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	216,718	268,990	1,236,400	268,990	ug/m^3	2.9E+00	ug/m^3	6	ug/m^3	6.09E-05	ug/m^3	95% UCL-G	
	VINYL CHLORIDE	ug/m3	483	605	79	79	ug/m^3	1.0E-03	ug/m^3	33	ug/m^3	4.39E-04	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N), 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values partitioned to determine a soil source concentration and then modeled to provide Outdoor air concentrations using RBCA Tool Kit for Chemical Releases Version 1.2. See Appendix Tables A6-7 and A6-8.

ug/m^3: microgram per cubic meter

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-24 - Site Parcel, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	105,462	285,452	2,457,000	285,452	ug/m^3	2.8E+00	ug/m^3	197	ug/m^3	1.91E-03	ug/m^3	UCL-NP	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	812,823	1,002,004	2,910,800	1,002,004	ug/m^3	3.6E+00	ug/m^3	2,604	ug/m^3	9.34E-03	ug/m^3	95% UCL-G assumed	
	1,1,2-TRICHLOROETHANE	ug/m3	1,069	1,383	1,420	1,383	ug/m^3	1.3E-02	ug/m^3	328	ug/m^3	3.18E-03	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHANE	ug/m3	9,076	24,174	105,300	24,174	ug/m^3	2.2E-01	ug/m^3	24	ug/m^3	2.25E-04	ug/m^3	95% UCL-T	
	1,1-DICHLOROETHENE	ug/m3	426,003	538,251	1,905,600	538,251	ug/m^3	6.0E+00	ug/m^3	1,528	ug/m^3	1.71E-02	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	22,430	54,098	81,250	54,098	ug/m^3	ND	ug/m^3	3,000	ug/m^3	ND	ug/m^3	95% UCL-G	
	1,2-DICHLOROETHANE	ug/m3	1,822	5,103	10,125	5,103	ug/m^3	6.6E-02	ug/m^3	32	ug/m^3	4.09E-04	ug/m^3	95% UCL-T	
	1,3-BUTADIENE	ug/m3	711	1,082	11	11	ug/m^3	1.4E-04	ug/m^3	11	ug/m^3	1.38E-04	ug/m^3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,487	2,145	701	701	ug/m^3	ND	ug/m^3	458	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	2-BUTANONE	ug/m3	572	717	171	171	ug/m^3	1.9E-03	ug/m^3	103	ug/m^3	1.15E-03	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	105	No UCL	112	112	ug/m^3	1.72E-03	ug/m^3	97	ug/m^3	1.50E-03	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	3,715	6,471	21,182	6,471	ug/m^3	1.0E-01	ug/m^3	105	ug/m^3	1.62E-03	ug/m^3	UCL-NP	
	BENZENE	ug/m3	764	1,293	3,828	1,293	ug/m^3	1.4E-02	ug/m^3	31	ug/m^3	3.43E-04	ug/m^3	UCL-NP	
	CARBON DISULFIDE	ug/m3	3,288	4,417	26,124	4,417	ug/m^3	5.7E-02	ug/m^3	249	ug/m^3	3.22E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,154	2,598	233	233	ug/m^3	2.3E-03	ug/m^3	126	ug/m^3	1.22E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	5,534	6,980	48,800	6,980	ug/m^3	9.0E-02	ug/m^3	49	ug/m^3	6.32E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,813	9,819	37,620	9,819	ug/m^3	9.0E-02	ug/m^3	51	ug/m^3	4.72E-04	ug/m^3	UCL-NP	
	CYCLOHEXANE	ug/m3	1,062	1,644	24	24	ug/m^3	2.4E-04	ug/m^3	17	ug/m^3	1.71E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	977	2,099	1,238	1,238	ug/m^3	1.2E-02	ug/m^3	59	ug/m^3	5.92E-04	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	770	1,745	30	30	ug/m^3	2.8E-04	ug/m^3	17	ug/m^3	1.62E-04	ug/m^3	Max	UCL is greater than Max
	HEPTANE	ug/m3	1,273	1,896	127	127	ug/m^3	ND	ug/m^3	115	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	1,242	1,859	4,576	1,859	ug/m^3	4.63E-02	ug/m^3	197	ug/m^3	4.91E-03	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,087	1,747	608	608	ug/m^3	5.3E-03	ug/m^3	61	ug/m^3	5 30E-04	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1,493	2,503	23,249	2,503	ug/m^3	3.1E-02	ug/m^3	555	ug/m^3	6.99E-03	ug/m^3	95% UCL-T	
	O-XYLENE	ug/m3	824	1,829	3,472	1,829	ug/m^3	1.60E-02	ug/m^3	29	ug/m^3	2.50E-04	ug/m^3	UCL-NP	
	TETRACHLOROETHENE	ug/m3	572,704	720,351	3,390,000	720,351	ug/m^3	6.5E+00	ug/m^3	488	ug/m^3	4.38E-03	ug/m^3	95% UCL-G	
	TETRAHYDROFURAN	ug/m3	1,120	1,693	3,835	1,693	ug/m^3	2.1E-02	ug/m^3	3,835	ug/m^3	4.68E-02	ug/m^3	95% UCL-G	

TABLE 4-24 - Site Parcel, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
	TOLUENE	ug/m3	951	1,191	15,080	1,191	ug/m^3	1.3E-02	ug/m^3	60	ug/m^3	6.54E-04	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,903	6,512	24,552	6,512	ug/m^3	5.7E-02	ug/m^3	35	ug/m^3	3.10E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	87,323	108,427	451,080	108,427	ug/m^3	1.1E+00	ug/m^3	199	ug/m^3	1 96E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	259,879	325,350	1,236,400	325,350	ug/m^3	3.5E+00	ug/m^3	1,068	ug/m^3	1.16E-02	ug/m^3	95% UCL-G assumed	
	VINYL CHLORIDE	ug/m3	468	1,056	79	79	ug/m^3	1.0E-03	ug/m^3	33	ug/m^3	4 39E-04	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values partitioned to determine a soil source concentration and then modeled to provide Outdoor air concentrations using RBCA Tool Kit for Chemical Releases Version 1.2. See Appendix Tables A6-9 and A6-10.

ug/m^3: microgram per cubic meter.

ND. Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE 4-25 - Other Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	8,848	64,480	251,160	64,480	ug/m^3	6.3E-01	ug/m^3	142	ug/m^3	1.38E-03	ug/m^3	UCL-NP	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	607,484	950,498	3,447,000	950,498	ug/m^3	3.4E+00	ug/m^3	13	ug/m^3	4.67E-05	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	1,187	1,872	8,910	1,872	ug/m^3	1.7E-02	ug/m^3	486	ug/m^3	4.49E-03	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHENE	ug/m3	244,094	380,406	1,071,900	380,406	ug/m^3	4.3E+00	ug/m^3	83	ug/m^3	9.35E-04	ug/m^3	95% UCL-G	
	1,2,4-TRIMETHYLBENZENE	ug/m3	934	1,431	16	16	ug/m^3	1.5E-04	ug/m^3	9	ug/m^3	8.27E-05	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	87,500	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	81,250	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,3-BUTADIENE	ug/m3	415	623	139	139	ug/m^3	1.7E-03	ug/m^3	3	ug/m^3	3.51E-05	ug/m^3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	849	1,275	1,541	1,275	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	95% UCL-G assumed	
	2-BUTANONE	ug/m3	548	791	174	174	ug/m^3	1.94E-03	ug/m^3	4	ug/m^3	4.93E-05	ug/m^3	Max	UCL is greater than Max
	2-PROPANOL	ug/m3	3,109	5,081	36,900	5,081	ug/m^3	ND	ug/m^3	9,840	ug/m^3	ND	ug/m^3	95% UCL-G	
	4-ETHYLTOLUENE	ug/m3	932	1,445	17	17	ug/m^3	ND	ug/m^3	7	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	440	691	500	500	ug/m^3	7.7E-03	ug/m^3	15	ug/m^3	2.39E-04	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	2,270	5,690	89	89	ug/m^3	9.8E-04	ug/m^3	3	ug/m^3	3.15E-05	ug/m^3	Max	UCL is greater than Max
	BROMODICHLOROMETHANE	ug/m3	1,143	2,089	24	24	ug/m^3	9.0E-05	ug/m^3	9	ug/m^3	3.48E-05	ug/m^3	Max	UCL is greater than Max
	BROMOFORM	ug/m3	1,956	3,044	13	13	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	CARBON DISULFIDE	ug/m3	601	945	26	26	ug/m^3	3.4E-04	ug/m^3	3	ug/m^3	4.03E-05	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,521	12,512	107,360	12,512	ug/m^3	1.6E-01	ug/m^3	7	ug/m^3	9.48E-05	ug/m^3	95% UCL-T	
	CIS-1,2-DICHLOROETHENE	ug/m3	1,046	1,644	13,068	1,644	ug/m^3	1.5E-02	ug/m^3	713	ug/m^3	6.54E-03	ug/m^3	95% UCL-G	
	CYCLOHEXANE	ug/m3	658	1,008	963	963	ug/m^3	9.6E-03	ug/m^3	4	ug/m^3	4.11E-05	ug/m^3	Max	UCL is greater than Max
	DIBROMOCHLOROMETHANE	ug/m3	1,646	2,581	14	14	ug/m^3	1.6E-04	ug/m^3	9	ug/m^3	1.12E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	1,325	2,034	9,405	2,034	ug/m^3	2.03E-02	ug/m^3	11	ug/m^3	1.13E-04	ug/m^3	95% UCL-G	
	ETHANOL	ug/m3	1,405	2,156	254	254	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	808	1,236	20	20	ug/m^3	1.9E-04	ug/m^3	6	ug/m^3	5.27E-05	ug/m^3	Max	UCL is greater than Max
	HEPTANE	ug/m3	746	1,143	98	98	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	679	1,000	2,218	1,000	ug/m^3	2.5E-02	ug/m^3	4	ug/m^3	9.65E-05	ug/m^3	95% UCL-G assumed	
	M,P-XYLENES	ug/m3	847	3,106	126	126	ug/m^3	1.1E-03	ug/m^3	10	ug/m^3	8.71E-05	ug/m^3	Max	UCL is greater than Max
	METHYL TERT-BUTYL ETHER	ug/m3	683	1,068	21	21	ug/m^3	2.1E-04	ug/m^3	19	ug/m^3	1.91E-04	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	681	1,035	298	298	ug/m^3	3.8E-03	ug/m^3	8	ug/m^3	1.05E-04	ug/m^3	Max	UCL is greater than Max
	O-XYLENE	ug/m3	808	1,229	24	24	ug/m^3	2.1E-04	ug/m^3	5	ug/m^3	4.16E-05	ug/m^3	Max	UCL is greater than Max
	PENTANE	ug/m3	21,535	No UCL	21,535	21,535	ug/m^3	ND	ug/m^3	21,535	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	273,264	706,170	2,101,800	706,170	ug/m^3	6.3E+00	ug/m^3	12	ug/m^3	1.09E-04	ug/m^3	95% UCL-T	
	TETRAHYDROFURAN	ug/m3	570	894	4	4	ug/m^3	5.0E-05	ug/m^3	3	ug/m^3	3.60E-05	ug/m^3	Max	UCL is greater than Max

TABLE 4-25 - Other Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distnbution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						EPC Soil Gas Value	Units	EPC Excavation Air Value [2]	Units	Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic [3]	Rationale
	TOLUENE	ug/m3	984	2,463	12,441	2,463	ug/m^3	2.7E-02	ug/m^3	8	ug/m^3	8.17E-05	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	995	1,597	9,900	1,597	ug/m^3	1.4E-02	ug/m^3	673	ug/m^3	5.93E-03	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	43,637	123,349	472,560	123,349	ug/m^3	1.2E+00	ug/m^3	54	ug/m^3	5.29E-04	ug/m^3	95% UCL-T	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	153,073	237,484	1,011,600	237,484	ug/m^3	2.6E+00	ug/m^3	6	ug/m^3	6.09E-05	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The anthmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values partitioned to determine a soil source concentration and then modeled to provide Outdoor air concentrations using RBCA Tool Kit for Chemical Releases Version 1.2. See Appendix Tables A6-11 and A6-12.

ug/m^3: microgram per cubic meter.

ND. Not determined Indoor air concentration could not be calculated because physical parameters for constituent were not available.

Section 5

Section 5
Toxicity Assessment

The purpose of a toxicity assessment is to review and summarize available information on the potential for each chemical of potential concern (COPC) to cause adverse effects in exposed individuals. Adverse effects include both noncarcinogenic and carcinogenic health effects in humans. For most adverse effects caused by chemicals, a positive relationship exists between dose (intake of a chemical through a particular exposure pathway, such as ingestion) and response. Generally, as dose increases, type and severity of adverse response also increases. Further, time of onset of toxic responses often shortens.

A key facet of any toxicity assessment is the use of dose-response information to describe a quantitative relationship between human exposure and potential for adverse health effects. Quantitative toxicity criteria are generally numerical expressions developed by EPA of the relationship between chronic average daily dose (exposure) and toxic response (adverse health effects). As described below, separate toxicity criteria are developed for assessment of carcinogenic and noncarcinogenic health effects.

Sources of toxicity information included, in order of descending priority, are:

- Office of Environmental Health Hazard Assessment (CalEPA) Toxicity Criteria Database or USEPA's Integrated Risk Information System (IRIS) - The more health-protective toxicity value of CalEPA and IRIS will be used, with the exception of TCE (see Section 7).
- USEPA criteria documents
- Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles

This section explains how toxicity criteria for carcinogens and noncarcinogens are developed and expressed, and summarizes toxicity values for each COPC. The general basis for the development of toxicity values for carcinogens and noncarcinogens is presented in subsections 5.1 and 5.2, respectively, along with a summary of the toxicity values for all COPCs.

5.1 Carcinogens

5.1.1 Evidence of Carcinogenicity

USEPA has developed a classification system for carcinogens, which characterizes the overall weight of evidence of carcinogenicity based on the availability of human, animal, and other supportive data. Three major factors are considered:

- The quality of evidence from human studies
- The quality of evidence from animal studies

- Other supportive data assessed to determine whether the overall weight of evidence should be modified

USEPA classification system for the characterization of the overall weight of carcinogenicity has the following five categories:

1. Human Carcinogen. This category indicates that there is sufficient evidence from epidemiological studies to support a causal association between an agent and cancer.

2. Probable Human Carcinogen. This category generally indicates that there is at least limited evidence from epidemiological studies of carcinogenicity to humans (Group B1) or that, in the absence of adequate data on humans, there is sufficient evidence of carcinogenicity in animals (Group B2).

3. Possible Human Carcinogen. This category indicates that there is limited evidence of carcinogenicity in animals in the absence of adequate data on humans.

4. Not Classified. This category indicates that the evidence for carcinogenicity in animals is inadequate.

5. Evidence of Noncarcinogenicity to Humans. This category indicates that there is evidence for noncarcinogenicity in at least two adequate animal tests in different species or in both epidemiological and animal studies.

5.1.2 Cancer Slope Factors

Carcinogenic toxicity criteria are usually provided as cancer slope factors (CSFs) in units of excess risk per milligram of chemical per kilogram of body weight per day ((mg/kg-day)$^{-1}$). These factors are based on the assumption that no threshold exists for carcinogenic effects and any dose is associated with some finite carcinogenic risk. Chemical-specific toxicity criteria for the carcinogens at the site are presented in Table 5-1.

USEPA has used a variety of specialized models to estimate the upper bound risk of carcinogenesis for a number of compounds. Data from animal or epidemiological studies are used to determine slope factors, which are expressed as (mg/kg-day)$^{-1}$ for a lifetime exposure. The CSF describes the increase in an individual's risk of developing cancer over a 70-year lifetime per unit of exposure where the unit of exposure is expressed as mg/kg-day.

CSFs are calculated using methods protective of human health and are based on the assumption that cancer risks decrease linearly with decreasing dose. The 95 percent upper confidence limit estimate for the slope is used in most cases to compensate for animal to human extrapolation and other uncertainties. The resulting CSFs are considered to be upper range estimates that are unlikely to underestimate carcinogenic potential in humans.

When the upper-bound CSF is multiplied by the lifetime average daily dose of a potential carcinogen, the product is the upper-bound lifetime individual cancer risk associated with exposure at that dose. The calculated risk is thus an estimate of the increased likelihood of cancer resulting from exposure to a chemical. For example, if the product of the CSF and the average daily dose is 1×10^{-6}, the predicted upper-bound cancer risk for the exposed population is one in one million, or 0.0001 percent. This risk is in addition to any "background" risk of cancer not related to the chemical exposure.

Calculation of risk often relies on data derived from chronic animal bioassays. The likelihood that an animal carcinogen is also a human carcinogen is a function of the following factors:

- The number of tissues affected by the chemical
- The number of animal species, strains, sexes, and number of experiments and doses showing a carcinogenic response
- The occurrence of clear-cut dose-response relationships as well as a high level of statistical significance of the increased tumor incidence in treated compared to control groups
- A dose-related decrease in time-to-tumor occurrence or time-to-death with tumor
- A dose-related increase in the proportion of malignant tumors

Animal studies are usually conducted using relatively high doses to observe adverse effects. Because humans are expected to be exposed at lower doses, data are adjusted using a mathematical model. Data from animal studies are fitted to a linearized multi-stage model and a dose-response curve is obtained. The low-dose slope of the dose-response curve is subjected to various adjustments (e.g., calculation of 95 percent UCL), and inter-species scaling factors are often applied to derive slope factors for humans. Dose-response data derived from human epidemiological studies are fitted to dose-time-response curves on an individual basis. These models provide conservative but plausible estimates of upper limits on lifetime risk. Although the actual risk is unlikely to be higher than the estimated risk, it could be considerably lower. In some instances, it may even be zero.

5.2 Noncarcinogens

Toxicity criteria for noncarcinogens, or for significant noncarcinogenic effects caused by carcinogens, are provided as reference doses (RfD) for oral and inhalation exposure and are expressed in units of milligram of chemical per kilogram of body weight per day (mg/kg-day). RfDs may be interpreted as thresholds below which adverse effects are not expected to occur in the most sensitive populations even if the exposure occurs continuously over a lifetime. Chemical-specific toxicity criteria for the noncarcinogens at the site are presented in Table 5-2.

RfDs are usually derived from no observable adverse effect levels (NOAELs) taken either from human studies, often involving workplace exposures, or from animal studies, and are adjusted downward using uncertainty or modifying factors. For example, a modifying factor of 2 to 10 may be applied if the database on a particular chemical lacks information on possible reproductive or developmental toxicity.

Uncertainty factors are generally applied to adjust for the possibility that humans are more sensitive than experimental animals and that there may be sensitive subpopulations of humans (e.g., children, pregnant women, individuals with hay fever or asthma). Depending upon the information available, other factors may also be applied.

RfDs are presented in units of mg/kg-day for comparison with estimated chronic daily intake into the body. Chronic exposure in this instance is not clearly defined, but need not be a lifetime exposure. Generally, exposures must continue for several years to be considered chronic. Intakes less than the RfD are not likely to cause adverse health effects. Chronic daily intakes greater than the RfD indicate a possibility for adverse effects. Whether such exposures actually produce adverse effects, however, is a function of a number of factors such as accuracy of uncertainty factors applied to the NOAEL, appropriateness of animal models used in studies extrapolated to humans, and potential for the chemical to cause effects in organs or systems (e.g., reproductive and immune systems) that have not been adequately studied. Generally, protective assumptions made by USEPA in deriving RfDs will, in most cases, mean that exposures slightly in excess of the RfD will be associated with a low risk for adverse effects, with the probability of adverse effects increasing with increasing exposure.

RfDs can be generated for subchronic exposures as well as chronic exposures. Subchronic is generally assumed to be exposures of several weeks to a few years. Since construction workers at the site are expected to be exposed for no more than 60 days (see Table 4-2), a subchronic reference dose is most appropriate for assessing risks to these receptors. Subchronic RfDs are derived in the same manner as RfDs for chronic exposure, except that data from shorter term animal studies, or human exposures, are used.

EPA has not published conventional quantitative toxicity criteria for lead because available data suggest a very low or possibly no threshold for adverse effects, even at exposure levels that might be considered background. Any significant increase above such background exposures could represent a cause for some concern. In lieu of evaluating risk using typical intake calculations and toxicity criteria, DTSC has developed a spreadsheet model for prediction of blood-lead levels in receptors exposed to lead from a variety of sources, including soil, dust, air, and water. Estimated blood-lead levels are compared to target blood-lead concentrations to assess possible risks. This model is further discussed in Section 6.

Inhalation toxicity values for the constituents at the site are provided in Tables 5-3 and 5-4.

5.3 Adjustment of Toxicity Values

Oral toxicity values reported in IRIS and CalEPA are based on an administered dose. Therefore, these values need to be adjusted to reflect inefficiencies that would exist through gastrointestinal absorption (EPA 2004). If oral absorption is complete, then the absorbed dose is equivalent to the administered dose and the oral value does not need to be adjusted. However, if the chemical has poor gastrointestinal absorption, then the absorbed dose is actually much smaller than the administered dose and the toxicity factor needs to be adjusted. For chemicals without a gastrointestinal absorption adjustment factor, 100 percent absorption is assumed. As the gastrointestinal absorption adjustment factor decreases, the contribution of the dermal pathway to the overall risk increases. These adjusted toxicity values are used in the calculation of risks and hazards for the dermal pathway. Gastrointestinal absorption adjustment factors for the COPCs are listed in Table 5-5.

Oral toxicity factors also need to be adjusted to represent a dermally absorbed dose to be used in the evaluation of the dermal exposure pathway. RAGS Part E guidance only provides dermal adjustment factors for semi-volatile organics. Volatile organics would tend to volatilize from the skin and exposure to this group of chemicals would better be assessed through the inhalation pathway. Although inorganics would remain in the soil and available for dermal contact, their toxicity is highly dependent on speciation and too little toxicity data is available on this group of chemicals to provide reliable dermal absorption factors. Dermal adjustment factors for the COPCs are listed in Table 5-5. RAGS Part E guidance recommends that dermal exposure to chemicals that do not have dermal absorption fractions to be addressed qualitatively in the uncertainty section, Section 7.

TABLE 5-1

CANCER TOXICITY DATA - ORAL/DERMAL

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Oral Cancer Slope Factor		Dermal Absorption Adjustment (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	OEHHA	11/30/2006
1,1,2,2-TETRACHLOROETHANE	2.7E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,1,2-TRICHLOROETHANE	7.2E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1-DICHLOROETHANE	5.7E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,2-DICHLOROBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
1,2-DICHLOROETHANE	9.1E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	IRIS	11/30/2006
1,3,5-TRIMETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,3-BUTADIENE	6.0E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	5.4E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2B	OEHHA	11/30/2006
1,4-DIOXANE	2.7E-02	mg/kg/day^{-1}	10.00	2.7E-03	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
2-BUTANONE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
2-METHYLNAPHTHALENE	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}			11/30/2006
2-PROPANOL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
4,4'-DDD	2.4E-01	mg/kg/day^{-1}	33.33	7.2E-03	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4,4'-DDE	3.4E-01	mg/kg/day^{-1}	33 33	1.0E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4,4'-DDT	3.4E-01	mg/kg/day^{-1}	33 33	1.0E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4-ETHYLTOLUENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ACETALDEHYDE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ACETONE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ALUMINUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
ANTIMONY	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
BARIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
BENZENE	1.0E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	OEHHA	11/30/2006
BENZO(A)ANTHRACENE	1.2E+00	mg/kg/day^{-1}	7.69	1.6E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZO(A)PYRENE	1.2E+01	mg/kg/day^{-1}	7.69	1.6E+00	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZO(B)FLUORANTHENE	1.2E+00	mg/kg/day^{-1}	7.69	1.6E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}			07/24/2007
BERYLLIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B1	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	1.4E-02	mg/kg/day^{-1}	10 00	1.4E-03	mg/kg/day^{-1}	B2	IRIS	11/30/2006
BROMODICHLOROMETHANE	1.3E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BROMOFORM	7.9E-03	mg/kg/day^{-1}	10.00	7.9E-04	mg/kg/day^{-1}	B2	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}	C	IRIS	07/24/2007
CADMIUM	NA	mg/kg/day^{-1}	25.00	NA	mg/kg/day^{-1}			07/24/2007
CARBON DISULFIDE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
CARBON TETRACHLORIDE	1.5E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
CHLOROFORM	3.1E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
CHROMIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
CHROMIUM III	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
CHROMIUM VI	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	IRIS	11/30/2006
CHRYSENE	1.2E-01	mg/kg/day^{-1}	7.69	1.6E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007

TABLE 5-1
CANCER TOXICITY DATA - ORAL/DERMAL
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Oral Cancer Slope Factor		Dermal Absorption Adjustment (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
CIS-1,2-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
COBALT	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
COPPER	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
CYCLOHEXANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
DIBROMOCHLOROMETHANE	8.4E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	IRIS	04/12/2007
DICHLORODIFLUOROMETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
DIELDRIN	1.6E+01	mg/kg/day^{-1}	10.00	1.6E+00	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
ETHANOL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			04/12/2007
ETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
HEPTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
HEXANE (N-HEXANE)	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
IRON	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ISOPHORONE	9.5E-04	mg/kg/day^{-1}	10.00	9.5E-05	mg/kg/day^{-1}	C	IRIS	07/24/2007
LEAD	8.5E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
M,P-XYLENES	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}		IRIS	02/27/2007
MANGANESE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
MERCURY	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
METHYL TERT-BUTYL ETHER	1.8E-04	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		OEHHA	07/24/2007
METHYLENE CHLORIDE	1.4E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
MOLYBDENUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
NAPHTHALENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	C	OEHHA (2)	10/01/2004
NICKEL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
O-XYLENE	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}		IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	5.0E+00	mg/kg/day^{-1}	7.14	7.0E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
PENTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
PHENANTHRENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	5.0E+00	mg/kg/day^{-1}	7.14	7.0E-01	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
PYRENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
SILVER	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
TETRACHLOROETHENE	5.4E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2B	OEHHA	11/30/2006
TETRAHYDROFURAN	7.6E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		EPA-Region 9	10/01/2004
THALLIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
TOLUENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
TRANS-1,2-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
TRICHLOROETHENE	1.3E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2A	OEHHA	11/30/2006

TABLE 5-1

CANCER TOXICITY DATA - ORAL/DERMAL

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Oral Cancer Slope Factor		Dermal Absorption Adjustment (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
TRICHLOROFLUOROMETHANE (FREON 11)	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
VANADIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
VINYL CHLORIDE	1.5	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	IRIS	11/30/2006
ZINC	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007

Footnotes:

(1) Dermal absorption adjustment is a combination of the dermal absorption fraction (ABSd) and the gastrointestinal absorption (ABSGI) as presented in Table A3-4 2. = ABSGI/ABSd so the absorbed cancer slope factor = SFo *ABSd/ABSGI

(2) OEHHA considers naphthalene to be a carcinogen by inhalation only, therefore, the oral cancer slope factor is not used in this risk assessment.

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ne Chemical has not been evaluated by EPA for evidence of human carcinogenicity.

ni: No information available.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE 5-2
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Dermal Absorption Adjustment (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	chronic	2.8E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2,2-TETRACHLOROETHANE	chronic	6.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day	CNS	10	IRIS	11/30/2006
1,1,2-TRICHLOROETHANE	chronic	4.0E-03	mg/kg/day	NA	NA	mg/kg/day	Clinical serum chemistry	1,000	IRIS	11/30/2006
1,1-DICHLOROETHANE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHENE	chronic	5.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver toxicity	100	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	chronic	5.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
1,2-DICHLOROBENZENE	chronic	9.0E-02	mg/kg/day	NA	NA	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
1,2-DICHLOROETHANE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,3,5-TRIMETHYLBENZENE	chronic	5.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,3-BUTADIENE	chronic	5.7E-03	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	chronic	3.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DIOXANE	chronic	NA	mg/kg/day	10.00	NA	mg/kg/day				11/30/2006
2,2,4-TRIMETHYLPENTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
2-BUTANONE	chronic	6.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. offspring weight	1,000	IRIS	11/30/2006
2-METHYLNAPHTHALENE	chronic	4.0E-03	mg/kg/day	10.00	4.0E-02	mg/kg/day	Pulmonary alveolar proteinosis	1,000	IRIS	11/30/2006
2-PROPANOL	chronic	NA		NA	NA	mg/kg/day				11/30/2006
4,4'-DDD	chronic	NA	mg/kg/day	33.33	NA	mg/kg/day				07/24/2007
4,4'-DDE	chronic	NA	mg/kg/day	33.33	NA	mg/kg/day				07/24/2007
4,4'-DDT	chronic	5.0E-04	mg/kg/day	33.33	1.7E-02	mg/kg/day	Liver lesions	100	IRIS	07/24/2007
4-ETHYLTOLUENE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
ACETALDEHYDE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
ACETONE	chronic	9.0E-01	mg/kg/day	NA	NA	mg/kg/day	Kidney	1,000	IRIS	11/30/2006
ALUMINUM	chronic	1.0E+00	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
ANTIMONY	chronic	4.0E-04	mg/kg/day	NA	NA	mg/kg/day	longevity, blood glucose and chloesterol	1,000	IRIS	07/24/2007
BARIUM	chronic	2.0E-01	mg/kg/day	NA	NA	mg/kg/day	Nephropathy	300	IRIS	07/24/2007
BENZENE	chronic	4.0E-03	mg/kg/day	NA	NA	mg/kg/day	Dec. lymphocyte count	300	IRIS	11/30/2006
BENZO(A)ANTHRACENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZO(A)PYRENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZO(B)FLUORANTHENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	chronic	3.0E-01	mg/kg/day	10.00	3.0E+00	mg/kg/day			EPA-Region 9	10/01/2004
BERYLLIUM	chronic	2.0E-03	mg/kg/day	NA	NA	mg/kg/day	small intestinal lesions	300	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	chronic	2.0E-02	mg/kg/day	10.00	2.0E-01	mg/kg/day	Inc. liver weight	1,000	IRIS	11/30/2006
BROMODICHLOROMETHANE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day	Kidney	1,000	IRIS	11/30/2006
BROMOFORM	chronic	2.0E-02	mg/kg/day	10.00	2.0E-01	mg/kg/day	Liver lesions	1,000	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	inc. body wt. and liver to brain ratio	1,000	IRIS	07/24/2007
CADMIUM	chronic	1.0E-03	mg/kg/day	25.00	2.5E-02	mg/kg/day	significant proteinuria	10	IRIS	07/24/2007
CARBON DISULFIDE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day	Fetal toxicity	100	IRIS	11/30/2006
CARBON TETRACHLORIDE	chronic	7.0E-04	mg/kg/day	NA	NA	mg/kg/day	Liver lesions	1,000	IRIS	11/30/2006
CHLOROFORM	chronic	1.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver	100	IRIS	11/30/2006
CHROMIUM	chronic	1.5E+00	mg/kg/day	NA	NA	mg/kg/day	None	100	IRIS	11/30/2006
CHROMIUM III	chronic	1.5E+00	mg/kg/day	NA	NA	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
CHROMIUM VI	chronic	3.0E-03	mg/kg/day	NA	NA	mg/kg/day	None	300	IRIS	11/30/2006
CHRYSENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				07/24/2007

TABLE 5-2
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Dermal Absorption Adjustment (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
CIS-1,2-DICHLOROETHENE	chronic	1.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
COBALT	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
COPPER	chronic	4.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
CYCLOHEXANE	chronic	1.7E+00	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
DIBROMOCHLOROMETHANE	chronic	2 0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver lesions	1,000	IRIS	04/12/2007
DICHLORODIFLUOROMETHANE	chronic	2.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. body weight	100	IRIS	11/30/2006
DIELDRIN	chronic	5.0E-05	mg/kg/day	10.00	5.0E-04	mg/kg/day	Liver	100	IRIS	11/30/2006
ETHANOL	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				04/12/2007
ETHYLBENZENE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day	Liver and kidney toxicity	1,000	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	chronic	4.0E-02	mg/kg/day	7.69	3.1E-01	mg/kg/day	Nephropathy, inc. liver wt.	3,000	IRIS	07/24/2007
HEPTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
HEXANE (N-HEXANE)	chronic	1.1E+01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
IRON	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
ISOPHORONE	chronic	2 0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
LEAD	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
M,P-XYLENES	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	Dec. body weight, inc mortality	1,000	IRIS	02/27/2007
MANGANESE	chronic	1.4E-01	mg/kg/day	NA	NA	mg/kg/day	CNS	1	IRIS	07/24/2007
MERCURY	chronic	3 0E-04	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
METHYL TERT-BUTYL ETHER	chronic	8.6E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
METHYLENE CHLORIDE	chronic	6.0E-02	mg/kg/day	NA	NA	mg/kg/day			IRIS	11/30/2006
MOLYBDENUM	chronic	5 0E-03	mg/kg/day	NA	NA	mg/kg/day	Inc. uric acid levels	30	IRIS	07/24/2007
NAPHTHALENE	chronic	2.0E-02	mg/kg/day	7.69	1.5E-01	mg/kg/day	Dec. body weight in males	3,000	IRIS	11/30/2006
NICKEL	chronic	2 0E-02	mg/kg/day	NA	NA	mg/kg/day	dec. body and organ wts.	300	IRIS	07/24/2007
O-XYLENE	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	Dec. body weight, inc. mortality	1,000	IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	chronic	2.0E-05	mg/kg/day	7.14	1.4E-04	mg/kg/day	Ocular exudate	300	IRIS	11/30/2006
PENTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
PHENANTHRENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	chronic	7 0E-05	mg/kg/day	7.14	5.0E-04	mg/kg/day			EPA-Region 9	10/01/2004
PYRENE	chronic	3.0E-02	mg/kg/day	7.69	2.3E-01	mg/kg/day	Kidney	3,000	IRIS	07/24/2007
SILVER	chronic	5.0E-03	mg/kg/day	NA	NA	mg/kg/day	Argyria	3	IRIS	07/24/2007
TETRACHLOROETHENE	chronic	1 0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver toxicity in mice	1,000	IRIS	11/30/2006
TETRAHYDROFURAN	chronic	2 1E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
THALLIUM	chronic	6.6E-05	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
TOLUENE	chronic	8.0E-02	mg/kg/day	NA	NA	mg/kg/day	Inc. kidney weight	3,000	IRIS	11/30/2006
TRANS-1,2-DICHLOROETHENE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day	Inc. serum alkaline phosphatase in male mice	1,000	IRIS	11/30/2006
TRICHLOROETHENE	chronic	3 0E-04	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
TRICHLOROFLUOROMETHANE (FREON 11)	chronic	3 0E-01	mg/kg/day	NA	NA	mg/kg/day	Survival and histopathology	1,000	IRIS	11/30/2006
VANADIUM	chronic	1.0E-03	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
VINYL CHLORIDE	chronic	3.0E-03	mg/kg/day	NA	NA	mg/kg/day	Liver	30	IRIS	11/30/2006
ZINC	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. euythrocyte Cu	3	IRIS	07/24/2007

Footnotes:

(1) Dermal absorption adjustment is a combination of the dermal absorption fraction (ABSd) and the gastrointestinal absorption (ABSGI) as presented in Table A3-4.2. = ABSGI/ABSd

so the absorbed reference dose = RfDo *ABSGI/ABSd

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

HEAST: Healht Effects Assessments Summary Tables (EPA 1997b)

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ni: No information available.

nl: Chemical is not listed.

CNS: Central Nervous System.

mg/kg/day: milligram per kilogram per day

TABLE 5-3
CANCER TOXICITY DATA - INHALATION
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
1,1,2,2-TETRACHLOROETHANE	5.8E-05	$(ug/m^3)^{-1}$	2.0E-01	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,1,2-TRICHLOROETHANE	1.6E-05	$(ug/m^3)^{-1}$	5.70E-02	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1-DICHLOROETHANE	1.6E-06	$(ug/m^3)^{-1}$	5.70E-03	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	C	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,2-DICHLOROBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
1,2-DICHLOROETHANE	2.6E-05	$(ug/m^3)^{-1}$	9.1E-02	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
1,3,5-TRIMETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,3-BUTADIENE	1.7E-04	$(ug/m^3)^{-1}$	6.0E-01	$mg/kg/day^{-1}$		EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	1.1E-05	$(ug/m^3)^{-1}$	4.0E-02	$mg/kg/day^{-1}$	2B	OEHHA	11/30/2006
1,4-DIOXANE	7.7E-06	$(ug/m^3)^{-1}$	2.7E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-BUTANONE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-METHYLNAPHTHALENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-PROPANOL	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
4,4'-DDD	6.9E-05	$(ug/m^3)^{-1}$	2.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4,4'-DDE	9.7E-05	$(ug/m^3)^{-1}$	3.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4,4'-DDT	9.7E-05	$(ug/m^3)^{-1}$	3.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4-ETHYLTOLUENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ACETALDEHYDE	2.7E-06	$(ug/m^3)^{-1}$	1.00E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
ACETONE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ALUMINUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
ANTIMONY	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
BARIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
BENZENE	2.9E-05	$(ug/m^3)^{-1}$	1.0E-01	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
BENZO(A)ANTHRACENE	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZO(A)PYRENE	1.1E-03	$(ug/m^3)^{-1}$	3.9E+00	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZO(B)FLUORANTHENE	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
BERYLLIUM	2.4E-03	$(ug/m^3)^{-1}$	8.4E+00	$mg/kg/day^{-1}$	B1	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	2.4E-06	$(ug/m^3)^{-1}$	8.4E-03	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BROMODICHLOROMETHANE	3.7E-05	$(ug/m^3)^{-1}$	1.3E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BROMOFORM	1.1E-06	$(ug/m^3)^{-1}$	3.9E-03	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	C	IRIS	07/24/2007
CADMIUM	4.2E-03	$(ug/m^3)^{-1}$	1.5E+01	$mg/kg/day^{-1}$	B1	OEHHA	07/24/2007
CARBON DISULFIDE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
CARBON TETRACHLORIDE	4.3E-05	$(ug/m^3)^{-1}$	1.5E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
CHLOROFORM	2.3E-05	$(ug/m^3)^{-1}$	8.1E-02	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
CHROMIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
CHROMIUM III	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
CHROMIUM VI	1.5E-01	$(ug/m^3)^{-1}$	5.1E+02	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
CHRYSENE	1.1E-05	$(ug/m^3)^{-1}$	3.9E-02	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
CIS-1,2-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
COBALT	2.8E-03	$(ug/m^3)^{-1}$	9.8E+00	$mg/kg/day^{-1}$		EPA-Region 9	07/24/2007
COPPER	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
CYCLOHEXANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
DIBROMOCHLOROMETHANE	2.7E-05	$(ug/m^3)^{-1}$	9.4E-02	$mg/kg/day^{-1}$	C	OEHHA	04/12/2007
DICHLORODIFLUOROMETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
DIELDRIN	4.6E-03	$(ug/m^3)^{-1}$	1.6E+01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006

TABLE 5-3

CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
ETHANOL	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			04/12/2007
ETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
HEPTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
HEXANE (N-HEXANE)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
IRON	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ISOPHORONE	2.7E-07	$(ug/m^3)^{-1}$	9.5E-04	$mg/kg/day^{-1}$	C	EPA-Region 9	07/24/2007
LEAD	1.2E-05	$(ug/m^3)^{-1}$	4.2E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
M,P-XYLENES	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$		IRIS	02/27/2007
MANGANESE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
MERCURY	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
METHYL TERT-BUTYL ETHER	2.6E-07	$(ug/m^3)^{-1}$	9.1E-04	$mg/kg/day^{-1}$		OEHHA	07/24/2007
METHYLENE CHLORIDE	1.0E-06	$(ug/m^3)^{-1}$	3.5E-03	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
MOLYBDENUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
NAPHTHALENE	3.4E-05	$(ug/m^3)^{-1}$	1.2E-01	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
NICKEL	2.6E-04	$(ug/m^3)^{-1}$	9.1E-01	$mg/kg/day^{-1}$	A	OEHHA	07/24/2007
O-XYLENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$		IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	5.7E-04	$(ug/m^3)^{-1}$	2.0E+00	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
PENTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
PHENANTHRENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	5.7E-04	$(ug/m^3)^{-1}$	2.0E+00	$mg/kg/day^{-1}$	B2	IRIS	07/24/2007
PYRENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
SILVER	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
TETRACHLOROETHENE	5.9E-06	$(ug/m^3)^{-1}$	2.1E-02	$mg/kg/day^{-1}$	2B	OEHHA	11/30/2006
TETRAHYDROFURAN	1.9E-06	$(ug/m^3)^{-1}$	6.8E-03	$mg/kg/day^{-1}$		EPA-Region 9	10/01/2004
THALLIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
TOLUENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
TRANS-1,2-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
TRICHLOROETHENE	2.0E-06	$(ug/m^3)^{-1}$	7.0E-03	$mg/kg/day^{-1}$	2A	OEHHA	11/30/2006
TRICHLOROFLUOROMETHANE (FREON 11)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
VANADIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
VINYL CHLORIDE	7.8E-05	$(ug/m^3)^{-1}$	2.7E-01	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
ZINC	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007

Footnotes:

Cal-EPA: Technical Support Document for Describing Available Cancer Potency Factors (OEHHA 2003).

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ne: Chemical has not been evaluated by EPA for evidence of human carcinogenicity.

ni. No information available.

$(ug/m^3)^{-1}$: cubic meter per microgram

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE 5-4

NON-CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Inhalation RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	chronic	2.2E+00	mg/m^3	6.3E-01	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2,2-TETRACHLOROETHANE	chronic	2.1E-01	mg/m^3	6.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
1,1,2-TRICHLOROETHANE	chronic	1.4E-02	mg/m^3	4.0E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHANE	chronic	5.0E-01	mg/m^3	1.4E-01	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHENE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day	Liver toxicity	30	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	chronic	6.0E-03	mg/m^3	1.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
1,2-DICHLOROBENZENE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day			EPA-Region 9	07/24/2007
1,2-DICHLOROETHANE	chronic	4.9E-03	mg/m^3	1.4E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,3,5-TRIMETHYLBENZENE	chronic	6.0E-03	mg/m^3	1.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,3-BUTADIENE	chronic	2.0E-02	mg/m^3	5.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	chronic	8.0E-01	mg/m^3	2.3E-01	mg/kg/day	CNS, RESP, liver, kidney	100	OEHHA	11/30/2006
1,4-DIOXANE	chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	ALIM, Kidney, CVS		OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
2-BUTANONE	chronic	5.0E+00	mg/m^3	1.4E+00	mg/kg/day	DEV	300	IRIS	11/30/2006
2-METHYLNAPHTHALENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
2-PROPANOL	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
4,4'-DDD	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
4,4'-DDE	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
4,4'-DDT	chronic	1.8E-03	mg/m^3	5.0E-04	mg/kg/day			EPA-Region 9	10/01/2004
4-ETHYLTOLUENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
ACETALDEHYDE	chronic	9.0E-03	mg/m^3	2.6E-03	mg/kg/day	RESP	1E+03	OEHHA	11/30/2006
ACETONE	chronic	3.2E+00	mg/m^3	9.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
ALUMINUM	chronic	4.9E-03	mg/m^3	1.4E-03	mg/kg/day			EPA-Region 9	10/01/2004
ANTIMONY	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
BARIUM	chronic	5.0E-04	mg/m^3	1.4E-04	mg/kg/day			EPA-Region 9	10/01/2004
BENZENE	chronic	3.0E-02	mg/m^3	8.6E-03	mg/kg/day	Hematopoetic system, DEV, CNS,	300	IRIS	11/30/2006
BENZO(A)ANTHRACENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZO(A)PYRENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZO(B)FLUORANTHENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	chronic	1.1E+00	mg/m^3	3.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
BERYLLIUM	chronic	2.0E-05	mg/m^3	5.7E-06	mg/kg/day	Beryllium sensitization to CBD	10	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BROMODICHLOROMETHANE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BROMOFORM	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BUTYLBENZYL PHTHALATE	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
CADMIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CARBON DISULFIDE	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day	Peripheral nervous system	30	IRIS	11/30/2006
CARBON TETRACHLORIDE	chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	ALIM, DEV, CNS		OEHHA	11/30/2006
CHLOROFORM	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day	ALIM, Kidney, DEV		OEHHA	11/30/2006
CHROMIUM	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
CHROMIUM III	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CHROMIUM VI	chronic	8.0E-06	mg/m^3	2.3E-06	mg/kg/day	RESP	90	IRIS	11/30/2006
CHRYSENE	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CIS-1,2-DICHLOROETHENE	chronic	3.5E-02	mg/m^3	1.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
COBALT	chronic	2.0E-05	mg/m^3	5.7E-06	mg/kg/day			EPA-Region 9	10/01/2004
COPPER	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007

TABLE 5-4

NON-CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Inhalation RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	*Units*	*Value*	*Units*			*Source(s)*	*Date(s)* (MM/DD/YYYY)
CYCLOHEXANE	chronic	6.0E+00	mg/m^3	1.7E+00	mg/kg/day	Dec. offspring weight	3E+02	IRIS	11/30/2006
DIBROMOCHLOROMETHANE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
DICHLORODIFLUOROMETHANE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day			EPA-Region 9	10/01/2004
DIELDRIN	chronic	1.8E-04	mg/m^3	5.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
ETHANOL	chronic	NA	mg/m^3	NA	mg/kg/day				04/13/2007
ETHYLBENZENE	chronic	1.0E+00	mg/m^3	2.9E-01	mg/kg/day	DEV, ALIM, liver, kidney, endocrine	300	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	chronic	1.4E-01	mg/m^3	4.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
HEPTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
HEXANE (N-HEXANE)	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day	Peripheral neuropathy	300	IRIS	11/30/2006
IRON	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
ISOPHORONE	chronic	2.0E+00	mg/m^3	5.7E-01	mg/kg/day	development, liver		OEHHA	07/24/2007
LEAD	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
M,P-XYLENES	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	nervous system, RESP		IRIS	06/20/2007
MANGANESE	chronic	5.0E-05	mg/m^3	1.4E-05	mg/kg/day	impair neorobehavioral function	1000	IRIS	07/24/2007
MERCURY	chronic	9.0E-06	mg/m^3	2.6E-06	mg/kg/day	nervous system		OEHHA	07/24/2007
METHYL TERT-BUTYL ETHER	chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	inc. liver and kidney wt., renal	100	IRIS	07/24/2007
METHYLENE CHLORIDE	chronic	4.0E-01	mg/m^3	1.1E-01	mg/kg/day	CVS, CNS		OEHHA	11/30/2006
MOLYBDENUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
NAPHTHALENE	chronic	3.0E-03	mg/m^3	8.5E-04	mg/kg/day	RESP	3000	IRIS	11/30/2006
NICKEL	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
O-XYLENE	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	nervous system, RESP		IRIS	06/20/2007
PCB-1254 (AROCLOR 1254)	chronic	7.0E-05	mg/m^3	2.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
PENTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
PHENANTHRENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	chronic	2.5E-04	mg/m^3	7.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
PYRENE	chronic	1.1E-01	mg/m^3	3.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
SILVER	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
TETRACHLOROETHENE	chronic	3.5E-02	mg/m^3	1.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
TETRAHYDROFURAN	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day			EPA-Region 9	10/01/2004
THALLIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
TOLUENE	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day	CNS, RESP, DEV	10	OEHHA	11/30/2006
TRANS-1,2-DICHLOROETHENE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
TRICHLOROETHENE	chronic	6.0E-01	mg/m^3	1.7E-01	mg/kg/day	CNS, eyes		OEHHA	11/30/2006
TRICHLOROFLUOROMETHANE (FREON 11)	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
VANADIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
VINYL CHLORIDE	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	Liver	30	IRIS	11/30/2006
ZINC	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007

Footnotes:

Cal-EPA: Technical Support Document for Describing Available Cancer Potency Factors (OEHHA 2003).

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

EPA-Region 9: USEPA Region IX PRG Table (EPA 2004c).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ni: No information available.

mg/m^3: milligram per cubic meter.

mg/kg/day: milligram per kilogram per day.

CNS: Central Nervous system

CVS: Cadiovascular system

RESP: Respiratory system

ALIM: Alimentary system

DEV: Developmental

TABLE 5-5
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal Absorption Fraction[1,2] ABS_d	Gastrointestinal Absorption Fraction[3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
1,1,1-TRICHLOROETHANE	VOC	—	1	NA
1,1,2,2-TETRACHLOROETHANE	VOC	—	1	NA
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	VOC	—	1	NA
1,1,2-TRICHLOROETHANE	VOC	—	1	NA
1,1-DICHLOROETHANE	VOC	—	1	NA
1,1-DICHLOROETHENE	VOC	—	1	NA
1,2,4-TRIMETHYLBENZENE	VOC	—	1	NA
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	VOC	—	1	NA
1,2-DICHLOROBENZENE	VOC	—	1	NA
1,2-DICHLOROETHANE	VOC	—	1	NA
1,3,5-TRIMETHYLBENZENE	VOC	—	1	NA
1,3-BUTADIENE	VOC	—	1	NA
1,4-DICHLOROBENZENE	VOC	—	1	NA
1,4-DIOXANE	VOC	0.10	1	10.00
2,2,4-TRIMETHYLPENTANE	VOC	—	1	NA
2-BUTANONE	VOC	—	1	NA
2-METHYLNAPHTHALENE	SVOC	0.10	1	10.00
2-PROPANOL	VOC	—	1	NA
4,4'-DDD	Pesticide	0.03	1	33.33
4,4'-DDE	Pesticide	0.03	1	33.33
4,4'-DDT	Pesticide	0.03	1	33.33
4-ETHYLTOLUENE	VOC	—	1	NA
ACETALDEHYDE	VOC	—	1	NA
ACETONE	VOC	—	1	NA
ALUMINUM	Inorganic	—	1	NA
ANTIMONY	Inorganic	—	0.15	NA
BARIUM	Inorganic	—	0.07	NA
BENZENE	VOC	—	1	NA
BENZO(A)ANTHRACENE	PAH	0.13	1	7.69
BENZO(A)PYRENE	PAH	0.13	1	7.69
BENZO(B)FLUORANTHENE	PAH	0.13	1	7.69
BENZYL ALCOHOL (PHENYLMETHANOL)		0.10	1	10.00
BERYLLIUM	Inorganic	—	1	NA
BIS(2-ETHYLHEXYL)PHTHALATE	SVOC	0.10	1	10.00
BROMODICHLOROMETHANE	VOC	—	1	NA
BROMOFORM	VOC	0.10	1	10.00
BUTYLBENZYL PHTHALATE	SVOC	0.10	1	10.00
CADMIUM	Inorganic	0.001	0.025	25.00
CARBON DISULFIDE	VOC	—	1	NA
CARBON TETRACHLORIDE	VOC	—	1	NA
CHLOROFORM	VOC	—	1	NA

TABLE 5-5
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal *Absorption Fraction*[1,2] ABS_d	Gastrointestinal *Absorption Fraction*[1,3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
CHROMIUM	Inorganic	—	0.013	NA
CHROMIUM III	Inorganic	—	0.013	NA
CHROMIUM VI	Inorganic	—	0.025	NA
CHRYSENE	PAH	0.13	1	7.69
CIS-1,2-DICHLOROETHENE	VOC	—	1	NA
COBALT	Inorganic	—	1	NA
COPPER	Inorganic	—	1	NA
CYCLOHEXANE	VOC	—	1	NA
DIBROMOCHLOROMETHANE	VOC	—	1	NA
DICHLORODIFLUOROMETHANE	VOC	—	1	NA
DIELDRIN	Pesticide/PCB	0.10	1	10.00
ETHANOL	VOC	—	1	NA
ETHYLBENZENE	VOC	—	1	NA
FLUORANTHENE (IDRYL)	PAH	0.13	1	7.69
HEPTANE	VOC	—	1	NA
HEXANE (N-HEXANE)	VOC	—	1	NA
IRON	Inorganic	—	1	NA
ISOPHORONE		0.10	1	10.00
LEAD	Inorganic	—	1	NA
M,P-XYLENES	VOC	0.10	1	10.00
MANGANESE	Inorganic	—	0.04	NA
MERCURY	Inorganic	—	1	NA
METHYL TERT-BUTYL ETHER	VOC	—	1	NA
METHYLENE CHLORIDE	VOC	—	1	NA
MOLYBDENUM	Inorganic	—	1	NA
NAPHTHALENE	PAH	0.13	1	7.69
NICKEL	Inorganic	—	0.04	NA
O-XYLENE	VOC	0.10	1	10.00
PCB-1254 (AROCLOR 1254)	PCB	0.14	1	7.14
PENTANE	VOC	—	1	NA
PHENANTHRENE	PAH	0.13	1	7.69
POLYCHLORINATED BI PHENYLS, TOTAL	PCB	0.14	1	7.14
PYRENE	PAH	0.13	1	7.69
SILVER	Inorganic	—	0.04	NA
TETRACHLOROETHENE	VOC	—	1	NA
TETRAHYDROFURAN	VOC	—	1	NA
THALLIUM	Inorganic	—	1	NA
TOLUENE	VOC	—	1	NA
TRANS-1,2-DICHLOROETHENE	VOC	—	1	NA
TRICHLOROETHENE	VOC	—	1	NA

TABLE 5-5
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal Absorption Fraction[1,2] ABS_d	Gastrointestinal Absorption Fraction[3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
TRICHLOROFLUOROMETHANE (FREON 11)	VOC	—	1	NA
VANADIUM	Inorganic	—	0 026	NA
VINYL CHLORIDE	VOC	—	1	NA
ZINC	Inorganic	—	1	NA

(1) EPA 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Ju Exhibit 3-4. "—" signifies that no dermal absorption fraction from soil was provided VOCs are assumed to volatilize and are accounted for in the inhalation pathway and inc highly dependent on the speciation of the compound and there is too little data to determine a reasonable default value.

(2) ABSd values for 1,4-dioxane, bromoform, benzyl alcohol, dieldnn, DDE, DDD, isophorone, and xylenes were obtained from EPA 2004 Region 9 PRG Table.

(3) EPA 2004. Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Ju Exhibit 4-1. Default value of 1 signifies that compound was not recommended for adjustment for gastrointestinal absorption efficiencies

Section 6

Section 6
Risk Characterization

In the final step of risk assessment, exposure estimates are combined with toxicity criteria presented in the toxicity assessment to estimate carcinogenic risks and noncarcinogenic hazards. EPA Risk Assessment Guidance for Superfund (RAGS) calculations are used to evaluate the risks. Lead (Pb) is an exception. Potential health hazards associated with exposure to lead are estimated using the Adult Lead Methodology as discussed in Section 3.

Equations used for risk and hazards calculations are presented below.

6.1 Risk Equations

Potential cancer risks and potential non-cancer hazards are separately calculated using standard methods from EPA as described in the following sections.

6.1.1 Cancer Risks

Cancer risks are estimated by multiplying exposure estimates for carcinogenic chemicals by corresponding cancer slope factors. The result is a risk estimate expressed as the incremental odds of developing cancer. Commonly, risks (or odds) of developing cancer of one to 100 in one million (1×10^{-6} to 1×10^{-4}) or less are considered to fall within a potentially acceptable range, although decisions on the need for remediation or mitigation are made on a site-by-site basis. Lower risks are typically considered de minimis, while higher risks are often deemed unacceptable (EPA, 1992). In such instances, mitigation of risks may be considered necessary.

Carcinogenic risks are estimated as the incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens (EPA, 1989). The estimated risk is expressed as a unitless probability. The equation for calculating the potential excess cancer risk for each carcinogenic chemical is:

$$Risk_i = CDI_i \times CSF_i$$

Where:

$Risk_i$ = Lifetime Excess Cancer Risk from exposure to $chemical_i$

CDI_i = Chronic Daily Intake for $chemical_i$ in milligrams per kilograms per day (mg/kg-day)

CSF_i = Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$

An estimate of an individual's incremental excess cancer risk from potential exposure to multiple chemicals emitted from the site is then calculated by summing the chemical-specific excess cancer risks (i.e., Total risk = $\Sigma Risk_i$).

6.1.2 Chronic Non-Cancer Hazards

For COPCs that are not classified as carcinogens and for those carcinogens known to cause adverse health effects in addition to cancer, chronic non-cancer hazard indices are calculated by dividing exposure estimates by reference doses. As discussed in Section 4, Non-Cancer Reference Doses, reference doses are estimates of highest exposure levels that would not cause adverse health effects even if exposures continue over a lifetime. The potential for exposure to result in non-carcinogenic effects is evaluated by comparing estimated daily dose to the chemical-specific non-cancer RfD. The ratio of exposure to reference dose is termed the hazard quotient (HQ). A HQ greater than one indicates an exposure greater than that considered safe. Risks or odds of adverse effects cannot be estimated using references doses. However, because reference doses are developed in a conservative fashion, HQs only slightly higher than one are generally accepted as being associated with low risks (or even no risk) of adverse effects, and that potential for adverse effects increases as the HQ gets larger.

Impacts of exposure to multiple chemicals are accounted for by adding estimated HQs for non-carcinogenic chemicals that affect the same target organ or tissue in the body. Addition of HQs for COPCs that produce effects in similar organs and tissues results in a HI that reflects possible cumulative hazards. To evaluate the potential for non-carcinogenic adverse health effects from simultaneous exposure to multiple chemicals, hazard quotients for all chemicals that affect the same target organs are summed yielding hazard indices (HI). In general practice, all hazard quotients are summed to yield a total hazard index. If that total hazard index is greater than one, then the hazard quotients for the different chemicals are separated by toxicity endpoint and then summed to determine the total hazard index for each toxicity endpoint. The RAGS D tables provided in Appendix A-3 have been modified to show the total hazard index followed by a breakdown of the hazard index by toxicity endpoint.

Equations for calculating the chemical-specific hazard quotients and the overall hazard index are:

$$HQ_i = \frac{CDI_i}{RfD_i}$$

$$HI = \Sigma HQ_i$$

Where:

HI = Hazard Index

HQ_i = Hazard Quotient for individual $chemical_i$

CDI_i = Chronic daily intake for $chemical_i$ (mg/kg-day)

RfD_i = Chronic Non-cancer Inhalation Reference Dose for $chemical_i$ (mg/kg-day)

6.2 Risk Characterization Results

Cancer risks and non-cancer hazards for current and future receptors at the Site are summarized in Tables 6-1 and 6-2, respectively. The risk calculation spreadsheets are provided in Appendix A.

Tables 6-1 and 6-2 show both minimum and maximum risks and hazards to show the possible range of risks. Minimum risks and hazards were calculated using the minimum detected exposure point concentration and maximum risks and hazards were calculated using either the maximum detected or 95 UCL exposure point concentration. This approach was used to address the possibility for compartmentalized vapor concentrations inside buildings. If air circulation limited mixing among different area/rooms, any of the individual indoor air detections could be viewed as a separate exposure point concentration. That is, all risks associated with indoor air VOC concentrations could be extant at the same time. Instead of calculating risks for all of the data, minimum and maximums are calculated to show the possible range of risks possible given the potential for compartmentalization.

6.2.1 Cancer Risks

Total cancer risk estimates for current commercial/industrial worker on the Site parcel (Three Kings Construction CTE, 2E-5 to 9E-5 and RME, 4E-5 to 1E-4; Star City Auto Body CTE, 3E-5 to 6E-5 and RME, 4E-5 to 9E-5) are above the point of departure of one in one million but within the EPA risk range (Table 6-1). Cancer risks for the industrial/commercial worker are primarily attributable to inhalation of indoor air (Figure 6-1).

Total cancer risk estimates for future commercial/industrial indoor worker based on data from All Parcels (CTE, 9E-6 to 3E-4 and RME, 1E-5 to 5E-4) are above the EPA risk range (Table 6-2). Total cancer risk estimates for future commercial/industrial outdoor worker based on data from All Parcels (CTE, 1E-5 to 2E-5 and RME, 1E-5 to 2E-5) are above the point of departure of one in one million but within the EPA risk range. Total cancer risk estimates for the future construction worker (CTE, 2E-7 to 4E-7 and RME, 1E-06 to 2E-6) on the Site parcel; on the Others Parcels (CTE, 2E-7 to 4E-7 and RME, 1E-06 to 2E-6); and on All Parcels (CTE, 2E-7 to 3E-7 and RME, 1E-06 to 2E-6) are above the point of departure of one in one million but within the EPA risk range. Total cancer risk estimates for future residents (adult, 5E-5 to 3E-3; adult+child, 8E-5 to 3E-3; and child, 4E-5 to 1E-3) on the Site parcel and on the Others Parcels (adult, 2E-5 to 4E-3; adult+child, 4E-5 to 5E-3; and child, 3E-5 to 2E-3) are above the EPA risk range. Cancer risks for the future industrial/commercial indoor worker and residents are primarily attributable to inhalation of indoor air (Figure 6-2). Cancer risks for construction workers and future industrial/commercial outdoor workers are primarily attributable to exposure to soil (Figure 6-3). The following discussions separately describe risks associated with soil and indoor air exposure in more detail.

Risks Associated With Soil Exposure

Risks associated with surface soil exposure only account for about 10 percent of the total cancer risks for the current commercial/industrial worker in the Three Kings

Construction building and 15 percent in the Star City Auto Body building and are within the middle of the EPA risk range (CTE, 9E-6 and RME, 1E-5) (Table 6-1, Figure 6-1). Similarly risks associated with soil exposure for the future commercial/industrial worker account for about 2 percent of the total cancer risks for the indoor worker (CTE, 8E-6 and RME, 1E-5) and 56 percent for the outdoor worker (CTE, 1E-5 and RME, 1E-5), and are also within the middle of the EPA risk range (Figure 6-2). Risks associated with surface soil exposure for current and future commercial/industrial indoor workers are not likely to be realized. In a commercial/industrial setting, most of the surface soil at the site will be covered by buildings, concrete/asphalt driveways, and landscaped grounds. Little bare soil would be available for contact and estimated risks for this pathway are greatly exaggerated.

Risks associated with surface soil exposure only account for about 1 percent of the total cancer risks for the adult and adult+child residents and 2 percent for the child resident and are within the middle of the EPA risk range (adult, 2E-5; adult+child, 4E-5; and child, 3E-5) (Table 6-2, Figure 6-2).

For construction workers, the risks associated with oral and dermal exposure to surface and subsurface soil and inhalation of fugitive dust account for 53 to 69 percent of the total cancer risks and are within the lower EPA risk range (CTE, 2E-7 and RME, 1E-6) (Table 6-2, Figure 6-3). Because there is only one set of soil data for the site, soil risks are the same for the Site Parcel, Others Parcels, and All Parcels. However, site-related contamination is likely to be highest near source areas at the site, and similar or lower levels of COPCs are anticipated in adjacent properties that were not sampled. Thus, minimal risks from exposure to site-related chemicals in soils are expected in surrounding parcels. Benzo(a)pyrene accounts for about 44 to 48 percent of the cancer risk from soil exposure for construction workers (RME and CTE, respectively). PCB-1254 and total PCBs collectively accounts for about 25 to 28 percent of the cancer risk from soil exposure for construction workers (RME and CTE, respectively).

Risks Associated With Indoor Air Exposure

Potential inhalation of indoor air is the primary contributor to cancer risks (Three Kings Construction CTE, 1E-5 to 8E-5 and RME, 2E-5 to 1E-4; Star City Auto Body CTE, 2E-5 to 5E-5 and RME, 3E-5 to 7E-5) for a current industrial/commercial worker on the Omega Site parcel (Table 6-1, Figure 6-1). Inhalation of benzene accounts for 38 (Star City) to 46 (Three Kings) percent of the cancer risk. Inhalation of methylene chloride accounts for 38 percent of the cancer risk for commercial/industrial workers at Three Kings, while inhalation of PCE accounts for 50 percent of the risk at Star City Auto Body (Figure 6-4). Onsite, sources at Star Auto Body and/or 3 Kings Construction could be responsible for some or all of the benzene detected in indoor air.

For the other buildings, cancer risks were assessed only for the inhalation of vapors intruding into indoor air. Estimated Inhalation cancer risks for these parcels were similar to, or lower than, those for the Site parcel, except for the West Parcel -

Terrapave (Figure 6-5). All inhalation cancer risks were above the point of departure of one in one million but within the EPA risk range.

Inhalation cancer risks for the five parcels are summarized as follows (Figure 6-4). Cancer risks for the north parcel (Medlin & Sons CTE, 1E-5 to 3E-5 and RME, 2E-5 to 5E-5) are primarily attributable to exposure to PCE (48 percent) with lesser contributions from carbon tetrachloride (21 percent), benzene (12 percent), and TCE (10 percent). Cancer risks for the west parcel (TerraPave CTE, 4E-5 to 1E-4 and RME, 6E-5 to 1E-4) are primarily attributable to exposure to PCE (88 percent) with lesser contributions from carbon tetrachloride (4 percent) and benzene (5 percent). Cancer risks for the south parcel - Bishop (CTE, 1E-5 to 3E-5 and RME, 2E-5 to 5E-5) are primarily attributable to exposure to PCE (71 percent) with lesser contributions from carbon tetrachloride (10 percent) and benzene (14 percent). Cancer risks for the south parcel - LA Carts (CTE, 9E-6 to 1E-5 and RME, 1E-5 to 2E-5) are primarily attributable to exposure to benzene (56 percent) with lesser contributions from carbon tetrachloride (20 percent) and PCE (8 percent). Cancer risks for the south parcel - Oncology Care (CTE, 1E-5 and RME, 2E-5) are primarily attributable to exposure to benzene (39 percent) with lesser contributions from carbon tetrachloride (26 percent) and chloroform (17 percent).

Benzene and carbon tetrachloride are observed in similar concentrations in ambient air and indoor air for parcels other than the Omega site itself. Ambient levels of benzene were reported between 0.8 to 1.09 $\mu g/m^3$, compared to indoor air concentrations for adjacent parcels (0.89 to 2.17 $\mu g/m^3$, with only one concentration above 2 $\mu g/m^3$). Benzene concentrations in shallow soil gas samples (5 to 6 feet bgs) are greater on-site (45 to 2,074 $\mu g/m^3$ - Table 3-7b) than on the adjacent parcels (8 to 16 $\mu g/m^3$ - Table 3-7c). This same trend is visible in the deeper soil gas (5 to 30 feet bgs) with benzene concentrations ranging from 31 to 3,828 $\mu g/m^3$ on-Site (Table 3-8b) compared to the range of 3 to 89 $\mu g/m^3$ (Table 3-8c) on the adjacent parcels. Ambient concentrations of carbon tetrachloride ranged from 0.5 to 0.63 $\mu g/m^3$, compared to indoor air concentrations ranging from 0.5 to 1.3 $\mu g/m^3$. Further, carbon tetrachloride is reported infrequently in the subsurface (once among 46 shallow soil gas samples); carbon tetrachloride in the subsurface does not appear to represent a significant source. Carbon tetrachloride was also not detected in shallow soil gas samples (5 to 6 feet bgs - Table 3-7c) or the deeper soil gas samples (5 to 30 feet bgs - Table 3-8c) collected from the Other Parcels. Although benzene in soil gas could be partially responsible for indoor air concentrations, indoor air concentrations of carbon tetrachloride may well have its source in ambient air rather than soil vapors. This interpretation is supported by the lack of PCE and other chemicals in indoor air in the LA Carts/Oncology Care buildings. These VOCs are found in very high concentrations in soil gas. If subsurface vapors were intruding into buildings, one would expect to find PCE along with benzene and carbon tetrachloride in indoor air.

The high concentrations of individual VOCs in groundwater, most notably PCE, suggest the presence of a dense non-aqueous phase liquid (DNAPL). MIP data, discussed in the following section, demonstrate the highest content of VOCs within the capillary fringe, suggesting that DNAPL is present as residual saturation in this

depth interval. The DNAPL is likely a continuous source of groundwater contamination at the former Omega Chemical property, as evidenced by persistently high VOC concentrations in groundwater at Putnam Street.

Chloroform, though detected in soil gas and groundwater, is also common in municipal water as a result of chlorination, and is a common indoor air contaminant. Chloroform concentrations detected in indoor air are relatively low (0.14 to 0.68 $\mu g/m^3$) compared to shallow soil gas samples (5 to 6 feet bgs) concentrations of 93 to 14,640 $\mu g/m^3$ for on-Site (Table 3-7b) and 73 to 1,757 $\mu g/m^3$ for adjacent parcels (Table 3-7c). Although the indoor air concentrations are greater than Cal-modified Region 9 ambient air PRG for chloroform (0.35 $\mu g/m^3$), they are still considerably below the Agency for Toxic Substances and Diseases Registry (ATSDR) established acute inhalation minimal risk level (MRL) of 500 $\mu g/m^3$ (0.1 ppm) and chronic inhalation MRL of 100 $\mu g/m^3$ (0.02 ppm) for chloroform. ATSDR's public health statement for chloroform also states that amount of chloroform normally expected to be in the air ranges from 0.1 to 0.25 $\mu g/m^3$ (0.02 to 0.05 ppb) of air and from 2 to 44 ppb in treated drinking water (ATSDR 1997). The indoor air concentrations are certainly consistent with a source in municipal water. Again, this interpretation is supported by the lack of PCE and other chemicals in indoor air in the LA Carts/Oncology Care buildings. These VOCs are found in very high concentrations along with chloroform in soil gas. Although chloroform in soil gas could be partially responsible for indoor air concentrations, one would expect to find these other VOCs along with chloroform in indoor air if subsurface vapors were intruding into buildings. Chloroform was not reported in ambient air samples. Without the contributions of benzene, carbon tetrachloride, and chloroform which could be attributable to background, inhalation cancer risks for the industrial workers at the buildings would be as follows:

- North Parcel - Medlin & Sons: RME, 3E-5 (compared to RME, 5E-5 with benzene, carbon tetrachloride, and chloroform)
- West Parcel - TerraPave: RME, 1E-4 (compared to RME, 1E-4 with benzene, carbon tetrachloride, and chloroform)
- South Parcel – Bishop: RME, 3E-5 (compared to RME, 5E-5 with benzene, carbon tetrachloride, and chloroform)
- South Parcel - LA Carts: RME, 4E-6 (compared to RME, 2E-5 with benzene, carbon tetrachloride, and chloroform)
- South Parcel - Oncology Care: RME, 3E-6 (compared to RME, 2E-5 with benzene, carbon tetrachloride, and chloroform)

The above considerations suggest that background risks, unrelated to vapor intrusion of site-related contaminants is in the range of $1x10^{-5}$. Such risk suggests that incremental risks possibly related to site contamination are a significant portion of total risks associated with VOCs in indoor air. Background risks account for essentially all risks at the LA Carts/Oncology Care buildings and 10 to 50 percent of total risks for surrounding parcels.

Risks associated inhalation of indoor air for the future adult resident (Site Parcel: 3E-5 to 3E-3, Others Parcel: 3E-6 to 4E-3), adult+child resident (Site Parcel: 4E-5 to 3E-3, Others Parcel: 4E-6 to 5E-3), and the child resident (Site Parcel: 2E-5 to 1E-3, Others Parcel: 1E-6 to 2E-3) range above the EPA risk range (Table 6-2, Figure 6-6). Inhalation of PCE in soil gas accounts for 90 to 95 percent of the total inhalation risk (Figure 6-7).

Risks associated inhalation of indoor air for the future commercial/industrial indoor worker (CTE, 8E-7 to 3E-4 and RME, 1E-6 to 5E-4) calculated from soil gas for All Parcels also result in risks above the EPA range (Table 6-2, Figure 6-8). PCE in soil gas accounts for 90 percent of the total inhalation risk (Figure 6-7).

Risks Associated With Ambient Air Exposure

Risks associated inhalation of ambient air for the future commercial/industrial outdoor worker (CTE, 2E-8 to 8E-6 and RME, 3E-8 to 1E-5) calculated from soil gas for All Parcels result in risks below or at the lower end of the EPA range. For construction workers, the risks associated with inhalation of ambient air are also all within the EPA risk range (Site: CTE, 1E-9 to 1E-7 and RME, 8E-9 to 1E-6; Other Parcels: CTE, 7E-11 to 1E-7 and RME, 5E-10 to 1E-6); and All Parcels: CTE, 5E-10 to 1E-7 and RME, 4E-9 to 8E-7) (Table 6-2, Figure 6-8). PCE in soil gas accounts for 84 to 85 percent of the total inhalation risk (Figure 6-9).

6.2.2 Chronic Non-Cancer Hazards

Chronic non-cancer hazards for the current commercial/industrial worker (Three Kings CTE, 0.4 to 1.2 and RME, 0.6 to 2; Star City Auto CTE, 0.5 to 5.1 and RME, 0.8 to 8) are above the threshold of 1. HIs for the commercial/industrial worker are primarily attributable to inhalation of indoor air (Figure 6-11). Total HIs for future residents (Site Parcel: adult, 0.7 to 30; adult+child 1.4 to 39; and child, 4.1 to 74; Other Parcels: adult, 0.4 to 45; adult+child 1 to 58; and child, 3.4 to 108) are above the target threshold. Total HIs for future commercial/industrial workers (Indoor: CTE, 0.15 to 4 and RME, 0.3 to 7; and Outdoor: CTE, 0.2 to 0.3 and RME, 0.3 to 0.5) based on data from All Parcels are above the target threshold for indoor workers and below the target threshold for outdoor workers. Total hazard indices for the construction worker (Site Parcel: CTE, 0.08 to 0.13 and RME, 0.8 to 1.2; Other Parcels: CTE, 0.08 to 0.12 and RME, 0.8 to 1.2; and All Parcels: CTE, 0.08 to 0.12 and RME, 0.08 to 1.1) are below or at the target HI of one. HIs for the construction worker are primarily attributable to exposure to soil (Figure 6-12). The following discussions separately describe the hazards associated with soil exposure and indoor air in more detail.

Hazards Associated With Soil Exposure

Hazards associated with surface soil exposure only account for 3 (Star City Auto Body) to 14 (Three Kings Construction) percent of the total HIs for the current and future commercial/industrial worker and are below the target threshold of one (Table 6-2, Figure 6-10). For future commercial/industrial worker, HIs associated with oral and dermal exposure to surface and subsurface soil and inhalation of fugitive dust are below the target threshold of one for the CTE scenario (indoor: 0.14; outdoor: 0.2) and RME scenario (indoor: 0.3; outdoor: 0.3). Risks associated with surface soil exposure for the current and future commercial/industrial indoor workers are not likely to be

realized. In a commercial/industrial setting, most of the surface soil at the site will be covered by buildings, concrete/asphalt driveways, and landscaped grounds. Little bare soil would be available for contact and estimated risks for this pathway are greatly exaggerated.

For future residents, HIs associated with oral and dermal exposure to surface and subsurface soil are below the target threshold of one for the adult scenario (0.3) and the adult+child scenario (0.9) and above the threshold for the child scenario (3.2).

For future construction workers, HIs associated with oral and dermal exposure to surface and subsurface soil and inhalation of fugitive dust are below the target threshold of one for the CTE scenario (0.08) and RME scenario (0.8).

Hazards Associated With Indoor Air Exposure

The highest HQs for the Site parcel for the current commercial/industrial worker are at the Star City Auto Body (total hazard index of 8) and are attributable to inhalation exposure to toluene and acetone, which account for 54 and 13 percent of site-related inhalation HIs, respectively (Figure 6-13). When the total HI is divided by target organ, HI associated with kidneys is the largest portion (66 percent of the total HI, or an HI of 3.3, CTE and 5.3, RME). HI associated with body weight effects is the second largest (23 percent of the total HI, or an HI of 1.2, CTE and 1.8, RME). HIs for all other organs are less than the threshold of 1.

HIs for the current commercial/industrial worker on the Site parcel at the Three Kings building (total hazard index of 2) are attributable to inhalation exposure to toluene (18 percent), m,p-xylenes (27 percent), methylene chloride (21 percent), PCE (12 percent), and benzene (12 percent). When the total HI is divided by target organ, HIs for all organs are less than the threshold of 1.

For the other five parcels, HIs were assessed only for the inhalation of vapors intruding into indoor air. Inhalation HIs for the other buildings were all below the HIs for Star City Auto Body and slightly above the target HI of one (ranging from 0.1 to 1.8), indicating that non-cancer hazards at these parcels are minimal. Inhalation HIs for the five parcels are summarized as follows (Figures 6-13 and 6-14). HIs for the north parcel (Medlin and Sons, CTE, 0.09 to 0.65 and RME, 0.1 to 1; Medlin and Sons North, CTE, 0.05 and RME, 0.08) are primarily attributable to exposure to acetone (55 percent) with a lesser contribution from PCE (32 percent). HIs for the west parcel (TerraPave, CTE, 0.5 to 1.28 and RME, 0.7 to 1.8) are primarily attributable to exposure to PCE (90 percent). HIs for the south parcel - Bishop (CTE, 0.1 to 0.4 and RME, 0.2 to 0.6) are primarily attributable to exposure to PCE (76 percent) with a lesser contribution from 1,1-DCE (6 percent). HIs for the south parcel - LA Carts (CTE, 0.06 to 0.8 and RME, 0.1 to 1.3) are primarily attributable to exposure to toluene (74 percent) with a lesser contribution from acetone (15 percent). HIs for the south parcel - Oncology Care (CTE, 0.09 and RME, 0.14 to 0.15) are primarily attributable to exposure to toluene (20 percent), 1,2-DCA (23 percent), benzene (14 percent) and acetone (11 percent). The highest HIs by toxicity endpoints for these other parcels are

at Terrapave, where the total HI to the liver is 1.7, and at LA Carts, where the total HI to the kidney is 1.3. All other HIs by toxicity endpoints were below one.

The highest HQs for residents are calculated from data from the Other Parcels (adult: 45, adult+child: 58, and child 108) and are attributable to inhalation exposure to PCE and 1,1-DCE, which account for 90 and 6 percent of HIs for the child resident on the Other Parcels and 86 and 8 percent of HIs for the child resident on the Site Parcel (Figure 6-16). When the total HI for the child resident on Other Parcels is divided by target organ, HI associated with liver is the largest portion (93 percent of the total HI, or an HI of 101 for the child). HIs for the unspecified endpoints is 7 and the HIs for all other calculated endpoints (body weight effects and kidneys) are less than the threshold of 1.

Inhalation HIs for the future commercial/industrial indoor worker calculated from data on All Parcels range above the threshold of 1 (CTE, 0.009 to 4.2 and RME, 0.014 to 7) (Figure 6-17). As shown in Table 6-2, inhalation of indoor air is attributable for most of this hazard. Similar to the resident, PCE and 1,1-DCE account for most of the hazard, contributing 84 and 9 percent, respectively (Figure 6-16). When the total HI is divided by target organ for the RME worker, HI associated with liver is the largest portion (90 percent of the total HI, or an HI of 6.4). HIs for all other endpoints are less than the threshold of 1.

Hazards Associated With Ambient Air Exposure

Total ambient air HIs for future commercial/industrial outdoor worker (CTE, 0.0002 to 0.11 and RME, 0.0003 to 0.15) based on data from All Parcels are below the target threshold (Figure 6-17). When the total HI is divided by target organ for the RME worker, HI associated with liver is the largest portion (70 percent of the total HI, or an HI of 0.3). HIs for all endpoints are less than the threshold of 1.

For construction workers, the hazards associated with inhalation of ambient air are below the target threshold of one (Site Parcel: CTE, 0.0002 to 0.05 and RME, 0.002 to 0.4; Other Parcels: CTE, 0.00006 to 0.04 and RME, 0.0005 to 0.3; and All Parcels: CTE, 0.00012 to 0.04 and RME, 0.0009 to 0.3). As shown in Figure 6-12, roughly 30 percent of the hazards for the future construction worker are related to inhalation of ambient air. Figure 6-18 shows the RME construction worker ambient air hazards by chemical. Hazards are higher on the Site Parcel than on the Other Parcels and All Parcels. When the total HI is divided by target organ for the RME Site Parcel construction worker, HI associated with unspecified endpoints is the largest portion (69 percent of the total HI, or an HI of 0.8). HIs for all calculated endpoints (liver, body weight effects, and kidneys) are less than the threshold of 1.

6.2.3 Risks Associated with Lead Exposure

Ingestion of soil by receptors would likely be incidental from hand to mouth activities. The EPA Adult Lead Methodology was used to assess exposure to lead for the current and future industrial worker. The lead model was adjusted for the exposure frequency discussed in Section 4.

For the current commercial/industrial worker, the 95% UCL for lead detected in surface soil was 65.4 mg/kg. The model results indicate that the geometric mean blood lead concentration might range from 1.7 to 1.9 µg/dl for an adult worker. The 95th percentile blood lead concentration of a fetus in an adult worker would range from 5.2 to 6.8 µg/dl. This range is considerably below a typical target of 10 µg/dL. More importantly, the probability that fetal blood levels for pregnant adult worker would exceed the target of 10 µg/dL is 0.6% to 1.7%. Where the probability of exceeding 10 µg/dL is 5 percent or less, lead exposures are typically deemed to fall into an acceptable range.

For the future commercial/industrial worker and RME construction workers, the 95% UCL for lead detected in soil to 12 feet bgs was 59.9 mg/kg. The model results indicate that the geometric mean blood lead concentration might range from 1.7 to 1.9 µg/dl for an adult worker. The 95th percentile blood lead concentration of a fetus in an adult worker would range from 5.2 to 6.7 µg/dl. This range is considerably below a typical target of 10 µg/dL. More importantly, the probability that fetal blood levels for pregnant adult worker would exceed the target of 10 µg/dL is 0.6% to 1.7%. Where the probability of exceeding 10 µg/dL is 5 percent or less, lead exposures are typically deemed to fall into an acceptable range.

The DTSC Leadspread model was used to assess exposure to lead for hypothetical future residents. The lead model was adjusted for the exposure frequency discussed in Section 4. The 95% UCL for lead detected in soil to 12 feet bgs was 59.9 mg/kg. The Leadspread results predict that chronic exposure to 59.9 mg/kg of lead in the soil will result in blood-lead concentrations of 6.7 micrograms per deciliter (ug/dL) in normal nonpica children in the 99th percentile and 8.0 ug/dL in pica children in the 99th percentile. Blood-lead concentrations in adult residents are predicted to be 3.9 ug/dL. All of these values are well below the CalEPA acceptable level of 10 ug/dL. Although the EPA adult lead model was used for the industrial worker, it should be noted that the Leadspread occupational calculation for an adult results in a blood lead concentration of 3.9 ug/dL, which is also well below the CalEPA acceptable level of 10 ug/dL.

Therefore, risks due to lead exposure do not appear to be sufficiently high to warrant action.

6.3 Evaluation of Empirical Attenuation Factors

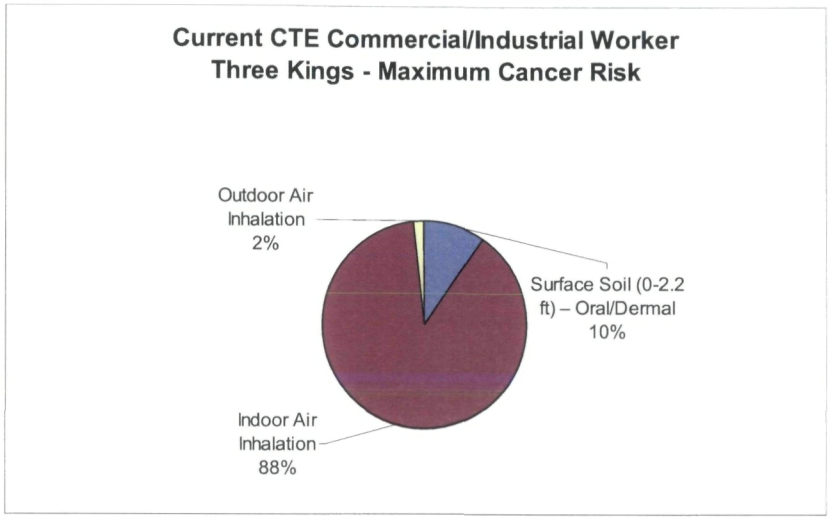
Site data are available for both shallow soil gas collected near building foundations, and indoor air for these same buildings. The ratios of indoor air concentrations to soil gas concentrations provide a measure of possible attenuation factors. Such factors are only valid for chemicals for which ambient air and/or background concentrations do not make a substantial contribution to indoor air contamination. For the analysis of attenuation factors, PCE, TCE and Freon 113 were selected as reasonable indicator factors. These three chemicals are present in very high concentrations in shallow soil gas and were observed in indoor air in ratios similar to those in soil gas. Indoor air concentrations for these VOCs seem likely to reflect, at least in large measure, vapor intrusion.

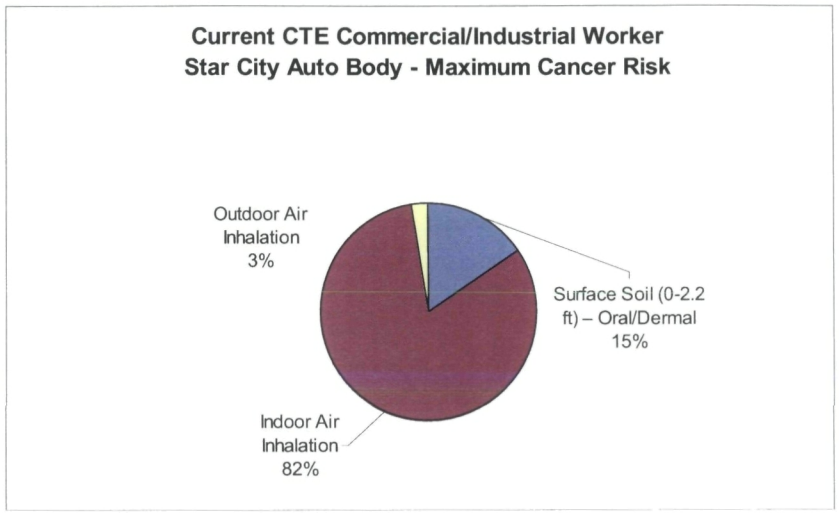
To estimate possible ranges for attenuation factors, minimum indoor air concentrations, by parcel, were divided by maximum soil gas concentrations to give lower end point. The opposite calculation provides the upper range estimate. The mid range was estimated by the ratio of average indoor air concentrations by parcel to average soil gas concentrations. Results of the calculation are provided in Table 6-3.

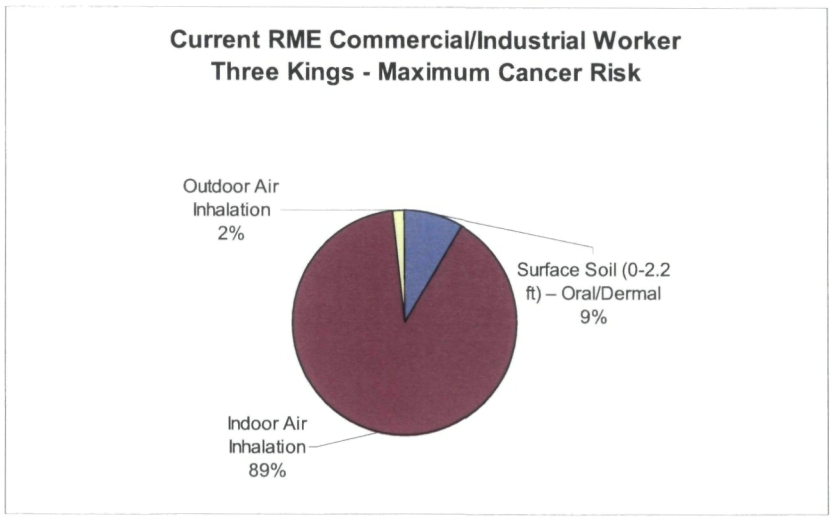
The range of possible attenuation factors are consistent from parcel to parcel, with average ratios falling in the range of 7E-06 to 3E-04. The upper end of this range is consistent with attenuation factors for commercial/industrial workers estimated using the Johnson and Ettinger model. The latter estimates are in the range of 1E-04 and 4E-04.

The overall range of estimates for attenuation factors is quite wide, from 7E-07 to 2E-02. Data are insufficient to determine if the extremes of this range are within those possible for current site conditions. However, soil gas concentrations vary considerably along building perimeters, suggesting that some integrating of concentrations for both soil gas and indoor air might be appropriate for estimating attenuation factors. However, whether an appropriate integration is simple averaging cannot be determined.

Average attenuation factors estimated from empirical results provide some confidence in the results of modeling, in that at least some of these estimates fall within the modeled range. Overall, however, empirical estimates appear too variable to use in estimating site-specific PRGs. A range of site-specific PRGs that spans almost 5 orders of magnitude would be difficult to use in defining remedial strategies. Site-specific PRG calculations are provided in Appendix D.







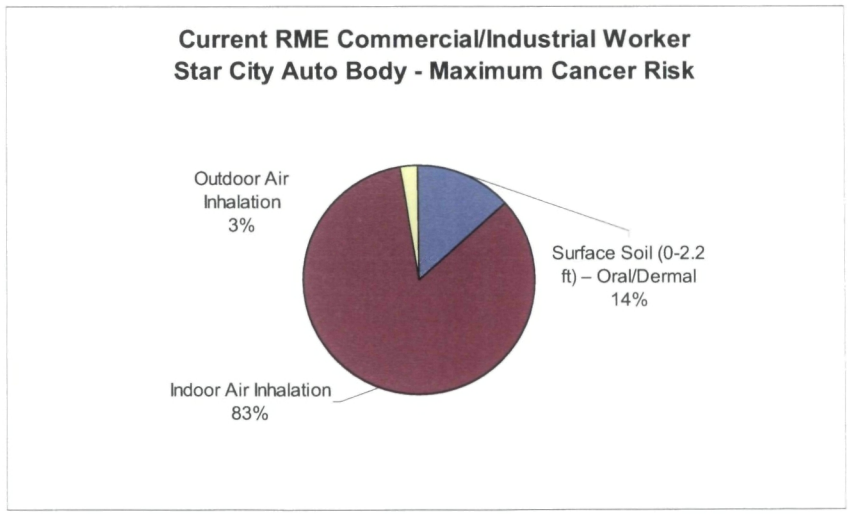
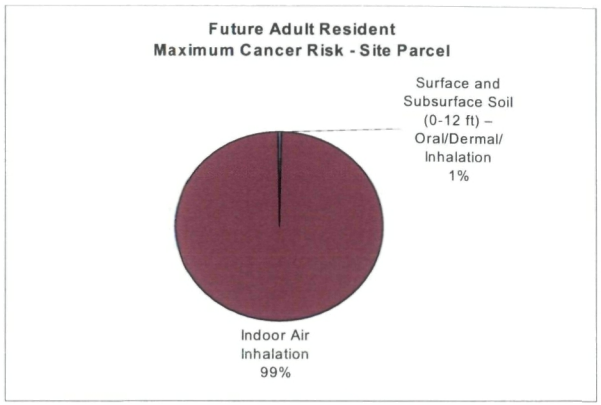
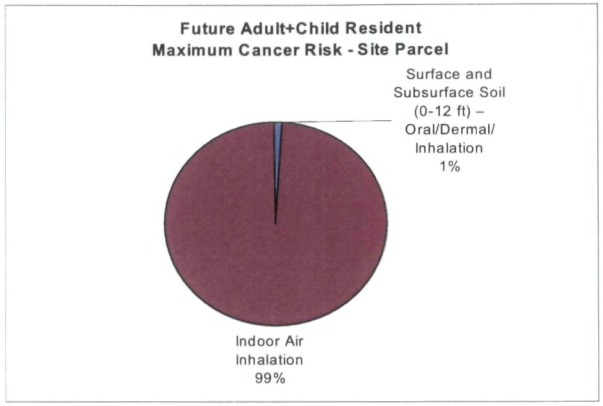
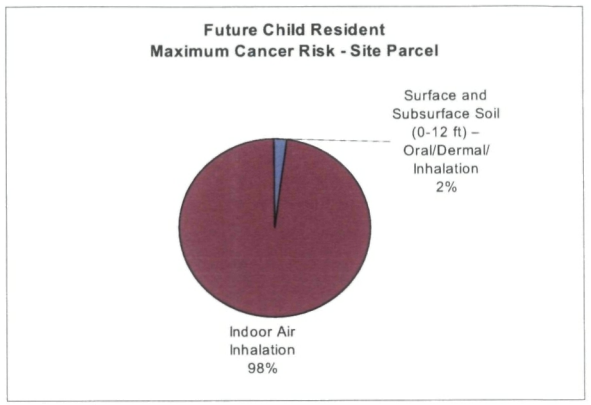
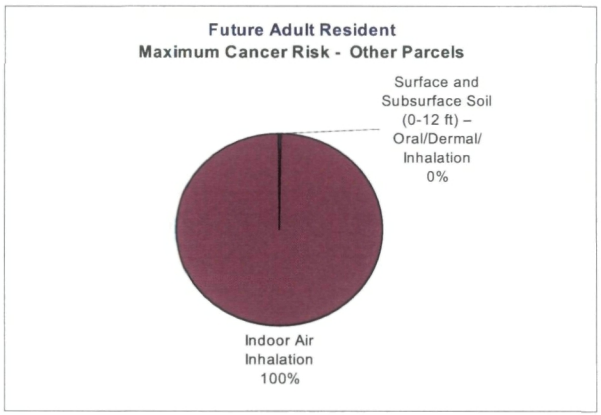


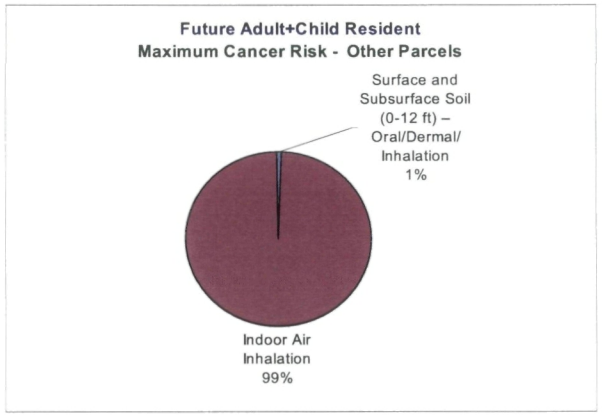
Figure 6-1
Pie Graphs of Total Cancer Risk by Pathway
Current Commercial/Industrial Worker

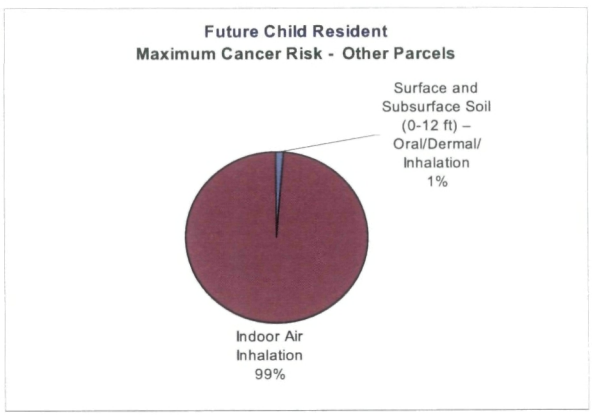


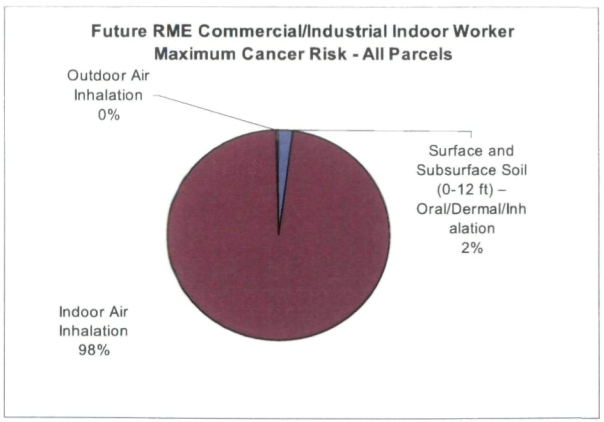












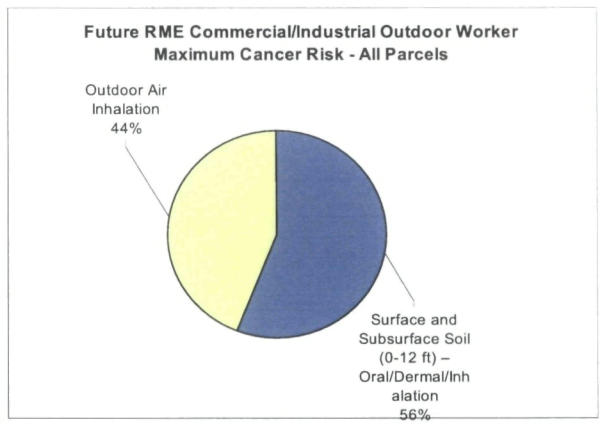


Figure 6-2
Pie Graphs of Total Cancer Risk by Pathway
Future Residents (Adult, Child, and Adult+Child) and
Future Commercial/Industrial Indoor and Outdoor Workers

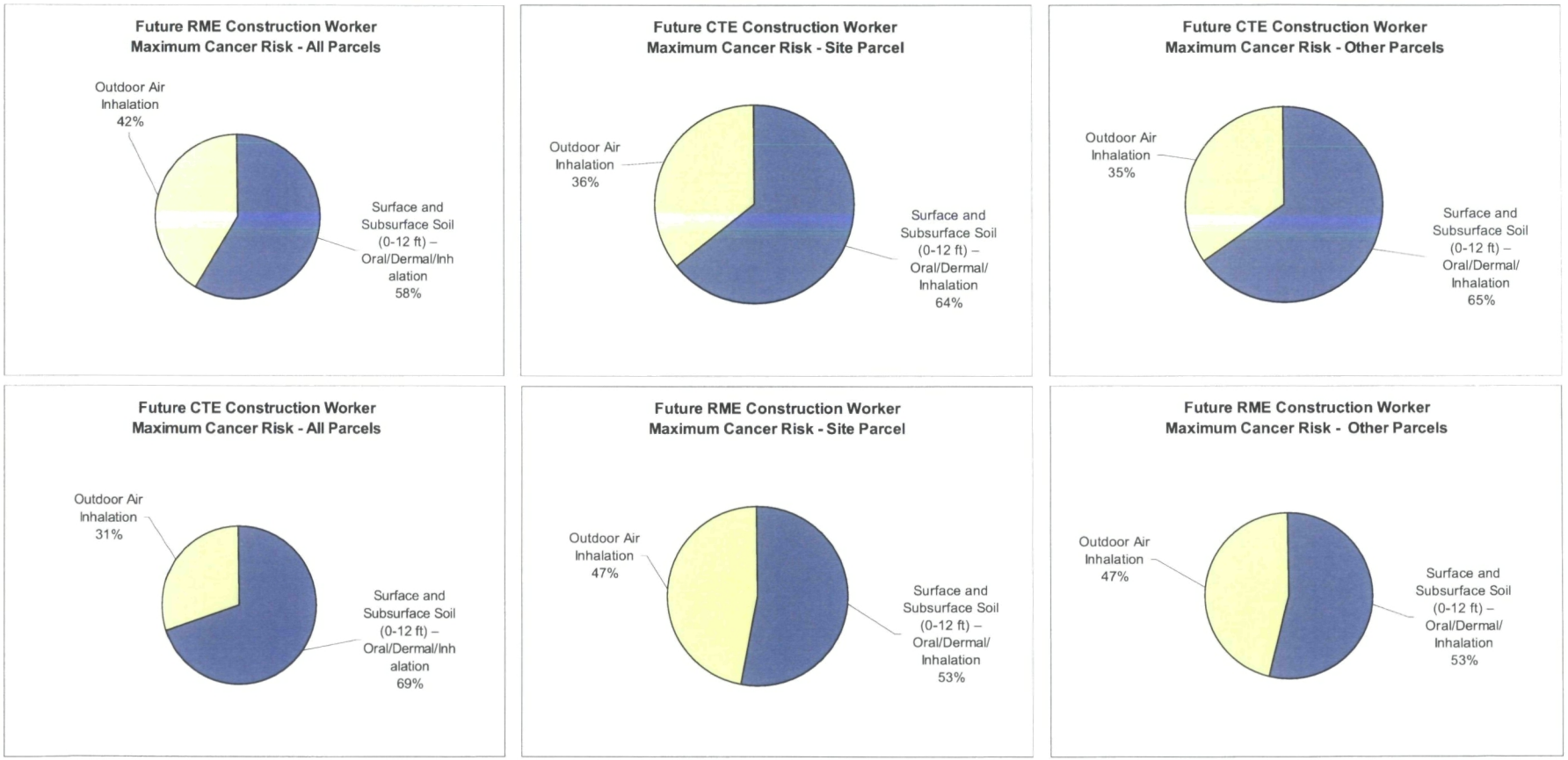
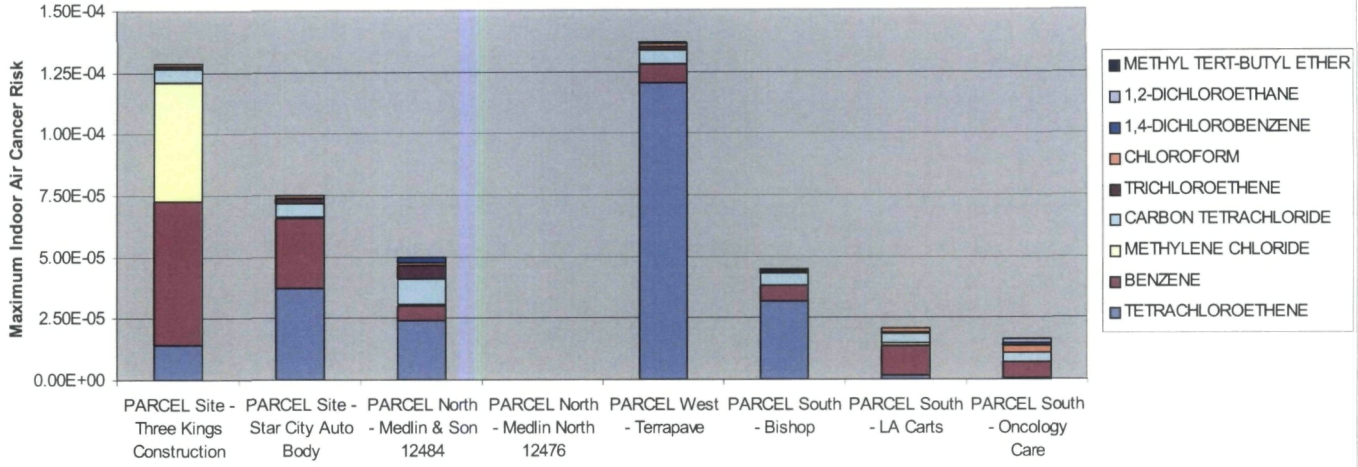
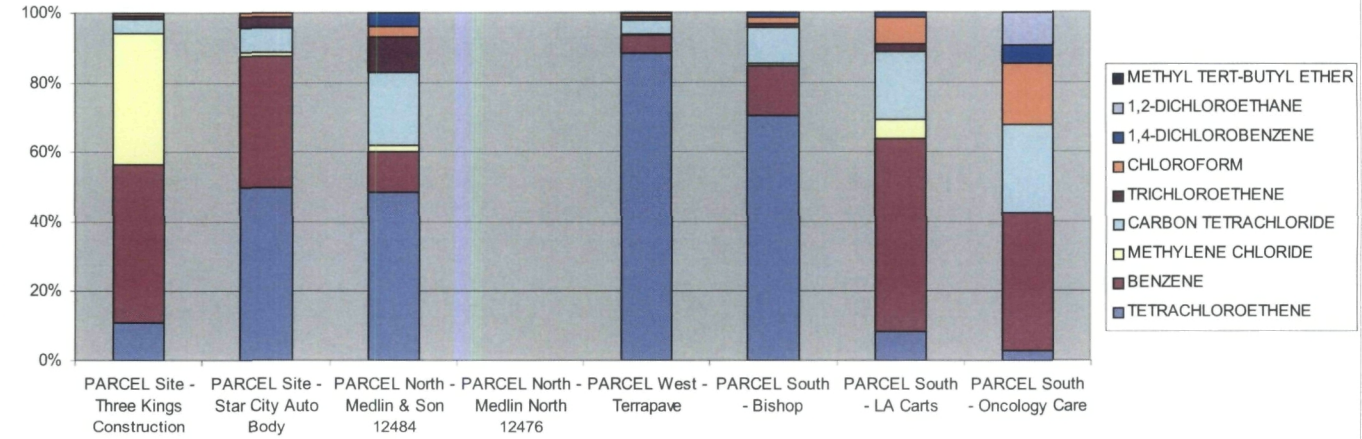


Figure 6-3
Pie Graphs of Total Cancer Risk by Pathway
Future Construction Worker

Current RME Commercial/Industrial Worker Cancer Risk by Chemical for Indoor Air Inhalation Pathway

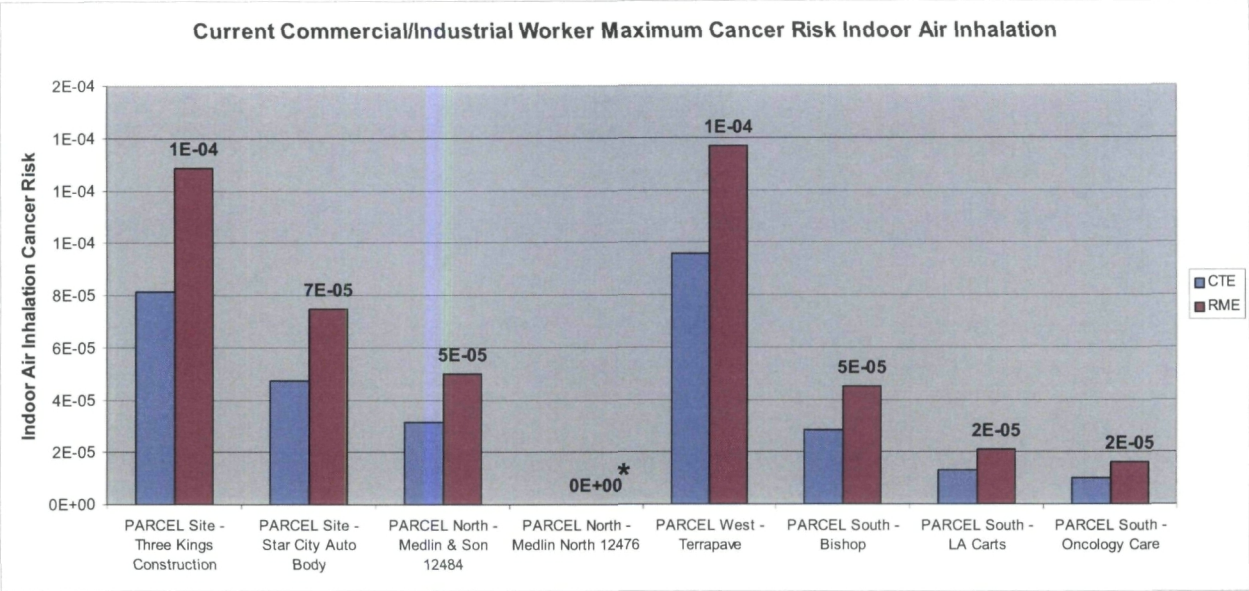


Current RME Commercial/Industrial Worker by Chemical Percentage of Total Cancer Risk for Indoor Air Inhalation Pathway



Chemical	RME Commercial Industrial Worker Cancer Risk by Chemical for Indoor Air Inhalation Pathway							
	PARCEL Site - Three Kings Construction	PARCEL Site - Star City Auto Body	PARCEL North - Medlin & Son 12484	PARCEL North - Medlin North 12476	PARCEL West - Terrapave	PARCEL South - Bishop	PARCEL South - LA Carts	PARCEL South - Oncology Care
1,2-DICHLOROETHANE								9.55%
1,4-DICHLOROBENZENE			4.0%		0.4%	1.5%	1.6%	5.1%
BENZENE	45.5%	37.6%	11.7%		5.4%	14.1%	55.5%	39.4%
CARBON TETRACHLORIDE	4.0%	7.1%	20.8%		3.9%	10.2%	19.7%	25.6%
CHLOROFORM	0.8%	1.1%	2.7%		0.7%	1.7%	7.5%	17.4%
METHYL TERT-BUTYL ETHER						0.1%		
METHYLENE CHLORIDE	37.6%	1.2%	1.9%		0.2%	0.7%	5.2%	
TETRACHLOROETHENE	11.1%	49.8%	48.4%		88.1%	70.5%	8.3%	3.0%
TRICHLOROETHENE	1.0%	3.2%	10.4%		1.2%	1.2%	2.1%	
Other	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 6-4
Current RME Commercial/Industrial Worker Indoor Air Cancer Risks by Chemical



* No carcinogenic compounds were selected as COPCs at the Medlin North Building

Figure 6-5
Current Commercial/Industrial Worker
Maximum Indoor Air Cancer Risks

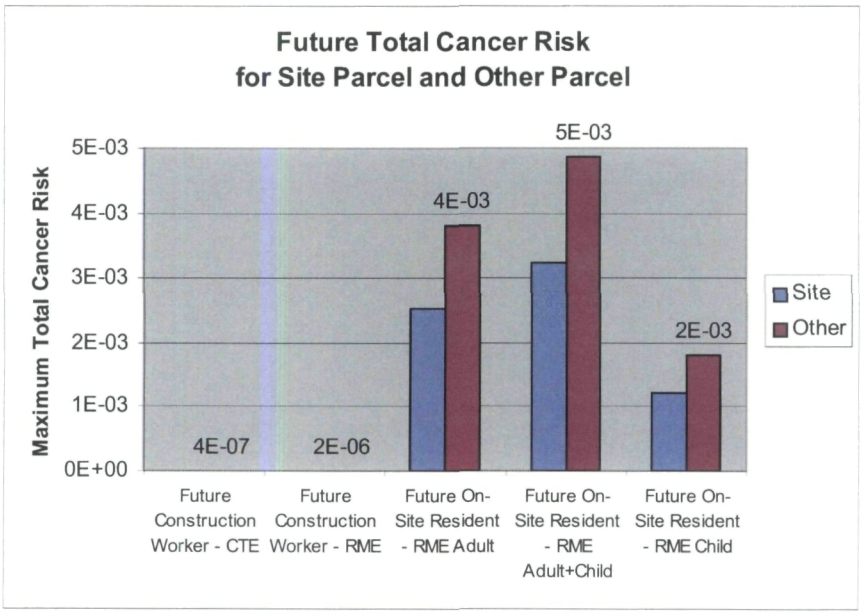
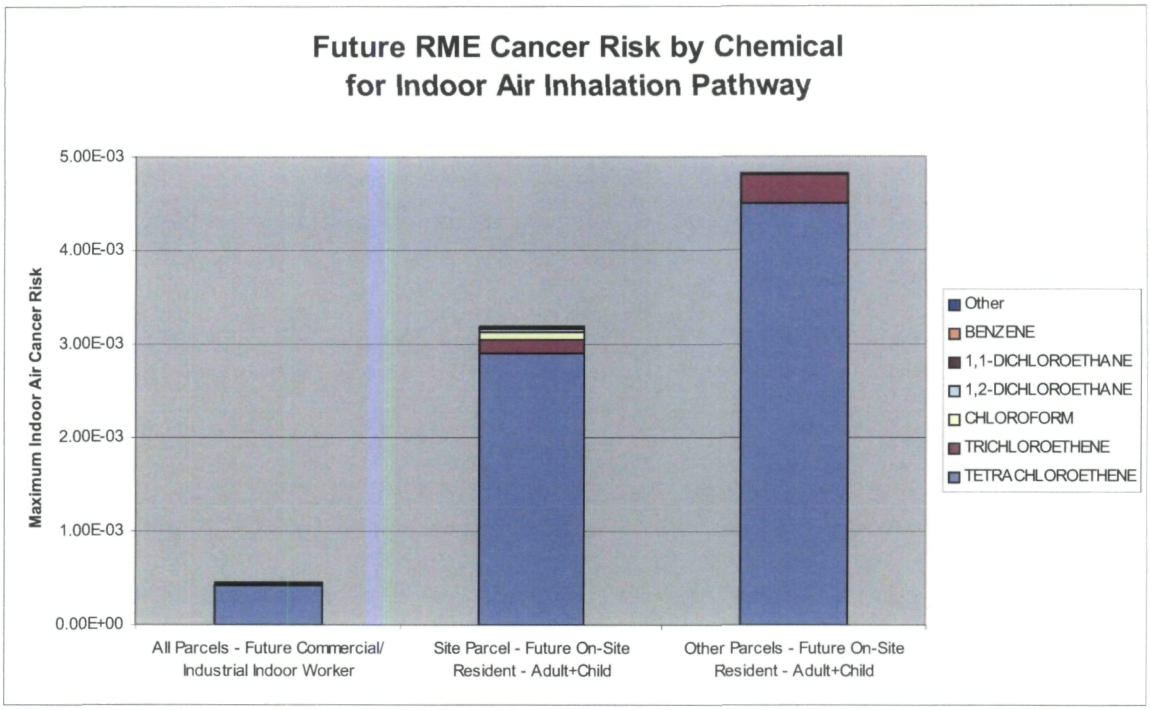


Figure 6-6
Future Residents and Construction Worker
Total Cancer Risks



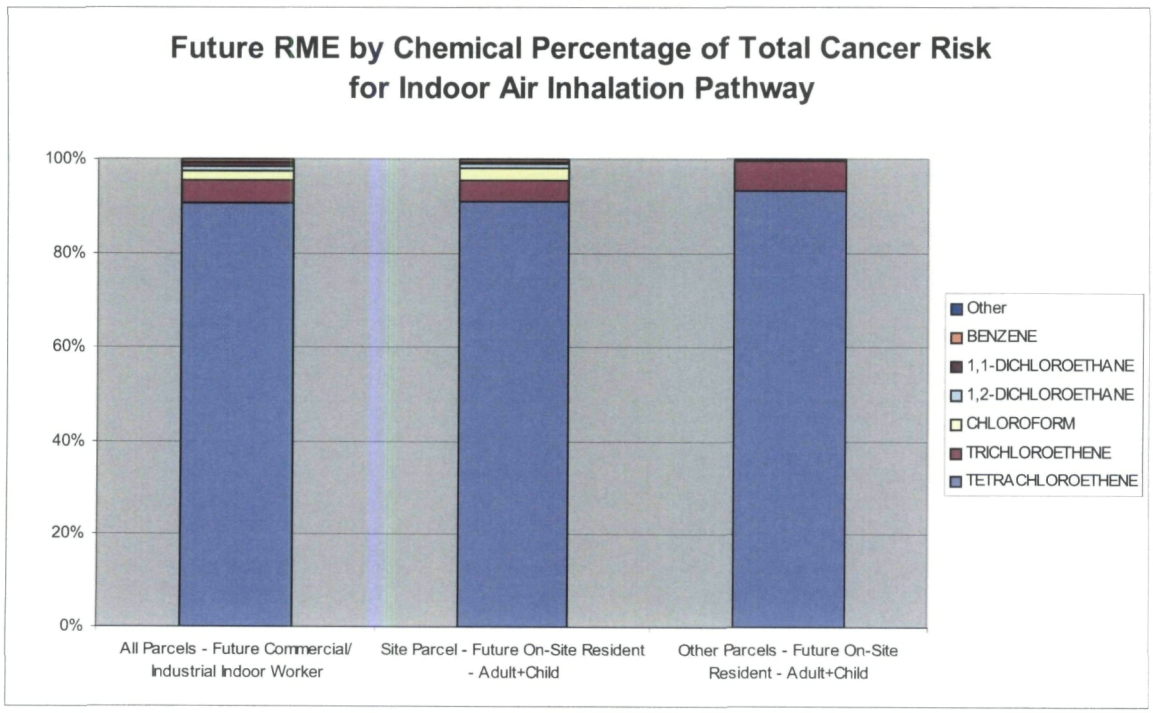


Figure 6-7
Future RME Indoor Air Cancer Risk by Chemical
Industrial Worker and Adult+Child Resident

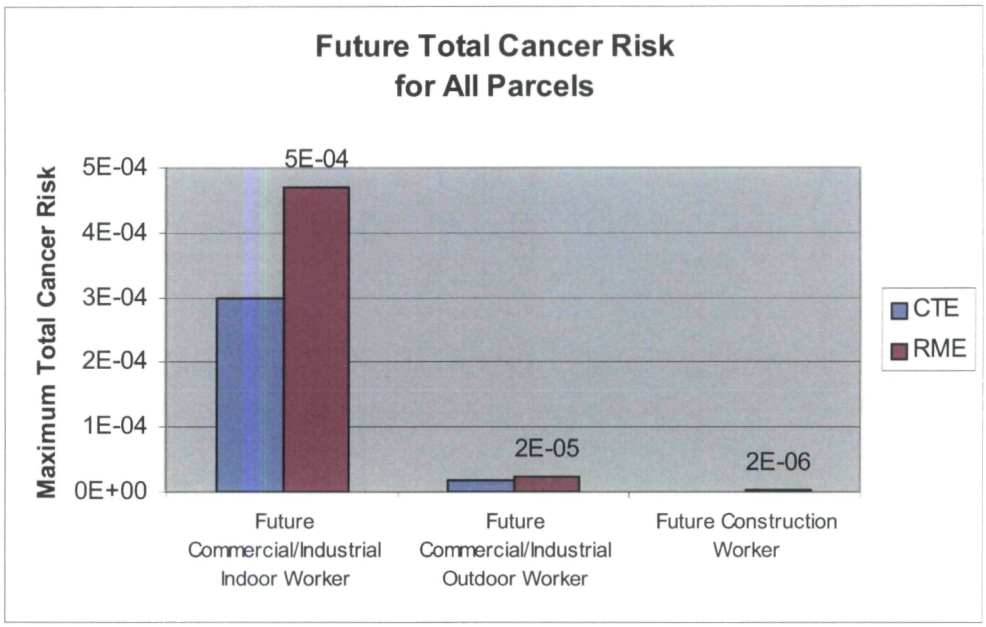
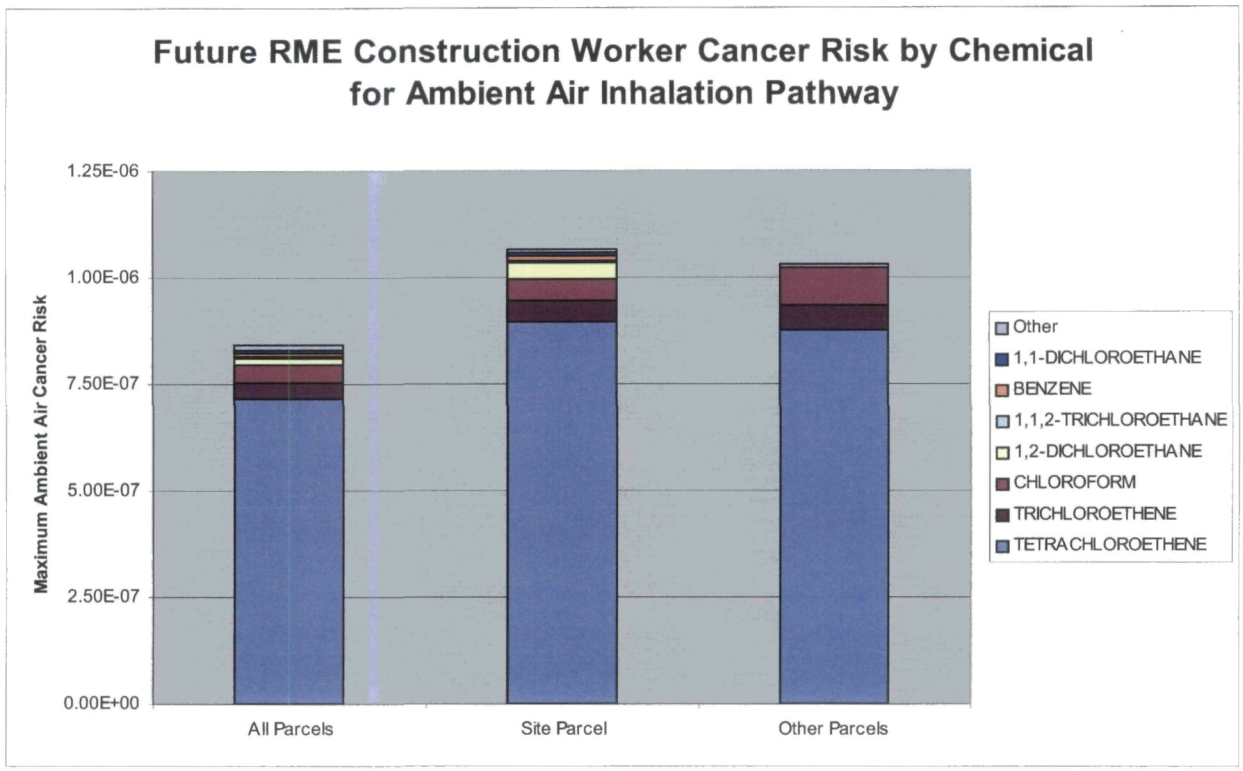


Figure 6-8
Future Commercial/Industrial Workers and Construction Workers
Total Cancer Risks



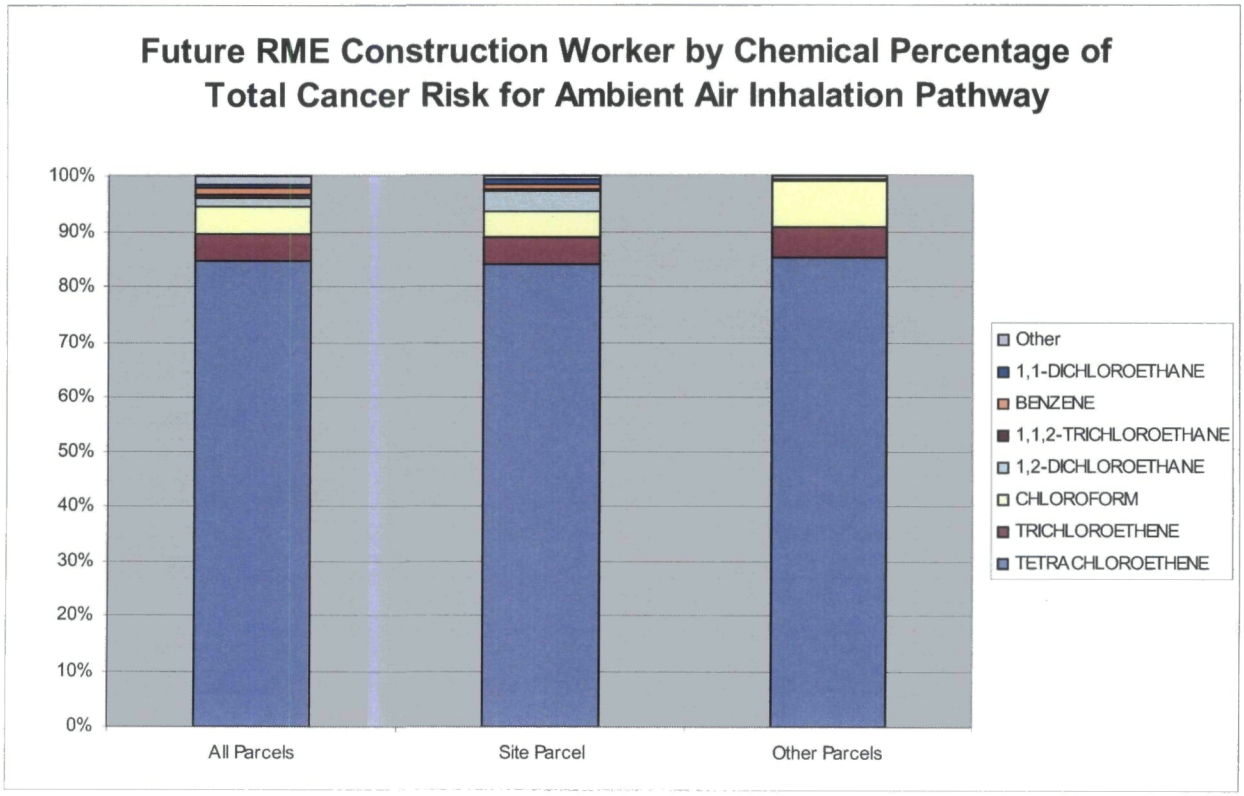
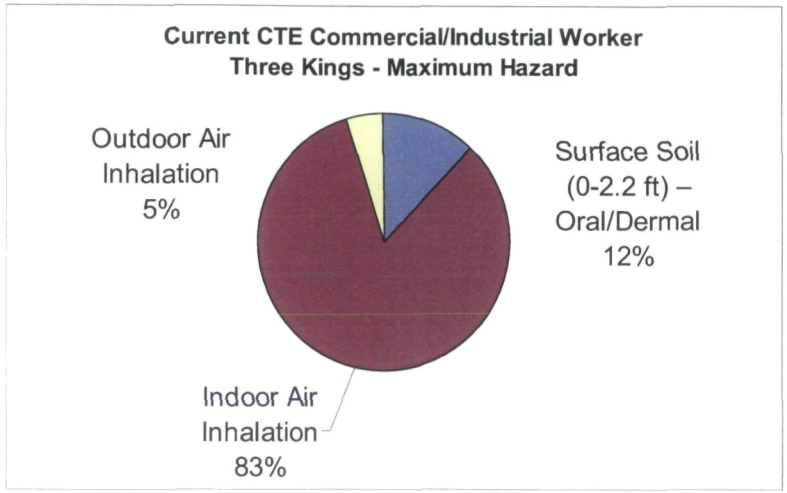
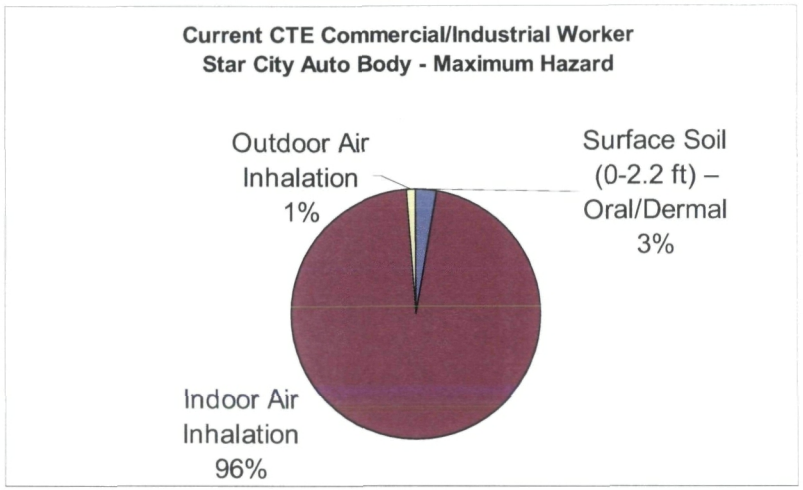
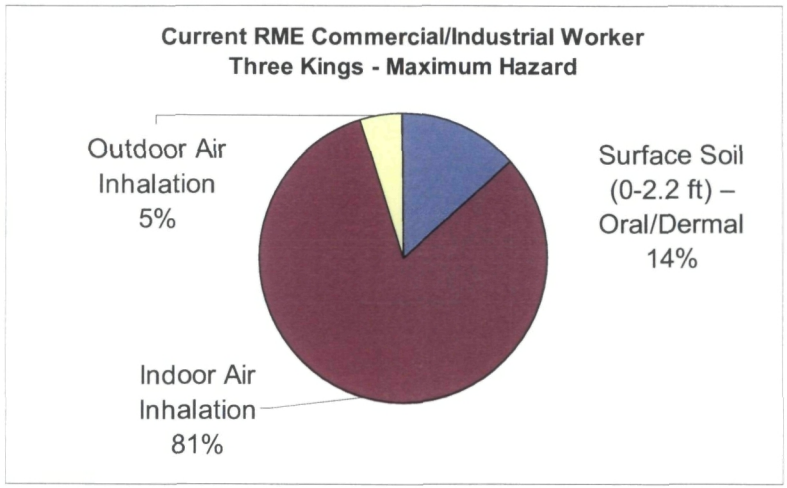


Figure 6-9
Future RME Ambient Air Cancer Risk by Chemical Construction Worker







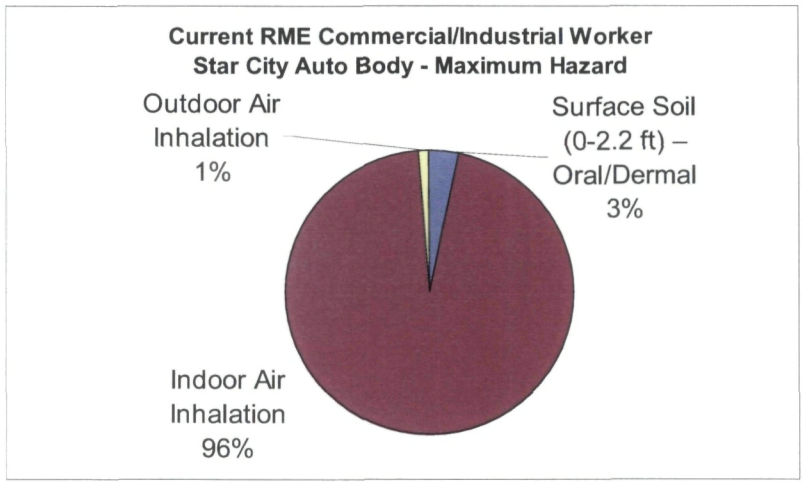


Figure 6-10
Pie Graphs of Total Hazard by Pathway
Current Commercial/Industrial Worker

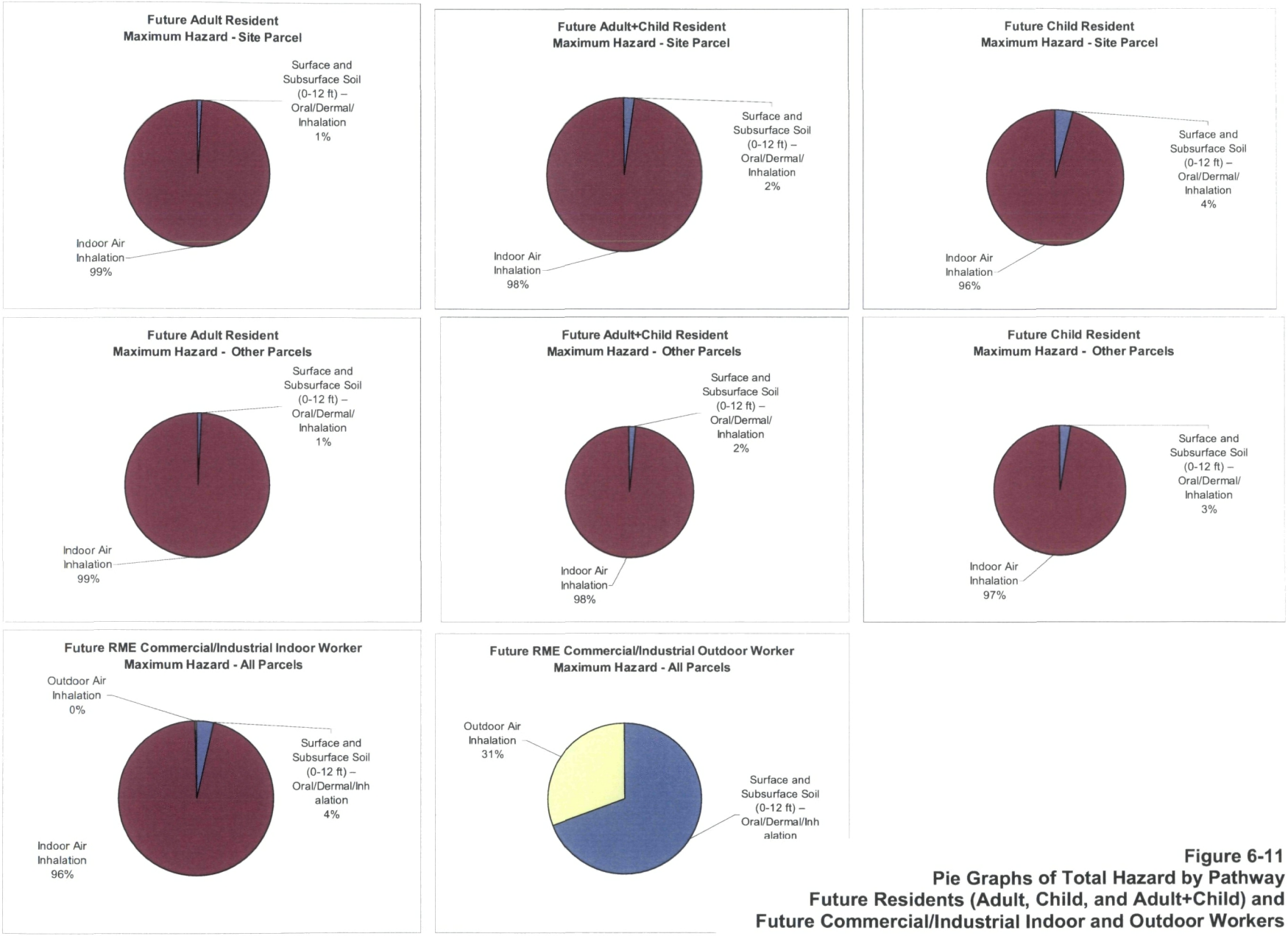


Figure 6-11
Pie Graphs of Total Hazard by Pathway
Future Residents (Adult, Child, and Adult+Child) and
Future Commercial/Industrial Indoor and Outdoor Workers

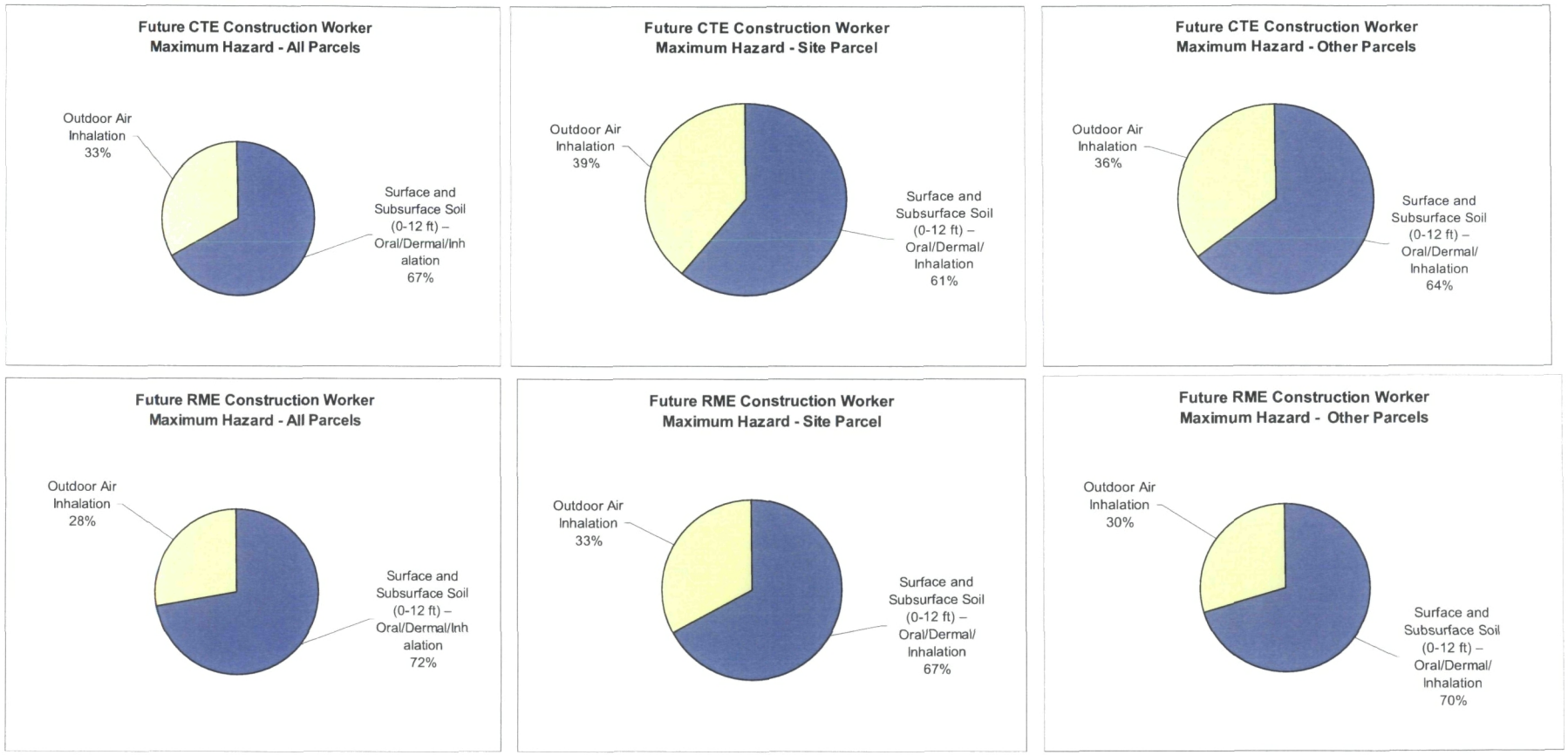
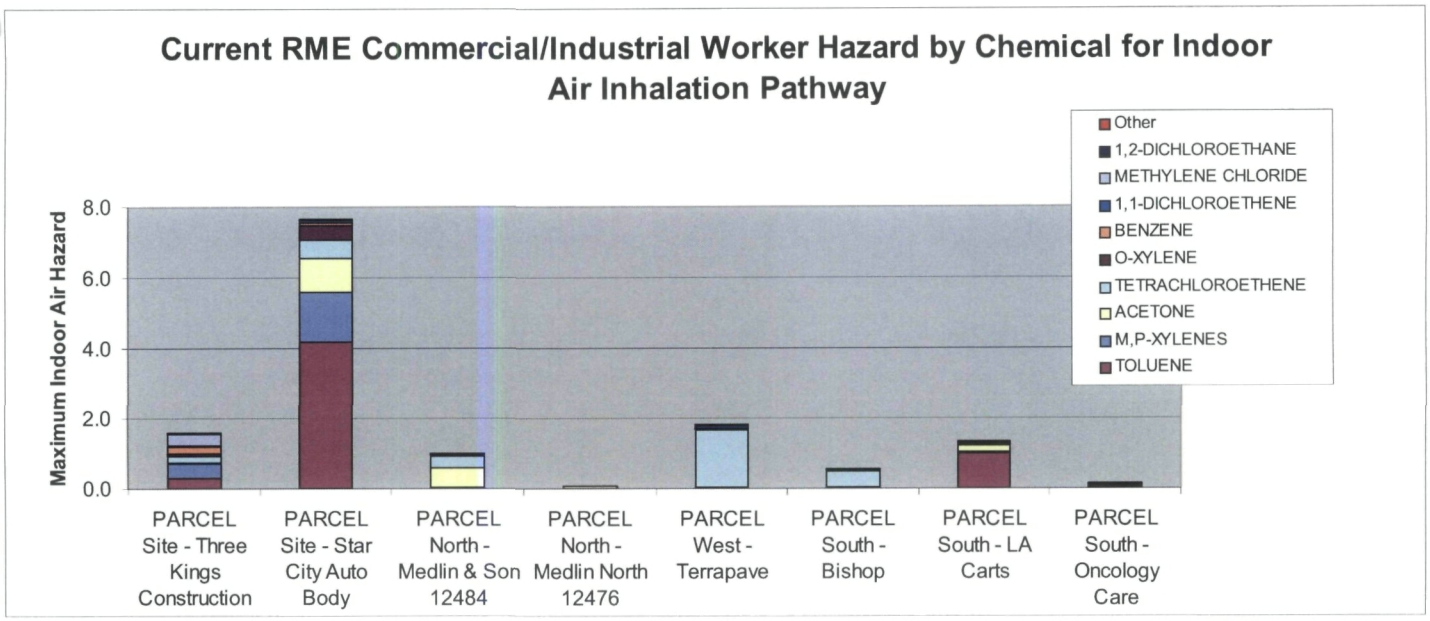
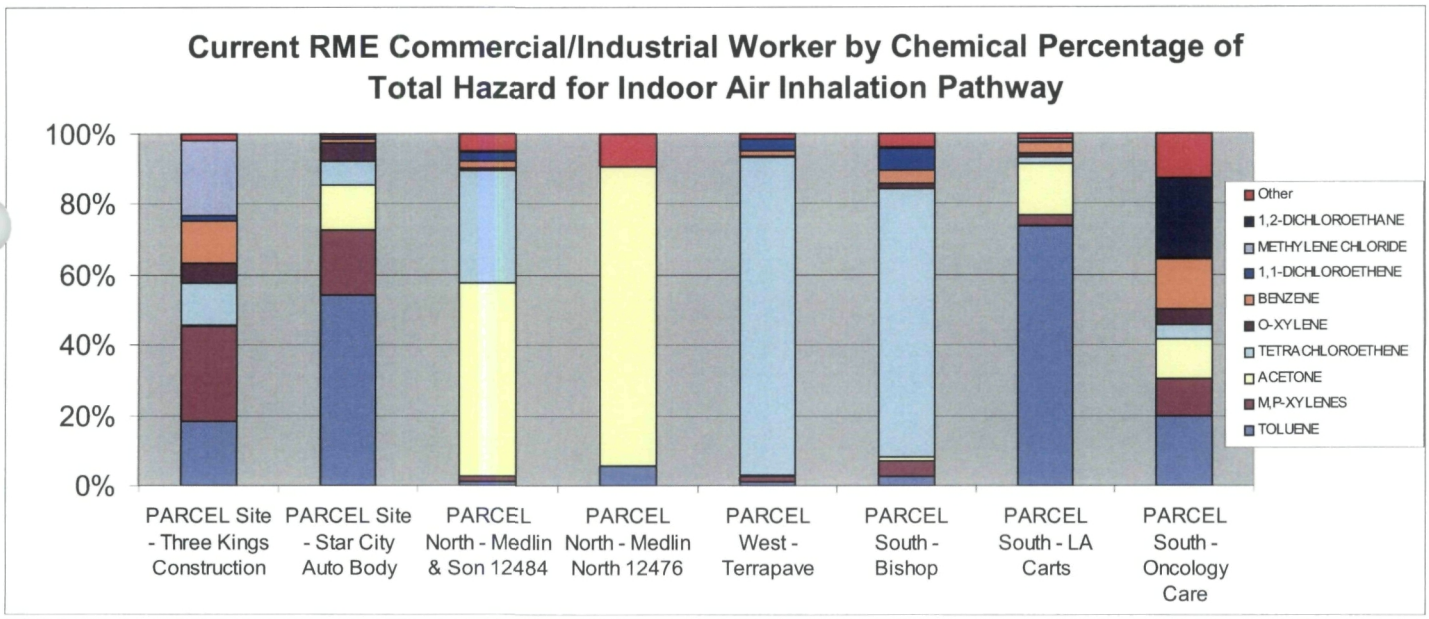


Figure 6-12
Pie Graphs of Total Hazard by Pathway
Future Construction Worker





Chemical	RME Commercial Industrial Worker Cancer Risk by Chemical for Indoor Air Inhalation Pathway							
	PARCEL Site - Three Kings Construction	PARCEL Site - Star City Auto Body	PARCEL North - Medlin & Son 12484	PARCEL North - Medlin North 12476	PARCEL West Terrapave	PARCEL South - Bishop	PARCEL South - LA Carts	PARCEL South - Oncology Care
TOLUENE	18.45%	54.26%	1.26%	5.79%	0.96%	2.57%	73.91%	19.72%
M,P-XYLENES	26.7%	18.3%	1.4%		1.6%	4.5%	2.8%	10.8%
ACETONE	0.5%	12.9%	55.0%	84.7%	0.4%	1.2%	14.8%	10.9%
TETRACHLOROETHENE	12.1%	6.6%	32.0%		90.2%	76.0%	1.8%	4.4%
O-XYLENE	5.5%	5.3%	0.5%		0.6%	1.6%	1.0%	4.5%
BENZENE	11.9%	1.2%	1.9%		1.3%	3.7%	2.9%	13.9%
1,1-DICHLOROETHENE	1.5%	0.6%	2.6%		3.3%	6.4%	0.7%	0.4%
METHYLENE CHLORIDE	21.2%	0.1%	0.7%		0.1%	0.4%	0.6%	
1,2-DICHLOROETHANE								22.7%
Other	2.0%	0.7%	4.7%	9.5%	1.5%	3.7%	1.5%	12.6%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 6-13
Current RME Commercial/Industrial Worker Indoor Air Hazard by Chemical

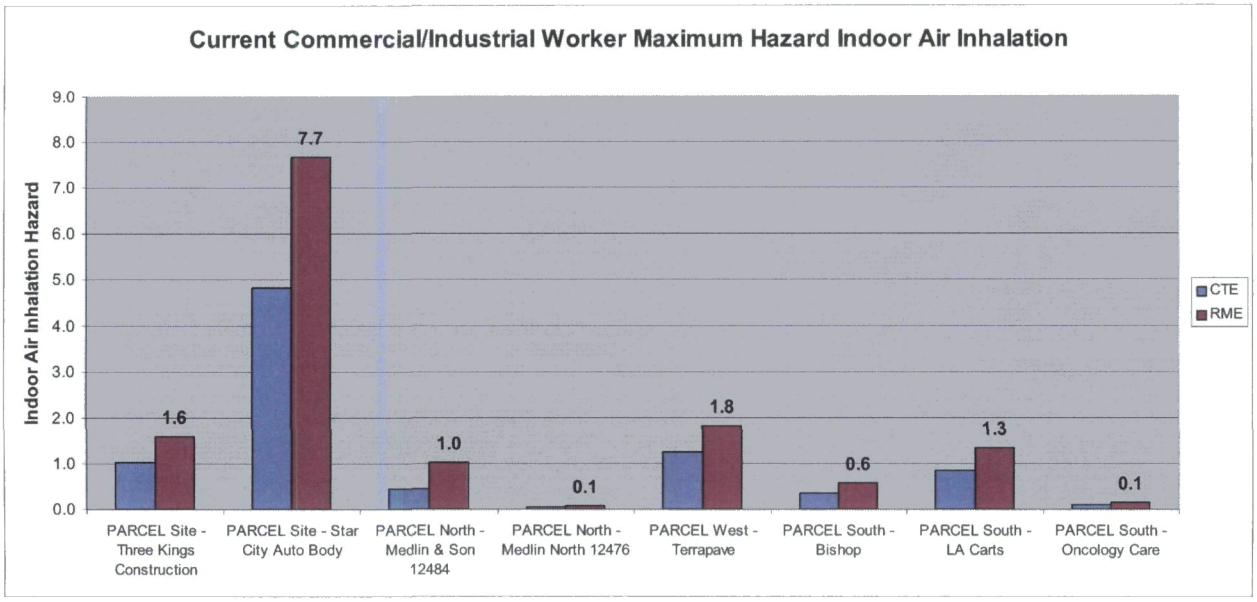


Figure 6-14
Current Commercial/Industrial Worker
Maximum Indoor Air Hazard

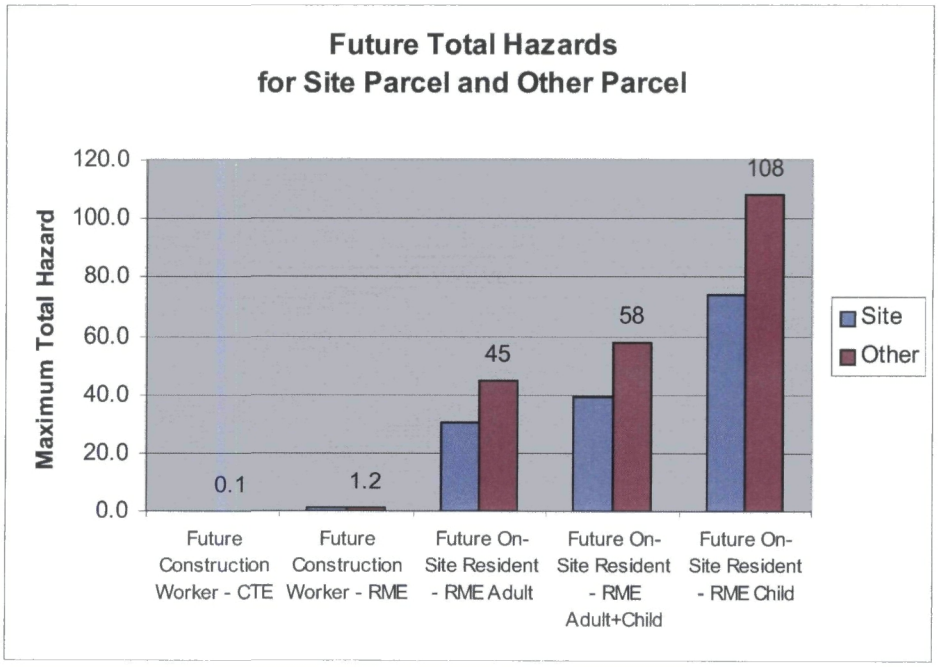
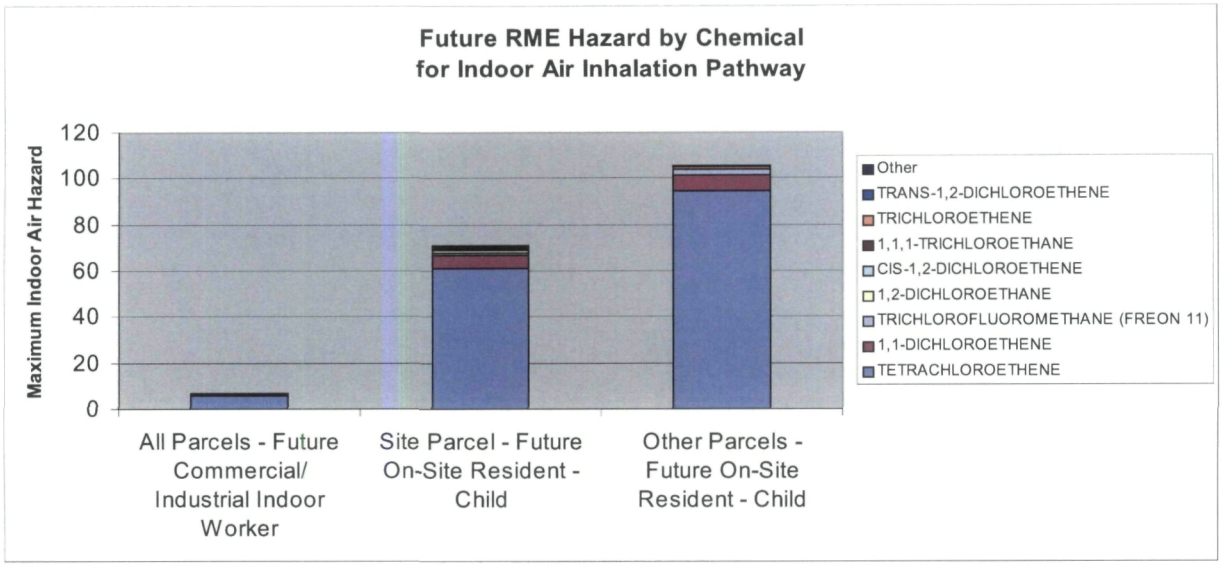
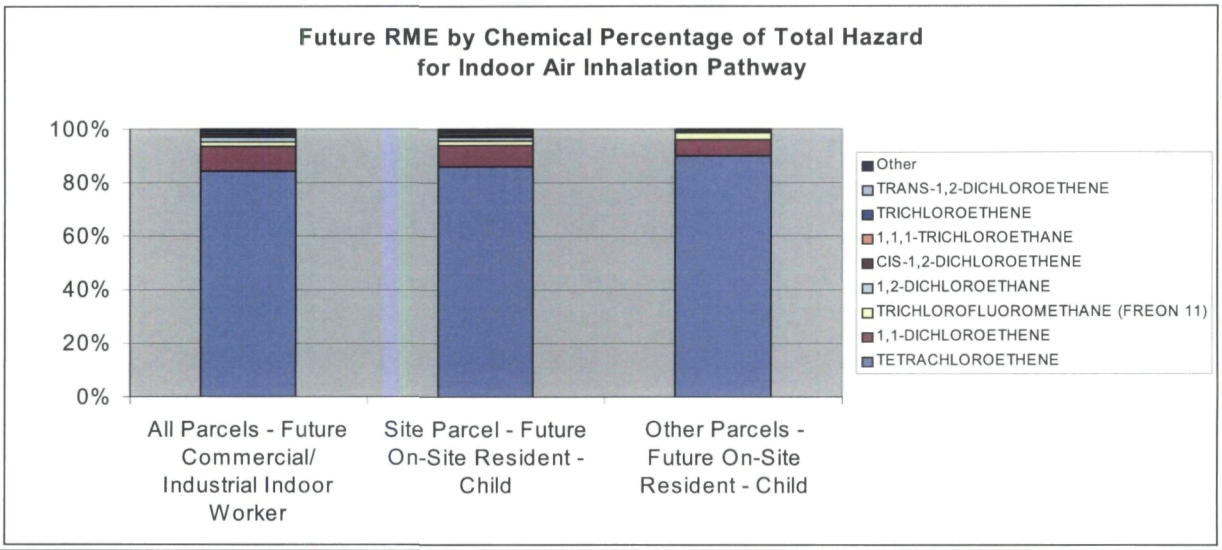


Figure 6-15
Future Residents and Construction Worker
Total Hazard





Chemical	All Parcels - Future Commercial/ Industrial Indoor Worker	Site Parcel - Future On-Site Resident - Child	Other Parcels - Future On-Site Resident - Child
TETRACHLOROETHENE	84.2%	86.0%	89.8%
1,1-DICHLOROETHENE	9.3%	8.1%	6.4%
TRICHLOROFLUOROMETHANE (FREON 11)	1.9%	1.6%	2.5%
1,2-DICHLOROETHANE	1.4%	1.5%	
CIS-1,2-DICHLOROETHENE	1.3%	0.9%	
1,1,1-TRICHLOROETHANE	0.4%	0.6%	0.0%
TRICHLOROETHENE	0.8%	0.8%	1.0%
TRANS-1,2-DICHLOROETHENE	0.2%	0.3%	0.2%
Other	0.5%	0.4%	0.1%
TOTAL	100%	100%	100%

Figure 6-16
Future RME Indoor Air Hazard by Chemical
Industrial Worker and Child Resident

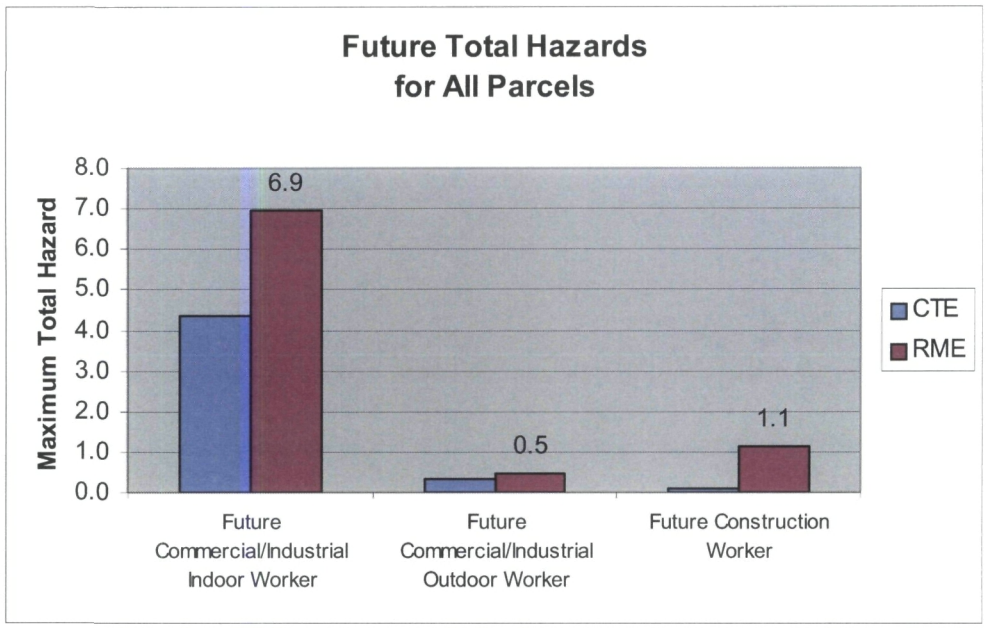
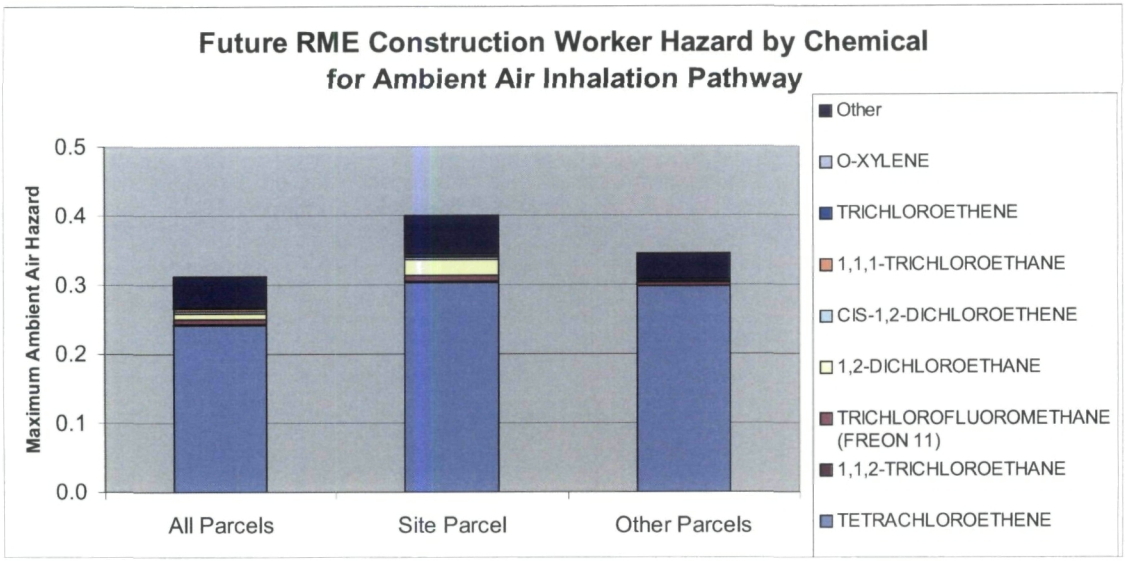
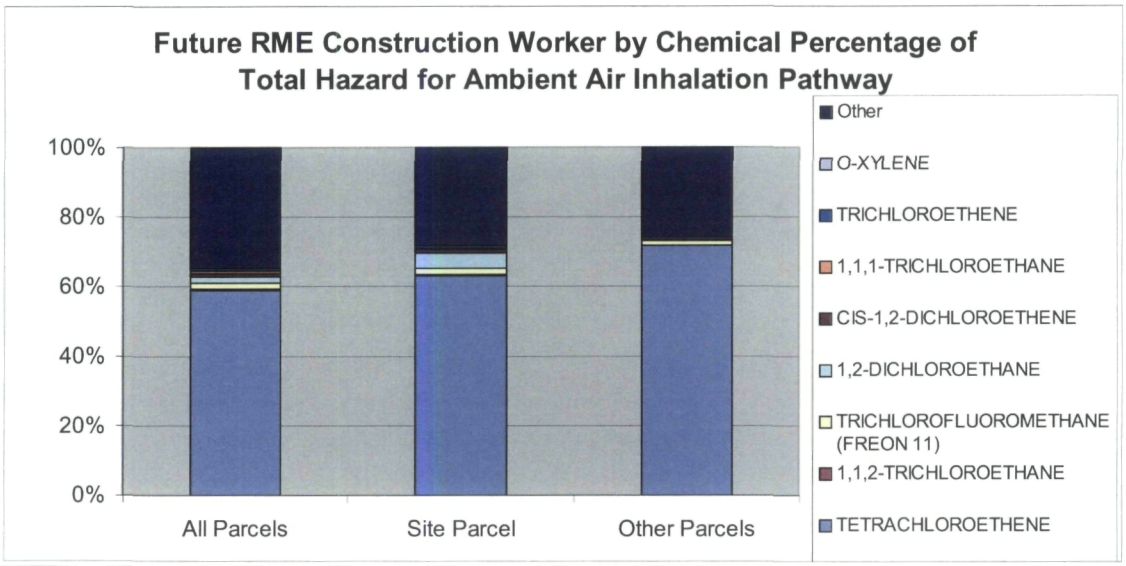


Figure 6-17
Future Commercial/Industrial Workers and Construction Workers Total Hazard





Chemical	Future Construction Worker - RME by percentage		
	All Parcels	Site Parcel	Other Parcels
TETRACHLOROETHENE	77.5%	76.0%	86.2%
1,1,2-TRICHLOROETHANE	0.5%	0.4%	
TRICHLOROFLUOROMETHANE (FREON 11)	2.2%	2.1%	1.8%
1,2-DICHLOROETHANE	2.5%	5.6%	
CIS-1,2-DICHLOROETHENE	1.2%	1.1%	0.2%
1,1,1-TRICHLOROETHANE	1.0%	0.5%	0.1%
TRICHLOROETHENE	0.8%	0.7%	1.0%
O-XYLENE	0.1%	0.1%	0.0%
Other	14.3%	13.6%	10.7%
TOTAL	100%	100%	100%

Figure 6-18
Future RME Ambient Air Hazard by Chemical
Construction Worker

Table 6-1
Summary of Chronic Cancer Risks and Chronic Non-Cancer Hazards - Current Scenarios

Receptor	Exposure Pathway	PARCEL Site - Three Kings Construction				PARCEL Site - Star City Auto Body				PARCEL North - Medlin & Son 12484				PARCEL North - Medlin North 12476		PARCEL West - Terrapave				PARCEL South - Bishop				PARCEL South - LA Carts				PARCEL South - Oncology Care			
		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk	Total Chronic Non-Cancer Hazard	Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum			Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Current Commercial/Industrial worker CTE	**Surface Soil to 2.2 ft bgs –** Oral/Dermal/Inhalation[3]	9 E-06	9 E-06	0.15	0.15	9.E-06	9.E-06	0.15	0 15	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	Indoor Air – Inhalation Pathway[1]	*1.E-05*	*8.E-05*	*0.15*	*1 0*	*2.E-05*	*5.E-05*	*0.3*	*4 8*	*1.E-05*	*3.E-05*	*0.09*	*0 6*	*0 E+00*	*0.05*	*4 E-05*	*1.E-04*	*0 5*	*1.2*	*1 E-05*	*3.E-05*	*0.12*	*0 4*	*9.E-06*	*1.E-05*	*0.06*	*0.8*	*1.E-05*	*1.E-05*	*0.09*	*0.09*
	Outdoor Air – Inhalation Pathway	*1.E-06*	*1.E-06*	*0.06*	*0.06*	*1.E-06*	*1.E-06*	*0 06*	*0 06*	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	TOTAL	**2.E-05**	**9.E-05**	**0.4**	**1.2**	**3.E-05**	**6.E-05**	**0.5**	**5.1**	**1.E-05**	**3.E-05**	**0.1**	**0.6**	**0.E+00**	**0.05**	**4.E-05**	**1.E-04**	**0.5**	**1.2**	**1.E-05**	**3.E-05**	**0.12**	**0.4**	**9.E-06**	**1.E-05**	**0.06**	**0.8**	**1.E-05**	**1.E-05**	**0.09**	**0.09**
Current Commercial/Industrial worker RME	**Surface Soil to 2.2 ft bgs –** Oral/Dermal/Inhalation[3]	1.E-05	1.E-05	0.3	0.3	1.E-05	1 E-05	0.3	0 3	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	Indoor Air – Inhalation Pathway[1]	*2.E-05*	*1.E-04*	*0 2*	*1.6*	*3 E-05*	*7.E-05*	*0.4*	*7.7*	*2.E-05*	*5.E-05*	*0.14*	*1.0*	*0 E+00*	*0 08*	*6 E-05*	*1.E-04*	*0.7*	*1.8*	*2.E-05*	*5.E-05*	*0.2*	*0.6*	*1.E-05*	*2.E-05*	*0.10*	*1.3*	*2.E-05*	*2.E-05*	*0 14*	*0.15*
	Outdoor Air – Inhalation Pathway	*2.E-06*	*2.E-06*	*0.09*	*0 09*	*2 E-06*	*2.E-06*	*0.09*	*0.09*	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]	NA[2]
	TOTAL	**4.E-05**	**1.E-04**	**0.6**	**2.0**	**4.E-05**	**9.E-05**	**0.8**	**8.0**	**2.E-05**	**5.E-05**	**0.1**	**1.0**	**0.E+00**	**0.08**	**6.E-05**	**1.E-04**	**0.7**	**1.8**	**2.E-05**	**5.E-05**	**0.2**	**0.6**	**1.E-05**	**2.E-05**	**0.10**	**1.3**	**2.E-05**	**2.E-05**	**0.14**	**0.15**

(1) Indoor air inhalation pathway was calculated using measured indoor air data.
(2) Soil and Outdoor air pathways not calculated separately for the parcels
(3) Surface soil risks and hazards for Three Kings Construction and Star City Auto Body are the same for both buildings because there is only one set of soil data for the site.
(4) Outdoor air exposure concentrations calculated from measured outdoor air concentrations.

Table 6-2
Summary of Chronic Cancer Risks and Chronic Non-Cancer Hazards - Future Scenarios

Receptor	Exposure Pathway	PARCEL Site - Former Omega Property [1]				Parcels Other than the Former Omega Property				All Parcels			
		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard		Total Chronic Cancer Risk		Total Chronic Non-Cancer Hazard	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
Future Commercial/Industrial worker Indoor Worker CTE	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									8.E-06	8.E-06	0.14	0.14
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]									8.E-07	3.E-04	0.009	4.2
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									2.E-09	7.E-07	0.00002	0.010
	TOTAL									9.E-06	3.E-04	0.15	4.4
Future Commercial/Industrial worker Indoor Worker RME	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.3	0.3
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]									1.E-06	5.E-04	0.014	7
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									3.E-09	1.E-06	0.00003	0.02
	TOTAL									1.E-05	5.E-04	0.3	6.9
Future Commercial/Industrial worker Outdoor Worker CTE	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.23	0.23
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									2.E-08	8.E-06	0.0002	0.11
	TOTAL									1.E-05	2.E-05	0.23	0.3
Future Commercial/Industrial worker Outdoor Worker RME	Surface and Subsurface Soil to 12 ft bgs – Oral/Dermal/Inhalation									1.E-05	1.E-05	0.3	0.3
	Outdoor Air (Soil gas 5 to 6 Feet bgs) - Inhalation Pathway									3.E-08	1.E-05	0.0003	0.15
	TOTAL									1.E-05	2.E-05	0.3	0.5
Future Construction Worker CTE	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	2.E-07	2.E-07	0.08	0.08	2.E-07	2.E-07	0.08	0.08	2.E-07	2.E-07	0.08	0.08
	Outdoor Air (Soil gas 5 to 12 Feet bgs) - Inhalation Pathway - in Excavation (3)	1.E-09	1.E-07	0.0002	0.05	7.E-11	1.E-07	0.00006	0.04	5.E-10	1.E-07	0.00012	0.04
	TOTAL	2.E-07	4.E-07	0.08	0.1	2.E-07	4.E-07	0.08	0.1	2.E-07	3.E-07	0.08	0.1
Future Construction Worker RME	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	1.E-06	1.E-06	0.8	0.8	1.E-06	1.E-06	0.8	0.8	1.E-06	1.E-06	0.8	0.8
	Outdoor Air (Soil gas 5 to 12 Feet bgs) - Inhalation Pathway - in Excavation (3)	8.E-09	1.E-06	0.002	0.4	5.E-10	1.E-06	0.0005	0.3	4.E-09	8.E-07	0.0009	0.3
	TOTAL	1.E-06	2.E-06	0.8	1	1.E-06	2.E-06	0.8	1	1.E-06	2.E-06	0.8	1
Future On-Site Resident [4] RME - Adult	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	2.E-05	2.E-05	0.3	0.3	2.E-05	2.E-05	0.3	0.3				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	3.E-05	3.E-03	0.4	30	3.E-06	4.E-03	0.08	45				
	TOTAL	5.E-05	3.E-03	0.7	30	2.E-05	4.E-03	0.4	45				
Future On-Site Resident [4] RME - Adult+Child	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	4.E-05	4.E-05	0.9	0.9	4.E-05	4.E-05	0.9	0.9				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	4.E-05	3.E-03	0.5	38	4.E-06	5.E-03	0.11	57				
	TOTAL	8.E-05	3.E-03	1.4	39	4.E-05	5.E-03	1.0	58				
Future On-Site Resident [4] RME - Child	Surface and Subsurface Soil to 12 ft bgs – Oral /Dermal, Inhalation of Fugitive Dust	3.E-05	3.E-05	3.2	3.2	3.E-05	3.E-05	3.2	3.2				
	Indoor Air (Soil gas 5 to 6 Feet bgs) – Inhalation Pathway [2]	2.E-05	1.E-03	0.9	71	1.E-06	2.E-03	0.20	105				
	TOTAL	4.E-05	1.E-03	4.1	74	3.E-05	2.E-03	3.4	108				

(1) For future scenarios there is only one set of soil data for on-site.
(2) Indoor air pathway was calculated using soil gas data since future buildings are not expected to have the same characteristics as the current building where indoor air samples were measured.
(3) Outdoor air exposure concentrations calculated from soil gas concentrations.
(4) Future residential development is unlikely for any area of the site. Calculations were only conducted on-site to provide a representative calculation for potential residential exposure.

Table 6-3
Comparison of Attenuation Factors for Primary Site Constituents
Omega Chemical Site - Whittier, California

Parcel	Compound	Soil Gas (6 feet) ($\mu g/m^3$)			Indoor Air ($\mu g/m^3$)			Attenuation Factor (α_{SG} = IA/SG)		
		Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Maximum	Average
North	PCE	379,591	1,294,898	2,100,000	4.3	9.28	22	2.05E-06	5.80E-05	7.16E-06
	TCE	139,672	302,418	470,000	2.3	5.40	14	4.89E-06	1.00E-04	1.79E-05
	1,1-DCA	1,052	1,052	1,052	ND	ND	ND	NC	NC	NC
	Benzene	ND	ND	ND	0.91	1.18	1.1	NC	NC	NC
	Freon 11	840,000	923,737	1,000,000	1.6	7.32	12	1.60E-06	1.43E-05	7.92E-06
South	PCE	1,200	30,064	88,119	0.24	8.09	29	2.72E-06	2.42E-02	2.69E-04
	TCE	340	17,494	41,901	0.44	0.92	1.5	1.05E-05	4.41E-03	5.24E-05
	1,1-DCA	ND	ND	ND	ND	ND	ND	NC	NC	NC
	Benzene	16	16	16	1.1	1.37	2.2	6.88E-02	1.38E-01	8.55E-02
	Freon 11	920	177,373	528,029	1.5	2.42	3.7	2.84E-06	4.02E-03	1.36E-05
West	PCE	430,000	1,015,000	1,600,000	39	73.50	110	2.44E-05	2.56E-04	7.24E-05
	TCE	24,000	55,000	86,000	1.6	2.93	4.4	1.86E-05	1.83E-04	5.32E-05
	1,1-DCA	ND	ND	ND	ND	ND	ND	NC	NC	NC
	Benzene	ND	ND	ND	1.1	1.25	1.4	NC	NC	NC
	Freon 11	1,400	104,500	4,100	0.18	5.18	0.2	4.39E-05	1.43E-04	4.95E-05
Site	PCE	16,000	923,727	3,400,000	1	11.54	34	2.94E-07	2.13E-03	1.25E-05
	TCE	3,100	125,423	450,000	0.25	2.70	6.5	5.56E-07	2.10E-03	2.16E-05
	1,1-DCA	36	1,640	110,000	ND	ND	ND	NC	NC	NC
	Benzene	44	641	2,100	2.6	5.49	11	1.24E-03	2.50E-01	8.57E-03
	Freon 11	4,300	273,514	790,000	2	6.53	14	2.53E-06	3.26E-03	2.39E-05

ug/m^3: microgram per cubic meter

(1) Average is the arithmetic mean

Section 7

Section 7
Uncertainties

7.1 Uncertainties in the Risk Assessment Process

A degree of uncertainty is associated with all phases of a risk assessment. This section describes the potential impact of uncertainties associated with the database, exposure assumptions, and toxicity assessment on the final step of the risk assessment and risk characterization. In addition, uncertainties inherent in risk characterization are identified and discussed.

7.2 Uncertainties in the Database

Site data appear to provide an adequate characterization of current conditions at the site. Numerous samples were collected across the site for all media, and in many cases sampling locations were biased towards contaminated (or formerly contaminated) areas. That is, much of the site characterization effort focused on and near known source/release areas. Moreover, more than one round of sampling was completed for each media, reducing any concerns with taking a "snap shot" of site conditions that was not representative of typical conditions. This concern is particularly relevant to soil gas and indoor air concentrations which could theoretically vary considerably over time.

Overall, available data for the site can be considered representative, or somewhat biased toward areas of contamination. COPC selection based on these data is likely to include chemicals that present little risk rather than exclude chemicals that may be of concern. Risk assessment based on available data can be used with confidence to produce a conservative (protective) evaluation of potential human health risks.

7.3 Uncertainties with Exposure Assessment

Methods used in this risk assessment are conservative; methods are used that are more likely to overestimate than underestimate possible health risks. For example, risks and hazards are calculated for individuals that are likely to be exposed at locations where COPC concentrations are predicted to be highest. Further, individuals are assumed to be exposed for almost all days of the year and for many years to maximize estimates of possible exposure. Resulting cancer risk estimates represent upper-range predictions of exposure, and therefore health risk, which may be associated with living or working on the site. By protecting hypothetical individuals that receive the highest exposures (i.e., people living at or working at locations for which the highest emissions are predicted), the risk assessment will also be protective for actual members of the population that are not as highly exposed.

Potential risks and hazards associated with vapor intrusion under current conditions were considered on a parcel-by-parcel basis, using data from indoor air sampling for existing buildings. These estimates allow better visualization of potential site-impacts at the Omega Site and at surrounding properties, as well as providing an indication of possible current Site-related health risk, if any. This approach eliminates the

possibility that combining data within a larger exposure area (e.g. the Omega Site and all surrounding parcels) dilute out parcels with high and low potential for vapor intrusion.

7.3.1 Exposure Populations

Oncology Care Medical Associates is located in the South parcel, at the northeast corner of Putnam Street and Washington Boulevard. It is a 3,720 square foot, U-shaped, one level building, with an exterior paved parking lot. The building has a reception/waiting area in the front, with offices, examination rooms, a medicine storage/mixing room, and treatment room occupying the remainder of the building. This facility serves as an outpatient medical facility where patients receive oncology treatment. The chemical inventory of Oncology Care only noted several medications and an obvious odor of isopropyl alcohol, which is used for surface disinfecting throughout the facility. The HVAC evaluation revealed three AC units on the roof. The units appeared to be fairly new, and did have intakes allowing outside air to be drawn into the building. The medicine storage/mixing room contained two fume hoods for mixing medicines. The larger fume hood apparently discharges fumes from the top of the unit to the indoor air

Oncology patients are likely to have suppressed immune systems due to chemotherapy or radiology. As such, they are a potentially sensitive population that may be more affected by exposure to chemicals than the average healthy person. However, most oncology patients would not be attending the facility for the decades assumed in a risk assessment for a staff worker. Oncology treatment periods are usually less than a year at a time with patients going to the facility for a few hours a week depending on the course of treatment. Although some patients require more than one course of treatment or may have to return to the facility if the cancer reoccurs, their total time spent at the facility is still considerably less than a staff worker. Current workers at Oncology Care were assessed based on measured indoor air concentrations. As noted in Section 6, indoor air risks for workers at Oncology Care are 2E-05, which is within the middle of the EPA risk range.

7.3.2 Exposure Concentrations

The site is relatively small and will likely remain as single parcel; therefore, it was appropriately assessed as a single exposure unit. The same argument holds true for surrounding properties that are also relatively small and likely to remain as single parcels. Thus, separate evaluation of vapor intrusion for these parcels is also justified. Exposure point concentrations for individual is, however, subject to some uncertainty because dividing Site data by parcel reduces the size of the datasets used for EPC calculations.

Generally, 95% UCL concentrations were used as the exposure concentrations for site media. A 95% UCL is a statistic meaning that there is a 95% confidence (probability) that the concentration on the site will be at this level. For samples with non-detectable levels of a contaminant, one-half of the reporting limit is substituted when calculating the 95% UCL.

For example, PCE is the primary COPC of concern at the site. The 95% UCL for PCE in soil gas from 5 to 6 feet bgs for the Site parcel is 1,355,479µg/m^3 (199,923 ppbv) while PCE concentrations detected in the 22 indoor air samples ranged from 16,272 to 3,390,000 µg/m^3 . Only 6 of the 22 PCE detections had concentrations higher than 1,355,479µg/m^3 (199,923 ppbv) . It is unlikely that a receptor would spend all of his time (in the case of a commercial/industrial worker - 8 hours a day, 250 days a year for 25 years) standing at the location of the highest PCE detection. In such a manner, use of the 95% UCL as the exposure concentration provides a reasonable estimate of exposure.

In some cases, however, small datasets forced the use of the maximum detected concentration in indoor air as the EPC. Use of the maximum is likely overestimate possible indoor air concentrations. In these cases, additional conservatism may be included in risk and hazard estimates.

For a conservative estimate of potential health risks from soil gas for the future industrial worker and hypothetical residential scenarios, samples collected from 5 to 6 feet bgs collected from 2004 to 2006 were used to calculate the exposure concentrations for soil gas. Soil gas concentrations can vary seasonally and the availability of multiple rounds of soil gas sampling increased confidence in exposure point concentrations. Higher concentrations of some COPCs were found at greater depths bgs, but available data provide no indication that the observed vertical profile of soil gas concentrations is not representative of typical conditions at the site. That is, the profile did not change notably between sampling events. Thus, higher concentrations found below 6 feet bgs do not suggest that current modeling for vapor intrusion significantly underestimates potential risks or hazards. Soil gas samples collected between 5 and 30 feet bgs were used in the evaluation of the construction worker since construction workers may be present in excavations.

Measured indoor air data was used to represent indoor air under current scenarios. Due to the small number of samples collected in the buildings, 95% UCLs could not be calculated and maximum detected concentrations were used instead. The use of maximum concentrations to represent all exposures likely results in an overestimate of risks. Therefore, minimum detected concentrations in the buildings were also evaluated to provide the risk manager with a range of risks that could be experience by potential receptors.

7.3.3 Exposure Pathways

Risks and hazards calculated for future commercial/industrial worker soil exposure pathways assume that soil is available for contact. However, the site is currently covered by buildings and other impervious surfaces, and it is unlikely that soils would remain uncovered (i.e., bare) following redevelopment, eliminating much potential for exposure to Site soils. Therefore, risks and hazards associated with the exposure pathways of dermal contact, soil ingestion, and inhalation of particulates are ceiling estimates, and actual risks are likely to be negligible.

7.3.4 Estimates of Indoor and Ambient Air Concentrations

Indoor air concentrations for the site for current scenarios were estimated directly from measured indoor air concentrations. Indoor air concentrations are likely to vary during the course of a day and seasonally, and may be influenced by sources of VOCs inside of buildings and, conceivably, in ambient air. Variations in concentrations over the course of a day were addressed in the sampling by continuous sample collection over an 8-hour period, during typical work hours. These samples provide an overall daily average concentration, which is most appropriate for assessing chronic daily exposure. In addition, samples were taken in various work areas within each building to help ensure that vagaries of building ventilation did not produce spurious results. Thus, available data are reasonable estimates of daily exposure on sample collection days.

Seasonal variation was addressed by collecting samples on two or more occasions. Results from these separate sampling events were very similar for a given building. It is likely that available data reasonably describe likely indoor air quality for each of the buildings sampled. Risks estimated on the basis of measured indoor air concentrations probably fall into upper range of those possible for the site and surrounding parcels.

A final issue concerning indoor air measurements is that they cannot be used directly to estimate future indoor air concentrations should the site and/or surrounding parcels be redeveloped. While it is not possible to predict future indoor air concentrations, it is reasonable to assume that new buildings would be constructed following existing commercial building codes which are likely to require a vapor barrier and substantial ventilation. Moreover, new buildings would have intact buildings with few if any cracks that would facilitate vapor intrusion. Thus, vapor intrusion can be predicted to be less for new construction than is suggested by current indoor air data. Also, current indoor air data are likely to include non-site-related VOCs from building and/or ambient air. Current data therefore are likely to overestimate site-related risks and hazards.

However, over time, cracks may develop in the new foundation and holes may develop in the vapor barriers. In addition, building codes may require engineered fill to be placed under the foundation, which could be more permeable than the clay assumed to currently be in place and the loam assumed in the modeling. In addition, redevelopment of the area could include the construction of multi-story buildings with elevators. Elevators in multi-story buildings require subsurface foundations, and elevator movement can create a piston effect than could potentially draw vapors into the building as zones of negative pressure are created during elevator rise. These types of considerations for multi-story buildings are not taken into account in the Johnson and Ettinger Model. Therefore, it is uncertain whether current data overestimate or underestimate site-related future risks and hazards.

Risk estimates developed in this document for future vapor intrusion used measured soil gas concentrations modeled using a spreadsheet model to estimate future indoor air concentrations. Modeling is associated with some uncertainty, and inputs to the

model were chosen to ensure that theoretical risks and hazards would be over- rather than underestimated. For example, to be conservative and health protective, loam was selected as the soil type for the Johnson and Ettinger model. However, the measured effective conductivity (K_s) for shallow soils at the site is significantly lower than the default value (0.5 cm/hr) used for loam in the model. Measured effective conductivities for the site are shown in Table 7-1.

Outdoor air concentrations for the future industrial worker were also estimated using measured soil gas concentrations. As noted above, modeling introduces additional uncertainties into the estimates. A comparison of modeled outdoor air to actual measured outdoor air is provided in Table 7-2. As shown in the table, measured and modeled PCE and TCE concentrations are similar. However, measured and modeled concentrations for some chemicals like acetone and benzene are very dissimilar. This variance is consistent with other outdoor sources (such as benzene in car exhaust) contribute to ambient air concentrations at the site. Further, outdoor air samples collected at the site were not intended to provide an estimate of local air quality. For example, one outdoor air sample was collected immediately outside of the front door at Skateland. Concentrations of VOCs in this sample undoubtedly reflect VOCs leaking from within the building. At the time of sampling, concentrations of VOCs inside Skateland were a few to several hundred $\mu g/m^3$.

Finally, estimates of releases of VOCs to ambient air are likely to overestimate any possible releases. For the windfield (box model) assumed for future industrial workers, an air concentration of PCE of about 7.7 $\mu g/m^3$ is associated with a risk of 1E-06. PCE is used for this analysis since it is the major contributor to site-related risks via inhalation. This concentration implies a flow of soil gas across the soil-air interface of about 0.000132 m^3/sec. Over the course of a year, all of the soil gas within 6 feet of ground surface over 0.7 acres (about 3/4 of the site) would have been released to ambient air. As discussed in Section 3.3.7, shallow soil gas concentrations are typically greater than concentrations measured deeper in the soil profile. Also, concentrations of VOCs beneath neighboring properties are substantially lower than those below the site. Thus, as soil gas in the most highly contaminated areas was released, it would likely be replaced by deeper or adjacent soil gas with lower PCE concentrations, or would be replaced with "clean" ambient air. Thus, even if volumetric flow rates did not change, PCE emission rates and therefore ambient air concentrations would be less than those predicted as soon as soil gas began to be replaced from less contaminated sources.

After the course of 25 years, the volume of shallow soil gas beneath the Site would be replaced about 17 times, implying that none of the higher concentrations of PCE in soil gas would remain, and that release rates across the soil-air interface would have decreased dramatically.

It seems unlikely that the amounts of PCE and other VOCs in shallow soil gas are sufficient to support long-term ambient air concentrations that would be of concern for future workers at or near the site. Intrusion into indoor air remains a more viable exposure pathway because of the relatively low indoor air exchange rates used in

evaluating intrusion. Lower exchange rates imply that lower emissions (intrusion rates) would be necessary to maintain given indoor air concentrations. This in turn suggests that intrusion could remain a substantive problem for chronic exposure periods.

Calculations in support of the above analysis are provided in Appendix E.

7.4 Uncertainties Associated with Toxicity Assessment

A potentially large source of uncertainty is inherent in the derivation of the EPA toxicity criteria (i.e., RfDs, and cancer slope factors). In many cases, data must be extrapolated from animals to sensitive humans by the application of uncertainty factors to an estimated NOAEL or LOAEL for non-cancer effects. While designed to be protective, it is likely in many cases that uncertainty factors overestimate the magnitude of differences that may exist between human and animals, and among humans.

In some cases, however, toxicity criteria may be based on studies that did not detect the most sensitive adverse effects. For example, many past studies have not measured possible toxic effects on the immune system. Moreover, some chemicals may cause subtle effects not easily recognized in animal studies. The effects of lead on cognitive function and behavior at very low levels of exposure serve as examples.

In addition, derivation of cancer slope factors often involves linear extrapolation of effects at high doses to potential effects at lower doses commonly seen in environmental exposure settings. Currently, it is not known whether linear extrapolation is appropriate. In all likelihood, the shape of the dose response curve for carcinogenesis varies with different chemicals and mechanisms of action. It is not possible at this time, however, to describe such differences in quantitative terms.

It is likely that the assumption of linearity is conservative and yields slope factors that are unlikely to lead to underestimation of risks. Yet, for specific chemicals, current methodology could cause slope factors, and, hence, risks, to be underestimated.

Use of CalEPA toxicity criteria could either over or underestimate potential risks, but it is difficult to determine either the direction or magnitude of any errors. In general, however, it is likely that the criteria err on the side of protectiveness for most chemicals.

Benzo(g,h,i)perylene in soil was the only chemical eliminated based on lack of toxicity criteria. Quantitative risks and hazards could not be calculated for this chemical in the absence of toxicity criteria. As such, this chemical was removed from the quantitative analysis. Omission of this chemical is unlikely to affect the outcome of the risk assessment. Although toxicity factors have not been identified for this chemical, USEPA has classified benzo(g,h,i)perylene as not being a human carcinogen. Studies verifying non-carcinogenic effects from exposure to benzo(g,h,i)perylene are not available at this time.

In August 2001, EPA released a health risk assessment for TCE that presents a new cancer slope factor range, 2E-02 to 4E-01 $(mg/kg\text{-}day)^{-1}$, which would result in calculated risk estimates two to 40 times greater than those calculated with OEHHA's slope factor for TCE, 1.3E-02 $(mg/kg\text{-}day)^{-1}$. The revised cancer slope factor range was based on stronger epidemiological evidence than was available for previous assessments. In particular, several diverse studies including cancer estimates derived for kidney and liver cancer from occupational exposure, non-Hodgkin's lymphoma from exposure to drinking water and liver cancer in laboratory mice provide the basis for the quantitative assessment. Currently, under EPA's cancer guidelines TCE would be classified as a "probable human carcinogen" (group B1), with "limited" human evidence and "sufficient" animal evidence of carcinogenicity. Under EPA's proposed cancer guidelines, TCE can be characterized as "highly likely to produce cancer in humans".

EPA's online toxicity database, IRIS, currently does not list toxicity factors for TCE, instead indicating that the carcinogen assessment for this chemical has been withdrawn following further review. The OEHHA online toxicity database continues to list the oral slope factor of 1.3E-02 $(mg/kg\text{-}day)^{-1}$ and inhalation slope factor of 7.0E-03 $(mg/kg\text{-}day)^{-1}$ for TCE. These values were used for the evaluation of TCE exposure in this risk assessment.

As shown in the tables and figures in Section 6, PCE is the primary risk driver at the site, followed by TCE. If the proposed and now withdrawn EPA TCE cancer slope factors were used, TCE risk values could be 2 to 40 times greater than calculated in this assessment and would make TCE the primary risk driver. TCE toxicity is currently being reconsidered and any TCE slope factors that come out of this revision are likely to be different than those previously proposed. Since calculated risks already indicate unacceptable risks due to exposure to PCE, any future upward revision of TCE toxicity values would not change the overall outcome of the assessment. In addition, any mitigation measures designed to reduce inhalation exposure to PCE would reduce inhalation exposures to TCE as well.

As noted in Section 5, dermal absorption factors are not available for all COPCs. RAGS Part E guidance only provides factors for semi-volatile organics. Volatile organics are likely to vaporize when they come in to contact with the skin and exposure to these chemicals are better captured under the inhalation pathway. Dermal exposure to inorganics is highly dependent on the speciation of the inorganics, and further research is not yet available. Thus, because dermal exposures cannot be further characterized at this time, dermal exposures in this risk assessment may underestimate actual risks and hazards.

7.5 Uncertainties in Risk Characterization

The current and future land use of the site was assumed to be commercial/industrial. The possibility that this site would be redeveloped for residential use is remote. Its location, surrounded by commercial/residential businesses and next to a major arterial, make it undesirable and unlikely for residential development. In addition, although the zoning of the site in the Whittier Boulevard Specific Plan-Workplace

District allows for Live/Work units and multi-family housing, City representatives have stated that it is unlikely that the Omega property will be redeveloped for residential uses (Adams, 2007). Thus, the assumption of a commercial/industrial land use is reasonable and appropriate.

Also if the site were redeveloped, with the construction of new commercial/industrial facilities, the foundation of the new facilities would be new and would likely not have significant cracks (as assumed in the indoor vapor intrusion model) that would allow easy passage of soil vapors.

The risk assessment assumes that current concentrations of COPCs will remain constant into the future. Data are not available to verify the appropriateness of this assumption. However, risk calculations for indoor air (which appears to be the primary pathway of concern) were based on data collected from 2004 to 2006. A review of the PCE indoor air data collected during this time period (provided in Table 7-3) shows a general decreasing trend of PCE concentrations. As such, it is likely that the risks calculated in this assessment provide an overestimate of future risks as PCE concentrations may decrease in the future. Uncertainties associated with future concentrations need to be taken into account whenever the risk estimates provided in this assessment are used in risk management decisions. They are considered equally important as the numerical estimates in providing a characterization of risk at the site.

Finally, risks and hazards calculated for exposures to construction workers to COPCs in surface and subsurface soil are likely to be artificially high because of the inherent conservatism in models used to estimate EPCs. Risks and hazards associated with direct contact with surface and subsurface soil appear to be minimal.

Table 7-1
Measured Soil Physical Properties

SAMPLE ID.	DATE	DEPTH feet	SAMPLE ORIENT. (1)	MOISTURE CONTENT (% wt)	OXIDATION REDUCTION POTENTIAL (mV)	CATION EXCHANGE (meq/100g)	TOTAL ORGANIC CARBON (mg/kg)	25.0 PSI CONFINING STRESS	
								NATIVE STATE EFFECTIVE PERMEABILITY TO WATER (2,3) (millidarcy)	NATIVE STATE EFFECTIVE HYDRAULIC CONDUCTIVITY (2,3) (cm/s)
		METHODOLOGY:		ASTM D2216	SM 2580B	EPA 9081	WALKLEY-BLACK	ASTM D5084	
GP1-015	12/29/03	15	v	25.6	230	8.7	2700	0.461	4.35E-07
GP1-035	12/29/03	35	v	6.1	250	2.6	790	103	9.38E-05
GP1-055	12/29/03	55	v	19.0	290	14.0	2450	0.051	4.72E-08
GP1-070	12/29/03	70	v	24.5	260	14.0	2700	0.125	1.15E-07
GP1-080	12/29/03	80	v	17.4	240	17.0	2100	0.031	2.87E-08
GP2-015	12/29/03	15	v	16.3	260	6.1	1850	0.326	3.01E-07
GP2-033	12/29/03	33	v	17.0	280	10.0	970	0.390	3.62E-07
GP2-045	12/29/03	45	v	19.6	300	13.0	1250	0.042	3.92E-08
GP2-060	12/29/03	60	v	18.8	320	14.0	1500	0.015	1.39E-08
GP2-085	12/29/03	85	v	19.8	300	13.0	1100	0.311	2.92E-07
GP3A-015	12/29/03	15	v	18.2	260	10.0	2450	0.838	7.89E-07
GP3A-030	12/29/03	30	v	22.6	310	18.0	2900	0.035	3.32E-08
GP3A-057	12/29/03	57	v	35.9	260	11.0	1450	0.227	2.14E-07
GP3A-070	12/29/03	70	v	23.3	300	13.0	1750	0.051	4.66E-08
GP3A-084	12/29/03	84	v	20.8	270	10.0	1400	0.206	1.90E-07
GP6-15	2/26/04	N/A	V	22.4	340	11	2550	0.943	8.96E-07
GP6-30	2/26/04	N/A	V	22.4	320	12	2000	0.868	8.27E-07
GP6-45	2/26/04	N/A	V	25.9	340	9	1750	0.756	7.22E-07
GP6-60	2/26/04	N/A	V	20.6	330	14	1400	0.599	5.73E-07
GP6-80	2/26/04	N/A	V	22.1	320	14	1950	0.575	5.48E-07
OC-SG-06-04-041204	5/11/04	N/A	V	12.0	NA	NA	NA	9.80	9.41E-06
OC-SG-06-08-041304	5/11/04	N/A	V	19.7	NA	NA	NA	0.829	8.04E-07
OC-SS-000-13-040604	5/11/04	N/A	V	19.8	NA	NA	NA	2.49	2.38E-06
OC-SS-000-20-040604	5/11/04	N/A	V	26.4	NA	NA	NA	0.268	2.62E-07

(1) Sample Orientation: H = horizontal; V = vertical
(2) Native State = As received with pore fluids in place
(3) Permeability to water and conductivity measured at saturated conditions
NA = not analyzed
mV = millivolts
mg/kg = milligrams per kilograms
cm/s = centimeters per secong
meq/100 g = milliequivalents per 100 grams of soil

Table 7-2
Comparison of Modeled Outdoor Air with Measured Outdoor Air Concentrations

Chemical	Maximum Measured Outdoor Air Concentration - All Parcels ug/m^3	Measured Soil Gas 5 to 6 feet bgs - All Parcels		
		Soil Gas Exposure Point Concentration ug/m^3	Modeled Outdoor Air Value based on EPC [1] ug/m^3	Is measured concentration higher than modeled?
1,1,1-TRICHLOROETHANE	1.15E+00	3.53E+05	2.18E+00	NO
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.76E+00	1.61E+06	3.68E+00	NO
1,1,2,2-TETRACHLOROETHANE	3.92E-01	ND	ND	NO
1,1-DICHLOROETHANE	ND	3.84E+04	2.26E-01	NO
1,1-DICHLOROETHENE	6.35E-01	6.60E+05	4.71E+00	NO
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	9.38E+04	ND	NO
1,2-DICHLOROETHANE	ND	2.25E+03	1.86E-02	NO
1,2-DICHLOROBENZENE	2.94E-01	ND	ND	NO
1,4-DICHLOROBENZENE	3.91E-01	ND	ND	NO
2,2,4-TRIMETHYLPENTANE	ND	5.60E+01	ND	NO
ACETALDEHYDE	ND	9.72E+01	9.55E-04	NO
ACETONE	3.81E+03	5.97E+03	5.87E-02	YES
BENZENE	1.08E+00	1.42E+03	9.89E-03	YES
CARBON DISULFIDE	ND	5.13E+03	4.23E-02	NO
CARBON TETRACHLORIDE	6.29E-01	2.33E+02	1.44E-03	YES
CHLOROFORM	ND	5.73E+03	4.72E-02	NO
CIS-1,2-DICHLOROETHENE	ND	1.80E+04	1.05E-01	NO
DICHLORODIFLUOROMETHANE	3.32E+00	2.48E+03	1.57E-02	YES
ETHYLBENZENE	9.55E-01	ND	ND	NO
METHYLENE CHLORIDE	2.08E+00	ND	ND	NO
M,P-XYLENES	3.12E+00	6.08E+02	3.37E-03	YES
O-XYLENE	1.19E+00	ND	ND	NO
TETRACHLOROETHENE	1.76E+00	1.23E+06	7.00E+00	NO
TOLUENE	1.58E+01	1.59E+03	1.09E-02	YES
TRANS-1,2-DICHLOROETHENE	ND	6.70E+03	3.76E-02	NO
TRICHLOROETHENE	1.07E+00	1.84E+05	1.15E+00	NO
TRICHLOROFLUOROMETHANE (FREON 11)	1.97E+00	4.85E+05	3.35E+00	NO
VINYL CHLORIDE	ND	ND	ND	NO

(1) Exposure point concentrations for soil gas were modeled using a box model calculations to determine outdoor air concentrations. These concentrations are the EPC Outdoor Air value for industrial workers listed in Table 4-20.

ug/m^3: microgram per cubic meter.

ND = not detected

Table 7-3
Summary of PCE Indoor Air Data for 2004-2006
Omega Chemical Site - Whittier, California

SAMPLE ID	SAMPLE DATE	SAMPLE TYPE	TETRACHLOROETHENE (ppbv)
OC-AA-FS-02-051104	5/11/2004	ORIG	145
OC-AA-FS-01-051104	5/11/2004	ORIG	140
OC1-LC1-G-0-11	5/11/2004	EPA	130
OC-AA-FS-05-051104	5/11/2004	ORIG	15
OC-AA-FS-06-051104	5/11/2004	ORIG	14
OC-AA-FS-07-051104	5/11/2004	ORIG	2.35
OC-AA-FS-11-051104	5/11/2004	ORIG	0.89
OC-AA-FS-09-051104	5/11/2004	ORIG	0.87
OC-AA-FS-10-051104	5/11/2004	ORIG	0.62
OC-AA-FS-13-051104	5/11/2004	ORIG	0.46
OC-AA-FS-14-051104	5/11/2004	ORIG	0.15
OC1-RC1-G-0-14	7/30/2004	EPA	24
OC1-CSR-G-0-15	7/30/2004	EPA	21.85
OC1-CSR-G-0-18	7/31/2004	EPA	85
OC1-RC1-G-0-20	7/31/2004	EPA	80
OC-IA-FS-20-080404	8/4/2004	ORIG	110
OC-IA-FS-16-080404	8/4/2004	ORIG	45
OC-IA-FS-18-080404	8/4/2004	ORIG	40
OC-IA-FS-21-080404	8/4/2004	ORIG	26
OC-IA-FS-22-080404	8/4/2004	ORIG	24
OC-IA-FS-23-080404	8/4/2004	ORIG	23
OC-IA-FS-19-080404	8/4/2004	ORIG	1.4
OC1-CSR-G-0-34	12/29/2004	EPA	14
OC1-RC1-G-0-32	12/29/2004	EPA	13
OC1-OFF-G-0-33	12/29/2004	EPA	4.3
OC-IA-FS-03-122904	12/30/2004	ORIG	12
OC-IA-FS-04-122904	12/30/2004	ORIG	12
OC-IA-FS-01-122904	12/30/2004	ORIG	11
OC-IA-FS-02-122904	12/30/2004	ORIG	9.6
OCI-OFF-G-0-38	1/12/2005	EPA	ND
OCI-CSR-G-0-36	1/12/2005	EPA	13
OC-IA-FS-04-011205	1/12/2005	ORIG	8.3
OC-IA-FS-03-011205	1/12/2005	ORIG	6.4
OC-IA-FS-02-011205	1/12/2005	ORIG	6.3
OC-IA-FS-01-011205	1/12/2005	ORIG	5.2
OCI-RCI-G-0-37	1/12/2005	EPA	5.1
OC-AA-FS-02-091405	9/14/2005	ORIG	12.5
OC-AA-FS-17-091405	9/14/2005	ORIG	12
OC-AA-FS-18-091405	9/14/2005	ORIG	10
OC-AA-FS-16-091405	9/14/2005	ORIG	8.7
OC-IA-FD-06-091405	9/14/2005	ORIG	6.6
OC-IA-FD-05-091405	9/14/2005	ORIG	5.7
OC-IA-FS-07-091405	9/14/2005	ORIG	5
OC-AA-FS-10-091405	9/14/2005	ORIG	3.3
OC-IA-FS-14-091405	9/14/2005	ORIG	1.9
OC-IA-FS-13-091405	9/14/2005	ORIG	1.1
OC-AA-FS-11-091405	9/14/2005	ORIG	0.69
OC-IA-FD-09-091405	9/14/2005	ORIG	ND
OC-IA-LAC-Sm Prod-090806	9/8/2006	ORIG	ND
OC-IA-BIS-STORE-090806	9/8/2006	ORIG	4.3
OC-IA-BIS-AO-090806	9/8/2006	ORIG	1.5
OC-IA-BIS-WHSE-090806	9/8/2006	ORIG	1
OC-IA-LAC-Lg Prod-090806	9/8/2006	ORIG	0.24
OC-IA-ONC-NS-090806	9/8/2006	ORIG	0.065
OC-IA-LAC-AO-090806	9/8/2006	ORIG	0.036
OC-IA-MN-090806	9/8/2006	ORIG	ND
OC-IA-ONC-AO-090806	9/8/2006	ORIG	ND

ppbv - parts per billion by volume

Section 8

Section 8
Summary and Conclusions

The primary findings and conclusions of this risk assessment are briefly summarized in this section. The following tasks were performed as part of this risk assessment:

- Examined the history of the Omega Chemical site in Whittier, CA, and identified types of chemicals used and likely release mechanisms for these chemicals to enter the environment
- Evaluated data collected to characterize the site and existing contamination and used the most recent of these data to select chemicals of potential concern (COPCs) and to calculate exposure point concentrations
- Analyzed the potential for exposure to COPCs at the site though an evaluation of people that might be exposed, exposure pathways that might result in significant contact between these people and COPCs, and identification of exposure parameters appropriate for quantifying exposure resulting from this contact.
- Identified appropriate toxicity criteria for site COPCs
- Estimated risk to current and potential future receptors (people) that might contact contamination
- Evaluated uncertainties in data, exposure, toxicity and risk characterization aspects of the risk assessment
- Calculated health-based remediation goals (site-specific PRGs) for use in remediation decisions for the site

Important results of the risk assessment that follow from the above assessments can be summarized as follows:

- Field investigations since 2004 provide a recent and complete site characterization. High confidence can be assigned to use of these data to select chemicals of potential concern and to estimate exposure point concentrations.
- Commercial/industrial land use is an appropriate assumption for future site use. The site has been used for such purpose since it was developed from agricultural land in the 1950's. In addition, City representatives have stated that it is unlikely that the former Omega Chemical property will be redeveloped for residential uses (Adams, 2007), although the zoning of the site in the Whittier Blvd. Specific Plan-Workplace District allows for Live/Work units and multi-family housing.
- Among receptors likely to be exposed to site-related contaminants, the highest cancer risks and noncancer hazards are associated with exposure of hypothetical

future residents, with risks above the EPA risk range and hazards above the target threshold.

- The pathway that suggests the highest potential for exposure involves intrusion of vapors into indoor air spaces. Inhalation of these vapors indoors results in the highest estimates of potential cancer risk and noncancer hazard.

- PCE is the primary COPC of concern at the site. For example, inhalation of indoor air suggests potential total inhalation cancer risks for current industrial workers ranging from 8E-6 to 7E-5. Cancer risk associated with inhalation exposure to PCE alone ranges from 5E-7 to 4E-05. Estimated hazards for PCE were relatively low, however. HQs for exposure to indoor air for PCE ranged from 0.01 to 1.6 compared to a total inhalation HIs ranging from 0.06 to 8.

- Total cancer risk estimates for future commercial/industrial indoor worker based on data from All Parcels (CTE, 9E-6 to 3E-4 and RME, 1E-5 to 5E-4) are above the EPA risk range (Table 6-2; Figure 6-8). Total cancer risk estimates for future commercial/industrial outdoor worker based on data from All Parcels (CTE, 1E-5 to 2E-5 and RME, 1E-5 to 2E-5) are above the point of departure of one in one million but within the EPA risk range. Cancer risks for the future industrial/commercial indoor worker are primarily attributable to inhalation of indoor air. PCE in soil gas accounts for 90 percent of the total inhalation risk. Cancer risks for future industrial/commercial outdoor worker are primarily attributable to exposure to COPCs in soil.

- Potential risks associated with exposure to ambient (urban background) concentrations of VOCs are as high as $3x10^{-5}$ and may account for 12 to essentially 100 percent of total risks estimated for indoor exposures, depending on parcel. LA Carts/Oncology Care may not be affected by site-related VOCs. Further, subsurface VOC contamination appears to be insufficient to sustain releases that would produce significant ambient air concentrations over extended periods of time.

- Ambient air risks for construction workers are within and near the lower end of the EPA risk range, and ambient air hazards are below the target threshold. Subsurface VOC contamination appears to be insufficient to sustain releases that would produce significant ambient air concentrations over the one-year time period assumed for construction worker exposures. .

- Hypothetical exposure to contaminants in soil is unlikely to occur, since soil is currently covered with buildings, asphalt, and concrete and such cover is likely to remain even if the site is redeveloped for other commercial/industrial purposes in the future. Even if the current property cover is replaced by green-belt type landscape, it is unlikely that contaminated soils would be exposed at the ground surface where direct contact (e.g., dermal contact or ingestion) could occur. Further, volatile COPCs, in particular PCE, acetone, and toluene, will not persist

in non-volatile form in soils exposed during excavation, and direct contact exposures (incidental ingestion and dermal contact) for construction worker exposures via these pathways are expected to be minimal. These VOCs along with benzo(a)pyrene were associated with the bulk of risks and hazards estimated for direct contact exposure to surface soils.

- Uncertainties in the risk assessment suggest that site-related risks have been adequately characterized to support risk management decisions. In fact, the database is biased toward source/release areas and likely overstates levels of contamination for the site as a whole.

- Site-related risks involving exposure to PCE vapors in indoor air appear to be adequately assessed using available site-specific data.

- Site-specific PRGs developed for PCE can be used upon approval by EPA with confidence in evaluating remedial alternatives, if the site is deemed by EPA to pose an unacceptable risk.

Section 9

Section 9
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Appendix A

Appendix A
Risk Calculations

A-1 UCL Summaries

A-2A USEPA Adult Lead Model

A-2B Leadspread Model

A-3 RAGS D Tables

A-4 Johnson and Ettinger Model Calculations

A-5 Ambient Air from Soil Gas Calculations

Appendix A-1
UCL Summaries

A-1.1 Surface Soil 0-2.2 feet

Summary of UCLs for All Parcels Soil 0-2.2 ft bgs

Chemical	Distribution	95 UCL mg/kg		Maximum mg/kg	Mean mg/kg	Statistic
1,2-DICHLOROBENZENE	Data are Non-parametnc (0.05)	0.445046	Use 99% Chebyshev (Mean, Sd) UCL	0.5	0.13315625	UCL-NP
1,4-DIOXANE	Data are lognormal (0 05)	9.615725	Use 99% Chebyshev (MVUE) UCL	14	1.7349	95% UCL-T
2-METHYLNAPHTHALENE	Data are Non-parametric (0.05)	0.389356	Use 95% Chebyshev (Mean, Sd) UCL	0.54	0.187142857	UCL-NP
4,4'-DDD	Data are Non-parametric (0.05)	0.023528	Use 99% Chebyshev (Mean, Sd) UCL	0.032	0.00262	UCL-NP
4,4'-DDE	Data are Non-parametric (0.05)	0.173553	Use 99% Chebyshev (Mean, Sd) UCL	0.3	0.017155263	UCL-NP
4,4'-DDT	Data are Non-parametric (0.05)	0.106265	Use 99% Chebyshev (Mean, Sd) UCL	0.15	0.016071053	UCL-NP
ALUMINUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	9830	9707.5	
ANTIMONY	Data are Non-parametric (0.05)	13.70949	Use 99% Chebyshev (Mean, Sd) UCL	18	4.385714286	UCL-NP
ARSENIC	Data follow gamma distribution (0.05)	6.046788	Use Approximate Gamma UCL	21	5.226388889	95% UCL-G
BARIUM	Data are Non-parametric (0.05)	161.5074	Use Student's-t UCL	230	150.5416667	UCL-NP
BENZO(A)ANTHRACENE	Data are Non-parametric (0.05)	1.930534	Use 99% Chebyshev (Mean, Sd) UCL	2.4	0.288	UCL-NP
BENZO(A)PYRENE	Data are Non-parametric (0.05)	0.755766	Use 95% Chebyshev (Mean, Sd) UCL	1.6	0.246153846	UCL-NP
BENZO(B)FLUORANTHENE	Data are Non-parametric (0.05)	0.485788	Use 95% Chebyshev (Mean, Sd) UCL	0.91	0.193076923	UCL-NP
BENZO(G,H,I)PERYLENE	Data are Non-parametric (0.05)	0.340116	Use 95% Chebyshev (Mean, Sd) UCL	0.5	0.160769231	UCL-NP
BENZYL ALCOHOL (PHENYLMETHANOL)	Data are Non-parametric (0 05)	2.432875	Use 95% Chebyshev (Mean, Sd) UCL	5.2	0.616666667	UCL-NP
BERYLLIUM	Data are Non-parametric (0.05)	0.508604	Use Student's-t UCL	0.75	0.478055556	UCL-NP
BIS(2-ETHYLHEXYL)PHTHALATE	Data are Non-parametric (0.05)	27.14903	Use 99% Chebyshev (Mean, Sd) UCL	51	3.264142857	UCL-NP
BUTYLBENZYL PHTHALATE	Data are Non-parametric (0.05)	0.901286	Use 95% Chebyshev (Mean, Sd) UCL	1.9	0.310714286	UCL-NP
CADMIUM	Data are Non-parametric (0.05)	1.340821	Use 95% Chebyshev (Mean, Sd) UCL	2.1	0.882794118	UCL-NP
CALCIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	7170	6612.5	
CHROMIUM	Data are Non-parametric (0.05)	88.77216	Use 95% Chebyshev (Mean, Sd) UCL	360	39.93055556	UCL-NP
CHRYSENE	Data are Non-parametric (0 05)	4.730344	Use 99% Chebyshev (Mean, Sd) UCL	6	0.545571429	UCL-NP
COBALT	Data are Non-parametric (0.05)	9.512926	Use Student's-t UCL	16	8.954166667	UCL-NP
COPPER	Data are Non-parametric (0.05)	40.02014	Use Student's-t UCL	150	32.65277778	UCL-NP
DIELDRIN	Data are Non-parametric (0.05)	0.039782	Use 99% Chebyshev (Mean, Sd) UCL	0.05	0.004471429	UCL-NP
DIETHYL PHTHALATE	Data are Non-parametric (0.05)	0.263424	Use 95% Chebyshev (Mean, Sd) UCL	0 5	0.125923077	UCL-NP
DI-N-BUTYLPHTHALATE	Data are Non-parametric (0.05)	0.297497	Use 95% Chebyshev (Mean, Sd) UCL	0.5	0.148461539	UCL-NP
DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALA	Data are Non-parametric (0.05)	0.294512	Use 95% Chebyshev (Mean, Sd) UCL	0.5	0.145	UCL-NP
ENDRIN	Data are Non-parametric (0.05)	0.027009	Use 99% Chebyshev (Mean, Sd) UCL	0 032	0.002784615	UCL-NP
FLUORANTHENE (IDRYL)	Data are Non-parametric (0.05)	0.373462	Use 95% Chebyshev (Mean, Sd) UCL	0.66	0.163785714	UCL-NP
IRON	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	23200	22650	
ISOPHORONE	Data are Non-parametric (0.05)	9.054049	Use 99% Chebyshev (Mean, Sd) UCL	9.9	0.953333333	UCL-NP
LEAD	Data are lognormal (0.05)	65.38021	Use H-UCL	890	55.71666667	95% UCL-T
MAGNESIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	5575	5382.5	
MANGANESE	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	353	296	
MERCURY	Data are Non-parametric (0.05)	0.304026	Use 95% Chebyshev (Mean, Sd) UCL	0.85	0.145545455	UCL-NP
MOLYBDENUM	Data are normal (0.05)	3.384177	Use Student's-t UCL	4.2	2.926666667	95% UCL-N
NAPHTHALENE	Data are Non-parametric (0.05)	0.597195	Use 95% Chebyshev (Mean, Sd) UCL	1.2	0.215384615	UCL-NP
NICKEL	Assuming gamma distribution (0.05)	24.93461	Use Approximate Gamma UCL	55	22.50555556	95% UCL-G assumed
PCB-1254 (AROCLOR 1254)	Data are Non-parametric (0.05)	0.425054	Use 99% Chebyshev (Mean, Sd) UCL	0.5	0.063571429	UCL-NP
PHENANTHRENE	Data are Non-parametric (0.05)	3.693868	Use 99% Chebyshev (Mean, Sd) UCL	5	0.442866667	UCL-NP
POLYCHLORINATED BI PHENYLS, TOTAL	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	0.5	0.5	
POTASSIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	4520	4435	
PYRENE	Data are Non-parametric (0 05)	2.314593	Use 99% Chebyshev (Mean, Sd) UCL	3.1	0.317466667	UCL-NP
SILVER	Data are Non-parametric (0.05)	0.645985	Use Student's-t UCL	1.2	0.556666667	UCL-NP
SODIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	320	305	
THALLIUM	Data are Non-parametric (0.05)	3.337258	Use 95% Chebyshev (Mean, Sd) UCL	3.5	2.415384615	UCL-NP
VANADIUM	Data are normal (0.05)	47.08547	Use Student's-t UCL	71	44.09722222	95% UCL-N
ZINC	Data are Non-parametric (0.05)	97.28231	Use Student's-t UCL	350	81.52777778	UCL-NP

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	5
Minimum	0.0025
Maximum	25
Mean	2.400536
Median	0.25
Standard Deviation	6.635476
Variance	44.02954
Coefficient of Variation	2.764165
Skewness	3.513623

Gamma Statistics	
k hat	0.272241
k star (bias corrected)	0.261523
Theta hat	8.817682
Theta star	9.179069
nu hat	7.622752
nu star	7.322638
Approx.Chi Square Value (.05)	2.3487
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	1.992614

Log-transformed Statistics	
Minimum of log data	-5.991465
Maximum of log data	3.218876
Mean of log data	-1.697602
Standard Deviation of log data	2.715962
Variance of log data	7.37645

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

20.0457

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.402443
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	5.541118

Gamma Distribution Test	
A-D Test Statistic	1.475859
A-D 5% Critical Value	0.843539
K-S Test Statistic	0.368022
K-S 5% Critical Value	0.249232
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	7.484248
Adjusted Gamma UCL	8.821706

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.834923
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	768.4843
95% Chebyshev (MVUE) UCL	14.53373
97.5% Chebyshev (MVUE) UCL	19.38716
99% Chebyshev (MVUE) UCL	28.9208

95% Non-parametric UCLs	
CLT UCL	5.317528
Adj-CLT UCL (Adjusted for skewness)	7.096953
Mod-t UCL (Adjusted for skewness)	5.818673
Jackknife UCL	5.541118
Standard Bootstrap UCL	5.205814
Bootstrap-t UCL	38.22793
Hall's Bootstrap UCL	37.58742
Percentile Bootstrap UCL	5.675714
BCA Bootstrap UCL	7.782857
95% Chebyshev (Mean, Sd) UCL	10.13063
97.5% Chebyshev (Mean, Sd) UCL	13.47545
99% Chebyshev (Mean, Sd) UCL	20.0457

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROBENZENE

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	6
Minimum	0.0025
Maximum	0.5
Mean	0.133156
Median	0.1
Standard Deviation	0.125384
Variance	0.015721
Coefficient of Variation	0.941633
Skewness	1.803837

Gamma Statistics	
k hat	0.821626
k star (bias corrected)	0.709238
Theta hat	0.162064
Theta star	0.187745
nu hat	26.29204
nu star	22.69562
Approx.Chi Square Value (.05)	12.85949
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	12.02196

Log-transformed Statistics	
Minimum of log data	-5.991465
Maximum of log data	-0.693147
Mean of log data	-2.736053
Standard Deviation of log data	1.690913
Variance of log data	2.859188

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.445046

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.768838
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.188107

Gamma Distribution Test	
A-D Test Statistic	1.508065
A-D 5% Critical Value	0.771305
K-S Test Statistic	0.306777
K-S 5% Critical Value	0.22263
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.235006
Adjusted Gamma UCL	0.251379

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.721003
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.493017
95% Chebyshev (MVUE) UCL	0.712369
97.5% Chebyshev (MVUE) UCL	0.922646
99% Chebyshev (MVUE) UCL	1.335693

95% Non-parametric UCLs	
CLT UCL	0.184716
Adj-CLT UCL (Adjusted for skewness)	0.19982
Mod-t UCL (Adjusted for skewness)	0.190463
Jackknife UCL	0.188107
Standard Bootstrap UCL	0.183588
Bootstrap-t UCL	0.212643
Hall's Bootstrap UCL	0.262879
Percentile Bootstrap UCL	0.187125
BCA Bootstrap UCL	0.197563
95% Chebyshev (Mean, Sd) UCL	0.269791
97.5% Chebyshev (Mean, Sd) UCL	0.328912
99% Chebyshev (Mean, Sd) UCL	0.445046

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,4-DIOXANE

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	9
Minimum	0.014
Maximum	14
Mean	1.7349
Median	0.093
Standard Deviation	4.348693
Variance	18.91113
Coefficient of Variation	2.506596
Skewness	3.060603

Gamma Statistics	
k hat	0.287883
k star (bias corrected)	0.268185
Theta hat	6.026401
Theta star	6.469043
nu hat	5.757665
nu star	5.363699
Approx.Chi Square Value (.05)	1.323391
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	1.009208

Log-transformed Statistics	
Minimum of log data	-4.268698
Maximum of log data	2.639057
Mean of log data	-1.860503
Standard Deviation of log data	2.297141
Variance of log data	5.276855

RECOMMENDATION

Data are lognormal (0.05)

Use 99% Chebyshev (MVUE) UCL

9.615725

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.458901
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.255755

Gamma Distribution Test	
A-D Test Statistic	1.009833
A-D 5% Critical Value	0.818507
K-S Test Statistic	0.304432
K-S 5% Critical Value	0.288596
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	7.031545
Adjusted Gamma UCL	9.220581

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.898097
Shapiro-Wilk 5% Critical Value	0.842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	236.1149
95% Chebyshev (MVUE) UCL	4.87117
97.5% Chebyshev (MVUE) UCL	6.471732
99% Chebyshev (MVUE) UCL	9.615725

95% Non-parametric UCLs	
CLT UCL	3.996866
Adj-CLT UCL (Adjusted for skewness)	5.419018
Mod-t UCL (Adjusted for skewness)	4.477583
Jackknife UCL	4.255755
Standard Bootstrap UCL	3.873207
Bootstrap-t UCL	18.78595
Hall's Bootstrap UCL	18.68018
Percentile Bootstrap UCL	4.3712
BCA Bootstrap UCL	5.8693
95% Chebyshev (Mean, Sd) UCL	7.72916
97.5% Chebyshev (Mean, Sd) UCL	10.32288
99% Chebyshev (Mean, Sd) UCL	15.41774

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-METHYLNAPHTHALENE

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	4
Minimum	0.1
Maximum	0.54
Mean	0.187143
Median	0.1
Standard Deviation	0.173579
Variance	0.03013
Coefficient of Variation	0.927521
Skewness	1.585455

Gamma Statistics	
k hat	1.940674
k star (bias corrected)	1.572434
Theta hat	0.096432
Theta star	0.119015
nu hat	54.33887
nu star	44.02816
Approx.Chi Square Value (.05)	29.80816
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	28.26161

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.616186
Mean of log data	-1.955124
Standard Deviation of log data	0.690851
Variance of log data	0.477275

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.389356

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.533775
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.269298

Gamma Distribution Test	
A-D Test Statistic	3.564895
A-D 5% Critical Value	0.74649
K-S Test Statistic	0.490803
K-S 5% Critical Value	0.231769
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.276419
Adjusted Gamma UCL	0.291546

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.525344
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.280793
95% Chebyshev (MVUE) UCL	0.324817
97.5% Chebyshev (MVUE) UCL	0.389166
99% Chebyshev (MVUE) UCL	0.515568

95% Non-parametric UCLs	
CLT UCL	0.263449
Adj-CLT UCL (Adjusted for skewness)	0.284453
Mod-t UCL (Adjusted for skewness)	0.272574
Jackknife UCL	0.269298
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.389356
97.5% Chebyshev (Mean, Sd) UCL	0.476854
99% Chebyshev (Mean, Sd) UCL	0.648727

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ANTIMONY

Raw Statistics	
Number of Valid Samples	21
Number of Unique Samples	7
Minimum	0.6
Maximum	18
Mean	4.385714
Median	5
Standard Deviation	4.294215
Variance	18.44029
Coefficient of Variation	0.979137
Skewness	1.942775

Gamma Statistics	
k hat	1.175797
k star (bias corrected)	1.039572
Theta hat	3.729992
Theta star	4.218769
nu hat	49.38348
nu star	43.66203
Approx.Chi Square Value (.05)	29.50668
Adjusted Level of Significance	0.0383
Adjusted Chi Square Value	28.61262

Log-transformed Statistics	
Minimum of log data	-0.510826
Maximum of log data	2.890372
Mean of log data	0.996251
Standard Deviation of log data	1.080461
Variance of log data	1.167397

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

13.70949

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.703722
Shapiro-Wilk 5% Critical Value	0.908
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6.001904

Gamma Distribution Test	
A-D Test Statistic	1.961181
A-D 5% Critical Value	0.765605
K-S Test Statistic	0.293894
K-S 5% Critical Value	0.194141
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6.48969
Adjusted Gamma UCL	6.692474

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.804074
Shapiro-Wilk 5% Critical Value	0.908
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9.264881
95% Chebyshev (MVUE) UCL	10.10662
97.5% Chebyshev (MVUE) UCL	12.46359
99% Chebyshev (MVUE) UCL	17.0934

95% Non-parametric UCLs	
CLT UCL	5.927065
Adj-CLT UCL (Adjusted for skewness)	6.351555
Mod-t UCL (Adjusted for skewness)	6.068116
Jackknife UCL	6.001904
Standard Bootstrap UCL	5.919188
Bootstrap-t UCL	6.797722
Hall's Bootstrap UCL	14.81823
Percentile Bootstrap UCL	5.928571
BCA Bootstrap UCL	6.261905
95% Chebyshev (Mean, Sd) UCL	8.470328
97.5% Chebyshev (Mean, Sd) UCL	10.23774
99% Chebyshev (Mean, Sd) UCL	13.70949

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ARSENIC

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	27
Minimum	1.4
Maximum	21
Mean	5.226389
Median	4.85
Standard Deviation	3.238375
Variance	10.48707
Coefficient of Variation	0.61962
Skewness	3.425818

Gamma Statistics	
k hat	4.170071
k star (bias corrected)	3.841083
Theta hat	1.253309
Theta star	1.360655
nu hat	300.2451
nu star	276.558
Approx.Chi Square Value (.05)	239.0359
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	237.4556

Log-transformed Statistics	
Minimum of log data	0.336472
Maximum of log data	3.044522
Mean of log data	1.529053
Standard Deviation of log data	0.488076
Variance of log data	0.238218

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

6.046788

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.697604
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6.1383

Gamma Distribution Test	
A-D Test Statistic	0.673122
A-D 5% Critical Value	0.752167
K-S Test Statistic	0.118901
K-S 5% Critical Value	0.147479
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6.046788
Adjusted Gamma UCL	6.08703

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.963798
Shapiro-Wilk 5% Critical Value	0.935
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6.082541
95% Chebyshev (MVUE) UCL	7.096254
97.5% Chebyshev (MVUE) UCL	7.926115
99% Chebyshev (MVUE) UCL	9.556217

95% Non-parametric UCLs	
CLT UCL	6.114164
Adj-CLT UCL (Adjusted for skewness)	6.443447
Mod-t UCL (Adjusted for skewness)	6.189662
Jackknife UCL	6.1383
Standard Bootstrap UCL	6.114999
Bootstrap-t UCL	6.71435
Hall's Bootstrap UCL	10.30676
Percentile Bootstrap UCL	6.188889
BCA Bootstrap UCL	6.486111
95% Chebyshev (Mean, Sd) UCL	7.579013
97.5% Chebyshev (Mean, Sd) UCL	8.596996
99% Chebyshev (Mean, Sd) UCL	10.59663

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ALUMINUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	9585
Maximum	9830
Mean	9707.5
Median	9707.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BUTYLBENZYL PHTHALATE

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	4
Minimum	0.1
Maximum	1.9
Mean	0.310714
Median	0.1
Standard Deviation	0.506944
Variance	0.256992
Coefficient of Variation	1.631542
Skewness	2.807044

Gamma Statistics	
k hat	0.892673
k star (bias corrected)	0.749005
Theta hat	0.348072
Theta star	0.414836
nu hat	24.99485
nu star	20.97215
Approx.Chi Square Value (.05)	11.56934
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	10.65212

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.641854
Mean of log data	-1.824446
Standard Deviation of log data	0.986028
Variance of log data	0.972251

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.901286

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.499979
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.550652

Gamma Distribution Test	
A-D Test Statistic	3.225102
A-D 5% Critical Value	0.764536
K-S Test Statistic	0.485651
K-S 5% Critical Value	0.236186
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.563242
Adjusted Gamma UCL	0.611742

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.5565
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.560644
95% Chebyshev (MVUE) UCL	0.561643
97.5% Chebyshev (MVUE) UCL	0.696432
99% Chebyshev (MVUE) UCL	0.961198

95% Non-parametric UCLs	
CLT UCL	0.53357
Adj-CLT UCL (Adjusted for skewness)	0.642177
Mod-t UCL (Adjusted for skewness)	0.567592
Jackknife UCL	0.550652
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.901286
97.5% Chebyshev (Mean, Sd) UCL	1.156826
99% Chebyshev (Mean, Sd) UCL	1.658787

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZYL ALCOHOL (PHENYLMETHANOL)

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	2
Minimum	0.2
Maximum	5.2
Mean	0.616667
Median	0.2
Standard Deviation	1.443376
Variance	2.083333
Coefficient of Variation	2.340609
Skewness	3.464102

Gamma Statistics	
k hat	0.706356
k star (bias corrected)	0.585323
Theta hat	0.873025
Theta star	1.05355
nu hat	16.95255
nu star	14.04774
Approx.Chi Square Value (.05)	6.602905
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	5.841064

Log-transformed Statistics	
Minimum of log data	-1.609438
Maximum of log data	1.648659
Mean of log data	-1.33793
Standard Deviation of log data	0.940531
Variance of log data	0.884599

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

2.432875

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.327007
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.364952

Gamma Distribution Test	
A-D Test Statistic	4.24676
A-D 5% Critical Value	0.768976
K-S Test Statistic	0.562841
K-S 5% Critical Value	0.255486
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.311964
Adjusted Gamma UCL	1.483082

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.327007
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.905608
95% Chebyshev (MVUE) UCL	0.878868
97.5% Chebyshev (MVUE) UCL	1.090854
99% Chebyshev (MVUE) UCL	1.507261

95% Non-parametric UCLs	
CLT UCL	1.302022
Adj-CLT UCL (Adjusted for skewness)	1.747237
Mod-t UCL (Adjusted for skewness)	1.434396
Jackknife UCL	1.364952
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/A
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	2.432875
97.5% Chebyshev (Mean, Sd) UCL	3.218749
99% Chebyshev (Mean, Sd) UCL	4.762448

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BIS(2-ETHYLHEXYL)PHTHALATE

Raw Statistics	
Number of Valid Samples	21
Number of Unique Samples	12
Minimum	0.03
Maximum	51
Mean	3.264143
Median	0.2
Standard Deviation	11.00057
Variance	121.0126
Coefficient of Variation	3.370126
Skewness	4.498124

Gamma Statistics	
k hat	0.349403
k star (bias corrected)	0.331234
Theta hat	9.342059
Theta star	9.854484
nu hat	14.67492
nu star	13.91184
Approx.Chi Square Value (.05)	6.509901
Adjusted Level of Significance	0.0383
Adjusted Chi Square Value	6.123221

Log-transformed Statistics	
Minimum of log data	-3.506558
Maximum of log data	3.931826
Mean of log data	-0.74207
Standard Deviation of log data	1.678271
Variance of log data	2.816595

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

27.14903

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.298162
Shapiro-Wilk 5% Critical Value	0.908
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	7.404366

Gamma Distribution Test	
A-D Test Statistic	2.894676
A-D 5% Critical Value	0.835763
K-S Test Statistic	0.285507
K-S 5% Critical Value	0.204155
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6.975564
Adjusted Gamma UCL	7.41607

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.864444
Shapiro-Wilk 5% Critical Value	0.908
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	7.51702
95% Chebyshev (MVUE) UCL	5.00922
97.5% Chebyshev (MVUE) UCL	6.443334
99% Chebyshev (MVUE) UCL	9.260372

95% Non-parametric UCLs	
CLT UCL	7.21265
Adj-CLT UCL (Adjusted for skewness)	9.730373
Mod-t UCL (Adjusted for skewness)	7.79708
Jackknife UCL	7.404366
Standard Bootstrap UCL	7.058719
Bootstrap-t UCL	35.45039
Hall's Bootstrap UCL	24.65175
Percentile Bootstrap UCL	8.013048
BCA Bootstrap UCL	10.85176
95% Chebyshev (Mean, Sd) UCL	13.72778
97.5% Chebyshev (Mean, Sd) UCL	18.2554
99% Chebyshev (Mean, Sd) UCL	27.14903

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(G,H,I)PERYLENE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.1
Maximum	0.5
Mean	0.160769
Median	0.1
Standard Deviation	0.14835
Variance	0.022008
Coefficient of Variation	0.922751
Skewness	2.17961

Gamma Statistics	
k hat	2.338931
k star (bias corrected)	1.85046
Theta hat	0.068736
Theta star	0.086881
nu hat	60.81221
nu star	48.11195
Approx.Chi Square Value (.05)	33.18848
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	31.4293

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-2.056533
Standard Deviation of log data	0.600619
Variance of log data	0.360743

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.340116

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.448177
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.234101

Gamma Distribution Test	
A-D Test Statistic	3.854577
A-D 5% Critical Value	0.741788
K-S Test Statistic	0.518321
K-S 5% Critical Value	0.239003
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.23306
Adjusted Gamma UCL	0.246105

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.446914
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.225944
95% Chebyshev (MVUE) UCL	0.264191
97.5% Chebyshev (MVUE) UCL	0.313266
99% Chebyshev (MVUE) UCL	0.409664

95% Non-parametric UCLs	
CLT UCL	0.228447
Adj-CLT UCL (Adjusted for skewness)	0.255023
Mod-t UCL (Adjusted for skewness)	0.238247
Jackknife UCL	0.234101
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.340116
97.5% Chebyshev (Mean, Sd) UCL	0.417719
99% Chebyshev (Mean, Sd) UCL	0.570155

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BARIUM

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	18
Minimum	38
Maximum	230
Mean	150.5417
Median	156.25
Standard Deviation	38.9416
Variance	1516.448
Coefficient of Variation	0.258677
Skewness	-0.948962

Gamma Statistics	
k hat	10.9712
k star (bias corrected)	10.07545
Theta hat	13.72153
Theta star	14.94143
nu hat	789.9266
nu star	725.4327
Approx.Chi Square Value (.05)	663.9245
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	661.2625

Log-transformed Statistics	
Minimum of log data	3.637586
Maximum of log data	5.438079
Mean of log data	4.967974
Standard Deviation of log data	0.343328
Variance of log data	0.117874

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

161.5074

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.912352
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	161.5074

Gamma Distribution Test	
A-D Test Statistic	2.403653
A-D 5% Critical Value	0.748076
K-S Test Statistic	0.257659
K-S 5% Critical Value	0.146758
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	164.4884
Adjusted Gamma UCL	165.1505

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.775718
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	169.3445
95% Chebyshev (MVUE) UCL	191.0188
97.5% Chebyshev (MVUE) UCL	207.8163
99% Chebyshev (MVUE) UCL	240.8118

95% Non-parametric UCLs	
CLT UCL	161.2172
Adj-CLT UCL (Adjusted for skewness)	160.1204
Mod-t UCL (Adjusted for skewness)	161.3364
Jackknife UCL	161.5074
Standard Bootstrap UCL	160.9803
Bootstrap-t UCL	160.2033
Hall's Bootstrap UCL	160.6318
Percentile Bootstrap UCL	160.4444
BCA Bootstrap UCL	159.9444
95% Chebyshev (Mean, Sd) UCL	178.8321
97.5% Chebyshev (Mean, Sd) UCL	191.0734
99% Chebyshev (Mean, Sd) UCL	215.119

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(A)ANTHRACENE

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	4
Minimum	0.032
Maximum	2.4
Mean	0.288
Median	0.1
Standard Deviation	0.617676
Variance	0.381524
Coefficient of Variation	2.144708
Skewness	3.556996

Gamma Statistics	
k hat	0.750799
k star (bias corrected)	0.637532
Theta hat	0.383592
Theta star	0.451742
nu hat	21.02236
nu star	17.8509
Approx.Chi Square Value (.05)	9.281834
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	8.472359

Log-transformed Statistics	
Minimum of log data	-3.442019
Maximum of log data	0.875469
Mean of log data	-2.04201
Standard Deviation of log data	1.001462
Variance of log data	1.002926

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.930534

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.381831
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.580347

Gamma Distribution Test	
A-D Test Statistic	3.436665
A-D 5% Critical Value	0.770586
K-S Test Statistic	0.501549
K-S 5% Critical Value	0.237582
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.553884
Adjusted Gamma UCL	0.606804

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.601801
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.466788
95% Chebyshev (MVUE) UCL	0.462337
97.5% Chebyshev (MVUE) UCL	0.574139
99% Chebyshev (MVUE) UCL	0.793753

95% Non-parametric UCLs	
CLT UCL	0.559534
Adj-CLT UCL (Adjusted for skewness)	0.72722
Mod-t UCL (Adjusted for skewness)	0.606503
Jackknife UCL	0.580347
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	1.007571
97.5% Chebyshev (Mean, Sd) UCL	1.31893
99% Chebyshev (Mean, Sd) UCL	1.930534

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(A)PYRENE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.1
Maximum	1.6
Mean	0.246154
Median	0.1
Standard Deviation	0.421536
Variance	0.177692
Coefficient of Variation	1.712489
Skewness	3.239033

Gamma Statistics	
k hat	1.021434
k star (bias corrected)	0.837
Theta hat	0.240989
Theta star	0.29409
nu hat	26.55728
nu star	21.76201
Approx.Chi Square Value (.05)	12.15845
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	11.14686

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.470004
Mean of log data	-1.965506
Standard Deviation of log data	0.856371
Variance of log data	0.733371

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.755766

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.411614
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.454526

Gamma Distribution Test	
A-D Test Statistic	3.633133
A-D 5% Critical Value	0.757097
K-S Test Statistic	0.516661
K-S 5% Critical Value	0.24294
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.440583
Adjusted Gamma UCL	0.480566

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.464103
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.386009
95% Chebyshev (MVUE) UCL	0.40964
97.5% Chebyshev (MVUE) UCL	0.502518
99% Chebyshev (MVUE) UCL	0.684957

95% Non-parametric UCLs	
CLT UCL	0.438459
Adj-CLT UCL (Adjusted for skewness)	0.550683
Mod-t UCL (Adjusted for skewness)	0.472031
Jackknife UCL	0.454526
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.755766
97.5% Chebyshev (Mean, Sd) UCL	0.976275
99% Chebyshev (Mean, Sd) UCL	1.409423

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(B)FLUORANTHENE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.1
Maximum	0.91
Mean	0.193077
Median	0.1
Standard Deviation	0.242122
Variance	0.058623
Coefficient of Variation	1.254018
Skewness	2.695793

Gamma Statistics	
k hat	1.517854
k star (bias corrected)	1.218862
Theta hat	0.127204
Theta star	0.158408
nu hat	39.46421
nu star	31.69042
Approx.Chi Square Value (.05)	19.82462
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	18.49638

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.094311
Mean of log data	-2.008915
Standard Deviation of log data	0.727187
Variance of log data	0.528802

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.485788

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.457127
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.312762

Gamma Distribution Test	
A-D Test Statistic	3.665395
A-D 5% Critical Value	0.750073
K-S Test Statistic	0.518238
K-S 5% Critical Value	0.240875
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.308641
Adjusted Gamma UCL	0.330805

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.465427
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.290241
95% Chebyshev (MVUE) UCL	0.32781
97.5% Chebyshev (MVUE) UCL	0.395873
99% Chebyshev (MVUE) UCL	0.529569

95% Non-parametric UCLs	
CLT UCL	0.303533
Adj-CLT UCL (Adjusted for skewness)	0.357182
Mod-t UCL (Adjusted for skewness)	0.32113
Jackknife UCL	0.312762
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.485788
97.5% Chebyshev (Mean, Sd) UCL	0.612445
99% Chebyshev (Mean, Sd) UCL	0.861237

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BERYLLIUM

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	23
Minimum	0.18
Maximum	0.75
Mean	0.478056
Median	0.49
Standard Deviation	0.108485
Variance	0.011769
Coefficient of Variation	0.226929
Skewness	-0.671957

Gamma Statistics	
k hat	15.58552
k star (bias corrected)	14.30524
Theta hat	0.030673
Theta star	0.033418
nu hat	1122.157
nu star	1029.978
Approx.Chi Square Value (.05)	956.4618
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	953.2582

Log-transformed Statistics	
Minimum of log data	-1.714798
Maximum of log data	-0.287682
Mean of log data	-0.770452
Standard Deviation of log data	0.280102
Variance of log data	0.078457

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

0.508604

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.908437
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.508604

Gamma Distribution Test	
A-D Test Statistic	2.198763
A-D 5% Critical Value	0.747384
K-S Test Statistic	0.22361
K-S 5% Critical Value	0.146643
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.5148
Adjusted Gamma UCL	0.51653

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.787321
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.523504
95% Chebyshev (MVUE) UCL	0.580095
97.5% Chebyshev (MVUE) UCL	0.623071
99% Chebyshev (MVUE) UCL	0.707487

95% Non-parametric UCLs	
CLT UCL	0.507796
Adj-CLT UCL (Adjusted for skewness)	0.505632
Mod-t UCL (Adjusted for skewness)	0.508267
Jackknife UCL	0.508604
Standard Bootstrap UCL	0.506972
Bootstrap-t UCL	0.506761
Hall's Bootstrap UCL	0.507943
Percentile Bootstrap UCL	0.506667
BCA Bootstrap UCL	0.504028
95% Chebyshev (Mean, Sd) UCL	0.556868
97.5% Chebyshev (Mean, Sd) UCL	0.59097
99% Chebyshev (Mean, Sd) UCL	0.657957

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHRYSENE

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	4
Minimum	0.038
Maximum	6
Mean	0.545571
Median	0.1
Standard Deviation	1.573687
Variance	2.47649
Coefficient of Variation	2.884474
Skewness	3.711349

Gamma Statistics	
k hat	0.471855
k star (bias corrected)	0.418363
Theta hat	1.156226
Theta star	1.304063
nu hat	13.21195
nu star	11.71415
Approx.Chi Square Value (.05)	5.038373
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	4.47085

Log-transformed Statistics	
Minimum of log data	-3.270169
Maximum of log data	1.791759
Mean of log data	-1.964285
Standard Deviation of log data	1.198971
Variance of log data	1.437532

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

4.730344

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.330789
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.2904

Gamma Distribution Test	
A-D Test Statistic	3.882191
A-D 5% Critical Value	0.798724
K-S Test Statistic	0.511015
K-S 5% Critical Value	0.242498
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.268447
Adjusted Gamma UCL	1.429461

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.545222
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.81909
95% Chebyshev (MVUE) UCL	0.677271
97.5% Chebyshev (MVUE) UCL	0.855177
99% Chebyshev (MVUE) UCL	1.204639

95% Non-parametric UCLs	
CLT UCL	1.237373
Adj-CLT UCL (Adjusted for skewness)	1.683134
Mod-t UCL (Adjusted for skewness)	1.35993
Jackknife UCL	1.2904
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	2.378861
97.5% Chebyshev (Mean, Sd) UCL	3.172127
99% Chebyshev (Mean, Sd) UCL	4.730344

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHROMIUM

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	26
Minimum	8.2
Maximum	360
Mean	39.93056
Median	20.5
Standard Deviation	67.23019
Variance	4519.899
Coefficient of Variation	1.683678
Skewness	3.821141

Gamma Statistics	
k hat	1.107077
k star (bias corrected)	1.033339
Theta hat	36.06845
Theta star	38.64226
nu hat	79.70955
nu star	74.40042
Approx.Chi Square Value (.05)	55.53185
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	54.79124

Log-transformed Statistics	
Minimum of log data	2.104134
Maximum of log data	5.886104
Mean of log data	3.171761
Standard Deviation of log data	0.821356
Variance of log data	0.674626

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

88.77216

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.445938
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	58.86227

Gamma Distribution Test	
A-D Test Statistic	4.852948
A-D 5% Critical Value	0.774189
K-S Test Statistic	0.345316
K-S 5% Critical Value	0.150816
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	53.49812
Adjusted Gamma UCL	54.22126

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.79919
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	45.36185
95% Chebyshev (MVUE) UCL	54.9749
97.5% Chebyshev (MVUE) UCL	64.47842
99% Chebyshev (MVUE) UCL	83.14623

95% Non-parametric UCLs	
CLT UCL	58.36119
Adj-CLT UCL (Adjusted for skewness)	65.98611
Mod-t UCL (Adjusted for skewness)	60.0516
Jackknife UCL	58.86227
Standard Bootstrap UCL	58.39435
Bootstrap-t UCL	86.94186
Hall's Bootstrap UCL	114.8334
Percentile Bootstrap UCL	59.68056
BCA Bootstrap UCL	67.57778
95% Chebyshev (Mean, Sd) UCL	88.77216
97.5% Chebyshev (Mean, Sd) UCL	109.906
99% Chebyshev (Mean, Sd) UCL	151.4192

Data File C:\Documents and Settings\tzoukh\My Docun Variable: LEAD

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	30
Minimum	5
Maximum	890
Mean	55.71667
Median	23.75
Standard Deviation	145.3002
Variance	21112.14
Coefficient of Variation	2.607841
Skewness	5.713973

Gamma Statistics	
k hat	0.775275
k star (bias corrected)	0.729187
Theta hat	71.86695
Theta star	76.40925
nu hat	55.81981
nu star	52.5015
Approx.Chi Square Value (.05)	36.85471
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	36.2586

Log-transformed Statistics	
Minimum of log data	1.609438
Maximum of log data	6.791221
Mean of log data	3.25156
Standard Deviation of log data	1.01496
Variance of log data	1.030144

RECOMMENDATION

Data are lognormal (0.05)

Use H-UCL

65.38021

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.301567
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	96.63252

Gamma Distribution Test	
A-D Test Statistic	2.642527
A-D 5% Critical Value	0.786785
K-S Test Statistic	0.224644
K-S 5% Critical Value	0.152479
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	79.37136
Adjusted Gamma UCL	80.67627

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.938943
Shapiro-Wilk 5% Critical Value	0.935
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	65.38021
95% Chebyshev (MVUE) UCL	78.67401
97.5% Chebyshev (MVUE) UCL	94.3951
99% Chebyshev (MVUE) UCL	125.2761

95% Non-parametric UCLs	
CLT UCL	95.54959
Adj-CLT UCL (Adjusted for skewness)	120.1919
Mod-t UCL (Adjusted for skewness)	100.4762
Jackknife UCL	96.63252
Standard Bootstrap UCL	94.63439
Bootstrap-t UCL	250.0535
Hall's Bootstrap UCL	243.0785
Percentile Bootstrap UCL	102.6417
BCA Bootstrap UCL	127.175
95% Chebyshev (Mean, Sd) UCL	161.2748
97.5% Chebyshev (Mean, Sd) UCL	206.9499
99% Chebyshev (Mean, Sd) UCL	296.6698

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CADMIUM

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	15
Minimum	0.25
Maximum	2.1
Mean	0.882794
Median	0.92
Standard Deviation	0.612708
Variance	0.375411
Coefficient of Variation	0.694055
Skewness	0.435039

Gamma Statistics	
k hat	1.829811
k star (bias corrected)	1.687965
Theta hat	0.482451
Theta star	0.522993
nu hat	124.4271
nu star	114.7816
Approx.Chi Square Value (.05)	91.04292
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	89.99805

Log-transformed Statistics	
Minimum of log data	-1.386294
Maximum of log data	0.741937
Mean of log data	-0.422144
Standard Deviation of log data	0.831589
Variance of log data	0.691541

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.340821

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.850114
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.060625

Gamma Distribution Test	
A-D Test Statistic	2.475013
A-D 5% Critical Value	0.761646
K-S Test Statistic	0.256394
K-S 5% Critical Value	0.153226
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.112975
Adjusted Gamma UCL	1.125897

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.792339
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.277821
95% Chebyshev (MVUE) UCL	1.548044
97.5% Chebyshev (MVUE) UCL	1.822302
99% Chebyshev (MVUE) UCL	2.361027

95% Non-parametric UCLs	
CLT UCL	1.055633
Adj-CLT UCL (Adjusted for skewness)	1.06401
Mod-t UCL (Adjusted for skewness)	1.061931
Jackknife UCL	1.060625
Standard Bootstrap UCL	1.053972
Bootstrap-t UCL	1.068246
Hall's Bootstrap UCL	1.063327
Percentile Bootstrap UCL	1.041912
BCA Bootstrap UCL	1.067941
95% Chebyshev (Mean, Sd) UCL	1.340821
97.5% Chebyshev (Mean, Sd) UCL	1.539009
99% Chebyshev (Mean, Sd) UCL	1.928312

Data File C:\Documents and Settings\tzoukh\My Docun Variable: COBALT

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	22
Minimum	4.7
Maximum	16
Mean	8.954167
Median	8.95
Standard Deviation	1.955482
Variance	3.823911
Coefficient of Variation	0.218388
Skewness	0.89523

Gamma Statistics	
k hat	21.712
k star (bias corrected)	19.92119
Theta hat	0.412406
Theta star	0.44948
nu hat	1563.264
nu star	1434.325
Approx.Chi Square Value (.05)	1347.361
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	1343.55

Log-transformed Statistics	
Minimum of log data	1.547563
Maximum of log data	2.772589
Mean of log data	2.168913
Standard Deviation of log data	0.221583
Variance of log data	0.049099

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

9.512926

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.896631
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	9.504821

Gamma Distribution Test	
A-D Test Statistic	1.444931
A-D 5% Critical Value	0.746621
K-S Test Statistic	0.176469
K-S 5% Critical Value	0.146525
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	9.532109
Adjusted Gamma UCL	9.559144

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.909775
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9.572063
95% Chebyshev (MVUE) UCL	10.4161
97.5% Chebyshev (MVUE) UCL	11.04617
99% Chebyshev (MVUE) UCL	12.28382

95% Non-parametric UCLs	
CLT UCL	9.490247
Adj-CLT UCL (Adjusted for skewness)	9.542207
Mod-t UCL (Adjusted for skewness)	9.512926
Jackknife UCL	9.504821
Standard Bootstrap UCL	9.498039
Bootstrap-t UCL	9.593882
Hall's Bootstrap UCL	9.678982
Percentile Bootstrap UCL	9.483333
BCA Bootstrap UCL	9.486111
95% Chebyshev (Mean, Sd) UCL	10.37479
97.5% Chebyshev (Mean, Sd) UCL	10.9895
99% Chebyshev (Mean, Sd) UCL	12.19697

Data File C:\Documents and Settings\tzoukh\My Docun Variable: COPPER

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	22
Minimum	13
Maximum	150
Mean	32.65278
Median	27
Standard Deviation	24.60889
Variance	605.5974
Coefficient of Variation	0.753654
Skewness	3.841055

Gamma Statistics	
k hat	3.928967
k star (bias corrected)	3.620072
Theta hat	8.310779
Theta star	9.019926
nu hat	282.8856
nu star	260.6452
Approx.Chi Square Value (.05)	224.2538
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	222.7244

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	5.010635
Mean of log data	3.353306
Standard Deviation of log data	0.448689
Variance of log data	0.201322

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

40.02014

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.517159
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	39.58253

Gamma Distribution Test	
A-D Test Statistic	3.708673
A-D 5% Critical Value	0.752687
K-S Test Statistic	0.275949
K-S 5% Critical Value	0.147555
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	37.9516
Adjusted Gamma UCL	38.2122

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.804564
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	36.46673
95% Chebyshev (MVUE) UCL	42.19627
97.5% Chebyshev (MVUE) UCL	46.81192
99% Chebyshev (MVUE) UCL	55.87849

95% Non-parametric UCLs	
CLT UCL	39.39911
Adj-CLT UCL (Adjusted for skewness)	42.20468
Mod-t UCL (Adjusted for skewness)	40.02014
Jackknife UCL	39.58253
Standard Bootstrap UCL	39.33513
Bootstrap-t UCL	51.99888
Hall's Bootstrap UCL	72.17545
Percentile Bootstrap UCL	40.23611
BCA Bootstrap UCL	43.36111
95% Chebyshev (Mean, Sd) UCL	50.53072
97.5% Chebyshev (Mean, Sd) UCL	58.26652
99% Chebyshev (Mean, Sd) UCL	73.462

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CALCIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	6055
Maximum	7170
Mean	6612.5
Median	6612.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIETHYL PHTHALATE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.037
Maximum	0.5
Mean	0.125923
Median	0.1
Standard Deviation	0.113737
Variance	0.012936
Coefficient of Variation	0.903225
Skewness	3.443979

Gamma Statistics	
k hat	2.885436
k star (bias corrected)	2.270849
Theta hat	0.043641
Theta star	0.055452
nu hat	75.02135
nu star	59.04206
Approx.Chi Square Value (.05)	42.3719
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	40.36567

Log-transformed Statistics	
Minimum of log data	-3.296837
Maximum of log data	-0.693147
Mean of log data	-2.255263
Standard Deviation of log data	0.543884
Variance of log data	0.29581

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.263424

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.396594
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.182145

Gamma Distribution Test	
A-D Test Statistic	3.367036
A-D 5% Critical Value	0.739624
K-S Test Statistic	0.492946
K-S 5% Critical Value	0.238364
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.175464
Adjusted Gamma UCL	0.184185

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.54847
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.170889
95% Chebyshev (MVUE) UCL	0.201335
97.5% Chebyshev (MVUE) UCL	0.236517
99% Chebyshev (MVUE) UCL	0.305625

95% Non-parametric UCLs	
CLT UCL	0.17781
Adj-CLT UCL (Adjusted for skewness)	0.210006
Mod-t UCL (Adjusted for skewness)	0.187167
Jackknife UCL	0.182145
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.263424
97.5% Chebyshev (Mean, Sd) UCL	0.322921
99% Chebyshev (Mean, Sd) UCL	0.439791

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DI-N-BUTYLPHTHALATE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.1
Maximum	0.5
Mean	0.148462
Median	0.1
Standard Deviation	0.123278
Variance	0.015197
Coefficient of Variation	0.830369
Skewness	2.532354

Gamma Statistics	
k hat	2.941408
k star (bias corrected)	2.313903
Theta hat	0.050473
Theta star	0.064161
nu hat	76.4766
nu star	60.16149
Approx.Chi Square Value (.05)	43.32201
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	41.29181

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-2.086942
Standard Deviation of log data	0.533168
Variance of log data	0.284268

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.297497

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.463812
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.2094

Gamma Distribution Test	
A-D Test Statistic	3.661892
A-D 5% Critical Value	0.739402
K-S Test Statistic	0.514216
K-S 5% Critical Value	0.238299
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.206169
Adjusted Gamma UCL	0.216306

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.46502
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.199304
95% Chebyshev (MVUE) UCL	0.23502
97.5% Chebyshev (MVUE) UCL	0.275577
99% Chebyshev (MVUE) UCL	0.355243

95% Non-parametric UCLs	
CLT UCL	0.204701
Adj-CLT UCL (Adjusted for skewness)	0.23036
Mod-t UCL (Adjusted for skewness)	0.213402
Jackknife UCL	0.2094
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.297497
97.5% Chebyshev (Mean, Sd) UCL	0.361985
99% Chebyshev (Mean, Sd) UCL	0.488659

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIELDRIN

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	3
Minimum	0.00035
Maximum	0.05
Mean	0.004471
Median	0.00035
Standard Deviation	0.013278
Variance	0.000176
Coefficient of Variation	2.969618
Skewness	3.587675

Gamma Statistics	
k hat	0.343122
k star (bias corrected)	0.317215
Theta hat	0.013032
Theta star	0.014096
nu hat	9.607416
nu star	8.882018
Approx.Chi Square Value (.05)	3.255095
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	2.818902

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-2.995732
Mean of log data	-7.376156
Standard Deviation of log data	1.518786
Variance of log data	2.306709

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.039782

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.360415
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.010756

Gamma Distribution Test	
A-D Test Statistic	4.118827
A-D 5% Critical Value	0.823673
K-S Test Statistic	0.535251
K-S 5% Critical Value	0.24647
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.012201
Adjusted Gamma UCL	0.014089

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.446696
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.009597
95% Chebyshev (MVUE) UCL	0.005124
97.5% Chebyshev (MVUE) UCL	0.006601
99% Chebyshev (MVUE) UCL	0.009503

95% Non-parametric UCLs	
CLT UCL	0.010309
Adj-CLT UCL (Adjusted for skewness)	0.013945
Mod-t UCL (Adjusted for skewness)	0.011323
Jackknife UCL	0.010756
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.01994
97.5% Chebyshev (Mean, Sd) UCL	0.026634
99% Chebyshev (Mean, Sd) UCL	0.039782

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	3
Minimum	0.1
Maximum	0.5
Mean	0.145
Median	0.1
Standard Deviation	0.11882
Variance	0.014118
Coefficient of Variation	0.819448
Skewness	2.90591

Gamma Statistics	
k hat	3.196732
k star (bias corrected)	2.453104
Theta hat	0.045359
Theta star	0.059109
nu hat	76.72156
nu star	58.87451
Approx.Chi Square Value (.05)	42.22983
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	40.08612

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-2.09551
Standard Deviation of log data	0.50831
Variance of log data	0.258379

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.294512

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.454068
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.2066

Gamma Distribution Test	
A-D Test Statistic	3.184214
A-D 5% Critical Value	0.73838
K-S Test Statistic	0.500782
K-S 5% Critical Value	0.247211
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.202151
Adjusted Gamma UCL	0.212962

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.483502
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.194637
95% Chebyshev (MVUE) UCL	0.228959
97.5% Chebyshev (MVUE) UCL	0.268176
99% Chebyshev (MVUE) UCL	0.345211

95% Non-parametric UCLs	
CLT UCL	0.201419
Adj-CLT UCL (Adjusted for skewness)	0.232164
Mod-t UCL (Adjusted for skewness)	0.211395
Jackknife UCL	0.2066
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.294512
97.5% Chebyshev (Mean, Sd) UCL	0.359206
99% Chebyshev (Mean, Sd) UCL	0.486284

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDE

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	9
Minimum	0.00035
Maximum	0.3
Mean	0.017155
Median	0.00035
Standard Deviation	0.068516
Variance	0.004694
Coefficient of Variation	3.993863
Skewness	4.354277

Gamma Statistics	
k hat	0.253505
k star (bias corrected)	0.248566
Theta hat	0.067672
Theta star	0.069017
nu hat	9.633198
nu star	9.4455
Approx.Chi Square Value (.05)	3.597453
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	3.287692

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-1.203973
Mean of log data	-6.861036
Standard Deviation of log data	1.733202
Variance of log data	3.003989

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.173553

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.260962
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.044412

Gamma Distribution Test	
A-D Test Statistic	4.263264
A-D 5% Critical Value	0.863682
K-S Test Statistic	0.374891
K-S 5% Critical Value	0.21732
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.045043
Adjusted Gamma UCL	0.049287

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.684769
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.022315
95% Chebyshev (MVUE) UCL	0.012326
97.5% Chebyshev (MVUE) UCL	0.015935
99% Chebyshev (MVUE) UCL	0.023024

95% Non-parametric UCLs	
CLT UCL	0.04301
Adj-CLT UCL (Adjusted for skewness)	0.059788
Mod-t UCL (Adjusted for skewness)	0.047029
Jackknife UCL	0.044412
Standard Bootstrap UCL	0.04335
Bootstrap-t UCL	0.838851
Hall's Bootstrap UCL	0.544031
Percentile Bootstrap UCL	0.048495
BCA Bootstrap UCL	0.064437
95% Chebyshev (Mean, Sd) UCL	0.085671
97.5% Chebyshev (Mean, Sd) UCL	0.115318
99% Chebyshev (Mean, Sd) UCL	0.173553

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDD

Raw Statistics	
Number of Valid Samples	15
Number of Unique Samples	4
Minimum	0.00035
Maximum	0.032
Mean	0.00262
Median	0.00035
Standard Deviation	0.008139
Variance	6.62E-05
Coefficient of Variation	3.106334
Skewness	3.855442

Gamma Statistics	
k hat	0.429768
k star (bias corrected)	0.388259
Theta hat	0.006096
Theta star	0.006748
nu hat	12.89305
nu star	11.64777
Approx.Chi Square Value (.05)	4.994971
Adjusted Level of Significance	0.03235
Adjusted Chi Square Value	4.469665

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-3.442019
Mean of log data	-7.458199
Standard Deviation of log data	1.226997
Variance of log data	1.505523

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.023528

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.31165
Shapiro-Wilk 5% Critical Value	0.881
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.006321

Gamma Distribution Test	
A-D Test Statistic	4.257733
A-D 5% Critical Value	0.807921
K-S Test Statistic	0.475084
K-S 5% Critical Value	0.235991
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.00611
Adjusted Gamma UCL	0.006828

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.48312
Shapiro-Wilk 5% Critical Value	0.881
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.003409
95% Chebyshev (MVUE) UCL	0.002881
97.5% Chebyshev (MVUE) UCL	0.003638
99% Chebyshev (MVUE) UCL	0.005124

95% Non-parametric UCLs	
CLT UCL	0.006076
Adj-CLT UCL (Adjusted for skewness)	0.008312
Mod-t UCL (Adjusted for skewness)	0.00667
Jackknife UCL	0.006321
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.01178
97.5% Chebyshev (Mean, Sd) UCL	0.015743
99% Chebyshev (Mean, Sd) UCL	0.023528

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDT

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	10
Minimum	0.00035
Maximum	0.15
Mean	0.016071
Median	0.0017
Standard Deviation	0.039513
Variance	0.001561
Coefficient of Variation	2.458637
Skewness	2.966229

Gamma Statistics	
k hat	0.324773
k star (bias corrected)	0.30858
Theta hat	0.049484
Theta star	0.052081
nu hat	12.34136
nu star	11.72606
Approx.Chi Square Value (.05)	5.046163
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	4.667594

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-1.89712
Mean of log data	-6.226637
Standard Deviation of log data	2.006757
Variance of log data	4.027073

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.106265

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.452649
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.03179

Gamma Distribution Test	
A-D Test Statistic	2.114094
A-D 5% Critical Value	0.837854
K-S Test Statistic	0.250066
K-S 5% Critical Value	0.214493
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.037345
Adjusted Gamma UCL	0.040374

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.820007
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.112814
95% Chebyshev (MVUE) UCL	0.039517
97.5% Chebyshev (MVUE) UCL	0.051656
99% Chebyshev (MVUE) UCL	0.0755

95% Non-parametric UCLs	
CLT UCL	0.030981
Adj-CLT UCL (Adjusted for skewness)	0.037573
Mod-t UCL (Adjusted for skewness)	0.032818
Jackknife UCL	0.03179
Standard Bootstrap UCL	0.030636
Bootstrap-t UCL	0.134016
Hall's Bootstrap UCL	0.109866
Percentile Bootstrap UCL	0.033103
BCA Bootstrap UCL	0.039279
95% Chebyshev (Mean, Sd) UCL	0.055584
97.5% Chebyshev (Mean, Sd) UCL	0.072681
99% Chebyshev (Mean, Sd) UCL	0.106265

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ENDRIN

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	2
Minimum	0.00035
Maximum	0.032
Mean	0.002785
Median	0.00035
Standard Deviation	0.008778
Variance	7.71E-05
Coefficient of Variation	3.152367
Skewness	3.605551

Gamma Statistics	
k hat	0.383692
k star (bias corrected)	0.34643
Theta hat	0.007257
Theta star	0.008038
nu hat	9.97599
nu star	9.007172
Approx.Chi Square Value (.05)	3.330522
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	2.856949

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-3.442019
Mean of log data	-7.610227
Standard Deviation of log data	1.25239
Variance of log data	1.568482

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.027009

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.311121
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.007124

Gamma Distribution Test	
A-D Test Statistic	4.716618
A-D 5% Critical Value	0.813124
K-S Test Statistic	0.575961
K-S 5% Critical Value	0.253607
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.007531
Adjusted Gamma UCL	0.008779

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.311121
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.003602
95% Chebyshev (MVUE) UCL	0.002633
97.5% Chebyshev (MVUE) UCL	0.003344
99% Chebyshev (MVUE) UCL	0.004742

95% Non-parametric UCLs	
CLT UCL	0.006789
Adj-CLT UCL (Adjusted for skewness)	0.009391
Mod-t UCL (Adjusted for skewness)	0.00753
Jackknife UCL	0.007124
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/A
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.013397
97.5% Chebyshev (Mean, Sd) UCL	0.017989
99% Chebyshev (Mean, Sd) UCL	0.027009

Data File C:\Documents and Settings\tzoukh\My Docun Variable: FLUORANTHENE (IDRYL)

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	4
Minimum	0.033
Maximum	0.66
Mean	0.163786
Median	0.1
Standard Deviation	0.179985
Variance	0.032394
Coefficient of Variation	1.098903
Skewness	2.387248

Gamma Statistics	
k hat	1.696359
k star (bias corrected)	1.380473
Theta hat	0.096551
Theta star	0.118645
nu hat	47.49806
nu star	38.65324
Approx.Chi Square Value (.05)	25.41143
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	23.99328

Log-transformed Statistics	
Minimum of log data	-3.411248
Maximum of log data	-0.415515
Mean of log data	-2.132025
Standard Deviation of log data	0.732392
Variance of log data	0.536399

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.373462

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.506746
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.248973

Gamma Distribution Test	
A-D Test Statistic	3.177602
A-D 5% Critical Value	0.748796
K-S Test Statistic	0.485203
K-S 5% Critical Value	0.232302
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.249134
Adjusted Gamma UCL	0.263859

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.636689
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.251845
95% Chebyshev (MVUE) UCL	0.287828
97.5% Chebyshev (MVUE) UCL	0.346804
99% Chebyshev (MVUE) UCL	0.462651

95% Non-parametric UCLs	
CLT UCL	0.242908
Adj-CLT UCL (Adjusted for skewness)	0.275701
Mod-t UCL (Adjusted for skewness)	0.254088
Jackknife UCL	0.248973
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.373462
97.5% Chebyshev (Mean, Sd) UCL	0.464188
99% Chebyshev (Mean, Sd) UCL	0.642404

Data File C:\Documents and Settings\tzoukh\My Docun Variable: IRON

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	22100
Maximum	23200
Mean	22650
Median	22650

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ISOPHORONE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	3
Minimum	0.1
Maximum	9.9
Mean	0.953333
Median	0.1
Standard Deviation	2.820307
Variance	7.954133
Coefficient of Variation	2.958364
Skewness	3.451874

Gamma Statistics	
k hat	0.382785
k star (bias corrected)	0.342644
Theta hat	2.490519
Theta star	2.782282
nu hat	9.186842
nu star	8.223465
Approx.Chi Square Value (.05)	2.864398
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.403949

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	2.292535
Mean of log data	-1.779125
Standard Deviation of log data	1.370831
Variance of log data	1.879177

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

9.054049

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.347217
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.415457

Gamma Distribution Test	
A-D Test Statistic	3.580769
A-D 5% Critical Value	0.807756
K-S Test Statistic	0.508137
K-S 5% Critical Value	0.262583
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.736946
Adjusted Gamma UCL	3.261176

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.457899
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.936316
95% Chebyshev (MVUE) UCL	1.095801
97.5% Chebyshev (MVUE) UCL	1.405526
99% Chebyshev (MVUE) UCL	2.01392

95% Non-parametric UCLs	
CLT UCL	2.292495
Adj-CLT UCL (Adjusted for skewness)	3.159358
Mod-t UCL (Adjusted for skewness)	2.550671
Jackknife UCL	2.415457
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	4.502142
97.5% Chebyshev (Mean, Sd) UCL	6.037715
99% Chebyshev (Mean, Sd) UCL	9.054049

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MERCURY

Raw Statistics	
Number of Valid Samples	33
Number of Unique Samples	21
Minimum	0.029
Maximum	0.85
Mean	0.145545
Median	0.05
Standard Deviation	0.208861
Variance	0.043623
Coefficient of Variation	1.435022
Skewness	2.369392

Gamma Statistics	
k hat	0.987783
k star (bias corrected)	0.918186
Theta hat	0.147346
Theta star	0.158514
nu hat	65.19366
nu star	60.60029
Approx.Chi Square Value (.05)	43.69488
Adjusted Level of Significance	0.0419
Adjusted Chi Square Value	42.95521

Log-transformed Statistics	
Minimum of log data	-3.540459
Maximum of log data	-0.162519
Mean of log data	-2.512468
Standard Deviation of log data	0.954656
Variance of log data	0.911369

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.304026

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.574578
Shapiro-Wilk 5% Critical Value	0.931
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.207132

Gamma Distribution Test	
A-D Test Statistic	4.019247
A-D 5% Critical Value	0.776204
K-S Test Statistic	0.29601
K-S 5% Critical Value	0.157796
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.201857
Adjusted Gamma UCL	0.205332

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.795647
Shapiro-Wilk 5% Critical Value	0.931
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.190424
95% Chebyshev (MVUE) UCL	0.229306
97.5% Chebyshev (MVUE) UCL	0.274261
99% Chebyshev (MVUE) UCL	0.362566

95% Non-parametric UCLs	
CLT UCL	0.205349
Adj-CLT UCL (Adjusted for skewness)	0.221373
Mod-t UCL (Adjusted for skewness)	0.209631
Jackknife UCL	0.207132
Standard Bootstrap UCL	0.20546
Bootstrap-t UCL	0.252479
Hall's Bootstrap UCL	0.206264
Percentile Bootstrap UCL	0.208273
BCA Bootstrap UCL	0.218545
95% Chebyshev (Mean, Sd) UCL	0.304026
97.5% Chebyshev (Mean, Sd) UCL	0.372601
99% Chebyshev (Mean, Sd) UCL	0.507303

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MANGANESE

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	239
Maximum	353
Mean	296
Median	296

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MAGNESIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	5190
Maximum	5575
Mean	5382.5
Median	5382.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MOLYBDENUM

Raw Statistics	
Number of Valid Samples	15
Number of Unique Samples	14
Minimum	0.5
Maximum	4.2
Mean	2.926667
Median	3.1
Standard Deviation	1.006029
Variance	1.012095
Coefficient of Variation	0.343746
Skewness	-1.061332

Gamma Statistics	
k hat	5.345389
k star (bias corrected)	4.320756
Theta hat	0.547512
Theta star	0.677351
nu hat	160.3617
nu star	129.6227
Approx.Chi Square Value (.05)	104.3185
Adjusted Level of Significance	0.03235
Adjusted Chi Square Value	101.5255

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	1.435085
Mean of log data	0.977419
Standard Deviation of log data	0.538457
Variance of log data	0.289936

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

3.384177

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.925042
Shapiro-Wilk 5% Critical Value	0.881
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3.384177

Gamma Distribution Test	
A-D Test Statistic	0.989687
A-D 5% Critical Value	0.73847
K-S Test Statistic	0.218094
K-S 5% Critical Value	0.222041
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3.636577
Adjusted Gamma UCL	3.736622

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.731484
Shapiro-Wilk 5% Critical Value	0.881
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4.162113
95% Chebyshev (MVUE) UCL	4.944064
97.5% Chebyshev (MVUE) UCL	5.768292
99% Chebyshev (MVUE) UCL	7.387328

95% Non-parametric UCLs	
CLT UCL	3.353927
Adj-CLT UCL (Adjusted for skewness)	3.277868
Mod-t UCL (Adjusted for skewness)	3.372313
Jackknife UCL	3.384177
Standard Bootstrap UCL	3.335875
Bootstrap-t UCL	3.303156
Hall's Bootstrap UCL	3.285693
Percentile Bootstrap UCL	3.333333
BCA Bootstrap UCL	3.286667
95% Chebyshev (Mean, Sd) UCL	4.058915
97.5% Chebyshev (Mean, Sd) UCL	4.54884
99% Chebyshev (Mean, Sd) UCL	5.511203

Data File C:\Documents and Settings\tzoukh\My Docun Variable: NAPHTHALENE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	3
Minimum	0.1
Maximum	1.2
Mean	0.215385
Median	0.1
Standard Deviation	0.315822
Variance	0.099744
Coefficient of Variation	1.466317
Skewness	3.003546

Gamma Statistics	
k hat	1.245716
k star (bias corrected)	1.009525
Theta hat	0.1729
Theta star	0.213352
nu hat	32.38862
nu star	26.24765
Approx.Chi Square Value (.05)	15.56836
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	14.40652

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.182322
Mean of log data	-1.987636
Standard Deviation of log data	0.789279
Variance of log data	0.622962

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.597195

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.436111
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.371501

Gamma Distribution Test	
A-D Test Statistic	3.630724
A-D 5% Critical Value	0.753926
K-S Test Statistic	0.517421
K-S 5% Critical Value	0.241998
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.36313
Adjusted Gamma UCL	0.392415

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.466179
Shapiro-Wilk 5% Critical Value	0.866
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.331532
95% Chebyshev (MVUE) UCL	0.364662
97.5% Chebyshev (MVUE) UCL	0.443858
99% Chebyshev (MVUE) UCL	0.599423

95% Non-parametric UCLs	
CLT UCL	0.359463
Adj-CLT UCL (Adjusted for skewness)	0.43743
Mod-t UCL (Adjusted for skewness)	0.383662
Jackknife UCL	0.371501
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.597195
97.5% Chebyshev (Mean, Sd) UCL	0.762405
99% Chebyshev (Mean, Sd) UCL	1.086927

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PCB-1254 (AROCLOR 1254)

Raw Statistics	
Number of Valid Samples	14
Number of Unique Samples	3
Minimum	0.015
Maximum	0.5
Mean	0.063571
Median	0.015
Standard Deviation	0.135936
Variance	0.018479
Coefficient of Variation	2.138318
Skewness	3.032933

Gamma Statistics	
k hat	0.612809
k star (bias corrected)	0.529112
Theta hat	0.103738
Theta star	0.120147
nu hat	17.15866
nu star	14.81514
Approx.Chi Square Value (.05)	7.13196
Adjusted Level of Significance	0.03122
Adjusted Chi Square Value	6.436274

Log-transformed Statistics	
Minimum of log data	-4.199705
Maximum of log data	-0.693147
Mean of log data	-3.760733
Standard Deviation of log data	1.128744
Variance of log data	1.274063

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.425054

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.424609
Shapiro-Wilk 5% Critical Value	0.874
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.12791

Gamma Distribution Test	
A-D Test Statistic	4.104313
A-D 5% Critical Value	0.783049
K-S Test Statistic	0.533514
K-S 5% Critical Value	0.239807
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.132056
Adjusted Gamma UCL	0.14633

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.44568
Shapiro-Wilk 5% Critical Value	0.874
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.113259
95% Chebyshev (MVUE) UCL	0.100632
97.5% Chebyshev (MVUE) UCL	0.126371
99% Chebyshev (MVUE) UCL	0.176931

95% Non-parametric UCLs	
CLT UCL	0.12333
Adj-CLT UCL (Adjusted for skewness)	0.154796
Mod-t UCL (Adjusted for skewness)	0.132818
Jackknife UCL	0.12791
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.221932
97.5% Chebyshev (Mean, Sd) UCL	0.290455
99% Chebyshev (Mean, Sd) UCL	0.425054

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PHENANTHRENE

Raw Statistics	
Number of Valid Samples	15
Number of Unique Samples	5
Minimum	0.013
Maximum	5
Mean	0.442867
Median	0.1
Standard Deviation	1.26545
Variance	1.601365
Coefficient of Variation	2.857407
Skewness	3.824987

Gamma Statistics	
k hat	0.478589
k star (bias corrected)	0.427315
Theta hat	0.92536
Theta star	1.036393
nu hat	14.35766
nu star	12.81946
Approx.Chi Square Value (.05)	5.77046
Adjusted Level of Significance	0.03235
Adjusted Chi Square Value	5.198565

Log-transformed Statistics	
Minimum of log data	-4.342806
Maximum of log data	1.609438
Mean of log data	-2.150767
Standard Deviation of log data	1.286205
Variance of log data	1.654324

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

3.693868

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.330899
Shapiro-Wilk 5% Critical Value	0.881
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.018353

Gamma Distribution Test	
A-D Test Statistic	3.447535
A-D 5% Critical Value	0.797542
K-S Test Statistic	0.490598
K-S 5% Critical Value	0.234475
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.983858
Adjusted Gamma UCL	1.092092

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.689283
Shapiro-Wilk 5% Critical Value	0.881
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.806863
95% Chebyshev (MVUE) UCL	0.64007
97.5% Chebyshev (MVUE) UCL	0.811629
99% Chebyshev (MVUE) UCL	1.148623

95% Non-parametric UCLs	
CLT UCL	0.980303
Adj-CLT UCL (Adjusted for skewness)	1.3251
Mod-t UCL (Adjusted for skewness)	1.072135
Jackknife UCL	1.018353
Standard Bootstrap UCL	0.956222
Bootstrap-t UCL	16.52209
Hall's Bootstrap UCL	14.59157
Percentile Bootstrap UCL	1.083467
BCA Bootstrap UCL	1.433333
95% Chebyshev (Mean, Sd) UCL	1.867084
97.5% Chebyshev (Mean, Sd) UCL	2.483344
99% Chebyshev (Mean, Sd) UCL	3.693868

Data File C:\Documents and Settings\tzoukh\My Docun Variable: POTASSIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	4350
Maximum	4520
Mean	4435
Median	4435

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: POLYCHLORINATED BI PHENYLS, TOTAL

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	0.5
Maximum	0.5
Mean	0.5
Median	0.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PYRENE

Raw Statistics	
Number of Valid Samples	15
Number of Unique Samples	5
Minimum	0.018
Maximum	3.1
Mean	0.317467
Median	0.1
Standard Deviation	0.77738
Variance	0.60432
Coefficient of Variation	2.448699
Skewness	3.752472

Gamma Statistics	
k hat	0.622061
k star (bias corrected)	0.542093
Theta hat	0.510347
Theta star	0.585631
nu hat	18.66183
nu star	16.2628
Approx.Chi Square Value (.05)	8.146624
Adjusted Level of Significance	0.03235
Adjusted Chi Square Value	7.448177

Log-transformed Statistics	
Minimum of log data	-4.017384
Maximum of log data	1.131402
Mean of log data	-2.135409
Standard Deviation of log data	1.120519
Variance of log data	1.255563

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

2.314593

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.357023
Shapiro-Wilk 5% Critical Value	0.881
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.670995

Gamma Distribution Test	
A-D Test Statistic	3.354019
A-D 5% Critical Value	0.78426
K-S Test Statistic	0.490505
K-S 5% Critical Value	0.232057
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.633747
Adjusted Gamma UCL	0.693176

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.679141
Shapiro-Wilk 5% Critical Value	0.881
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.534155
95% Chebyshev (MVUE) UCL	0.498874
97.5% Chebyshev (MVUE) UCL	0.624649
99% Chebyshev (MVUE) UCL	0.87171

95% Non-parametric UCLs	
CLT UCL	0.64762
Adj-CLT UCL (Adjusted for skewness)	0.855417
Mod-t UCL (Adjusted for skewness)	0.703407
Jackknife UCL	0.670995
Standard Bootstrap UCL	0.637232
Bootstrap-t UCL	8.502875
Hall's Bootstrap UCL	7.197459
Percentile Bootstrap UCL	0.7
BCA Bootstrap UCL	0.9212
95% Chebyshev (Mean, Sd) UCL	1.192379
97.5% Chebyshev (Mean, Sd) UCL	1.570955
99% Chebyshev (Mean, Sd) UCL	2.314593

Data File C:\Documents and Settings\tzoukh\My Docun Variable: NICKEL

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	20
Minimum	7.5
Maximum	55
Mean	22.50556
Median	23
Standard Deviation	8.051866
Variance	64.83254
Coefficient of Variation	0.357772
Skewness	1.533281

Gamma Statistics	
k hat	8.257508
k star (bias corrected)	7.587901
Theta hat	2.725466
Theta star	2.965979
nu hat	594.5406
nu star	546.3289
Approx.Chi Square Value (.05)	493.1071
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	490.8189

Log-transformed Statistics	
Minimum of log data	2.014903
Maximum of log data	4.007333
Mean of log data	3.051991
Standard Deviation of log data	0.368389
Variance of log data	0.135711

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

24.93461

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.870508
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	24.77292

Gamma Distribution Test	
A-D Test Statistic	1.019517
A-D 5% Critical Value	0.748868
K-S Test Statistic	0.131644
K-S 5% Critical Value	0.146928
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	24.93461
Adjusted Gamma UCL	25.05086

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.916593
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	25.36795
95% Chebyshev (MVUE) UCL	28.80222
97.5% Chebyshev (MVUE) UCL	31.48696
99% Chebyshev (MVUE) UCL	36.76061

95% Non-parametric UCLs	
CLT UCL	24.71291
Adj-CLT UCL (Adjusted for skewness)	25.07935
Mod-t UCL (Adjusted for skewness)	24.83008
Jackknife UCL	24.77292
Standard Bootstrap UCL	24.71644
Bootstrap-t UCL	25.03965
Hall's Bootstrap UCL	26.18797
Percentile Bootstrap UCL	24.62222
BCA Bootstrap UCL	25.01944
95% Chebyshev (Mean, Sd) UCL	28.3551
97.5% Chebyshev (Mean, Sd) UCL	30.8862
99% Chebyshev (Mean, Sd) UCL	35.85806

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ZINC

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	26
Minimum	34
Maximum	350
Mean	81.52778
Median	68.75
Standard Deviation	52.40378
Variance	2746.156
Coefficient of Variation	0.642772
Skewness	4.11306

Gamma Statistics	
k hat	4.867033
k star (bias corrected)	4.479966
Theta hat	16.75102
Theta star	18.1983
nu hat	350.4264
nu star	322.5575
Approx.Chi Square Value (.05)	281.9389
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	280.2191

Log-transformed Statistics	
Minimum of log data	3.526361
Maximum of log data	5.857933
Mean of log data	4.294708
Standard Deviation of log data	0.417619
Variance of log data	0.174406

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

97.28231

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.575797
Shapiro-Wilk 5% Critical Value	0.935
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	96.28444

Gamma Distribution Test	
A-D Test Statistic	2.065079
A-D 5% Critical Value	0.750411
K-S Test Statistic	0.197629
K-S 5% Critical Value	0.147246
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	93.27338
Adjusted Gamma UCL	93.84587

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.887681
Shapiro-Wilk 5% Critical Value	0.935
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	91.19382
95% Chebyshev (MVUE) UCL	104.7869
97.5% Chebyshev (MVUE) UCL	115.6066
99% Chebyshev (MVUE) UCL	136.8598

95% Non-parametric UCLs	
CLT UCL	95.89387
Adj-CLT UCL (Adjusted for skewness)	102.2913
Mod-t UCL (Adjusted for skewness)	97.28231
Jackknife UCL	96.28444
Standard Bootstrap UCL	95.43998
Bootstrap-t UCL	112.6373
Hall's Bootstrap UCL	159.2824
Percentile Bootstrap UCL	97.02778
BCA Bootstrap UCL	104.9722
95% Chebyshev (Mean, Sd) UCL	119.5982
97.5% Chebyshev (Mean, Sd) UCL	136.0714
99% Chebyshev (Mean, Sd) UCL	168.4296

Data File C:\Documents and Settings\tzoukh\My Docum Variable: SILVER

Raw Statistics	
Number of Valid Samples	15
Number of Unique Samples	4
Minimum	0.5
Maximum	1.2
Mean	0.556667
Median	0.5
Standard Deviation	0.179987
Variance	0.032395
Coefficient of Variation	0.32333
Skewness	3.733284

Gamma Statistics	
k hat	16.60994
k star (bias corrected)	13.3324
Theta hat	0.033514
Theta star	0.041753
nu hat	498.2983
nu star	399.972
Approx.Chi Square Value (.05)	354.6052
Adjusted Level of Significance	0.03235
Adjusted Chi Square Value	349.3468

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	0.182322
Mean of log data	-0.616193
Standard Deviation of log data	0.226441
Variance of log data	0.051275

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

0.645985

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.36206
Shapiro-Wilk 5% Critical Value	0.881
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.638519

Gamma Distribution Test	
A-D Test Statistic	4.138337
A-D 5% Critical Value	0.735585
K-S Test Statistic	0.435793
K-S 5% Critical Value	0.221298
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.627884
Adjusted Gamma UCL	0.637335

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.397027
Shapiro-Wilk 5% Critical Value	0.881
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.618793
95% Chebyshev (MVUE) UCL	0.69493
97.5% Chebyshev (MVUE) UCL	0.75632
99% Chebyshev (MVUE) UCL	0.876909

95% Non-parametric UCLs	
CLT UCL	0.633107
Adj-CLT UCL (Adjusted for skewness)	0.680972
Mod-t UCL (Adjusted for skewness)	0.645985
Jackknife UCL	0.638519
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.759235
97.5% Chebyshev (Mean, Sd) UCL	0.846887
99% Chebyshev (Mean, Sd) UCL	1.019061

Data File C:\Documents and Settings\tzoukh\My Docun Variable: SODIUM

Raw Statistics

Number of Valid Samples	2
Number of Unique Samples	2
Minimum	290
Maximum	320
Mean	305
Median	305

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: THALLIUM

Raw Statistics	
Number of Valid Samples	26
Number of Unique Samples	8
Minimum	0.9
Maximum	3.5
Mean	2.415385
Median	2
Standard Deviation	1.078403
Variance	1.162954
Coefficient of Variation	0.446473
Skewness	-0.137656

Gamma Statistics	
k hat	4.419711
k star (bias corrected)	3.935385
Theta hat	0.546503
Theta star	0.613761
nu hat	229.825
nu star	204.64
Approx.Chi Square Value (.05)	172.5323
Adjusted Level of Significance	0.0398
Adjusted Chi Square Value	170.5874

Log-transformed Statistics	
Minimum of log data	-0.105361
Maximum of log data	1.252763
Mean of log data	0.764484
Standard Deviation of log data	0.520085
Variance of log data	0.270489

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

3.337258

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.782288
Shapiro-Wilk 5% Critical Value	0.92
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.776643

Gamma Distribution Test	
A-D Test Statistic	2.083354
A-D 5% Critical Value	0.747189
K-S Test Statistic	0.299299
K-S 5% Critical Value	0.171769
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.864881
Adjusted Gamma UCL	2.897543

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.807007
Shapiro-Wilk 5% Critical Value	0.92
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3.01987
95% Chebyshev (MVUE) UCL	3.58032
97.5% Chebyshev (MVUE) UCL	4.07172
99% Chebyshev (MVUE) UCL	5.036978

95% Non-parametric UCLs	
CLT UCL	2.763258
Adj-CLT UCL (Adjusted for skewness)	2.757158
Mod-t UCL (Adjusted for skewness)	2.775692
Jackknife UCL	2.776643
Standard Bootstrap UCL	2.75899
Bootstrap-t UCL	2.770594
Hall's Bootstrap UCL	2.735154
Percentile Bootstrap UCL	2.757692
BCA Bootstrap UCL	2.757692
95% Chebyshev (Mean, Sd) UCL	3.337258
97.5% Chebyshev (Mean, Sd) UCL	3.736154
99% Chebyshev (Mean, Sd) UCL	4.519706

Data File C:\Documents and Settings\tzoukh\My Docun Variable: VANADIUM

Raw Statistics	
Number of Valid Samples	36
Number of Unique Samples	26
Minimum	20
Maximum	71
Mean	44.09722
Median	44
Standard Deviation	10.61187
Variance	112.6117
Coefficient of Variation	0.240647
Skewness	-0.024922

Gamma Statistics	
k hat	16.10078
k star (bias corrected)	14.77757
Theta hat	2.738825
Theta star	2.984065
nu hat	1159.256
nu star	1063.985
Approx.Chi Square Value (.05)	989.2461
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	985.9873

Log-transformed Statistics	
Minimum of log data	2.995732
Maximum of log data	4.26268
Mean of log data	3.755021
Standard Deviation of log data	0.263727
Variance of log data	0.069552

RECOMMENDATION

Data are normal (0.05)

Use Student's-t UCL

47.08547

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.988181
Shapiro-Wilk 5% Critical Value	0.935
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	47.08547

Gamma Distribution Test	
A-D Test Statistic	0.40997
A-D 5% Critical Value	0.747307
K-S Test Statistic	0.140747
K-S 5% Critical Value	0.146631
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	47.42882
Adjusted Gamma UCL	47.58558

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.944531
Shapiro-Wilk 5% Critical Value	0.935
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	47.87179
95% Chebyshev (MVUE) UCL	52.78665
97.5% Chebyshev (MVUE) UCL	56.50066
99% Chebyshev (MVUE) UCL	63.79611

95% Non-parametric UCLs	
CLT UCL	47.00638
Adj-CLT UCL (Adjusted for skewness)	46.99853
Mod-t UCL (Adjusted for skewness)	47.08425
Jackknife UCL	47.08547
Standard Bootstrap UCL	46.8778
Bootstrap-t UCL	46.96667
Hall's Bootstrap UCL	47.03511
Percentile Bootstrap UCL	47.04167
BCA Bootstrap UCL	47.13889
95% Chebyshev (Mean, Sd) UCL	51.80656
97.5% Chebyshev (Mean, Sd) UCL	55.1424
99% Chebyshev (Mean, Sd) UCL	61.69501

A-1.2 Surface and Subsurface Soil 0-12 feet

Summary of UCLs for All Parcels Soil 0-12 ft bgs

Chemical	Distribution	95 UCL mg/kg		Maximum mg/kg	Mean mg/kg	Statistic
1,1,1-TRICHLOROETHANE	Data are Non-parametric (0.05)	456.461	Use 99% Chebyshev (Mean, Sd) UCL	1200	58.19190961	UCL-NP
1,1,2-TRICHLOROETHANE	Data are Non-parametric (0.05)	14.43809	Use 99% Chebyshev (Mean, Sd) UCL	25	2.67787473	UCL-NP
1,1-DICHLOROETHANE	Data are Non-parametric (0.05)	14.43814	Use 99% Chebyshev (Mean, Sd) UCL	25	2.678009865	UCL-NP
1,1-DICHLOROETHENE	Data are Non-parametric (0.05)	21.58169	Use 99% Chebyshev (Mean, Sd) UCL	60	3.531223684	UCL-NP
1,2-DICHLOROBENZENE	Data are Non-parametric (0.05)	7.108503	Use 99% Chebyshev (Mean, Sd) UCL	25	0.756457564	UCL-NP
1,2-DICHLOROETHANE	Data are Non-parametric (0.05)	14.46676	Use 99% Chebyshev (Mean, Sd) UCL	25	2.727953108	UCL-NP
1,4-DICHLOROBENZENE	Data are Non-parametric (0.05)	7.484588	Use 99% Chebyshev (Mean, Sd) UCL	25	0.788636892	UCL-NP
1,4-DIOXANE	Data are lognormal (0.05)	43.42067	Use 99% Chebyshev (Mean, Sd) UCL	28	4.265307692	95% UCL-T
2-METHYLNAPHTHALENE	Data are Non-parametric (0.05)	0.372395	Use 95% Chebyshev (Mean, Sd) UCL	0.54	0.195555556	UCL-NP
4,4'-DDD	Data are Non-parametric (0.05)	0.018686	Use 99% Chebyshev (Mean, Sd) UCL	0.032	0.002176316	UCL-NP
4,4'-DDE	Data are Non-parametric (0.05)	0.143534	Use 99% Chebyshev (Mean, Sd) UCL	0.3	0.01426087	UCL-NP
4,4'-DDT	Data are Non-parametric (0.05)	0.088565	Use 99% Chebyshev (Mean, Sd) UCL	23	0.013365217	UCL-NP
ALUMINUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	9830	9707.5	
ANTIMONY	Data are Non-parametric (0.05)	12.29823	Use 99% Chebyshev (Mean, Sd) UCL	18	4.484	UCL-NP
ARSENIC	Data follow gamma distribution (0.05)	5.735525	Use Approximate Gamma UCL	21	4.9365	95% UCL-G
BARIUM	Data are Non-parametric (0.05)	157.6643	Use Student's-t UCL	230	146.4375	UCL-NP
BENZO(A)ANTHRACENE	Data are Non-parametric (0.05)	0.835608	Use 95% Chebyshev (Mean, Sd) UCL	18	0.274	UCL-NP
BENZO(A)PYRENE	Data are Non-parametric (0.05)	0.636844	Use 95% Chebyshev (Mean, Sd) UCL	17	0.241176471	UCL-NP
BENZO(B)FLUORANTHENE	Data are Non-parametric (0.05)	0.439056	Use 95% Chebyshev (Mean, Sd) UCL	17	0.200588235	UCL-NP
BENZO(G,H,I)PERYLENE	Data are Non-parametric (0.05)	0.339706	Use 95% Chebyshev (Mean, Sd) UCL	0.5	0.175882353	UCL-NP
BENZYL ALCOHOL (PHENYLMETHANOL)	Data are Non-parametric (0.05)	15.58316	Use 99% Chebyshev (Mean, Sd) UCL	22	1.8875	UCL-NP
BERYLLIUM	Data are Non-parametric (0.05)	0.505454	Use Student's-t UCL	40	0.47625	UCL-NP
BIS(2-ETHYLHEXYL)PHTHALATE	Data are Non-parametric (0.05)	23.13155	Use 99% Chebyshev (Mean, Sd) UCL	51	3.06988	UCL-NP
BUTYLBENZYL PHTHALATE	Data are Non-parametric (0.05)	0.755924	Use 95% Chebyshev (Mean, Sd) UCL	1.9	0.291666667	UCL-NP
CADMIUM	Data are Non-parametric (0.05)	1.248364	Use 95% Chebyshev (Mean, Sd) UCL	2.1	0.816184211	UCL-NP
CALCIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	7170	6612.5	
CHLOROFORM	Data are Non-parametric (0.05)	14.43818	Use 99% Chebyshev (Mean, Sd) UCL	25	2.678113514	UCL-NP
CHROMIUM	Data are Non-parametric (0.05)	82.62248	Use 95% Chebyshev (Mean, Sd) UCL	40	38.3525	UCL-NP
CHRYSENE	Data are Non-parametric (0.05)	3.723032	Use 99% Chebyshev (Mean, Sd) UCL	18	0.474333333	UCL-NP
COBALT	Data are Non-parametric (0.05)	9.306688	Use Student's-t UCL	40	8.72375	UCL-NP
COPPER	Data are Non-parametric (0.05)	40.46806	Use Student's-t UCL	150	33.7375	UCL-NP
DIELDRIN	Data are Non-parametric (0.05)	0.031113	Use 99% Chebyshev (Mean, Sd) UCL	0.05	0.003591667	UCL-NP
DIETHYL PHTHALATE	Data are Non-parametric (0.05)	0.292239	Use 95% Chebyshev (Mean, Sd) UCL	17	0.149235294	UCL-NP
DI-N-BUTYLPHTHALATE	Data are Non-parametric (0.05)	0.313099	Use 95% Chebyshev (Mean, Sd) UCL	17	0.166470588	UCL-NP
DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALA	Data are Non-parametric (0.05)	0.314416	Use 95% Chebyshev (Mean, Sd) UCL	16	0.165	UCL-NP
ENDRIN	Data are Non-parametric (0.05)	0.020754	Use 99% Chebyshev (Mean, Sd) UCL	17	0.00225	UCL-NP
FLUORANTHENE (IDRYL)	Data are Non-parametric (0.05)	0.360548	Use 95% Chebyshev (Mean, Sd) UCL	0.66	0.177388889	UCL-NP
IRON	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	23200	22650	
ISOPHORONE	Data are Non-parametric (0.05)	8.172762	Use 99% Chebyshev (Mean, Sd) UCL	9.9	1.14625	UCL-NP
LEAD	Data are lognormal (0.05)	59.89229	Use H-UCL	40	51.02	95% UCL-T
MAGNESIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	2	5382.5	
MANGANESE	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	2	296	
MERCURY	Data are Non-parametric (0.05)	0.277963	Use 95% Chebyshev (Mean, Sd) UCL	37	0.135216216	UCL-NP
MOLYBDENUM	Data are Non-parametric (0.05)	3.910367	Use 95% Chebyshev (Mean, Sd) UCL	4.2	2.836842105	UCL-NP
NAPHTHALENE	Data are Non-parametric (0.05)	0.793286	Use 99% Chebyshev (Mean, Sd) UCL	1.2	0.1906925	UCL-NP
NICKEL	Data are Non-parametric (0.05)	24.51265	Use Student's-t UCL	40	22.2775	UCL-NP
PCB-1254 (AROCLOR 1254)	Data are Non-parametric (0.05)	0.33725	Use 99% Chebyshev (Mean, Sd) UCL	18	0.055666667	UCL-NP
PHENANTHRENE	Data are Non-parametric (0.05)	2.959079	Use 99% Chebyshev (Mean, Sd) UCL	19	0.397	UCL-NP
POLYCHLORINATED BI PHENYLS, TOTAL	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	1	0.5	
POTASSIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	2	4435	
PYRENE	Data are Non-parametric (0.05)	1.875346	Use 99% Chebyshev (Mean, Sd) UCL	19	0.298	UCL-NP
SILVER	Data are Non-parametric (0.05)	0.614507	Use Student's-t UCL	19	0.544736842	UCL-NP
SODIUM	Too Few Observations To Calculate UCLs	No UCL	Too Few Observations To Calculate UCLs	2	305	
TETRACHLOROETHENE	Data are lognormal (0.05)	922.6763	Use 95% Chebyshev (MVUE) UCL	39	85.68163077	95% UCL-T
THALLIUM	Data are Non-parametric (0.05)	3.410887	Use 95% Chebyshev (Mean, Sd) UCL	30	2.56	UCL-NP
TRICHLOROETHENE	Data are Non-parametric (0.05)	51.88813	Use 99% Chebyshev (Mean, Sd) UCL	140	7.557710526	UCL-NP
VANADIUM	Data are normal (0.05)	46.95157	Use Student's-t UCL	40	43.8875	95% UCL-N
ZINC	Data are Non-parametric (0.05)	94.56662	Use Student's-t UCL	40	80.225	UCL-NP

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	38
Number of Unique Samples	17
Minimum	0.000465
Maximum	1200
Mean	58.19191
Median	0.25
Standard Deviation	246.7464
Variance	60883.77
Coefficient of Variation	4.240218
Skewness	4.253638

Gamma Statistics	
k hat	0.121193
k star (bias corrected)	0.129169
Theta hat	480.1607
Theta star	450.5112
nu hat	9.210636
nu star	9.816814
Approx.Chi Square Value (.05)	3.826766
Adjusted Level of Significance	0.0434
Adjusted Chi Square Value	3.672485

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	7.090077
Mean of log data	-2.471
Standard Deviation of log data	3.555706
Variance of log data	12.64305

RECOMMENDATION

Data are Non-parametric (0.05)

Use Hall's Bootstrap UCL

Use 99% Chebyshev (Mean, Sd) UCL

Recommended UCL exceeds the maximum o 456.461

In case Hall's Bootstrap method yields an erratic, unreasonably large UCL value, use 99% Chebyshev (Mean, Sd) UCL

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.255867
Shapiro-Wilk 5% Critical Value	0.938
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	125.7221

Gamma Distribution Test	
A-D Test Statistic	6.441383
A-D 5% Critical Value	0.947077
K-S Test Statistic	0.355636
K-S 5% Critical Value	0.161403
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	149.2799
Adjusted Gamma UCL	155.5511

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.881605
Shapiro-Wilk 5% Critical Value	0.938
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1669.79
95% Chebyshev (MVUE) UCL	89.27276
97.5% Chebyshev (MVUE) UCL	119.4649
99% Chebyshev (MVUE) UCL	178.7714

95% Non-parametric UCLs	
CLT UCL	124.0314
Adj-CLT UCL (Adjusted for skewness)	153.544
Mod-t UCL (Adjusted for skewness)	130.3255
Jackknife UCL	125.7221
Standard Bootstrap UCL	121.5473
Bootstrap-t UCL	5465.343
Hall's Bootstrap UCL	4173.562
Percentile Bootstrap UCL	134.7881
BCA Bootstrap UCL	177.8979
95% Chebyshev (Mean, Sd) UCL	232.6679
97.5% Chebyshev (Mean, Sd) UCL	308.1639
99% Chebyshev (Mean, Sd) UCL	456.461

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	9
Minimum	0.000465
Maximum	25
Mean	2.677875
Median	0.25
Standard Deviation	7.189497
Variance	51.68887
Coefficient of Variation	2.684777
Skewness	2.743239

Gamma Statistics	
k hat	0.19171
k star (bias corrected)	0.194184
Theta hat	13.96835
Theta star	13.79039
nu hat	14.18656
nu star	14.36963
Approx.Chi Square Value (.05)	6.824025
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	6.598094

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	3.218876
Mean of log data	-2.87901
Standard Deviation of log data	3.186093
Variance of log data	10.15119

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

14.43809

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.406779
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.673351

Gamma Distribution Test	
A-D Test Statistic	4.076384
A-D 5% Critical Value	0.905561
K-S Test Statistic	0.336864
K-S 5% Critical Value	0.160873
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.63891
Adjusted Gamma UCL	5.831996

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.833043
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	171.159
95% Chebyshev (MVUE) UCL	20.57985
97.5% Chebyshev (MVUE) UCL	27.41296
99% Chebyshev (MVUE) UCL	40.83529

95% Non-parametric UCLs	
CLT UCL	4.622003
Adj-CLT UCL (Adjusted for skewness)	5.191565
Mod-t UCL (Adjusted for skewness)	4.762191
Jackknife UCL	4.673351
Standard Bootstrap UCL	4.621406
Bootstrap-t UCL	5.937048
Hall's Bootstrap UCL	4.348334
Percentile Bootstrap UCL	4.717076
BCA Bootstrap UCL	5.223986
95% Chebyshev (Mean, Sd) UCL	7.829858
97.5% Chebyshev (Mean, Sd) UCL	10.05913
99% Chebyshev (Mean, Sd) UCL	14.43809

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	9
Minimum	0.000465
Maximum	25
Mean	2.67801
Median	0.25
Standard Deviation	7.189446
Variance	51.68813
Coefficient of Variation	2.684623
Skewness	2.743247

Gamma Statistics	
k hat	0.192765
k star (bias corrected)	0.195153
Theta hat	13.89265
Theta star	13.72262
nu hat	14.26458
nu star	14.44132
Approx.Chi Square Value (.05)	6.873434
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	6.646574

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	3.218876
Mean of log data	-2.854565
Standard Deviation of log data	3.167389
Variance of log data	10.03235

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

14.43814

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.406779
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.673472

Gamma Distribution Test	
A-D Test Statistic	4.026973
A-D 5% Critical Value	0.904961
K-S Test Statistic	0.338319
K-S 5% Critical Value	0.160834
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.626591
Adjusted Gamma UCL	5.818638

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.84002
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	159.9369
95% Chebyshev (MVUE) UCL	20.03264
97.5% Chebyshev (MVUE) UCL	26.67629
99% Chebyshev (MVUE) UCL	39.72646

95% Non-parametric UCLs	
CLT UCL	4.622124
Adj-CLT UCL (Adjusted for skewness)	5.191684
Mod-t UCL (Adjusted for skewness)	4.762312
Jackknife UCL	4.673472
Standard Bootstrap UCL	4.595618
Bootstrap-t UCL	5.967097
Hall's Bootstrap UCL	4.264075
Percentile Bootstrap UCL	4.814281
BCA Bootstrap UCL	5.076554
95% Chebyshev (Mean, Sd) UCL	7.829956
97.5% Chebyshev (Mean, Sd) UCL	10.05921
99% Chebyshev (Mean, Sd) UCL	14.43814

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	38
Number of Unique Samples	12
Minimum	0.0019
Maximum	60
Mean	3.531224
Median	0.25
Standard Deviation	11.18311
Variance	125.062
Coefficient of Variation	3.166923
Skewness	4.080798

Gamma Statistics	
k hat	0.18457
k star (bias corrected)	0.187543
Theta hat	19.13215
Theta star	18.82891
nu hat	14.02733
nu star	14.25324
Approx.Chi Square Value (.05)	6.743939
Adjusted Level of Significance	0.0434
Adjusted Chi Square Value	6.529742

Log-transformed Statistics	
Minimum of log data	-6.265901
Maximum of log data	4.094345
Mean of log data	-2.775398
Standard Deviation of log data	3.116031
Variance of log data	9.709648

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

21.58169

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.370781
Shapiro-Wilk 5% Critical Value	0.938
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6.591848

Gamma Distribution Test	
A-D Test Statistic	4.434622
A-D 5% Critical Value	0.910428
K-S Test Statistic	0.356263
K-S 5% Critical Value	0.159084
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	7.463203
Adjusted Gamma UCL	7.708021

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.829198
Shapiro-Wilk 5% Critical Value	0.938
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	128.152
95% Chebyshev (MVUE) UCL	19.00479
97.5% Chebyshev (MVUE) UCL	25.27943
99% Chebyshev (MVUE) UCL	37.60476

95% Non-parametric UCLs	
CLT UCL	6.515219
Adj-CLT UCL (Adjusted for skewness)	7.79845
Mod-t UCL (Adjusted for skewness)	6.792006
Jackknife UCL	6.591848
Standard Bootstrap UCL	6.554461
Bootstrap-t UCL	11.05279
Hall's Bootstrap UCL	8.825967
Percentile Bootstrap UCL	6.896905
BCA Bootstrap UCL	8.257418
95% Chebyshev (Mean, Sd) UCL	11.43888
97.5% Chebyshev (Mean, Sd) UCL	14.86053
99% Chebyshev (Mean, Sd) UCL	21.58169

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,4-DICHLOROBENZENE

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	9
Minimum	0.000465
Maximum	25
Mean	0.788637
Median	0.1
Standard Deviation	4.093507
Variance	16.7568
Coefficient of Variation	5.190611
Skewness	6.070497

Gamma Statistics	
k hat	0.22008
k star (bias corrected)	0.220253
Theta hat	3.583416
Theta star	3.58059
nu hat	16.28589
nu star	16.29875
Approx.Chi Square Value (.05)	8.172077
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	7.921848

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	3.218876
Mean of log data	-3.531379
Standard Deviation of log data	2.500531
Variance of log data	6.252658

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

7.484588

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.190689
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.924808

Gamma Distribution Test	
A-D Test Statistic	4.502646
A-D 5% Critical Value	0.892029
K-S Test Statistic	0.289885
K-S 5% Critical Value	0.159927
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.572892
Adjusted Gamma UCL	1.622575

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.852316
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4.316099
95% Chebyshev (MVUE) UCL	1.797726
97.5% Chebyshev (MVUE) UCL	2.359437
99% Chebyshev (MVUE) UCL	3.46281

95% Non-parametric UCLs	
CLT UCL	1.895571
Adj-CLT UCL (Adjusted for skewness)	2.613198
Mod-t UCL (Adjusted for skewness)	2.036743
Jackknife UCL	1.924808
Standard Bootstrap UCL	1.876482
Bootstrap-t UCL	23.97501
Hall's Bootstrap UCL	9.936587
Percentile Bootstrap UCL	2.135842
BCA Bootstrap UCL	2.845203
95% Chebyshev (Mean, Sd) UCL	3.722038
97.5% Chebyshev (Mean, Sd) UCL	4.991323
99% Chebyshev (Mean, Sd) UCL	7.484588

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	10
Minimum	0.000465
Maximum	25
Mean	2.727953
Median	0.25
Standard Deviation	7.176409
Variance	51.50085
Coefficient of Variation	2.630694
Skewness	2.737632

Gamma Statistics	
k hat	0.194638
k star (bias corrected)	0.196874
Theta hat	14.01553
Theta star	13.85631
nu hat	14.40321
nu star	14.56871
Approx.Chi Square Value (.05)	6.961365
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	6.732858

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	3.218876
Mean of log data	-2.793436
Standard Deviation of log data	3.225724
Variance of log data	10.40529

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

14.46676

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.417153
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.719797

Gamma Distribution Test	
A-D Test Statistic	3.576695
A-D 5% Critical Value	0.903895
K-S Test Statistic	0.31561
K-S 5% Critical Value	0.160766
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.709048
Adjusted Gamma UCL	5.902807

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.848864
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	227.1128
95% Chebyshev (MVUE) UCL	25.00948
97.5% Chebyshev (MVUE) UCL	33.33338
99% Chebyshev (MVUE) UCL	49.68406

95% Non-parametric UCLs	
CLT UCL	4.668542
Adj-CLT UCL (Adjusted for skewness)	5.235905
Mod-t UCL (Adjusted for skewness)	4.808294
Jackknife UCL	4.719797
Standard Bootstrap UCL	4.633417
Bootstrap-t UCL	5.834254
Hall's Bootstrap UCL	4.341074
Percentile Bootstrap UCL	4.760441
BCA Bootstrap UCL	5.53757
95% Chebyshev (Mean, Sd) UCL	7.870558
97.5% Chebyshev (Mean, Sd) UCL	10.09577
99% Chebyshev (Mean, Sd) UCL	14.46676

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROBENZENE

Raw Statistics	
Number of Valid Samples	39
Number of Unique Samples	11
Minimum	0.000465
Maximum	25
Mean	0.756458
Median	0.1
Standard Deviation	3.986835
Variance	15.89486
Coefficient of Variation	5.270402
Skewness	6.232189

Gamma Statistics	
k hat	0.226442
k star (bias corrected)	0.226117
Theta hat	3.340627
Theta star	3.345422
nu hat	17.66246
nu star	17.63714
Approx.Chi Square Value (.05)	9.127799
Adjusted Level of Significance	0.0437
Adjusted Chi Square Value	8.885743

Log-transformed Statistics	
Minimum of log data	-7.673473
Maximum of log data	3.218876
Mean of log data	-3.466023
Standard Deviation of log data	2.482975
Variance of log data	6.165164

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

7.108503

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.186518
Shapiro-Wilk 5% Critical Value	0.939
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.832778

Gamma Distribution Test	
A-D Test Statistic	4.550453
A-D 5% Critical Value	0.89034
K-S Test Statistic	0.295793
K-S 5% Critical Value	0.155662
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.461661
Adjusted Gamma UCL	1.501478

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.859635
Shapiro-Wilk 5% Critical Value	0.939
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4.039524
95% Chebyshev (MVUE) UCL	1.842613
97.5% Chebyshev (MVUE) UCL	2.414835
99% Chebyshev (MVUE) UCL	3.538855

95% Non-parametric UCLs	
CLT UCL	1.80654
Adj-CLT UCL (Adjusted for skewness)	2.487285
Mod-t UCL (Adjusted for skewness)	1.938961
Jackknife UCL	1.832778
Standard Bootstrap UCL	1.786794
Bootstrap-t UCL	23.20792
Hall's Bootstrap UCL	8.90138
Percentile Bootstrap UCL	2.021574
BCA Bootstrap UCL	2.720773
95% Chebyshev (Mean, Sd) UCL	3.539199
97.5% Chebyshev (Mean, Sd) UCL	4.743293
99% Chebyshev (Mean, Sd) UCL	7.108503

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,4-DIOXANE

Raw Statistics	
Number of Valid Samples	13
Number of Unique Samples	12
Minimum	0.014
Maximum	28
Mean	4.265308
Median	0.1
Standard Deviation	8.405365
Variance	70.65016
Coefficient of Variation	1.970635
Skewness	2.296129

Gamma Statistics	
k hat	0.267591
k star (bias corrected)	0.257121
Theta hat	15.93966
Theta star	16.58871
nu hat	6.957361
nu star	6.685149
Approx.Chi Square Value (.05)	1.998887
Adjusted Level of Significance	0.03009
Adjusted Chi Square Value	1.655194

Log-transformed Statistics	
Minimum of log data	-4.268698
Maximum of log data	3.332205
Mean of log data	-1.174833
Standard Deviation of log data	2.675051
Variance of log data	7.155899

RECOMMENDATION
Data are lognormal (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

43.42067

Use Larger of:
99% Chebyshev (MVUE) UCL
99% Chebyshev (Mean, Sd) UCL

Recommended UCL exceeds the maximum observation

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.594867
Shapiro-Wilk 5% Critical Value	0.866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	8.420228

Gamma Distribution Test	
A-D Test Statistic	1.020185
A-D 5% Critical Value	0.842232
K-S Test Statistic	0.287543
K-S 5% Critical Value	0.257944
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	14.26505
Adjusted Gamma UCL	17.22712

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892549
Shapiro-Wilk 5% Critical Value	0.866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1406.811
95% Chebyshev (MVUE) UCL	21.82152
97.5% Chebyshev (MVUE) UCL	29.10793
99% Chebyshev (MVUE) UCL	43.42067

95% Non-parametric UCLs	
CLT UCL	8.099838
Adj-CLT UCL (Adjusted for skewness)	9.686155
Mod-t UCL (Adjusted for skewness)	8.667661
Jackknife UCL	8.420228
Standard Bootstrap UCL	7.972388
Bootstrap-t UCL	14.12565
Hall's Bootstrap UCL	10.7938
Percentile Bootstrap UCL	8.284923
BCA Bootstrap UCL	9.647923
95% Chebyshev (Mean, Sd) UCL	14.4269
97.5% Chebyshev (Mean, Sd) UCL	18.82383
99% Chebyshev (Mean, Sd) UCL	27.46074

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-METHYLNAPHTHALENE

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.1
Maximum	0.54
Mean	0.195556
Median	0.1
Standard Deviation	0.172122
Variance	0.029626
Coefficient of Variation	0.880172
Skewness	1.414195

Gamma Statistics	
k hat	1.985331
k star (bias corrected)	1.69148
Theta hat	0.0985
Theta star	0.115612
nu hat	71.47193
nu star	60.89327
Approx.Chi Square Value (.05)	43.94397
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	42.56269

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.616186
Mean of log data	-1.904416
Standard Deviation of log data	0.690773
Variance of log data	0.477167

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.372395

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.579237
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.266131

Gamma Distribution Test	
A-D Test Statistic	3.829917
A-D 5% Critical Value	0.752736
K-S Test Statistic	0.448273
K-S 5% Critical Value	0.206347
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.270982
Adjusted Gamma UCL	0.279776

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.589291
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.274999
95% Chebyshev (MVUE) UCL	0.326179
97.5% Chebyshev (MVUE) UCL	0.386809
99% Chebyshev (MVUE) UCL	0.505905

95% Non-parametric UCLs	
CLT UCL	0.262287
Adj-CLT UCL (Adjusted for skewness)	0.276736
Mod-t UCL (Adjusted for skewness)	0.268385
Jackknife UCL	0.266131
Standard Bootstrap UCL	0.261184
Bootstrap-t UCL	0.30595
Hall's Bootstrap UCL	0.246363
Percentile Bootstrap UCL	0.264444
BCA Bootstrap UCL	0.282222
95% Chebyshev (Mean, Sd) UCL	0.372395
97.5% Chebyshev (Mean, Sd) UCL	0.448913
99% Chebyshev (Mean, Sd) UCL	0.599219

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ANTIMONY

Raw Statistics	
Number of Valid Samples	25
Number of Unique Samples	7
Minimum	0.6
Maximum	18
Mean	4.484
Median	5
Standard Deviation	3.926797
Variance	15.41973
Coefficient of Variation	0.875735
Skewness	2.001265

Gamma Statistics	
k hat	1.373863
k star (bias corrected)	1.235666
Theta hat	3.263791
Theta star	3.628813
nu hat	68.69313
nu star	61.78329
Approx.Chi Square Value (.05)	44.7013
Adjusted Level of Significance	0.0395
Adjusted Chi Square Value	43.7103

Log-transformed Statistics	
Minimum of log data	-0.510826
Maximum of log data	2.890372
Mean of log data	1.094361
Standard Deviation of log data	1.012655
Variance of log data	1.02547

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

12.29823

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.683264
Shapiro-Wilk 5% Critical Value	0.918
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	5.827657

Gamma Distribution Test	
A-D Test Statistic	2.824487
A-D 5% Critical Value	0.764434
K-S Test Statistic	0.34101
K-S 5% Critical Value	0.178164
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	6.197499
Adjusted Gamma UCL	6.338009

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.768074
Shapiro-Wilk 5% Critical Value	0.918
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	8.404699
95% Chebyshev (MVUE) UCL	9.714291
97.5% Chebyshev (MVUE) UCL	11.8218
99% Chebyshev (MVUE) UCL	15.96159

95% Non-parametric UCLs	
CLT UCL	5.775801
Adj-CLT UCL (Adjusted for skewness)	6.111681
Mod-t UCL (Adjusted for skewness)	5.880047
Jackknife UCL	5.827657
Standard Bootstrap UCL	5.718336
Bootstrap-t UCL	6.399667
Hall's Bootstrap UCL	13.22134
Percentile Bootstrap UCL	5.848
BCA Bootstrap UCL	6.164
95% Chebyshev (Mean, Sd) UCL	7.907302
97.5% Chebyshev (Mean, Sd) UCL	9.388568
99% Chebyshev (Mean, Sd) UCL	12.29823

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ARSENIC

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	29
Minimum	0.81
Maximum	21
Mean	4.9365
Median	4.35
Standard Deviation	3.206473
Variance	10.28147
Coefficient of Variation	0.649544
Skewness	3.327005

Gamma Statistics	
k hat	3.520392
k star (bias corrected)	3.273029
Theta hat	1.402259
Theta star	1.508236
nu hat	281.6313
nu star	261.8423
Approx.Chi Square Value (.05)	225.3647
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	224.1002

Log-transformed Statistics	
Minimum of log data	-0.210721
Maximum of log data	3.044522
Mean of log data	1.447955
Standard Deviation of log data	0.553355
Variance of log data	0.306202

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

5.735525

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.722773
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	5.790711

Gamma Distribution Test	
A-D Test Statistic	0.623345
A-D 5% Critical Value	0.753565
K-S Test Statistic	0.123936
K-S 5% Critical Value	0.140257
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.735525
Adjusted Gamma UCL	5.767887

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.961946
Shapiro-Wilk 5% Critical Value	0.94
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5.890521
95% Chebyshev (MVUE) UCL	6.928558
97.5% Chebyshev (MVUE) UCL	7.790452
99% Chebyshev (MVUE) UCL	9.483475

95% Non-parametric UCLs	
CLT UCL	5.770421
Adj-CLT UCL (Adjusted for skewness)	6.055392
Mod-t UCL (Adjusted for skewness)	5.835161
Jackknife UCL	5.790711
Standard Bootstrap UCL	5.77355
Bootstrap-t UCL	6.285388
Hall's Bootstrap UCL	9.814583
Percentile Bootstrap UCL	5.82425
BCA Bootstrap UCL	6.04525
95% Chebyshev (Mean, Sd) UCL	7.146409
97.5% Chebyshev (Mean, Sd) UCL	8.102638
99% Chebyshev (Mean, Sd) UCL	9.980966

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ALUMINUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	9585
Maximum	9830
Mean	9707.5
Median	9707.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BUTYLBENZYL PHTHALATE

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.1
Maximum	1.9
Mean	0.291667
Median	0.1
Standard Deviation	0.451875
Variance	0.204191
Coefficient of Variation	1.549286
Skewness	3.055447

Gamma Statistics	
k hat	1.010319
k star (bias corrected)	0.87897
Theta hat	0.288688
Theta star	0.331828
nu hat	36.3715
nu star	31.64291
Approx.Chi Square Value (.05)	19.787
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	18.88886

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.641854
Mean of log data	-1.802778
Standard Deviation of log data	0.920809
Variance of log data	0.847889

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.755924

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.503874
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.476949

Gamma Distribution Test	
A-D Test Statistic	3.486048
A-D 5% Critical Value	0.766386
K-S Test Statistic	0.434172
K-S 5% Critical Value	0.209394
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.466427
Adjusted Gamma UCL	0.488605

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.616894
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.444127
95% Chebyshev (MVUE) UCL	0.497366
97.5% Chebyshev (MVUE) UCL	0.60698
99% Chebyshev (MVUE) UCL	0.822296

95% Non-parametric UCLs	
CLT UCL	0.466857
Adj-CLT UCL (Adjusted for skewness)	0.548817
Mod-t UCL (Adjusted for skewness)	0.489733
Jackknife UCL	0.476949
Standard Bootstrap UCL	0.46188
Bootstrap-t UCL	0.805968
Hall's Bootstrap UCL	1.075025
Percentile Bootstrap UCL	0.477778
BCA Bootstrap UCL	0.586111
95% Chebyshev (Mean, Sd) UCL	0.755924
97.5% Chebyshev (Mean, Sd) UCL	0.956809
99% Chebyshev (Mean, Sd) UCL	1.351408

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZYL ALCOHOL (PHENYLMETHANOL)

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	4
Minimum	0.2
Maximum	22
Mean	1.8875
Median	0.2
Standard Deviation	5.505861
Variance	30.3145
Coefficient of Variation	2.917012
Skewness	3.700413

Gamma Statistics	
k hat	0.388073
k star (bias corrected)	0.356976
Theta hat	4.863777
Theta star	5.287472
nu hat	12.41833
nu star	11.42323
Approx.Chi Square Value (.05)	4.848665
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	4.370276

Log-transformed Statistics	
Minimum of log data	-1.609438
Maximum of log data	3.091042
Mean of log data	-1.068705
Standard Deviation of log data	1.378692
Variance of log data	1.900793

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

15.58316

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.355682
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.300512

Gamma Distribution Test	
A-D Test Statistic	4.630183
A-D 5% Critical Value	0.819565
K-S Test Statistic	0.489808
K-S 5% Critical Value	0.230412
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4.446862
Adjusted Gamma UCL	4.933635

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.46043
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.922663
95% Chebyshev (MVUE) UCL	2.182694
97.5% Chebyshev (MVUE) UCL	2.779678
99% Chebyshev (MVUE) UCL	3.952339

95% Non-parametric UCLs	
CLT UCL	4.151584
Adj-CLT UCL (Adjusted for skewness)	5.512201
Mod-t UCL (Adjusted for skewness)	4.512741
Jackknife UCL	4.300512
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	7.887372
97.5% Chebyshev (Mean, Sd) UCL	10.48352
99% Chebyshev (Mean, Sd) UCL	15.58316

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BIS(2-ETHYLHEXYL)PHTHALATE

Raw Statistics	
Number of Valid Samples	25
Number of Unique Samples	14
Minimum	0.03
Maximum	51
Mean	3.06988
Median	0.2
Standard Deviation	10.08137
Variance	101.634
Coefficient of Variation	3.283962
Skewness	4.849785

Gamma Statistics	
k hat	0.376442
k star (bias corrected)	0.357936
Theta hat	8.154981
Theta star	8.576619
nu hat	18.82212
nu star	17.8968
Approx.Chi Square Value (.05)	9.314952
Adjusted Level of Significance	0.0395
Adjusted Chi Square Value	8.893511

Log-transformed Statistics	
Minimum of log data	-3.506558
Maximum of log data	3.931826
Mean of log data	-0.643639
Standard Deviation of log data	1.663539
Variance of log data	2.767363

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

23.13155

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.300069
Shapiro-Wilk 5% Critical Value	0.918
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6.519486

Gamma Distribution Test	
A-D Test Statistic	3.002713
A-D 5% Critical Value	0.834615
K-S Test Statistic	0.28326
K-S 5% Critical Value	0.187577
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.898154
Adjusted Gamma UCL	6.177652

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.865011
Shapiro-Wilk 5% Critical Value	0.918
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6.808466
95% Chebyshev (MVUE) UCL	5.274982
97.5% Chebyshev (MVUE) UCL	6.749725
99% Chebyshev (MVUE) UCL	9.646572

95% Non-parametric UCLs	
CLT UCL	6.386355
Adj-CLT UCL (Adjusted for skewness)	8.476047
Mod-t UCL (Adjusted for skewness)	6.845436
Jackknife UCL	6.519486
Standard Bootstrap UCL	6.32919
Bootstrap-t UCL	23.19066
Hall's Bootstrap UCL	18.48382
Percentile Bootstrap UCL	6.99228
BCA Bootstrap UCL	9.1644
95% Chebyshev (Mean, Sd) UCL	11.85861
97.5% Chebyshev (Mean, Sd) UCL	15.6615
99% Chebyshev (Mean, Sd) UCL	23.13155

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(G,H,I)PERYLENE

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	4
Minimum	0.1
Maximum	0.5
Mean	0.175882
Median	0.1
Standard Deviation	0.154962
Variance	0.024013
Coefficient of Variation	0.881055
Skewness	1.778406

Gamma Statistics	
k hat	2.226712
k star (bias corrected)	1.872979
Theta hat	0.078987
Theta star	0.093905
nu hat	75.70821
nu star	63.68127
Approx.Chi Square Value (.05)	46.31951
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	44.7692

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-1.978982
Standard Deviation of log data	0.632775
Variance of log data	0.400405

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.339706

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.523732
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.241499

Gamma Distribution Test	
A-D Test Statistic	4.030705
A-D 5% Critical Value	0.748516
K-S Test Statistic	0.468815
K-S 5% Critical Value	0.211436
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.241808
Adjusted Gamma UCL	0.250181

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.544555
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.238624
95% Chebyshev (MVUE) UCL	0.283575
97.5% Chebyshev (MVUE) UCL	0.334214
99% Chebyshev (MVUE) UCL	0.433683

95% Non-parametric UCLs	
CLT UCL	0.237702
Adj-CLT UCL (Adjusted for skewness)	0.255024
Mod-t UCL (Adjusted for skewness)	0.244201
Jackknife UCL	0.241499
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.339706
97.5% Chebyshev (Mean, Sd) UCL	0.410593
99% Chebyshev (Mean, Sd) UCL	0.549837

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BARIUM

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	20
Minimum	28
Maximum	230
Mean	146.4375
Median	152.5
Standard Deviation	42.14219
Variance	1775.964
Coefficient of Variation	0.287783
Skewness	-1.047245

Gamma Statistics	
k hat	7.953059
k star (bias corrected)	7.373246
Theta hat	18.41273
Theta star	19.86066
nu hat	636.2447
nu star	589.8597
Approx.Chi Square Value (.05)	534.512
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	532.5461

Log-transformed Statistics	
Minimum of log data	3.332205
Maximum of log data	5.438079
Mean of log data	4.922414
Standard Deviation of log data	0.417626
Variance of log data	0.174412

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

157.6643

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.903842
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	157.6643

Gamma Distribution Test	
A-D Test Statistic	2.999827
A-D 5% Critical Value	0.749451
K-S Test Statistic	0.272258
K-S 5% Critical Value	0.139595
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	161.6008
Adjusted Gamma UCL	162.1974

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.735042
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	169.5583
95% Chebyshev (MVUE) UCL	193.9852
97.5% Chebyshev (MVUE) UCL	213.2361
99% Chebyshev (MVUE) UCL	251.0507

95% Non-parametric UCLs	
CLT UCL	157.3976
Adj-CLT UCL (Adjusted for skewness)	156.2187
Mod-t UCL (Adjusted for skewness)	157.4804
Jackknife UCL	157.6643
Standard Bootstrap UCL	157.0764
Bootstrap-t UCL	156.514
Hall's Bootstrap UCL	156.434
Percentile Bootstrap UCL	157.05
BCA Bootstrap UCL	156.5125
95% Chebyshev (Mean, Sd) UCL	175.482
97.5% Chebyshev (Mean, Sd) UCL	188.0496
99% Chebyshev (Mean, Sd) UCL	212.7361

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(A)ANTHRACENE

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.032
Maximum	2.4
Mean	0.274
Median	0.1
Standard Deviation	0.546629
Variance	0.298803
Coefficient of Variation	1.994996
Skewness	3.868977

Gamma Statistics	
k hat	0.867104
k star (bias corrected)	0.759624
Theta hat	0.315994
Theta star	0.360705
nu hat	31.21575
nu star	27.34646
Approx.Chi Square Value (.05)	16.41824
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	15.60759

Log-transformed Statistics	
Minimum of log data	-3.442019
Maximum of log data	0.875469
Mean of log data	-1.971994
Standard Deviation of log data	0.942217
Variance of log data	0.887773

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.835608

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.391115
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.498134

Gamma Distribution Test	
A-D Test Statistic	3.612741
A-D 5% Critical Value	0.772633
K-S Test Statistic	0.441551
K-S 5% Critical Value	0.210498
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.456378
Adjusted Gamma UCL	0.480082

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.671927
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.390322
95% Chebyshev (MVUE) UCL	0.433355
97.5% Chebyshev (MVUE) UCL	0.530084
99% Chebyshev (MVUE) UCL	0.720089

95% Non-parametric UCLs	
CLT UCL	0.485926
Adj-CLT UCL (Adjusted for skewness)	0.61147
Mod-t UCL (Adjusted for skewness)	0.517716
Jackknife UCL	0.498134
Standard Bootstrap UCL	0.47844
Bootstrap-t UCL	1.157055
Hall's Bootstrap UCL	1.179401
Percentile Bootstrap UCL	0.511111
BCA Bootstrap UCL	0.668444
95% Chebyshev (Mean, Sd) UCL	0.835608
97.5% Chebyshev (Mean, Sd) UCL	1.078616
99% Chebyshev (Mean, Sd) UCL	1.555959

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(A)PYRENE

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	4
Minimum	0.1
Maximum	1.6
Mean	0.241176
Median	0.1
Standard Deviation	0.374264
Variance	0.140074
Coefficient of Variation	1.551826
Skewness	3.387282

Gamma Statistics	
k hat	1.164788
k star (bias corrected)	0.998453
Theta hat	0.207056
Theta star	0.24155
nu hat	39.60281
nu star	33.94741
Approx.Chi Square Value (.05)	21.62018
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	20.59183

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.470004
Mean of log data	-1.909373
Standard Deviation of log data	0.818528
Variance of log data	0.669988

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.636844

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.444055
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.399654

Gamma Distribution Test	
A-D Test Statistic	3.778199
A-D 5% Critical Value	0.762585
K-S Test Statistic	0.456368
K-S 5% Critical Value	0.214378
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.378689
Adjusted Gamma UCL	0.3976

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.560304
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.340069
95% Chebyshev (MVUE) UCL	0.390377
97.5% Chebyshev (MVUE) UCL	0.471879
99% Chebyshev (MVUE) UCL	0.631974

95% Non-parametric UCLs	
CLT UCL	0.390484
Adj-CLT UCL (Adjusted for skewness)	0.470166
Mod-t UCL (Adjusted for skewness)	0.412083
Jackknife UCL	0.399654
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.636844
97.5% Chebyshev (Mean, Sd) UCL	0.80805
99% Chebyshev (Mean, Sd) UCL	1.14435

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZO(B)FLUORANTHENE

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	4
Minimum	0.1
Maximum	0.91
Mean	0.200588
Median	0.1
Standard Deviation	0.225568
Variance	0.050881
Coefficient of Variation	1.124532
Skewness	2.453098

Gamma Statistics	
k hat	1.634582
k star (bias corrected)	1.385342
Theta hat	0.122715
Theta star	0.144793
nu hat	55.57579
nu star	47.10163
Approx.Chi Square Value (.05)	32.3493
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	31.06995

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.094311
Mean of log data	-1.942568
Standard Deviation of log data	0.721721
Variance of log data	0.520881

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.439056

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.526688
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.296102

Gamma Distribution Test	
A-D Test Statistic	3.805421
A-D 5% Critical Value	0.753983
K-S Test Statistic	0.464052
K-S 5% Critical Value	0.212591
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.292063
Adjusted Gamma UCL	0.304089

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.565243
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.28138
95% Chebyshev (MVUE) UCL	0.330639
97.5% Chebyshev (MVUE) UCL	0.394714
99% Chebyshev (MVUE) UCL	0.520576

95% Non-parametric UCLs	
CLT UCL	0.290575
Adj-CLT UCL (Adjusted for skewness)	0.325355
Mod-t UCL (Adjusted for skewness)	0.301527
Jackknife UCL	0.296102
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.439056
97.5% Chebyshev (Mean, Sd) UCL	0.542241
99% Chebyshev (Mean, Sd) UCL	0.744928

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BERYLLIUM

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	23
Minimum	0.18
Maximum	0.75
Mean	0.47625
Median	0.49
Standard Deviation	0.109625
Variance	0.012018
Coefficient of Variation	0.230184
Skewness	-0.639846

Gamma Statistics	
k hat	15.34508
k star (bias corrected)	14.21086
Theta hat	0.031036
Theta star	0.033513
nu hat	1227.606
nu star	1136.869
Approx.Chi Square Value (.05)	1059.573
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	1056.791

Log-transformed Statistics	
Minimum of log data	-1.714798
Maximum of log data	-0.287682
Mean of log data	-0.77475
Standard Deviation of log data	0.280349
Variance of log data	0.078596

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

0.505454

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.929487
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.505454

Gamma Distribution Test	
A-D Test Statistic	1.99558
A-D 5% Critical Value	0.747335
K-S Test Statistic	0.205162
K-S 5% Critical Value	0.13924
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.510992
Adjusted Gamma UCL	0.512338

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.818995
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.518892
95% Chebyshev (MVUE) UCL	0.572758
97.5% Chebyshev (MVUE) UCL	0.613414
99% Chebyshev (MVUE) UCL	0.693273

95% Non-parametric UCLs	
CLT UCL	0.504761
Adj-CLT UCL (Adjusted for skewness)	0.502887
Mod-t UCL (Adjusted for skewness)	0.505162
Jackknife UCL	0.505454
Standard Bootstrap UCL	0.503831
Bootstrap-t UCL	0.503701
Hall's Bootstrap UCL	0.504135
Percentile Bootstrap UCL	0.503375
BCA Bootstrap UCL	0.501875
95% Chebyshev (Mean, Sd) UCL	0.551804
97.5% Chebyshev (Mean, Sd) UCL	0.584496
99% Chebyshev (Mean, Sd) UCL	0.648713

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHRYSENE

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.038
Maximum	6
Mean	0.474333
Median	0.1
Standard Deviation	1.38525
Variance	1.918917
Coefficient of Variation	2.920414
Skewness	4.180676

Gamma Statistics	
k hat	0.538687
k star (bias corrected)	0.485943
Theta hat	0.880536
Theta star	0.976109
nu hat	19.39274
nu star	17.49395
Approx.Chi Square Value (.05)	9.024824
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	8.444643

Log-transformed Statistics	
Minimum of log data	-3.270169
Maximum of log data	1.791759
Mean of log data	-1.911542
Standard Deviation of log data	1.101027
Variance of log data	1.212261

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

3.723032

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.307179
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1.042326

Gamma Distribution Test	
A-D Test Statistic	4.327936
A-D 5% Critical Value	0.796698
K-S Test Statistic	0.442349
K-S 5% Critical Value	0.214532
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.91946
Adjusted Gamma UCL	0.982631

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.610901
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.57344
95% Chebyshev (MVUE) UCL	0.586196
97.5% Chebyshev (MVUE) UCL	0.72825
99% Chebyshev (MVUE) UCL	1.007288

95% Non-parametric UCLs	
CLT UCL	1.011389
Adj-CLT UCL (Adjusted for skewness)	1.35517
Mod-t UCL (Adjusted for skewness)	1.095949
Jackknife UCL	1.042326
Standard Bootstrap UCL	1.003532
Bootstrap-t UCL	5.591431
Hall's Bootstrap UCL	5.218547
Percentile Bootstrap UCL	1.120889
BCA Bootstrap UCL	1.477778
95% Chebyshev (Mean, Sd) UCL	1.897542
97.5% Chebyshev (Mean, Sd) UCL	2.513366
99% Chebyshev (Mean, Sd) UCL	3.723032

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHROMIUM

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	28
Minimum	5.6
Maximum	360
Mean	38.3525
Median	20
Standard Deviation	64.23363
Variance	4125.959
Coefficient of Variation	1.674823
Skewness	3.979931

Gamma Statistics	
k hat	1.113725
k star (bias corrected)	1.046862
Theta hat	34.43624
Theta star	36.63567
nu hat	89.09801
nu star	83.74899
Approx.Chi Square Value (.05)	63.65338
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	62.9969

Log-transformed Statistics	
Minimum of log data	1.722767
Maximum of log data	5.886104
Mean of log data	3.134853
Standard Deviation of log data	0.834174
Variance of log data	0.695846

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

82.62248

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.453514
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	55.46447

Gamma Distribution Test	
A-D Test Statistic	4.575013
A-D 5% Critical Value	0.775794
K-S Test Statistic	0.320657
K-S 5% Critical Value	0.143336
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	50.46053
Adjusted Gamma UCL	50.98636

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.85109
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	43.64231
95% Chebyshev (MVUE) UCL	52.93643
97.5% Chebyshev (MVUE) UCL	61.91798
99% Chebyshev (MVUE) UCL	79.56049

95% Non-parametric UCLs	
CLT UCL	55.05801
Adj-CLT UCL (Adjusted for skewness)	61.88703
Mod-t UCL (Adjusted for skewness)	56.52966
Jackknife UCL	55.46447
Standard Bootstrap UCL	54.92383
Bootstrap-t UCL	85.05775
Hall's Bootstrap UCL	111.8549
Percentile Bootstrap UCL	56.825
BCA Bootstrap UCL	64.3925
95% Chebyshev (Mean, Sd) UCL	82.62248
97.5% Chebyshev (Mean, Sd) UCL	101.7781
99% Chebyshev (Mean, Sd) UCL	139.4057

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	9
Minimum	0.0025
Maximum	25
Mean	2.678114
Median	0.25
Standard Deviation	7.189406
Variance	51.68756
Coefficient of Variation	2.684504
Skewness	2.743253

Gamma Statistics	
k hat	0.195463
k star (bias corrected)	0.197633
Theta hat	13.70137
Theta star	13.55096
nu hat	14.46427
nu star	14.62483
Approx.Chi Square Value (.05)	7.000155
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	6.770925

Log-transformed Statistics	
Minimum of log data	-5.991465
Maximum of log data	3.218876
Mean of log data	-2.793363
Standard Deviation of log data	3.092431
Variance of log data	9.56313

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

14.43818

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.406757
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4.673565

Gamma Distribution Test	
A-D Test Statistic	4.186482
A-D 5% Critical Value	0.903426
K-S Test Statistic	0.342005
K-S 5% Critical Value	0.160736
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	5.595154
Adjusted Gamma UCL	5.784579

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.811252
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	118.119
95% Chebyshev (MVUE) UCL	17.35777
97.5% Chebyshev (MVUE) UCL	23.08613
99% Chebyshev (MVUE) UCL	34.33839

95% Non-parametric UCLs	
CLT UCL	4.622217
Adj-CLT UCL (Adjusted for skewness)	5.191775
Mod-t UCL (Adjusted for skewness)	4.762404
Jackknife UCL	4.673565
Standard Bootstrap UCL	4.5777
Bootstrap-t UCL	5.764085
Hall's Bootstrap UCL	4.293054
Percentile Bootstrap UCL	4.703776
BCA Bootstrap UCL	5.077992
95% Chebyshev (Mean, Sd) UCL	7.830032
97.5% Chebyshev (Mean, Sd) UCL	10.05927
99% Chebyshev (Mean, Sd) UCL	14.43818

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CADMIUM

Raw Statistics	
Number of Valid Samples	38
Number of Unique Samples	15
Minimum	0.25
Maximum	2.1
Mean	0.816184
Median	0.775
Standard Deviation	0.611194
Variance	0.373559
Coefficient of Variation	0.748844
Skewness	0.608214

Gamma Statistics	
k hat	1.707656
k star (bias corrected)	1.590385
Theta hat	0.477956
Theta star	0.513199
nu hat	129.7818
nu star	120.8692
Approx.Chi Square Value (.05)	96.47679
Adjusted Level of Significance	0.0434
Adjusted Chi Square Value	95.57491

Log-transformed Statistics	
Minimum of log data	-1.386294
Maximum of log data	0.741937
Mean of log data	-0.523634
Standard Deviation of log data	0.840653
Variance of log data	0.706697

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.248364

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.816884
Shapiro-Wilk 5% Critical Value	0.938
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.983458

Gamma Distribution Test	
A-D Test Statistic	3.250007
A-D 5% Critical Value	0.763275
K-S Test Statistic	0.293048
K-S 5% Critical Value	0.145467
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1.022542
Adjusted Gamma UCL	1.032191

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.771826
Shapiro-Wilk 5% Critical Value	0.938
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.144935
95% Chebyshev (MVUE) UCL	1.388677
97.5% Chebyshev (MVUE) UCL	1.629059
99% Chebyshev (MVUE) UCL	2.101241

95% Non-parametric UCLs	
CLT UCL	0.97927
Adj-CLT UCL (Adjusted for skewness)	0.989722
Mod-t UCL (Adjusted for skewness)	0.985088
Jackknife UCL	0.983458
Standard Bootstrap UCL	0.979965
Bootstrap-t UCL	1.006322
Hall's Bootstrap UCL	0.995322
Percentile Bootstrap UCL	0.986184
BCA Bootstrap UCL	0.994211
95% Chebyshev (Mean, Sd) UCL	1.248364
97.5% Chebyshev (Mean, Sd) UCL	1.435369
99% Chebyshev (Mean, Sd) UCL	1.802703

Data File C:\Documents and Settings\tzoukh\My Docun Variable: COBALT

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	25
Minimum	2
Maximum	16
Mean	8.72375
Median	8.9
Standard Deviation	2.18761
Variance	4.785639
Coefficient of Variation	0.250765
Skewness	0.016934

Gamma Statistics	
k hat	12.74619
k star (bias corrected)	11.80689
Theta hat	0.68442
Theta star	0.738869
nu hat	1019.695
nu star	944.5515
Approx.Chi Square Value (.05)	874.2001
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	871.6762

Log-transformed Statistics	
Minimum of log data	0.693147
Maximum of log data	2.772589
Mean of log data	2.126309
Standard Deviation of log data	0.316518
Variance of log data	0.100184

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

9.306688

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.91728
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	9.306534

Gamma Distribution Test	
A-D Test Statistic	2.103974
A-D 5% Critical Value	0.747673
K-S Test Statistic	0.200348
K-S 5% Critical Value	0.139313
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	9.425796
Adjusted Gamma UCL	9.453087

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.782521
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9.65036
95% Chebyshev (MVUE) UCL	10.76136
97.5% Chebyshev (MVUE) UCL	11.60875
99% Chebyshev (MVUE) UCL	13.27328

95% Non-parametric UCLs	
CLT UCL	9.292691
Adj-CLT UCL (Adjusted for skewness)	9.293681
Mod-t UCL (Adjusted for skewness)	9.306688
Jackknife UCL	9.306534
Standard Bootstrap UCL	9.29026
Bootstrap-t UCL	9.327136
Hall's Bootstrap UCL	9.34478
Percentile Bootstrap UCL	9.3
BCA Bootstrap UCL	9.29625
95% Chebyshev (Mean, Sd) UCL	10.23146
97.5% Chebyshev (Mean, Sd) UCL	10.88384
99% Chebyshev (Mean, Sd) UCL	12.16533

Data File C:\Documents and Settings\tzoukh\My Docun Variable: COPPER

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	24
Minimum	13
Maximum	150
Mean	33.7375
Median	27.5
Standard Deviation	23.89748
Variance	571.0896
Coefficient of Variation	0.708336
Skewness	3.657854

Gamma Statistics	
k hat	4.076326
k star (bias corrected)	3.787268
Theta hat	8.276448
Theta star	8.908136
nu hat	326.1061
nu star	302.9815
Approx.Chi Square Value (.05)	263.6517
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	262.2812

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	5.010635
Mean of log data	3.390965
Standard Deviation of log data	0.450076
Variance of log data	0.202568

RECOMMENDATION

Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

40.46806

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.574186
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	40.10384

Gamma Distribution Test	
A-D Test Statistic	3.240525
A-D 5% Critical Value	0.752424
K-S Test Statistic	0.251746
K-S 5% Critical Value	0.140065
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	38.77023
Adjusted Gamma UCL	38.97281

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.853768
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	37.59906
95% Chebyshev (MVUE) UCL	43.33207
97.5% Chebyshev (MVUE) UCL	47.90276
99% Chebyshev (MVUE) UCL	56.88098

95% Non-parametric UCLs	
CLT UCL	39.95262
Adj-CLT UCL (Adjusted for skewness)	42.28768
Mod-t UCL (Adjusted for skewness)	40.46806
Jackknife UCL	40.10384
Standard Bootstrap UCL	40.10501
Bootstrap-t UCL	48.33124
Hall's Bootstrap UCL	68.6116
Percentile Bootstrap UCL	40.275
BCA Bootstrap UCL	42.8625
95% Chebyshev (Mean, Sd) UCL	50.2077
97.5% Chebyshev (Mean, Sd) UCL	57.33437
99% Chebyshev (Mean, Sd) UCL	71.33333

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CALCIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	6055
Maximum	7170
Mean	6612.5
Median	6612.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIETHYL PHTHALATE

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	4
Minimum	0.037
Maximum	0.5
Mean	0.149235
Median	0.1
Standard Deviation	0.135268
Variance	0.018297
Coefficient of Variation	0.906408
Skewness	2.389065

Gamma Statistics	
k hat	2.339196
k star (bias corrected)	1.965612
Theta hat	0.063798
Theta star	0.075923
nu hat	79.53267
nu star	66.83082
Approx.Chi Square Value (.05)	49.0139
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	47.41626

Log-transformed Statistics	
Minimum of log data	-3.296837
Maximum of log data	-0.693147
Mean of log data	-2.130952
Standard Deviation of log data	0.619919
Variance of log data	0.384299

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.292239

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.50983
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.206513

Gamma Distribution Test	
A-D Test Statistic	3.578993
A-D 5% Critical Value	0.748063
K-S Test Statistic	0.45963
K-S 5% Critical Value	0.211321
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.203483
Adjusted Gamma UCL	0.21034

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.648157
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.201447
95% Chebyshev (MVUE) UCL	0.239599
97.5% Chebyshev (MVUE) UCL	0.281828
99% Chebyshev (MVUE) UCL	0.364777

95% Non-parametric UCLs	
CLT UCL	0.203199
Adj-CLT UCL (Adjusted for skewness)	0.223511
Mod-t UCL (Adjusted for skewness)	0.209681
Jackknife UCL	0.206513
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.292239
97.5% Chebyshev (Mean, Sd) UCL	0.354117
99% Chebyshev (Mean, Sd) UCL	0.475664

Data File C:\Documents and Settings\tzoukh\My Docum Variable: DI-N-BUTYLPHTHALATE

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	4
Minimum	0.1
Maximum	0.5
Mean	0.166471
Median	0.1
Standard Deviation	0.138697
Variance	0.019237
Coefficient of Variation	0.83316
Skewness	1.985765

Gamma Statistics	
k hat	2.54322
k star (bias corrected)	2.133632
Theta hat	0.065457
Theta star	0.078022
nu hat	86.46948
nu star	72.5435
Approx.Chi Square Value (.05)	53.92773
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	52.247

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-2.002235
Standard Deviation of log data	0.589116
Variance of log data	0.347057

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.313099

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.54068
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.2252

Gamma Distribution Test	
A-D Test Statistic	3.804091
A-D 5% Critical Value	0.747241
K-S Test Statistic	0.467023
K-S 5% Critical Value	0.21111
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.223936
Adjusted Gamma UCL	0.23114

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.562529
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.220025
95% Chebyshev (MVUE) UCL	0.26203
97.5% Chebyshev (MVUE) UCL	0.306716
99% Chebyshev (MVUE) UCL	0.394492

95% Non-parametric UCLs	
CLT UCL	0.221802
Adj-CLT UCL (Adjusted for skewness)	0.239113
Mod-t UCL (Adjusted for skewness)	0.2279
Jackknife UCL	0.2252
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.313099
97.5% Chebyshev (Mean, Sd) UCL	0.376545
99% Chebyshev (Mean, Sd) UCL	0.501173

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	4
Minimum	0.1
Maximum	0.5
Mean	0.165
Median	0.1
Standard Deviation	0.137113
Variance	0.0188
Coefficient of Variation	0.830988
Skewness	2.138762

Gamma Statistics	
k hat	2.635444
k star (bias corrected)	2.182965
Theta hat	0.062608
Theta star	0.075585
nu hat	84.33421
nu star	69.85488
Approx.Chi Square Value (.05)	51.61098
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	49.82794

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	-0.693147
Mean of log data	-2.003367
Standard Deviation of log data	0.57706
Variance of log data	0.332998

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.314416

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.535287
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.225092

Gamma Distribution Test	
A-D Test Statistic	3.409355
A-D 5% Critical Value	0.746486
K-S Test Statistic	0.454113
K-S 5% Critical Value	0.217101
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.223326
Adjusted Gamma UCL	0.231317

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.577455
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.2191
95% Chebyshev (MVUE) UCL	0.260501
97.5% Chebyshev (MVUE) UCL	0.305093
99% Chebyshev (MVUE) UCL	0.392685

95% Non-parametric UCLs	
CLT UCL	0.221383
Adj-CLT UCL (Adjusted for skewness)	0.240967
Mod-t UCL (Adjusted for skewness)	0.228146
Jackknife UCL	0.225092
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.314416
97.5% Chebyshev (Mean, Sd) UCL	0.379068
99% Chebyshev (Mean, Sd) UCL	0.506065

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIELDRIN

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	4
Minimum	0.00035
Maximum	0.05
Mean	0.003592
Median	0.00035
Standard Deviation	0.011735
Variance	0.000138
Coefficient of Variation	3.267371
Skewness	4.0756

Gamma Statistics	
k hat	0.367048
k star (bias corrected)	0.34291
Theta hat	0.009785
Theta star	0.010474
nu hat	13.21372
nu star	12.34477
Approx.Chi Square Value (.05)	5.453938
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	5.019725

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-2.995732
Mean of log data	-7.447037
Standard Deviation of log data	1.353217
Variance of log data	1.831196

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.031113

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.312386
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.008403

Gamma Distribution Test	
A-D Test Statistic	5.35127
A-D 5% Critical Value	0.82801
K-S Test Statistic	0.505434
K-S 5% Critical Value	0.218889
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.00813
Adjusted Gamma UCL	0.008833

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.446014
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.004181
95% Chebyshev (MVUE) UCL	0.003491
97.5% Chebyshev (MVUE) UCL	0.004424
99% Chebyshev (MVUE) UCL	0.006256

95% Non-parametric UCLs	
CLT UCL	0.008141
Adj-CLT UCL (Adjusted for skewness)	0.010981
Mod-t UCL (Adjusted for skewness)	0.008846
Jackknife UCL	0.008403
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.015649
97.5% Chebyshev (Mean, Sd) UCL	0.020866
99% Chebyshev (Mean, Sd) UCL	0.031113

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDE

Raw Statistics	
Number of Valid Samples	23
Number of Unique Samples	9
Minimum	0.00035
Maximum	0.3
Mean	0.014261
Median	0.00035
Standard Deviation	0.06231
Variance	0.003882
Coefficient of Variation	4.369277
Skewness	4.790617

Gamma Statistics	
k hat	0.256648
k star (bias corrected)	0.252158
Theta hat	0.055566
Theta star	0.056555
nu hat	11.80581
nu star	11.59926
Approx.Chi Square Value (.05)	4.963295
Adjusted Level of Significance	0.0389
Adjusted Chi Square Value	4.651276

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-1.203973
Mean of log data	-7.006095
Standard Deviation of log data	1.612412
Variance of log data	2.599874

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.143534

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.231674
Shapiro-Wilk 5% Critical Value	0.914
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.036571

Gamma Distribution Test	
A-D Test Statistic	5.52817
A-D 5% Critical Value	0.868383
K-S Test Statistic	0.360837
K-S 5% Critical Value	0.198772
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.033328
Adjusted Gamma UCL	0.035563

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.651637
Shapiro-Wilk 5% Critical Value	0.914
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.010853
95% Chebyshev (MVUE) UCL	0.008342
97.5% Chebyshev (MVUE) UCL	0.010667
99% Chebyshev (MVUE) UCL	0.015235

95% Non-parametric UCLs	
CLT UCL	0.035632
Adj-CLT UCL (Adjusted for skewness)	0.049499
Mod-t UCL (Adjusted for skewness)	0.038734
Jackknife UCL	0.036571
Standard Bootstrap UCL	0.035374
Bootstrap-t UCL	0.69695
Hall's Bootstrap UCL	0.441656
Percentile Bootstrap UCL	0.040165
BCA Bootstrap UCL	0.053693
95% Chebyshev (Mean, Sd) UCL	0.070894
97.5% Chebyshev (Mean, Sd) UCL	0.095399
99% Chebyshev (Mean, Sd) UCL	0.143534

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDD

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	5
Minimum	0.00035
Maximum	0.032
Mean	0.002176
Median	0.00035
Standard Deviation	0.007233
Variance	5.23E-05
Coefficient of Variation	3.323442
Skewness	4.337628

Gamma Statistics	
k hat	0.466052
k star (bias corrected)	0.427553
Theta hat	0.00467
Theta star	0.00509
nu hat	17.70999
nu star	16.24701
Approx.Chi Square Value (.05)	8.135447
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	7.636675

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-3.442019
Mean of log data	-7.508078
Standard Deviation of log data	1.107579
Variance of log data	1.226732

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.018686

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.273552
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.005054

Gamma Distribution Test	
A-D Test Statistic	5.364454
A-D 5% Critical Value	0.809591
K-S Test Statistic	0.459785
K-S 5% Critical Value	0.210862
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.004346
Adjusted Gamma UCL	0.00463

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.478686
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.002094
95% Chebyshev (MVUE) UCL	0.002176
97.5% Chebyshev (MVUE) UCL	0.0027
99% Chebyshev (MVUE) UCL	0.003729

95% Non-parametric UCLs	
CLT UCL	0.004906
Adj-CLT UCL (Adjusted for skewness)	0.00667
Mod-t UCL (Adjusted for skewness)	0.005329
Jackknife UCL	0.005054
Standard Bootstrap UCL	0.004862
Bootstrap-t UCL	0.04658
Hall's Bootstrap UCL	0.046733
Percentile Bootstrap UCL	0.005447
BCA Bootstrap UCL	0.007266
95% Chebyshev (Mean, Sd) UCL	0.009409
97.5% Chebyshev (Mean, Sd) UCL	0.012539
99% Chebyshev (Mean, Sd) UCL	0.018686

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4,4'-DDT

Raw Statistics	
Number of Valid Samples	23
Number of Unique Samples	11
Minimum	0.00035
Maximum	0.15
Mean	0.013365
Median	0.00035
Standard Deviation	0.036246
Variance	0.001314
Coefficient of Variation	2.711966
Skewness	3.31101

Gamma Statistics	
k hat	0.3156
k star (bias corrected)	0.303421
Theta hat	0.042349
Theta star	0.044048
nu hat	14.51762
nu star	13.95735
Approx.Chi Square Value (.05)	6.54102
Adjusted Level of Significance	0.0389
Adjusted Chi Square Value	6.174897

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-1.89712
Mean of log data	-6.482026
Standard Deviation of log data	1.912157
Variance of log data	3.656344

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.088565

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.406772
Shapiro-Wilk 5% Critical Value	0.914
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.026343

Gamma Distribution Test	
A-D Test Statistic	3.119136
A-D 5% Critical Value	0.845424
K-S Test Statistic	0.276334
K-S 5% Critical Value	0.196472
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.028519
Adjusted Gamma UCL	0.03021

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.780834
Shapiro-Wilk 5% Critical Value	0.914
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.047252
95% Chebyshev (MVUE) UCL	0.025264
97.5% Chebyshev (MVUE) UCL	0.032782
99% Chebyshev (MVUE) UCL	0.047549

95% Non-parametric UCLs	
CLT UCL	0.025797
Adj-CLT UCL (Adjusted for skewness)	0.031372
Mod-t UCL (Adjusted for skewness)	0.027213
Jackknife UCL	0.026343
Standard Bootstrap UCL	0.025296
Bootstrap-t UCL	0.110848
Hall's Bootstrap UCL	0.087894
Percentile Bootstrap UCL	0.026539
BCA Bootstrap UCL	0.032426
95% Chebyshev (Mean, Sd) UCL	0.046309
97.5% Chebyshev (Mean, Sd) UCL	0.060564
99% Chebyshev (Mean, Sd) UCL	0.088565

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ENDRIN

Raw Statistics	
Number of Valid Samples	17
Number of Unique Samples	3
Minimum	0.00035
Maximum	0.032
Mean	0.00225
Median	0.00035
Standard Deviation	0.007668
Variance	5.88E-05
Coefficient of Variation	3.408006
Skewness	4.12019

Gamma Statistics	
k hat	0.424989
k star (bias corrected)	0.389206
Theta hat	0.005294
Theta star	0.005781
nu hat	14.44962
nu star	13.23302
Approx.Chi Square Value (.05)	6.04865
Adjusted Level of Significance	0.03461
Adjusted Chi Square Value	5.546148

Log-transformed Statistics	
Minimum of log data	-7.957577
Maximum of log data	-3.442019
Mean of log data	-7.630202
Standard Deviation of log data	1.108784
Variance of log data	1.229401

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.020754

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.269959
Shapiro-Wilk 5% Critical Value	0.892
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.005497

Gamma Distribution Test	
A-D Test Statistic	5.898846
A-D 5% Critical Value	0.814376
K-S Test Statistic	0.533519
K-S 5% Critical Value	0.223113
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.004922
Adjusted Gamma UCL	0.005368

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.340218
Shapiro-Wilk 5% Critical Value	0.892
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.00198
95% Chebyshev (MVUE) UCL	0.001969
97.5% Chebyshev (MVUE) UCL	0.002452
99% Chebyshev (MVUE) UCL	0.003402

95% Non-parametric UCLs	
CLT UCL	0.005309
Adj-CLT UCL (Adjusted for skewness)	0.007295
Mod-t UCL (Adjusted for skewness)	0.005807
Jackknife UCL	0.005497
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.010357
97.5% Chebyshev (Mean, Sd) UCL	0.013864
99% Chebyshev (Mean, Sd) UCL	0.020754

Data File C:\Documents and Settings\tzoukh\My Docun Variable: FLUORANTHENE (IDRYL)

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.033
Maximum	0.66
Mean	0.177389
Median	0.1
Standard Deviation	0.178274
Variance	0.031782
Coefficient of Variation	1.004989
Skewness	1.991853

Gamma Statistics	
k hat	1.74766
k star (bias corrected)	1.493421
Theta hat	0.101501
Theta star	0.11878
nu hat	62.91577
nu star	53.76314
Approx.Chi Square Value (.05)	37.91415
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	36.63751

Log-transformed Statistics	
Minimum of log data	-3.411248
Maximum of log data	-0.415515
Mean of log data	-2.042006
Standard Deviation of log data	0.736804
Variance of log data	0.542881

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.360548

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.578077
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.250486

Gamma Distribution Test	
A-D Test Statistic	3.374588
A-D 5% Critical Value	0.754457
K-S Test Statistic	0.443241
K-S 5% Critical Value	0.206779
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.251542
Adjusted Gamma UCL	0.260307

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.69832
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.25649
95% Chebyshev (MVUE) UCL	0.302268
97.5% Chebyshev (MVUE) UCL	0.360743
99% Chebyshev (MVUE) UCL	0.475606

95% Non-parametric UCLs	
CLT UCL	0.246505
Adj-CLT UCL (Adjusted for skewness)	0.267584
Mod-t UCL (Adjusted for skewness)	0.253774
Jackknife UCL	0.250486
Standard Bootstrap UCL	0.244294
Bootstrap-t UCL	0.295206
Hall's Bootstrap UCL	0.235349
Percentile Bootstrap UCL	0.248833
BCA Bootstrap UCL	0.265556
95% Chebyshev (Mean, Sd) UCL	0.360548
97.5% Chebyshev (Mean, Sd) UCL	0.439801
99% Chebyshev (Mean, Sd) UCL	0.595478

Data File C:\Documents and Settings\tzoukh\My Docun Variable: IRON

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	22100
Maximum	23200
Mean	22650
Median	22650

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ISOPHORONE

Raw Statistics	
Number of Valid Samples	16
Number of Unique Samples	5
Minimum	0.1
Maximum	9.9
Mean	1.14625
Median	0.1
Standard Deviation	2.824764
Variance	7.979292
Coefficient of Variation	2.464352
Skewness	2.736086

Gamma Statistics	
k hat	0.380717
k star (bias corrected)	0.350999
Theta hat	3.010764
Theta star	3.265674
nu hat	12.18295
nu star	11.23198
Approx.Chi Square Value (.05)	4.724681
Adjusted Level of Significance	0.03348
Adjusted Chi Square Value	4.253572

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	2.292535
Mean of log data	-1.605769
Standard Deviation of log data	1.507674
Variance of log data	2.27308

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

8.172762

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.432014
Shapiro-Wilk 5% Critical Value	0.887
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.384238

Gamma Distribution Test	
A-D Test Statistic	4.122768
A-D 5% Critical Value	0.821091
K-S Test Statistic	0.444905
K-S 5% Critical Value	0.230623
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.72498
Adjusted Gamma UCL	3.026788

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.5313
Shapiro-Wilk 5% Critical Value	0.887
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.51604
95% Chebyshev (MVUE) UCL	1.5918
97.5% Chebyshev (MVUE) UCL	2.042782
99% Chebyshev (MVUE) UCL	2.92865

95% Non-parametric UCLs	
CLT UCL	2.307831
Adj-CLT UCL (Adjusted for skewness)	2.823976
Mod-t UCL (Adjusted for skewness)	2.464747
Jackknife UCL	2.384238
Standard Bootstrap UCL	2.281987
Bootstrap-t UCL	26.87373
Hall's Bootstrap UCL	35.20939
Percentile Bootstrap UCL	2.34625
BCA Bootstrap UCL	2.95
95% Chebyshev (Mean, Sd) UCL	4.224465
97.5% Chebyshev (Mean, Sd) UCL	5.556411
99% Chebyshev (Mean, Sd) UCL	8.172762

Data File C:\Documents and Settings\tzoukh\My Docun Variable: LEAD

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	32
Minimum	2.5
Maximum	890
Mean	51.02
Median	21.5
Standard Deviation	138.3908
Variance	19152.01
Coefficient of Variation	2.712481
Skewness	6.003166

Gamma Statistics	
k hat	0.74413
k star (bias corrected)	0.704987
Theta hat	68.56325
Theta star	72.3701
nu hat	59.53043
nu star	56.39898
Approx.Chi Square Value (.05)	40.13513
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	39.62042

Log-transformed Statistics	
Minimum of log data	0.916291
Maximum of log data	6.791221
Mean of log data	3.126884
Standard Deviation of log data	1.053959
Variance of log data	1.11083

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

59.89229

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.294092
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	87.8876

Gamma Distribution Test	
A-D Test Statistic	2.724258
A-D 5% Critical Value	0.789664
K-S Test Statistic	0.215073
K-S 5% Critical Value	0.145002
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	71.6947
Adjusted Gamma UCL	72.62608

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.960337
Shapiro-Wilk 5% Critical Value	0.94
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	59.89229
95% Chebyshev (MVUE) UCL	72.28585
97.5% Chebyshev (MVUE) UCL	86.72357
99% Chebyshev (MVUE) UCL	115.0837

95% Non-parametric UCLs	
CLT UCL	87.01187
Adj-CLT UCL (Adjusted for skewness)	109.2045
Mod-t UCL (Adjusted for skewness)	91.34919
Jackknife UCL	87.8876
Standard Bootstrap UCL	84.97273
Bootstrap-t UCL	220.7746
Hall's Bootstrap UCL	219.5114
Percentile Bootstrap UCL	93.0925
BCA Bootstrap UCL	118.5625
95% Chebyshev (Mean, Sd) UCL	146.3993
97.5% Chebyshev (Mean, Sd) UCL	187.67
99% Chebyshev (Mean, Sd) UCL	268.7382

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MOLYBDENUM

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	16
Minimum	0.5
Maximum	4.2
Mean	2.836842
Median	3.1
Standard Deviation	1.073525
Variance	1.152456
Coefficient of Variation	0.378423
Skewness	-1.078968

Gamma Statistics	
k hat	4.082935
k star (bias corrected)	3.473349
Theta hat	0.694805
Theta star	0.816746
nu hat	155.1515
nu star	131.9873
Approx.Chi Square Value (.05)	106.4422
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	104.4381

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	1.435085
Mean of log data	0.915261
Standard Deviation of log data	0.620567
Variance of log data	0.385103

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

3.910367

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892743
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3.263913

Gamma Distribution Test	
A-D Test Statistic	1.639719
A-D 5% Critical Value	0.744909
K-S Test Statistic	0.214816
K-S 5% Critical Value	0.199208
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3.517657
Adjusted Gamma UCL	3.585157

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.704979
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4.140082
95% Chebyshev (MVUE) UCL	4.946965
97.5% Chebyshev (MVUE) UCL	5.79274
99% Chebyshev (MVUE) UCL	7.454102

95% Non-parametric UCLs	
CLT UCL	3.241942
Adj-CLT UCL (Adjusted for skewness)	3.176803
Mod-t UCL (Adjusted for skewness)	3.253753
Jackknife UCL	3.263913
Standard Bootstrap UCL	3.217954
Bootstrap-t UCL	3.191542
Hall's Bootstrap UCL	3.196008
Percentile Bootstrap UCL	3.205263
BCA Bootstrap UCL	3.152632
95% Chebyshev (Mean, Sd) UCL	3.910367
97.5% Chebyshev (Mean, Sd) UCL	4.374882
99% Chebyshev (Mean, Sd) UCL	5.287332

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MAGNESIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	5190
Maximum	5575
Mean	5382.5
Median	5382.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MANGANESE

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	239
Maximum	353
Mean	296
Median	296

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: MERCURY

Raw Statistics	
Number of Valid Samples	37
Number of Unique Samples	21
Minimum	0.029
Maximum	0.85
Mean	0.135216
Median	0.05
Standard Deviation	0.1992
Variance	0.039681
Coefficient of Variation	1.473195
Skewness	2.562492

Gamma Statistics	
k hat	1.021231
k star (bias corrected)	0.956446
Theta hat	0.132405
Theta star	0.141374
nu hat	75.57108
nu star	70.77703
Approx.Chi Square Value (.05)	52.40479
Adjusted Level of Significance	0.0431
Adjusted Chi Square Value	51.71811

Log-transformed Statistics	
Minimum of log data	-3.540459
Maximum of log data	-0.162519
Mean of log data	-2.564713
Standard Deviation of log data	0.912825
Variance of log data	0.83325

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.277963

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.542429
Shapiro-Wilk 5% Critical Value	0.936
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.190505

Gamma Distribution Test	
A-D Test Statistic	5.193903
A-D 5% Critical Value	0.77646
K-S Test Statistic	0.321484
K-S 5% Critical Value	0.149226
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.182621
Adjusted Gamma UCL	0.185045

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.760426
Shapiro-Wilk 5% Critical Value	0.936
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.165412
95% Chebyshev (MVUE) UCL	0.200523
97.5% Chebyshev (MVUE) UCL	0.237566
99% Chebyshev (MVUE) UCL	0.310328

95% Non-parametric UCLs	
CLT UCL	0.189082
Adj-CLT UCL (Adjusted for skewness)	0.203823
Mod-t UCL (Adjusted for skewness)	0.192804
Jackknife UCL	0.190505
Standard Bootstrap UCL	0.188485
Bootstrap-t UCL	0.219116
Hall's Bootstrap UCL	0.1936
Percentile Bootstrap UCL	0.189405
BCA Bootstrap UCL	0.200649
95% Chebyshev (Mean, Sd) UCL	0.277963
97.5% Chebyshev (Mean, Sd) UCL	0.339729
99% Chebyshev (Mean, Sd) UCL	0.461057

Data File C:\Documents and Settings\tzoukh\My Docun Variable: NAPHTHALENE

Raw Statistics	
Number of Valid Samples	20
Number of Unique Samples	7
Minimum	0.0042
Maximum	1.2
Mean	0.190693
Median	0.1
Standard Deviation	0.270846
Variance	0.073357
Coefficient of Variation	1.420328
Skewness	3.132033

Gamma Statistics	
k hat	0.91819
k star (bias corrected)	0.813794
Theta hat	0.207683
Theta star	0.234325
nu hat	36.72758
nu star	32.55178
Approx.Chi Square Value (.05)	20.50798
Adjusted Level of Significance	0.038
Adjusted Chi Square Value	19.75291

Log-transformed Statistics	
Minimum of log data	-5.472671
Maximum of log data	0.182322
Mean of log data	-2.292219
Standard Deviation of log data	1.283498
Variance of log data	1.647366

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.793286

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.517689
Shapiro-Wilk 5% Critical Value	0.905
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.295414

Gamma Distribution Test	
A-D Test Statistic	2.768814
A-D 5% Critical Value	0.771726
K-S Test Statistic	0.361767
K-S 5% Critical Value	0.200008
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.302681
Adjusted Gamma UCL	0.314251

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.719229
Shapiro-Wilk 5% Critical Value	0.905
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.559419
95% Chebyshev (MVUE) UCL	0.528878
97.5% Chebyshev (MVUE) UCL	0.664637
99% Chebyshev (MVUE) UCL	0.931309

95% Non-parametric UCLs	
CLT UCL	0.29031
Adj-CLT UCL (Adjusted for skewness)	0.335631
Mod-t UCL (Adjusted for skewness)	0.302483
Jackknife UCL	0.295414
Standard Bootstrap UCL	0.285683
Bootstrap-t UCL	0.415169
Hall's Bootstrap UCL	0.581093
Percentile Bootstrap UCL	0.295233
BCA Bootstrap UCL	0.355698
95% Chebyshev (Mean, Sd) UCL	0.45468
97.5% Chebyshev (Mean, Sd) UCL	0.568908
99% Chebyshev (Mean, Sd) UCL	0.793286

Data File C:\Documents and Settings\tzoukh\My Docun Variable: NICKEL

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	21
Minimum	4.9
Maximum	55
Mean	22.2775
Median	23
Standard Deviation	8.245698
Variance	67.99153
Coefficient of Variation	0.370136
Skewness	1.119966

Gamma Statistics	
k hat	6.769182
k star (bias corrected)	6.27816
Theta hat	3.291018
Theta star	3.548412
nu hat	541.5346
nu star	502.2528
Approx.Chi Square Value (.05)	451.2719
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	449.4684

Log-transformed Statistics	
Minimum of log data	1.589235
Maximum of log data	4.007333
Mean of log data	3.027898
Standard Deviation of log data	0.424684
Variance of log data	0.180356

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

24.51265

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.894554
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	24.47417

Gamma Distribution Test	
A-D Test Statistic	1.43578
A-D 5% Critical Value	0.750272
K-S Test Statistic	0.143951
K-S 5% Critical Value	0.139713
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	24.79422
Adjusted Gamma UCL	24.89372

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.876911
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	25.63744
95% Chebyshev (MVUE) UCL	29.37872
97.5% Chebyshev (MVUE) UCL	32.33449
99% Chebyshev (MVUE) UCL	38.14053

95% Non-parametric UCLs	
CLT UCL	24.42199
Adj-CLT UCL (Adjusted for skewness)	24.66868
Mod-t UCL (Adjusted for skewness)	24.51265
Jackknife UCL	24.47417
Standard Bootstrap UCL	24.36002
Bootstrap-t UCL	24.70171
Hall's Bootstrap UCL	25.48183
Percentile Bootstrap UCL	24.45
BCA Bootstrap UCL	24.8375
95% Chebyshev (Mean, Sd) UCL	27.96046
97.5% Chebyshev (Mean, Sd) UCL	30.41947
99% Chebyshev (Mean, Sd) UCL	35.24974

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PCB-1254 (AROCLOR 1254)

Raw Statistics	
Number of Valid Samples	18
Number of Unique Samples	5
Minimum	0.015
Maximum	0.5
Mean	0.055667
Median	0.015
Standard Deviation	0.120068
Variance	0.014416
Coefficient of Variation	2.156903
Skewness	3.457814

Gamma Statistics	
k hat	0.700723
k star (bias corrected)	0.620973
Theta hat	0.079442
Theta star	0.089644
nu hat	25.22602
nu star	22.35502
Approx.Chi Square Value (.05)	12.60316
Adjusted Level of Significance	0.03574
Adjusted Chi Square Value	11.90309

Log-transformed Statistics	
Minimum of log data	-4.199705
Maximum of log data	-0.693147
Mean of log data	-3.750708
Standard Deviation of log data	1.019163
Variance of log data	1.038693

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

0.33725

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.399471
Shapiro-Wilk 5% Critical Value	0.897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.104898

Gamma Distribution Test	
A-D Test Statistic	4.547352
A-D 5% Critical Value	0.782322
K-S Test Statistic	0.460709
K-S 5% Critical Value	0.212153
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.098739
Adjusted Gamma UCL	0.104547

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.519825
Shapiro-Wilk 5% Critical Value	0.897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.076662
95% Chebyshev (MVUE) UCL	0.082114
97.5% Chebyshev (MVUE) UCL	0.101235
99% Chebyshev (MVUE) UCL	0.138793

95% Non-parametric UCLs	
CLT UCL	0.102216
Adj-CLT UCL (Adjusted for skewness)	0.126862
Mod-t UCL (Adjusted for skewness)	0.108742
Jackknife UCL	0.104898
Standard Bootstrap UCL	0.100558
Bootstrap-t UCL	0.587252
Hall's Bootstrap UCL	0.549496
Percentile Bootstrap UCL	0.105944
BCA Bootstrap UCL	0.134444
95% Chebyshev (Mean, Sd) UCL	0.179024
97.5% Chebyshev (Mean, Sd) UCL	0.232401
99% Chebyshev (Mean, Sd) UCL	0.33725

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PHENANTHRENE

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	6
Minimum	0.013
Maximum	5
Mean	0.397
Median	0.1
Standard Deviation	1.122411
Variance	1.259805
Coefficient of Variation	2.827231
Skewness	4.262673

Gamma Statistics	
k hat	0.550168
k star (bias corrected)	0.498387
Theta hat	0.721597
Theta star	0.796569
nu hat	20.9064
nu star	18.93872
Approx.Chi Square Value (.05)	10.07121
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	9.508368

Log-transformed Statistics	
Minimum of log data	-4.342806
Maximum of log data	1.609438
Mean of log data	-2.06154
Standard Deviation of log data	1.189609
Variance of log data	1.41517

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

2.959079

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.315006
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.843519

Gamma Distribution Test	
A-D Test Statistic	3.779321
A-D 5% Critical Value	0.79798
K-S Test Statistic	0.428096
K-S 5% Critical Value	0.209207
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.746551
Adjusted Gamma UCL	0.790743

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.734679
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.583507
95% Chebyshev (MVUE) UCL	0.575507
97.5% Chebyshev (MVUE) UCL	0.719101
99% Chebyshev (MVUE) UCL	1.001163

95% Non-parametric UCLs	
CLT UCL	0.820548
Adj-CLT UCL (Adjusted for skewness)	1.089615
Mod-t UCL (Adjusted for skewness)	0.885488
Jackknife UCL	0.843519
Standard Bootstrap UCL	0.820644
Bootstrap-t UCL	3.684744
Hall's Bootstrap UCL	3.325396
Percentile Bootstrap UCL	0.9
BCA Bootstrap UCL	1.154895
95% Chebyshev (Mean, Sd) UCL	1.519411
97.5% Chebyshev (Mean, Sd) UCL	2.005078
99% Chebyshev (Mean, Sd) UCL	2.959079

Data File C:\Documents and Settings\tzoukh\My Docun Variable: POLYCHLORINATED BI PHENYLS, TOTAL

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	0.5
Maximum	0.5
Mean	0.5
Median	0.5

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	39
Number of Unique Samples	36
Minimum	0.0025
Maximum	1300
Mean	85.68163
Median	1.2
Standard Deviation	278.7025
Variance	77675.06
Coefficient of Variation	3.252768
Skewness	3.710648

Gamma Statistics	
k hat	0.167812
k star (bias corrected)	0.171997
Theta hat	510.5819
Theta star	498.1572
nu hat	13.08932
nu star	13.41578
Approx.Chi Square Value (.05)	6.17228
Adjusted Level of Significance	0.0437
Adjusted Chi Square Value	5.978311

Log-transformed Statistics	
Minimum of log data	-5.991465
Maximum of log data	7.17012
Mean of log data	-0.054126
Standard Deviation of log data	3.283416
Variance of log data	10.78082

RECOMMENDATION

Data are lognormal (0.05)

Use Larger of:

Use 95% Chebyshev (MVUE) UCL

99% Chebyshev (MVUE) UCL

99% Chebyshev (Mean, Sd) UCL

922.6763

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.355122
Shapiro-Wilk 5% Critical Value	0.939
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	160.9226

Gamma Distribution Test	
A-D Test Statistic	4.035656
A-D 5% Critical Value	0.921078
K-S Test Statistic	0.307219
K-S 5% Critical Value	0.157649
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	186.2336
Adjusted Gamma UCL	192.276

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.951119
Shapiro-Wilk 5% Critical Value	0.939
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4218.394
95% Chebyshev (MVUE) UCL	464.1316
97.5% Chebyshev (MVUE) UCL	618.8203
99% Chebyshev (MVUE) UCL	922.6763

95% Non-parametric UCLs	
CLT UCL	159.0883
Adj-CLT UCL (Adjusted for skewness)	187.4222
Mod-t UCL (Adjusted for skewness)	165.3421
Jackknife UCL	160.9226
Standard Bootstrap UCL	158.9369
Bootstrap-t UCL	317.3151
Hall's Bootstrap UCL	400.9815
Percentile Bootstrap UCL	165.1473
BCA Bootstrap UCL	191.9239
95% Chebyshev (Mean, Sd) UCL	280.2111
97.5% Chebyshev (Mean, Sd) UCL	364.3841
99% Chebyshev (Mean, Sd) UCL	529.7257

Data File C:\Documents and Settings\tzoukh\My Docun Variable: POTASSIUM

Raw Statistics

Number of Valid Samples	2
Number of Unique Samples	2
Minimum	4350
Maximum	4520
Mean	4435
Median	4435

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PYRENE

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	6
Minimum	0.018
Maximum	3.1
Mean	0.298
Median	0.1
Standard Deviation	0.691013
Variance	0.477499
Coefficient of Variation	2.318836
Skewness	4.116505

Gamma Statistics	
k hat	0.717992
k star (bias corrected)	0.639713
Theta hat	0.415046
Theta star	0.465834
nu hat	27.2837
nu star	24.30908
Approx.Chi Square Value (.05)	14.08222
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	13.40347

Log-transformed Statistics	
Minimum of log data	-4.017384
Maximum of log data	1.131402
Mean of log data	-2.049415
Standard Deviation of log data	1.050133
Variance of log data	1.10278

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.875346

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.357223
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.5729

Gamma Distribution Test	
A-D Test Statistic	3.547856
A-D 5% Critical Value	0.781855
K-S Test Statistic	0.431769
K-S 5% Critical Value	0.206589
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.514415
Adjusted Gamma UCL	0.540465

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.733572
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.435801
95% Chebyshev (MVUE) UCL	0.467205
97.5% Chebyshev (MVUE) UCL	0.576591
99% Chebyshev (MVUE) UCL	0.791461

95% Non-parametric UCLs	
CLT UCL	0.558757
Adj-CLT UCL (Adjusted for skewness)	0.718729
Mod-t UCL (Adjusted for skewness)	0.597852
Jackknife UCL	0.5729
Standard Bootstrap UCL	0.554328
Bootstrap-t UCL	1.627676
Hall's Bootstrap UCL	1.565932
Percentile Bootstrap UCL	0.606947
BCA Bootstrap UCL	0.766421
95% Chebyshev (Mean, Sd) UCL	0.989013
97.5% Chebyshev (Mean, Sd) UCL	1.288015
99% Chebyshev (Mean, Sd) UCL	1.875346

Data File C:\Documents and Settings\tzoukh\My Docun Variable: SILVER

Raw Statistics	
Number of Valid Samples	19
Number of Unique Samples	4
Minimum	0.5
Maximum	1.2
Mean	0.544737
Median	0.5
Standard Deviation	0.160498
Variance	0.02576
Coefficient of Variation	0.294634
Skewness	4.205348

Gamma Statistics	
k hat	20.2122
k star (bias corrected)	17.05589
Theta hat	0.026951
Theta star	0.031938
nu hat	768.0636
nu star	648.1238
Approx.Chi Square Value (.05)	590.0499
Adjusted Level of Significance	0.03687
Adjusted Chi Square Value	585.214

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	0.182322
Mean of log data	-0.632394
Standard Deviation of log data	0.202286
Variance of log data	0.04092

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

0.614507

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.31309
Shapiro-Wilk 5% Critical Value	0.901
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.608586

Gamma Distribution Test	
A-D Test Statistic	5.564804
A-D 5% Critical Value	0.740291
K-S Test Statistic	0.461958
K-S 5% Critical Value	0.198139
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.598351
Adjusted Gamma UCL	0.603295

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.344108
Shapiro-Wilk 5% Critical Value	0.901
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.590477
95% Chebyshev (MVUE) UCL	0.651969
97.5% Chebyshev (MVUE) UCL	0.699679
99% Chebyshev (MVUE) UCL	0.793396

95% Non-parametric UCLs	
CLT UCL	0.605302
Adj-CLT UCL (Adjusted for skewness)	0.643259
Mod-t UCL (Adjusted for skewness)	0.614507
Jackknife UCL	0.608586
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	0.705235
97.5% Chebyshev (Mean, Sd) UCL	0.774683
99% Chebyshev (Mean, Sd) UCL	0.911099

Data File C:\Documents and Settings\tzoukh\My Docun Variable: SODIUM

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	290
Maximum	320
Mean	305
Median	305

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: THALLIUM

Raw Statistics	
Number of Valid Samples	30
Number of Unique Samples	8
Minimum	0.9
Maximum	3.5
Mean	2.56
Median	3.5
Standard Deviation	1.069192
Variance	1.143172
Coefficient of Variation	0.417653
Skewness	-0.403649

Gamma Statistics	
k hat	4.68845
k star (bias corrected)	4.241827
Theta hat	0.546023
Theta star	0.603514
nu hat	281.307
nu star	254.5096
Approx.Chi Square Value (.05)	218.5633
Adjusted Level of Significance	0.041
Adjusted Chi Square Value	216.6462

Log-transformed Statistics	
Minimum of log data	-0.105361
Maximum of log data	1.252763
Mean of log data	0.829588
Standard Deviation of log data	0.511547
Variance of log data	0.26168

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

3.410887

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.747877
Shapiro-Wilk 5% Critical Value	0.927
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.891681

Gamma Distribution Test	
A-D Test Statistic	3.045817
A-D 5% Critical Value	0.747434
K-S Test Statistic	0.339793
K-S 5% Critical Value	0.160425
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.981033
Adjusted Gamma UCL	3.007413

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.764359
Shapiro-Wilk 5% Critical Value	0.927
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3.142496
95% Chebyshev (MVUE) UCL	3.707247
97.5% Chebyshev (MVUE) UCL	4.186303
99% Chebyshev (MVUE) UCL	5.127316

95% Non-parametric UCLs	
CLT UCL	2.881087
Adj-CLT UCL (Adjusted for skewness)	2.865715
Mod-t UCL (Adjusted for skewness)	2.889284
Jackknife UCL	2.891681
Standard Bootstrap UCL	2.875166
Bootstrap-t UCL	2.889508
Hall's Bootstrap UCL	2.845755
Percentile Bootstrap UCL	2.866667
BCA Bootstrap UCL	2.87
95% Chebyshev (Mean, Sd) UCL	3.410887
97.5% Chebyshev (Mean, Sd) UCL	3.779067
99% Chebyshev (Mean, Sd) UCL	4.502284

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	38
Number of Unique Samples	15
Minimum	0.0025
Maximum	140
Mean	7.557711
Median	0.25
Standard Deviation	27.46477
Variance	754.3137
Coefficient of Variation	3.634007
Skewness	4.207062

Gamma Statistics	
k hat	0.167013
k star (bias corrected)	0.171372
Theta hat	45.25224
Theta star	44.10131
nu hat	12.69298
nu star	13.02424
Approx.Chi Square Value (.05)	5.907932
Adjusted Level of Significance	0.0434
Adjusted Chi Square Value	5.70934

Log-transformed Statistics	
Minimum of log data	-5.991465
Maximum of log data	4.941642
Mean of log data	-2.506978
Standard Deviation of log data	3.061804
Variance of log data	9.374646

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

51.88813

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.315168
Shapiro-Wilk 5% Critical Value	0.938
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	15.07434

Gamma Distribution Test	
A-D Test Statistic	5.144698
A-D 5% Critical Value	0.920581
K-S Test Statistic	0.390015
K-S 5% Critical Value	0.159727
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	16.66123
Adjusted Gamma UCL	17.24077

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.866422
Shapiro-Wilk 5% Critical Value	0.938
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	129.4419
95% Chebyshev (MVUE) UCL	21.44186
97.5% Chebyshev (MVUE) UCL	28.49461
99% Chebyshev (MVUE) UCL	42.34837

95% Non-parametric UCLs	
CLT UCL	14.88615
Adj-CLT UCL (Adjusted for skewness)	18.13516
Mod-t UCL (Adjusted for skewness)	15.58112
Jackknife UCL	15.07434
Standard Bootstrap UCL	14.8092
Bootstrap-t UCL	52.07074
Hall's Bootstrap UCL	52.73512
Percentile Bootstrap UCL	16.20896
BCA Bootstrap UCL	19.6786
95% Chebyshev (Mean, Sd) UCL	26.97824
97.5% Chebyshev (Mean, Sd) UCL	35.38151
99% Chebyshev (Mean, Sd) UCL	51.88813

Data File C:\Documents and Settings\tzoukh\My Docun Variable: VANADIUM

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	29
Minimum	20
Maximum	71
Mean	43.8875
Median	44
Standard Deviation	11.50167
Variance	132.2883
Coefficient of Variation	0.262072
Skewness	0.0043

Gamma Statistics	
k hat	13.51326
k star (bias corrected)	12.51644
Theta hat	3.247735
Theta star	3.50639
nu hat	1081.061
nu star	1001.315
Approx.Chi Square Value (.05)	928.8456
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	926.243

Log-transformed Statistics	
Minimum of log data	2.995732
Maximum of log data	4.26268
Mean of log data	3.744173
Standard Deviation of log data	0.287955
Variance of log data	0.082918

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

46.95157

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.981666
Shapiro-Wilk 5% Critical Value	0.94
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	46.95157

Gamma Distribution Test	
A-D Test Statistic	0.470878
A-D 5% Critical Value	0.747573
K-S Test Statistic	0.139919
K-S 5% Critical Value	0.139292
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	47.31164
Adjusted Gamma UCL	47.44458

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.939699
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	47.8158
95% Chebyshev (MVUE) UCL	52.89531
97.5% Chebyshev (MVUE) UCL	56.73734
99% Chebyshev (MVUE) UCL	64.28428

95% Non-parametric UCLs	
CLT UCL	46.87879
Adj-CLT UCL (Adjusted for skewness)	46.88011
Mod-t UCL (Adjusted for skewness)	46.95177
Jackknife UCL	46.95157
Standard Bootstrap UCL	46.79721
Bootstrap-t UCL	47.03593
Hall's Bootstrap UCL	46.93161
Percentile Bootstrap UCL	46.8125
BCA Bootstrap UCL	46.7125
95% Chebyshev (Mean, Sd) UCL	51.81448
97.5% Chebyshev (Mean, Sd) UCL	55.24448
99% Chebyshev (Mean, Sd) UCL	61.98207

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ZINC

Raw Statistics	
Number of Valid Samples	40
Number of Unique Samples	29
Minimum	34
Maximum	350
Mean	80.225
Median	68.25
Standard Deviation	50.55372
Variance	2555.679
Coefficient of Variation	0.630149
Skewness	4.149247

Gamma Statistics	
k hat	4.912019
k star (bias corrected)	4.560284
Theta hat	16.33239
Theta star	17.5921
nu hat	392.9615
nu star	364.8228
Approx.Chi Square Value (.05)	321.5489
Adjusted Level of Significance	0.044
Adjusted Chi Square Value	320.0319

Log-transformed Statistics	
Minimum of log data	3.526361
Maximum of log data	5.857933
Mean of log data	4.279604
Standard Deviation of log data	0.420047
Variance of log data	0.17644

RECOMMENDATION
Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

94.56662

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.59267
Shapiro-Wilk 5% Critical Value	0.94
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	93.69262

Gamma Distribution Test	
A-D Test Statistic	1.964817
A-D 5% Critical Value	0.751588
K-S Test Statistic	0.181606
K-S 5% Critical Value	0.139907
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	91.02163
Adjusted Gamma UCL	91.4531

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.900969
Shapiro-Wilk 5% Critical Value	0.94
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	89.31976
95% Chebyshev (MVUE) UCL	102.2448
97.5% Chebyshev (MVUE) UCL	112.4396
99% Chebyshev (MVUE) UCL	132.4654

95% Non-parametric UCLs	
CLT UCL	93.37272
Adj-CLT UCL (Adjusted for skewness)	98.97601
Mod-t UCL (Adjusted for skewness)	94.56662
Jackknife UCL	93.69262
Standard Bootstrap UCL	93.36038
Bootstrap-t UCL	105.9996
Hall's Bootstrap UCL	151.5683
Percentile Bootstrap UCL	94.8
BCA Bootstrap UCL	104.325
95% Chebyshev (Mean, Sd) UCL	115.0667
97.5% Chebyshev (Mean, Sd) UCL	130.1428
99% Chebyshev (Mean, Sd) UCL	159.7568

A-1.3 Soil Gas – All Parcels 5 to 6 feet bgs

Summary of UCLs for All Parcels Soil Gas 5-6 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are lognormal (0.05)	64,583	352,624	Use 97.5% Chebyshev (MVUE) UCL	280,000	12,919	70,537	95% UCL-T
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Data follow gamma distribution (0.05)	210,417	1,611,795	Use Approximate Gamma UCL	450,000	140,506	1,076,274	95% UCL-G
1,1,2-TRICHLOROETHANE	Data follow gamma distribution (0.05)	425	2,319	Use Approximate Gamma UCL	950	276	1,509	95% UCL-G
1,1-DICHLOROETHANE	Data are Non-parametric (0.05)	9,487	38,423	Use 99% Chebyshev (Mean, Sd) UCL	26,000	1,763	7,140	UCL-NP
1,1-DICHLOROETHENE	Assuming gamma distribution (0.05)	166,216	659,877	Use Approximate Gamma UCL	270,000	110,043	436,872	95% UCL-G assumed
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Data are normal (0.05)	16,381	102,378	Use Student's-t UCL	15,000	8,668	54,172	95% UCL-N
1,2-DICHLOROETHANE	Data follow gamma distribution (0.05)	556	2,253	Use Approximate Gamma UCL	2,500	359	1,453	95% UCL-G
2,2,4-TRIMETHYLPENTANE	Data follow gamma distribution (0.05)	685	3,105	Use Approximate Gamma UCL	1,800	400	1,869	95% UCL-G
2-BUTANONE	Data follow gamma distribution (0.05)	443	1,306	Use Approximate Gamma UCL	800	294	869	95% UCL-G
ACETALDEHYDE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		54	97	
ACETONE	Data follow gamma distribution (0.05)	2,509	5,971	Use Approximate Gamma UCL	8,900	1,729	4,114	95% UCL-G
BENZENE	Assuming gamma distribution (0.05)	445	1,418	Use Approximate Gamma UCL	950	301	961	95% UCL-G assumed
CARBON DISULFIDE	Data follow gamma distribution (0.05)	1,650	5,132	Use Adjusted Gamma UCL	8,400	956	2,973	95% UCL-G
CARBON TETRACHLORIDE	Data follow gamma distribution (0.05)	418	2,629	Use Approximate Gamma UCL	950	273	1,716	95% UCL-G
CHLOROFORM	Data follow gamma distribution (0.05)	1,173	5,726	Use Approximate Gamma UCL	3,000	791	3,858	95% UCL-G
CIS-1,2-DICHLOROETHENE	Data are Non-parametric (0.05)	4,535	17,957	Use 99% Chebyshev (Mean, Sd) UCL	9,300	893	3,537	UCL-NP
DICHLORODIFLUOROMETHANE	Data follow gamma distribution (0.05)	501	2,478	Use Approximate Gamma UCL	1,900	329	1,628	95% UCL-G
HEXANE (N-HEXANE)	Data are Non-parametric (0.05)	1,018	3,585	Use 99% Chebyshev (Mean, Sd) UCL	800	356	1,253	UCL-NP
M,P-XYLENES	Data follow gamma distribution (0.05)	501	2,173	Use Approximate Gamma UCL	1,900	338	1,469	95% UCL-G
O-XYLENE	Data follow gamma distribution (0.05)	418	1,815	Use Approximate Gamma UCL	950	274	1,188	95% UCL-G
TETRACHLOROETHENE	Assuming gamma distribution (0.05)	180,801	1,225,830	Use Approximate Gamma UCL	500,000	119,694	811,528	95% UCL-G assumed
TOLUENE	Data follow gamma distribution (0.05)	421	1,586	Use Approximate Gamma UCL	950	295	1,113	95% UCL-G
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	1,693	6,704	Use Adjusted Gamma UCL	5,300	1,010	4,000	95% UCL-G
TRICHLOROETHENE	Data follow gamma distribution (0.05)	34,320	184,300	Use Approximate Gamma UCL	88,000	22,849	122,697	95% UCL-G
TRICHLOROFLUOROMETHANE (FREON 11)	Data follow gamma distribution (0.05)	86,370	485,399	Use Approximate Gamma UCL	180,000	56,802	319,226	95% UCL-G

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	30
Minimum	0.7
Maximum	280000
Mean	12918.91
Median	725
Standard Deviation	49804.27
Variance	2.48E+09
Coefficient of Variation	3.855145
Skewness	5.06796

Gamma Statistics	
k hat	0.228803
k star (bias corrected)	0.228223
Theta hat	56462.92
Theta star	56606.58
nu hat	15.55863
nu star	15.51915
Approx.Chi Square Value (.05)	7.622817
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	7.349044

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	12.54254
Mean of log data	6.31764
Standard Deviation of log data	2.650828
Variance of log data	7.026888

RECOMMENDATION
Data are lognormal (0.05)

Use 97.5% Chebyshev (MVUE) UCL

64583.1

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.288891
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	27373.97

Gamma Distribution Test	
A-D Test Statistic	3.549672
A-D 5% Critical Value	0.886693
K-S Test Statistic	0.319414
K-S 5% Critical Value	0.166196
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	26301.36
Adjusted Gamma UCL	27281.16

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.94784
Shapiro-Wilk 5% Critical Value	0.933
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	168013.4
95% Chebyshev (MVUE) UCL	48944.62
97.5% Chebyshev (MVUE) UCL	64583.1
99% Chebyshev (MVUE) UCL	95301.87

95% Non-parametric UCLs	
CLT UCL	26968.2
Adj-CLT UCL (Adjusted for skewness)	34900.54
Mod-t UCL (Adjusted for skewness)	28611.25
Jackknife UCL	27373.97
Standard Bootstrap UCL	26582.29
Bootstrap-t UCL	113784.1
Hall's Bootstrap UCL	110581.2
Percentile Bootstrap UCL	28862.27
BCA Bootstrap UCL	40072.34
95% Chebyshev (Mean, Sd) UCL	50149.84
97.5% Chebyshev (Mean, Sd) UCL	66259.7
99% Chebyshev (Mean, Sd) UCL	97904.39

Data File : C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	28
Minimum	240
Maximum	450000
Mean	140505.7
Median	110000
Standard Deviation	134706.1
Variance	1.81E+10
Coefficient of Variation	0.958723
Skewness	0.948552

Gamma Statistics	
k hat	0.64565
k star (bias corrected)	0.608288
Theta hat	217619.2
Theta star	230985.4
nu hat	43.90417
nu star	41.36361
Approx.Chi Square Value (.05)	27.6205
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	27.06426

Log-transformed Statistics	
Minimum of log data	5.480639
Maximum of log data	13.017
Mean of log data	10.90619
Standard Deviation of log data	2.017963
Variance of log data	4.072175

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

210417

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.870364
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	179602.5

Gamma Distribution Test	
A-D Test Statistic	0.631699
A-D 5% Critical Value	0.797686
K-S Test Statistic	0.132165
K-S 5% Critical Value	0.158004
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	210417
Adjusted Gamma UCL	214741.7

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.822039
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1584997
95% Chebyshev (MVUE) UCL	1097134
97.5% Chebyshev (MVUE) UCL	1417590
99% Chebyshev (MVUE) UCL	2047064

95% Non-parametric UCLs	
CLT UCL	178505
Adj-CLT UCL (Adjusted for skewness)	182520.6
Mod-t UCL (Adjusted for skewness)	180228.8
Jackknife UCL	179602.5
Standard Bootstrap UCL	178669.7
Bootstrap-t UCL	186362.4
Hall's Bootstrap UCL	180396.2
Percentile Bootstrap UCL	179525
BCA Bootstrap UCL	182310
95% Chebyshev (Mean, Sd) UCL	241204.6
97.5% Chebyshev (Mean, Sd) UCL	284777.1
99% Chebyshev (Mean, Sd) UCL	370366.8

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	28
Minimum	0.7
Maximum	950
Mean	276.3176
Median	157.5
Standard Deviation	292.297
Variance	85437.56
Coefficient of Variation	1.05783
Skewness	0.931458

Gamma Statistics	
k hat	0.575088
k star (bias corrected)	0.543953
Theta hat	480.4787
Theta star	507.9808
nu hat	39.106
nu star	36.9888
Approx.Chi Square Value (.05)	24.06369
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	23.54724

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.856462
Mean of log data	4.54036
Standard Deviation of log data	1.984101
Variance of log data	3.936656

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

424.7337

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.826888
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	361.1532

Gamma Distribution Test	
A-D Test Statistic	0.561787
A-D 5% Critical Value	0.804438
K-S Test Statistic	0.133954
K-S 5% Critical Value	0.158752
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	424.7337
Adjusted Gamma UCL	434.0492

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.895065
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2446.955
95% Chebyshev (MVUE) UCL	1752.71
97.5% Chebyshev (MVUE) UCL	2261.233
99% Chebyshev (MVUE) UCL	3260.128

95% Non-parametric UCLs	
CLT UCL	358.7717
Adj-CLT UCL (Adjusted for skewness)	367.3281
Mod-t UCL (Adjusted for skewness)	362.4878
Jackknife UCL	361.1532
Standard Bootstrap UCL	358.9693
Bootstrap-t UCL	368.3471
Hall's Bootstrap UCL	364.0477
Percentile Bootstrap UCL	363.15
BCA Bootstrap UCL	367.4559
95% Chebyshev (Mean, Sd) UCL	494.8228
97.5% Chebyshev (Mean, Sd) UCL	589.3702
99% Chebyshev (Mean, Sd) UCL	775.0902

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	29
Minimum	0.7
Maximum	26000
Mean	1762.935
Median	725
Standard Deviation	4526.66
Variance	20490651
Coefficient of Variation	2.567684
Skewness	4.962586

Gamma Statistics	
k hat	0.403194
k star (bias corrected)	0.387226
Theta hat	4372.429
Theta star	4552.735
nu hat	27.41716
nu star	26.33134
Approx.Chi Square Value (.05)	15.6329
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	15.22444

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	10.16585
Mean of log data	5.844761
Standard Deviation of log data	2.2753
Variance of log data	5.176991

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

9487.18

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.385521
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3076.741

Gamma Distribution Test	
A-D Test Statistic	1.038015
A-D 5% Critical Value	0.833064
K-S Test Statistic	0.191369
K-S 5% Critical Value	0.161596
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2969.407
Adjusted Gamma UCL	3049.074

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.909268
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	24134.23
95% Chebyshev (MVUE) UCL	12389.4
97.5% Chebyshev (MVUE) UCL	16169.83
99% Chebyshev (MVUE) UCL	23595.76

95% Non-parametric UCLs	
CLT UCL	3039.861
Adj-CLT UCL (Adjusted for skewness)	3745.833
Mod-t UCL (Adjusted for skewness)	3186.858
Jackknife UCL	3076.741
Standard Bootstrap UCL	3029.007
Bootstrap-t UCL	5989.46
Hall's Bootstrap UCL	7112.794
Percentile Bootstrap UCL	3259.482
BCA Bootstrap UCL	4128.453
95% Chebyshev (Mean, Sd) UCL	5146.817
97.5% Chebyshev (Mean, Sd) UCL	6611.026
99% Chebyshev (Mean, Sd) UCL	9487.18

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	30
Minimum	21
Maximum	270000
Mean	110043.4
Median	82500
Standard Deviation	94345.9
Variance	8.9E+09
Coefficient of Variation	0.857352
Skewness	0.334892

Gamma Statistics	
k hat	0.621026
k star (bias corrected)	0.585838
Theta hat	177196.1
Theta star	187839.4
nu hat	42.22979
nu star	39.83696
Approx.Chi Square Value (.05)	26.3741
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	25.8315

Log-transformed Statistics	
Minimum of log data	3.044522
Maximum of log data	12.50618
Mean of log data	10.61872
Standard Deviation of log data	2.186628
Variance of log data	4.781343

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

166215.9

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.872336
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	137426.1

Gamma Distribution Test	
A-D Test Statistic	1.218772
A-D 5% Critical Value	0.800042
K-S Test Statistic	0.15105
K-S 5% Critical Value	0.158265
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	166215.9
Adjusted Gamma UCL	169707.4

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.79635
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2087393
95% Chebyshev (MVUE) UCL	1197371
97.5% Chebyshev (MVUE) UCL	1557744
99% Chebyshev (MVUE) UCL	2265627

95% Non-parametric UCLs	
CLT UCL	136657.5
Adj-CLT UCL (Adjusted for skewness)	137650.4
Mod-t UCL (Adjusted for skewness)	137581
Jackknife UCL	137426.1
Standard Bootstrap UCL	135997.9
Bootstrap-t UCL	137503.6
Hall's Bootstrap UCL	138629.8
Percentile Bootstrap UCL	136506.8
BCA Bootstrap UCL	136988.9
95% Chebyshev (Mean, Sd) UCL	180571.2
97.5% Chebyshev (Mean, Sd) UCL	211088.7
99% Chebyshev (Mean, Sd) UCL	271034.3

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	4
Number of Unique Samples	4
Minimum	770
Maximum	15000
Mean	8667.5
Median	9450
Standard Deviation	6554.914
Variance	42966892
Coefficient of Variation	0.756263
Skewness	-0.422536

Gamma Statistics	
k hat	1.219764
k star (bias corrected)	0.471608
Theta hat	7105.886
Theta star	18378.63
nu hat	9.758108
nu star	3.77286
Approx.Chi Square Value (.05)	0.633801
Adjusted Level of Significance	N/A
Adjusted Chi Square Value	N/A

Log-transformed Statistics	
Minimum of log data	6.646391
Maximum of log data	9.615805
Mean of log data	8.604402
Standard Deviation of log data	1.368311
Variance of log data	1.872276

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

Recommer 16380.55

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.933513
Shapiro-Wilk 5% Critical Value	0.748
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	16380.55

Gamma Distribution Test	
A-D Test Statistic	0.393832
A-D 5% Critical Value	0.664746
K-S Test Statistic	0.281001
K-S 5% Critical Value	0.401149
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	51595.52
Adjusted Gamma UCL	N/A

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.840725
Shapiro-Wilk 5% Critical Value	0.748
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.14E+08
95% Chebyshev (MVUE) UCL	36700.41
97.5% Chebyshev (MVUE) UCL	48176.38
99% Chebyshev (MVUE) UCL	70718.71

95% Non-parametric UCLs	
CLT UCL	14058.44
Adj-CLT UCL (Adjusted for skewness)	13318.57
Mod-t UCL (Adjusted for skewness)	16265.14
Jackknife UCL	16380.55
Standard Bootstrap UCL	N/R
Bootstrap-t UCL	N/R
Hall's Bootstrap UCL	N/R
Percentile Bootstrap UCL	N/R
BCA Bootstrap UCL	N/R
95% Chebyshev (Mean, Sd) UCL	22953.6
97.5% Chebyshev (Mean, Sd) UCL	29135.21
99% Chebyshev (Mean, Sd) UCL	41277.78

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	28
Minimum	0.7
Maximum	2500
Mean	358.6559
Median	187.5
Standard Deviation	475.6206
Variance	226215
Coefficient of Variation	1.32612
Skewness	2.959385

Gamma Statistics	
k hat	0.55339
k star (bias corrected)	0.524169
Theta hat	648.1068
Theta star	684.2365
nu hat	37.63053
nu star	35.64352
Approx.Chi Square Value (.05)	22.97968
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	22.47592

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	7.824046
Mean of log data	4.752265
Standard Deviation of log data	2.023454
Variance of log data	4.094368

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

556.3072

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.694022
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	496.6987

Gamma Distribution Test	
A-D Test Statistic	0.411812
A-D 5% Critical Value	0.806514
K-S Test Statistic	0.127522
K-S 5% Critical Value	0.158982
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	556.3072
Adjusted Gamma UCL	568.7757

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.903426
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3428.174
95% Chebyshev (MVUE) UCL	2359.617
97.5% Chebyshev (MVUE) UCL	3049.558
99% Chebyshev (MVUE) UCL	4404.814

95% Non-parametric UCLs	
CLT UCL	492.8237
Adj-CLT UCL (Adjusted for skewness)	537.0585
Mod-t UCL (Adjusted for skewness)	503.5985
Jackknife UCL	496.6987
Standard Bootstrap UCL	490.4589
Bootstrap-t UCL	574.6935
Hall's Bootstrap UCL	1095.612
Percentile Bootstrap UCL	505.4088
BCA Bootstrap UCL	536.3824
95% Chebyshev (Mean, Sd) UCL	714.2037
97.5% Chebyshev (Mean, Sd) UCL	868.0495
99% Chebyshev (Mean, Sd) UCL	1170.25

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2,2,4-TRIMETHYLPENTANE

Raw Statistics	
Number of Valid Samples	26
Number of Unique Samples	19
Minimum	4.5
Maximum	1600
Mean	400.2038
Median	342.5
Standard Deviation	454.9704
Variance	206998
Coefficient of Variation	1.136847
Skewness	1.447355

Gamma Statistics	
k hat	0.570822
k star (bias corrected)	0.530599
Theta hat	701.1009
Theta star	754.2492
nu hat	29.68275
nu star	27.59115
Approx.Chi Square Value (.05)	16.60819
Adjusted Level of Significance	0.0398
Adjusted Chi Square Value	16.0451

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	7.377759
Mean of log data	4.901488
Standard Deviation of log data	1.889427
Variance of log data	3.569933

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

664.8576

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.798298
Shapiro-Wilk 5% Critical Value	0.92
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	552.6161

Gamma Distribution Test	
A-D Test Statistic	0.786126
A-D 5% Critical Value	0.801649
K-S Test Statistic	0.163906
K-S 5% Critical Value	0.180341
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	664.8576
Adjusted Gamma UCL	688.1905

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.88355
Shapiro-Wilk 5% Critical Value	0.92
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3367.198
95% Chebyshev (MVUE) UCL	2104.824
97.5% Chebyshev (MVUE) UCL	2721.083
99% Chebyshev (MVUE) UCL	3931.604

95% Non-parametric UCLs	
CLT UCL	546.9693
Adj-CLT UCL (Adjusted for skewness)	574.0316
Mod-t UCL (Adjusted for skewness)	556.8373
Jackknife UCL	552.6161
Standard Bootstrap UCL	545.1782
Bootstrap-t UCL	600.183
Hall's Bootstrap UCL	615.3509
Percentile Bootstrap UCL	549.5769
BCA Bootstrap UCL	577.4538
95% Chebyshev (Mean, Sd) UCL	789.1355
97.5% Chebyshev (Mean, Sd) UCL	957.4265
99% Chebyshev (Mean, Sd) UCL	1288.002

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-BUTANONE

Raw Statistics	
Number of Valid Samples	32
Number of Unique Samples	25
Minimum	0.7
Maximum	800
Mean	294.4938
Median	222.5
Standard Deviation	277.0882
Variance	76777.88
Coefficient of Variation	0.940897
Skewness	0.720675

Gamma Statistics	
k hat	0.67876
k star (bias corrected)	0.635959
Theta hat	433.8705
Theta star	463.0702
nu hat	43.44062
nu star	40.70139
Approx.Chi Square Value (.05)	27.07919
Adjusted Level of Significance	0.0416
Adjusted Chi Square Value	26.48355

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.684612
Mean of log data	4.791032
Standard Deviation of log data	1.86083
Variance of log data	3.46269

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

442.6389

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.840513
Shapiro-Wilk 5% Critical Value	0.93
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	377.5449

Gamma Distribution Test	
A-D Test Statistic	0.653035
A-D 5% Critical Value	0.794198
K-S Test Statistic	0.133986
K-S 5% Critical Value	0.162383
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	442.6389
Adjusted Gamma UCL	452.5944

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.860423
Shapiro-Wilk 5% Critical Value	0.93
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2256.9
95% Chebyshev (MVUE) UCL	1744.381
97.5% Chebyshev (MVUE) UCL	2240.741
99% Chebyshev (MVUE) UCL	3215.745

95% Non-parametric UCLs	
CLT UCL	375.0632
Adj-CLT UCL (Adjusted for skewness)	381.7311
Mod-t UCL (Adjusted for skewness)	378.5849
Jackknife UCL	377.5449
Standard Bootstrap UCL	372.5259
Bootstrap-t UCL	388.7747
Hall's Bootstrap UCL	380.5928
Percentile Bootstrap UCL	377.45
BCA Bootstrap UCL	384.6906
95% Chebyshev (Mean, Sd) UCL	508.0046
97.5% Chebyshev (Mean, Sd) UCL	600.3909
99% Chebyshev (Mean, Sd) UCL	781.8658

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETALDEHYDE

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	54
Maximum	54
Mean	54
Median	54

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	32
Number of Unique Samples	27
Minimum	34
Maximum	8900
Mean	1728.625
Median	1400
Standard Deviation	1795.105
Variance	3222400
Coefficient of Variation	1.038458
Skewness	2.101012

Gamma Statistics	
k hat	0.801583
k star (bias corrected)	0.747268
Theta hat	2156.513
Theta star	2313.259
nu hat	51.30134
nu star	47.82517
Approx.Chi Square Value (.05)	32.95009
Adjusted Level of Significance	0.0416
Adjusted Chi Square Value	32.28835

Log-transformed Statistics	
Minimum of log data	3.526361
Maximum of log data	9.093807
Mean of log data	6.714875
Standard Deviation of log data	1.522929
Variance of log data	2.319312

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

2509

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.784758
Shapiro-Wilk 5% Critical Value	0.93
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2266.668

Gamma Distribution Test	
A-D Test Statistic	0.706343
A-D 5% Critical Value	0.785233
K-S Test Statistic	0.141219
K-S 5% Critical Value	0.161281
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2509
Adjusted Gamma UCL	2560.421

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892392
Shapiro-Wilk 5% Critical Value	0.93
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6137.928
95% Chebyshev (MVUE) UCL	6114.118
97.5% Chebyshev (MVUE) UCL	7700.492
99% Chebyshev (MVUE) UCL	10816.62

95% Non-parametric UCLs	
CLT UCL	2250.591
Adj-CLT UCL (Adjusted for skewness)	2376.526
Mod-t UCL (Adjusted for skewness)	2286.312
Jackknife UCL	2266.668
Standard Bootstrap UCL	2243.662
Bootstrap-t UCL	2437.852
Hall's Bootstrap UCL	2789.756
Percentile Bootstrap UCL	2271.063
BCA Bootstrap UCL	2417.656
95% Chebyshev (Mean, Sd) UCL	3111.846
97.5% Chebyshev (Mean, Sd) UCL	3710.367
99% Chebyshev (Mean, Sd) UCL	4886.045

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	27
Minimum	2.6
Maximum	950
Mean	301.3412
Median	157.5
Standard Deviation	294.1607
Variance	86530.53
Coefficient of Variation	0.976172
Skewness	0.755354

Gamma Statistics	
k hat	0.692959
k star (bias corrected)	0.651423
Theta hat	434.8616
Theta star	462.589
nu hat	47.1212
nu star	44.29678
Approx.Chi Square Value (.05)	30.02952
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	29.44775

Log-transformed Statistics	
Minimum of log data	0.955511
Maximum of log data	6.856462
Mean of log data	4.834888
Standard Deviation of log data	1.726646
Variance of log data	2.981305

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

444.5108

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.846556
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	386.7176

Gamma Distribution Test	
A-D Test Statistic	0.683495
A-D 5% Critical Value	0.79316
K-S Test Statistic	0.159244
K-S 5% Critical Value	0.157503
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	444.5108
Adjusted Gamma UCL	453.2925

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.88154
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1537.218
95% Chebyshev (MVUE) UCL	1374.446
97.5% Chebyshev (MVUE) UCL	1750.04
99% Chebyshev (MVUE) UCL	2487.823

95% Non-parametric UCLs	
CLT UCL	384.321
Adj-CLT UCL (Adjusted for skewness)	391.3039
Mod-t UCL (Adjusted for skewness)	387.8068
Jackknife UCL	386.7176
Standard Bootstrap UCL	384.6173
Bootstrap-t UCL	390.9796
Hall's Bootstrap UCL	389.6955
Percentile Bootstrap UCL	385.5794
BCA Bootstrap UCL	389.0441
95% Chebyshev (Mean, Sd) UCL	521.2396
97.5% Chebyshev (Mean, Sd) UCL	616.3898
99% Chebyshev (Mean, Sd) UCL	803.2939

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON DISULFIDE

Raw Statistics	
Number of Valid Samples	32
Number of Unique Samples	27
Minimum	0.7
Maximum	8400
Mean	955.8375
Median	365
Standard Deviation	1672.703
Variance	2797934
Coefficient of Variation	1.749986
Skewness	3.28032

Gamma Statistics	
k hat	0.436938
k star (bias corrected)	0.416808
Theta hat	2187.583
Theta star	2293.232
nu hat	27.96401
nu star	26.67572
Approx.Chi Square Value (.05)	15.89883
Adjusted Level of Significance	0.0416
Adjusted Chi Square Value	15.45273

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	9.035987
Mean of log data	5.377726
Standard Deviation of log data	2.326011
Variance of log data	5.410328

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1650.042

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.582947
Shapiro-Wilk 5% Critical Value	0.93
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1457.194

Gamma Distribution Test	
A-D Test Statistic	0.518715
A-D 5% Critical Value	0.824409
K-S Test Statistic	0.158013
K-S 5% Critical Value	0.165731
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1603.744
Adjusted Gamma UCL	1650.042

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.903623
Shapiro-Wilk 5% Critical Value	0.93
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	19500.58
95% Chebyshev (MVUE) UCL	8726.72
97.5% Chebyshev (MVUE) UCL	11421.91
99% Chebyshev (MVUE) UCL	16716.1

95% Non-parametric UCLs	
CLT UCL	1442.212
Adj-CLT UCL (Adjusted for skewness)	1625.429
Mod-t UCL (Adjusted for skewness)	1485.772
Jackknife UCL	1457.194
Standard Bootstrap UCL	1430.934
Bootstrap-t UCL	1967.817
Hall's Bootstrap UCL	3050.997
Percentile Bootstrap UCL	1456.253
BCA Bootstrap UCL	1718.284
95% Chebyshev (Mean, Sd) UCL	2244.741
97.5% Chebyshev (Mean, Sd) UCL	2802.451
99% Chebyshev (Mean, Sd) UCL	3897.964

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON TETRACHLORIDE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	29
Minimum	0.7
Maximum	950
Mean	272.8765
Median	130
Standard Deviation	292.9302
Variance	85808.12
Coefficient of Variation	1.07349
Skewness	0.963554

Gamma Statistics	
k hat	0.583731
k star (bias corrected)	0.551833
Theta hat	467.4697
Theta star	494.4911
nu hat	39.69369
nu star	37.52464
Approx.Chi Square Value (.05)	24.4968
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	23.97536

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.856462
Mean of log data	4.546204
Standard Deviation of log data	1.955392
Variance of log data	3.823558

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

417.9971

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.817464
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	357.8958

Gamma Distribution Test	
A-D Test Statistic	0.511294
A-D 5% Critical Value	0.803611
K-S Test Statistic	0.136558
K-S 5% Critical Value	0.15866
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	417.9971
Adjusted Gamma UCL	427.0882

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.898187
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2249.673
95% Chebyshev (MVUE) UCL	1657.337
97.5% Chebyshev (MVUE) UCL	2135.373
99% Chebyshev (MVUE) UCL	3074.384

95% Non-parametric UCLs	
CLT UCL	355.5092
Adj-CLT UCL (Adjusted for skewness)	364.3796
Mod-t UCL (Adjusted for skewness)	359.2794
Jackknife UCL	357.8958
Standard Bootstrap UCL	351.9969
Bootstrap-t UCL	374.797
Hall's Bootstrap UCL	358.9325
Percentile Bootstrap UCL	359.9118
BCA Bootstrap UCL	359.8118
95% Chebyshev (Mean, Sd) UCL	491.855
97.5% Chebyshev (Mean, Sd) UCL	586.6072
99% Chebyshev (Mean, Sd) UCL	772.7295

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	29
Minimum	0.7
Maximum	3000
Mean	790.5118
Median	725
Standard Deviation	810.5277
Variance	656955.1
Coefficient of Variation	1.02532
Skewness	1.451068

Gamma Statistics	
k hat	0.672835
k star (bias corrected)	0.633075
Theta hat	1174.897
Theta star	1248.686
nu hat	45.75277
nu star	43.04909
Approx.Chi Square Value (.05)	29.00258
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	28.43157

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	8.006368
Mean of log data	5.769461
Standard Deviation of log data	1.949414
Variance of log data	3.800217

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

1173.372

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.8295
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1025.757

Gamma Distribution Test	
A-D Test Statistic	0.478609
A-D 5% Critical Value	0.795085
K-S Test Statistic	0.153598
K-S 5% Critical Value	0.157716
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1173.372
Adjusted Gamma UCL	1196.938

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.838826
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	7504.395
95% Chebyshev (MVUE) UCL	5560.339
97.5% Chebyshev (MVUE) UCL	7162.148
99% Chebyshev (MVUE) UCL	10308.59

95% Non-parametric UCLs	
CLT UCL	1019.154
Adj-CLT UCL (Adjusted for skewness)	1056.116
Mod-t UCL (Adjusted for skewness)	1031.523
Jackknife UCL	1025.757
Standard Bootstrap UCL	1010.575
Bootstrap-t UCL	1084.048
Hall's Bootstrap UCL	1068.777
Percentile Bootstrap UCL	1020.435
BCA Bootstrap UCL	1057.247
95% Chebyshev (Mean, Sd) UCL	1396.418
97.5% Chebyshev (Mean, Sd) UCL	1658.594
99% Chebyshev (Mean, Sd) UCL	2173.588

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CIS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	30
Minimum	0.7
Maximum	9300
Mean	893.2441
Median	267.5
Standard Deviation	2133.913
Variance	4553583
Coefficient of Variation	2.388947
Skewness	3.705159

Gamma Statistics	
k hat	0.416559
k star (bias corrected)	0.399411
Theta hat	2144.342
Theta star	2236.402
nu hat	28.32599
nu star	27.15997
Approx.Chi Square Value (.05)	16.27364
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	15.85609

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	9.13777
Mean of log data	5.225425
Standard Deviation of log data	2.113105
Variance of log data	4.465214

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

4534.53

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.404422
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1512.585

Gamma Distribution Test	
A-D Test Statistic	1.363532
A-D 5% Critical Value	0.830103
K-S Test Statistic	0.208093
K-S 5% Critical Value	0.161314
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1490.784
Adjusted Gamma UCL	1530.042

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.919697
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	7385.589
95% Chebyshev (MVUE) UCL	4615.183
97.5% Chebyshev (MVUE) UCL	5987.091
99% Chebyshev (MVUE) UCL	8681.94

95% Non-parametric UCLs	
CLT UCL	1495.2
Adj-CLT UCL (Adjusted for skewness)	1743.676
Mod-t UCL (Adjusted for skewness)	1551.343
Jackknife UCL	1512.585
Standard Bootstrap UCL	1476.552
Bootstrap-t UCL	4044.768
Hall's Bootstrap UCL	4511.093
Percentile Bootstrap UCL	1512.574
BCA Bootstrap UCL	1732.456
95% Chebyshev (Mean, Sd) UCL	2488.44
97.5% Chebyshev (Mean, Sd) UCL	3178.682
99% Chebyshev (Mean, Sd) UCL	4534.53

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	27
Minimum	0.7
Maximum	1900
Mean	328.9059
Median	190
Standard Deviation	391.0975
Variance	152957.2
Coefficient of Variation	1.189086
Skewness	2.193687

Gamma Statistics	
k hat	0.600332
k star (bias corrected)	0.56697
Theta hat	547.8729
Theta star	580.1118
nu hat	40.82261
nu star	38.55395
Approx.Chi Square Value (.05)	25.33083
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	24.79989

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	7.549609
Mean of log data	4.766632
Standard Deviation of log data	1.925168
Variance of log data	3.706272

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

500.6002

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.762383
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	442.417

Gamma Distribution Test	
A-D Test Statistic	0.427532
A-D 5% Critical Value	0.802022
K-S Test Statistic	0.09678
K-S 5% Critical Value	0.158484
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	500.6002
Adjusted Gamma UCL	511.3175

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.899359
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2554.845
95% Chebyshev (MVUE) UCL	1936.868
97.5% Chebyshev (MVUE) UCL	2491.978
99% Chebyshev (MVUE) UCL	3582.382

95% Non-parametric UCLs	
CLT UCL	439.2306
Adj-CLT UCL (Adjusted for skewness)	466.1932
Mod-t UCL (Adjusted for skewness)	446.6226
Jackknife UCL	442.417
Standard Bootstrap UCL	440.2689
Bootstrap-t UCL	472.3632
Hall's Bootstrap UCL	545.4329
Percentile Bootstrap UCL	440.8147
BCA Bootstrap UCL	468.7118
95% Chebyshev (Mean, Sd) UCL	621.2688
97.5% Chebyshev (Mean, Sd) UCL	747.7745
99% Chebyshev (Mean, Sd) UCL	996.2704

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEXANE (N-HEXANE)

Raw Statistics	
Number of Valid Samples	20
Number of Unique Samples	15
Minimum	1.7
Maximum	800
Mean	355.88
Median	350
Standard Deviation	297.7642
Variance	88663.54
Coefficient of Variation	0.836698
Skewness	0.295067

Gamma Statistics	
k hat	0.62659
k star (bias corrected)	0.565935
Theta hat	567.9628
Theta star	628.8353
nu hat	25.06362
nu star	22.63741
Approx.Chi Square Value (.05)	12.81563
Adjusted Level of Significance	0.038
Adjusted Chi Square Value	12.23267

Log-transformed Statistics	
Minimum of log data	0.530628
Maximum of log data	6.684612
Mean of log data	4.894745
Standard Deviation of log data	2.091652
Variance of log data	4.375006

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

Recommer 1018.364

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.862442
Shapiro-Wilk 5% Critical Value	0.905
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	471.0093

Gamma Distribution Test	
A-D Test Statistic	1.250474
A-D 5% Critical Value	0.790874
K-S Test Statistic	0.248033
K-S 5% Critical Value	0.203112
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	628.6228
Adjusted Gamma UCL	658.5805

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.773356
Shapiro-Wilk 5% Critical Value	0.905
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9704.17
95% Chebyshev (MVUE) UCL	3176.304
97.5% Chebyshev (MVUE) UCL	4160.189
99% Chebyshev (MVUE) UCL	6092.841

95% Non-parametric UCLs	
CLT UCL	465.3978
Adj-CLT UCL (Adjusted for skewness)	470.0918
Mod-t UCL (Adjusted for skewness)	471.7415
Jackknife UCL	471.0093
Standard Bootstrap UCL	463.2223
Bootstrap-t UCL	481.8629
Hall's Bootstrap UCL	460.8619
Percentile Bootstrap UCL	460.67
BCA Bootstrap UCL	460.7
95% Chebyshev (Mean, Sd) UCL	646.1047
97.5% Chebyshev (Mean, Sd) UCL	771.6851
99% Chebyshev (Mean, Sd) UCL	1018.364

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	27
Minimum	3.2
Maximum	1900
Mean	338.4735
Median	222.5
Standard Deviation	385.2142
Variance	148390
Coefficient of Variation	1.138093
Skewness	2.217775

Gamma Statistics	
k hat	0.684332
k star (bias corrected)	0.643557
Theta hat	494.6046
Theta star	525.9416
nu hat	46.53455
nu star	43.76189
Approx.Chi Square Value (.05)	29.58888
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	29.0117

Log-transformed Statistics	
Minimum of log data	1.163151
Maximum of log data	7.549609
Mean of log data	4.938523
Standard Deviation of log data	1.7237
Variance of log data	2.971143

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

500.6017

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.769102
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	450.2771

Gamma Distribution Test	
A-D Test Statistic	0.462707
A-D 5% Critical Value	0.793985
K-S Test Statistic	0.0964
K-S 5% Critical Value	0.157594
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	500.6017
Adjusted Gamma UCL	510.561

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892758
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1691.344
95% Chebyshev (MVUE) UCL	1515.517
97.5% Chebyshev (MVUE) UCL	1929.335
99% Chebyshev (MVUE) UCL	2742.201

95% Non-parametric UCLs	
CLT UCL	447.1386
Adj-CLT UCL (Adjusted for skewness)	473.9872
Mod-t UCL (Adjusted for skewness)	454.4649
Jackknife UCL	450.2771
Standard Bootstrap UCL	443.2876
Bootstrap-t UCL	481.5356
Hall's Bootstrap UCL	536.0551
Percentile Bootstrap UCL	454.0618
BCA Bootstrap UCL	467.5294
95% Chebyshev (Mean, Sd) UCL	626.4385
97.5% Chebyshev (Mean, Sd) UCL	751.0411
99% Chebyshev (Mean, Sd) UCL	995.7989

Data File C:\Documents and Settings\tzoukh\My Docun Variable: O-XYLENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	29
Minimum	0.7
Maximum	950
Mean	273.8471
Median	130
Standard Deviation	292.1787
Variance	85368.4
Coefficient of Variation	1.066941
Skewness	0.966581

Gamma Statistics	
k hat	0.591099
k star (bias corrected)	0.558551
Theta hat	463.2847
Theta star	490.2812
nu hat	40.19473
nu star	37.98147
Approx.Chi Square Value (.05)	24.86663
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	24.34096

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.856462
Mean of log data	4.564956
Standard Deviation of log data	1.949198
Variance of log data	3.799373

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

418.2759

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.818471
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	358.6482

Gamma Distribution Test	
A-D Test Statistic	0.517859
A-D 5% Critical Value	0.802906
K-S Test Statistic	0.135063
K-S 5% Critical Value	0.158582
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	418.2759
Adjusted Gamma UCL	427.3091

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.893911
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2248.614
95% Chebyshev (MVUE) UCL	1666.443
97.5% Chebyshev (MVUE) UCL	2146.486
99% Chebyshev (MVUE) UCL	3089.437

95% Non-parametric UCLs	
CLT UCL	356.2678
Adj-CLT UCL (Adjusted for skewness)	365.1432
Mod-t UCL (Adjusted for skewness)	360.0326
Jackknife UCL	358.6482
Standard Bootstrap UCL	354.7027
Bootstrap-t UCL	370.0195
Hall's Bootstrap UCL	360.9463
Percentile Bootstrap UCL	358.65
BCA Bootstrap UCL	357.8647
95% Chebyshev (Mean, Sd) UCL	492.2638
97.5% Chebyshev (Mean, Sd) UCL	586.7729
99% Chebyshev (Mean, Sd) UCL	772.4177

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	30
Minimum	140
Maximum	500000
Mean	119694.4
Median	71000
Standard Deviation	115547.4
Variance	1.34E+10
Coefficient of Variation	0.965353
Skewness	1.202225

Gamma Statistics	
k hat	0.620911
k star (bias corrected)	0.585732
Theta hat	192772.4
Theta star	204350.1
nu hat	42.22192
nu star	39.82979
Approx.Chi Square Value (.05)	26.36826
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	25.82572

Log-transformed Statistics	
Minimum of log data	4.941642
Maximum of log data	13.12236
Mean of log data	10.70257
Standard Deviation of log data	2.07087
Variance of log data	4.288504

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

180800.8

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.871994
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	153230.6

Gamma Distribution Test	
A-D Test Statistic	0.861992
A-D 5% Critical Value	0.800053
K-S Test Statistic	0.14378
K-S 5% Critical Value	0.158266
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	180800.8
Adjusted Gamma UCL	184599

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.832289
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1535231
95% Chebyshev (MVUE) UCL	1005097
97.5% Chebyshev (MVUE) UCL	1301617
99% Chebyshev (MVUE) UCL	1884073

95% Non-parametric UCLs	
CLT UCL	152289.2
Adj-CLT UCL (Adjusted for skewness)	156654.8
Mod-t UCL (Adjusted for skewness)	153911.5
Jackknife UCL	153230.6
Standard Bootstrap UCL	151136.3
Bootstrap-t UCL	160079.9
Hall's Bootstrap UCL	160881.3
Percentile Bootstrap UCL	152887.9
BCA Bootstrap UCL	154764.7
95% Chebyshev (Mean, Sd) UCL	206071.3
97.5% Chebyshev (Mean, Sd) UCL	243446.6
99% Chebyshev (Mean, Sd) UCL	316863.2

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	28
Minimum	7.8
Maximum	950
Mean	295.1706
Median	157.5
Standard Deviation	294.6965
Variance	86846.06
Coefficient of Variation	0.998394
Skewness	0.843009

Gamma Statistics	
k hat	0.823359
k star (bias corrected)	0.770317
Theta hat	358.4958
Theta star	383.1806
nu hat	55.98838
nu star	52.38156
Approx.Chi Square Value (.05)	36.75413
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	36.10605

Log-transformed Statistics	
Minimum of log data	2.054124
Maximum of log data	6.856462
Mean of log data	4.969444
Standard Deviation of log data	1.397904
Variance of log data	1.954136

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

420.6738

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.825901
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	380.7025

Gamma Distribution Test	
A-D Test Statistic	0.748004
A-D 5% Critical Value	0.784167
K-S Test Statistic	0.128296
K-S 5% Critical Value	0.156448
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	420.6738
Adjusted Gamma UCL	428.2246

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.927223
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	775.9986
95% Chebyshev (MVUE) UCL	838.8377
97.5% Chebyshev (MVUE) UCL	1044.845
99% Chebyshev (MVUE) UCL	1449.507

95% Non-parametric UCLs	
CLT UCL	378.3016
Adj-CLT UCL (Adjusted for skewness)	386.109
Mod-t UCL (Adjusted for skewness)	381.9203
Jackknife UCL	380.7025
Standard Bootstrap UCL	378.2755
Bootstrap-t UCL	389.597
Hall's Bootstrap UCL	386.3925
Percentile Bootstrap UCL	374.5529
BCA Bootstrap UCL	384.2235
95% Chebyshev (Mean, Sd) UCL	515.4695
97.5% Chebyshev (Mean, Sd) UCL	610.793
99% Chebyshev (Mean, Sd) UCL	798.0376

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	32
Number of Unique Samples	29
Minimum	0.7
Maximum	5300
Mean	1009.994
Median	382.5
Standard Deviation	1298.87
Variance	1687064
Coefficient of Variation	1.286018
Skewness	1.937088

Gamma Statistics	
k hat	0.483784
k star (bias corrected)	0.459263
Theta hat	2087.695
Theta star	2199.164
nu hat	30.96218
nu star	29.39281
Approx.Chi Square Value (.05)	18.01418
Adjusted Level of Significance	0.0416
Adjusted Chi Square Value	17.53653

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	8.575462
Mean of log data	5.598
Standard Deviation of log data	2.336577
Variance of log data	5.459594

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1692.841

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.756759
Shapiro-Wilk 5% Critical Value	0.93
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1399.302

Gamma Distribution Test	
A-D Test Statistic	0.290784
A-D 5% Critical Value	0.813992
K-S Test Statistic	0.098839
K-S 5% Critical Value	0.164716
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1647.955
Adjusted Gamma UCL	1692.841

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.880482
Shapiro-Wilk 5% Critical Value	0.93
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	25289.81
95% Chebyshev (MVUE) UCL	11146.69
97.5% Chebyshev (MVUE) UCL	14594.2
99% Chebyshev (MVUE) UCL	21366.16

95% Non-parametric UCLs	
CLT UCL	1387.669
Adj-CLT UCL (Adjusted for skewness)	1471.681
Mod-t UCL (Adjusted for skewness)	1412.406
Jackknife UCL	1399.302
Standard Bootstrap UCL	1389.748
Bootstrap-t UCL	1562.773
Hall's Bootstrap UCL	1576.534
Percentile Bootstrap UCL	1400.669
BCA Bootstrap UCL	1479.272
95% Chebyshev (Mean, Sd) UCL	2010.841
97.5% Chebyshev (Mean, Sd) UCL	2443.908
99% Chebyshev (Mean, Sd) UCL	3294.585

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	28
Minimum	61
Maximum	88000
Mean	22848.51
Median	14000
Standard Deviation	24715.32
Variance	6.11E+08
Coefficient of Variation	1.081704
Skewness	1.419328

Gamma Statistics	
k hat	0.636841
k star (bias corrected)	0.600257
Theta hat	35877.88
Theta star	38064.53
nu hat	43.30521
nu star	40.8175
Approx.Chi Square Value (.05)	27.17403
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	26.62264

Log-transformed Statistics	
Minimum of log data	4.110874
Maximum of log data	11.38509
Mean of log data	9.074831
Standard Deviation of log data	1.908109
Variance of log data	3.640879

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

34320.24

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.817276
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	30021.82

Gamma Distribution Test	
A-D Test Statistic	0.298182
A-D 5% Critical Value	0.798529
K-S Test Statistic	0.097444
K-S 5% Critical Value	0.158097
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	34320.24
Adjusted Gamma UCL	35031.06

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.877918
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	180226.9
95% Chebyshev (MVUE) UCL	138802.1
97.5% Chebyshev (MVUE) UCL	178436.2
99% Chebyshev (MVUE) UCL	256289.7

95% Non-parametric UCLs	
CLT UCL	29820.46
Adj-CLT UCL (Adjusted for skewness)	30922.89
Mod-t UCL (Adjusted for skewness)	30193.78
Jackknife UCL	30021.82
Standard Bootstrap UCL	29795.32
Bootstrap-t UCL	31949.31
Hall's Bootstrap UCL	30684.17
Percentile Bootstrap UCL	29748.19
BCA Bootstrap UCL	30901.72
95% Chebyshev (Mean, Sd) UCL	41324.33
97.5% Chebyshev (Mean, Sd) UCL	49318.83
99% Chebyshev (Mean, Sd) UCL	65022.47

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	34
Number of Unique Samples	33
Minimum	98
Maximum	180000
Mean	56801.85
Median	34500
Standard Deviation	56733.26
Variance	3.22E+09
Coefficient of Variation	0.998792
Skewness	0.830019

Gamma Statistics	
k hat	0.602893
k star (bias corrected)	0.569304
Theta hat	94215.51
Theta star	99774.17
nu hat	40.99671
nu star	38.71269
Approx.Chi Square Value (.05)	25.4597
Adjusted Level of Significance	0.0422
Adjusted Chi Square Value	24.9273

Log-transformed Statistics	
Minimum of log data	4.584967
Maximum of log data	12.10071
Mean of log data	9.923198
Standard Deviation of log data	2.022994
Variance of log data	4.092503

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

86369.94

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.858678
Shapiro-Wilk 5% Critical Value	0.933
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	73267.96

Gamma Distribution Test	
A-D Test Statistic	0.469421
A-D 5% Critical Value	0.801777
K-S Test Statistic	0.124657
K-S 5% Critical Value	0.158457
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	86369.94
Adjusted Gamma UCL	88214.61

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.86691
Shapiro-Wilk 5% Critical Value	0.933
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	602736.9
95% Chebyshev (MVUE) UCL	415061.9
97.5% Chebyshev (MVUE) UCL	536413.2
99% Chebyshev (MVUE) UCL	774784.4

95% Non-parametric UCLs	
CLT UCL	72805.74
Adj-CLT UCL (Adjusted for skewness)	74285.63
Mod-t UCL (Adjusted for skewness)	73498.8
Jackknife UCL	73267.96
Standard Bootstrap UCL	72334.21
Bootstrap-t UCL	75394.67
Hall's Bootstrap UCL	74557.52
Percentile Bootstrap UCL	72731.12
BCA Bootstrap UCL	74213.53
95% Chebyshev (Mean, Sd) UCL	99212.52
97.5% Chebyshev (Mean, Sd) UCL	117563.6
99% Chebyshev (Mean, Sd) UCL	153610.9

A-1.4 Soil Gas – Site Parcel 5 to 6 feet bgs

Summary of UCLs for Site Parcel Soil Gas 5-6 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are lognormal (0.05)	101,360	553,427	Use 97.5% Chebyshev (MVUE) UCL	280,000	19,709	107,610	95% UCL-T
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	*Data are normal (0.05)*	*143,664*	*1,100,465*	*Use Student's-t UCL*	*310,000*	*111,620*	*855,013*	95% UCL-N
1,1-DICHLOROETHANE	Assuming gamma distribution (0.05)	4,855	19,662	Use Adjusted Gamma UCL	26,000	2,524	10,223	95% UCL-G assumed
1,1-DICHLOROETHENE	Data follow gamma distribution (0.05)	157,876	626,769	Use Approximate Gamma UCL	250,000	100,041	397,162	95% UCL-G
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Too Few Observations To Calculate UCLs	No UCL		Too Few Observations To Calculate UCLs	13,000	6,557	40,979	
1,2-DICHLOROETHANE	Data follow gamma distribution (0.05)	616	2,496	Use Approximate Gamma UCL	2,500	364	1,473	95% UCL-G
ACETALDEHYDE	Too Few Observations To Calculate UCLs	No UCL		Too Few Observations To Calculate UCLs	54	54	97	
ACETONE	Data follow gamma distribution (0.05)	2,942	7,001	Use Approximate Gamma UCL	8,900	1,923	4,576	95% UCL-G
BENZENE	Data follow gamma distribution (0.05)	427	1,362	Use Approximate Gamma UCL	750	275	877	95% UCL-G
CARBON DISULFIDE	Data follow gamma distribution (0.05)	2,253	7,008	Use Approximate Gamma UCL	8,400	1,245	3,872	95% UCL-G
CARBON TETRACHLORIDE	Data follow gamma distribution (0.05)	377	2,374	Use Approximate Gamma UCL	750	231	1,454	95% UCL-G
CHLOROFORM	Data follow gamma distribution (0.05)	1,533	7,482	Use Approximate Gamma UCL	3,000	1,016	4,960	95% UCL-G
CIS-1,2-DICHLOROETHENE	Data are lognormal (0.05)	3,618	14,326	Use 95% Chebyshev (MVUE) UCL	9,300	1,190	4,712	95% UCL-T
DICHLORODIFLUOROMETHANE	Data follow gamma distribution (0.05)	380	1,882	Use Approximate Gamma UCL	750	238	1,180	95% UCL-G
TETRACHLOROETHENE	Data follow gamma distribution (0.05)	199,923	1,355,479	Use Approximate Gamma UCL	500,000	135,782	920,601	95% UCL-G
TOLUENE	Data follow gamma distribution (0.05)	369	1,392	Use Approximate Gamma UCL	750	248	936	95% UCL-G
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	2,036	8,064	Use Approximate Gamma UCL	5,300	1,201	4,756	95% UCL-G
TRICHLOROETHENE	Data follow gamma distribution (0.05)	35,397	190,082	Use Approximate Gamma UCL	84,000	23,361	125,451	95% UCL-G
TRICHLOROFLUOROMETHANE (FREON 11)	Data follow gamma distribution (0.05)	76,547	430,192	Use Approximate Gamma UCL	140,000	48,848	274,527	95% UCL-G

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	4.5
Maximum	280000
Mean	19708.84
Median	925
Standard Deviation	61325.76
Variance	3.76E+09
Coefficient of Variation	3.111586
Skewness	4.054691

Gamma Statistics	
k hat	0.258579
k star (bias corrected)	0.253621
Theta hat	76219.8
Theta star	77709.73
nu hat	11.37748
nu star	11.15934
Approx.Chi Square Value (.05)	4.677738
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	4.367514

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	12.54254
Mean of log data	7.156857
Standard Deviation of log data	2.378673
Variance of log data	5.658083

RECOMMENDATION
Data are lognormal (0.05)

Use 97.5% Chebyshev (MVUE) UCL

101360.3

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.360897
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	42207.03

Gamma Distribution Test	
A-D Test Statistic	2.305572
A-D 5% Critical Value	0.865892
K-S Test Statistic	0.31896
K-S 5% Critical Value	0.202963
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	47017.93
Adjusted Gamma UCL	50357.61

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.952877
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	256668.1
95% Chebyshev (MVUE) UCL	56482.08
97.5% Chebyshev (MVUE) UCL	74487.61
99% Chebyshev (MVUE) UCL	109856

95% Non-parametric UCLs	
CLT UCL	41214.8
Adj-CLT UCL (Adjusted for skewness)	53291.78
Mod-t UCL (Adjusted for skewness)	44090.79
Jackknife UCL	42207.03
Standard Bootstrap UCL	41134.49
Bootstrap-t UCL	179292
Hall's Bootstrap UCL	169812.8
Percentile Bootstrap UCL	43977.25
BCA Bootstrap UCL	58523.39
95% Chebyshev (Mean, Sd) UCL	76700.12
97.5% Chebyshev (Mean, Sd) UCL	101360.3
99% Chebyshev (Mean, Sd) UCL	149800.4

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	17
Minimum	650
Maximum	310000
Mean	111620.5
Median	110000
Standard Deviation	87344.05
Variance	7.63E+09
Coefficient of Variation	0.782509
Skewness	0.541565

Gamma Statistics	
k hat	1.043039
k star (bias corrected)	0.931109
Theta hat	107014.7
Theta star	119879
nu hat	45.8937
nu star	40.9688
Approx.Chi Square Value (.05)	27.29766
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	26.46452

Log-transformed Statistics	
Minimum of log data	6.476972
Maximum of log data	12.64433
Mean of log data	11.07216
Standard Deviation of log data	1.422728
Variance of log data	2.024154

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

143663.8

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.92798
Shapiro-Wilk 5% Critical Value	0.911
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	143663.8

Gamma Distribution Test	
A-D Test Statistic	0.55082
A-D 5% Critical Value	0.769757
K-S Test Statistic	0.169396
K-S 5% Critical Value	0.19056
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	167521.9
Adjusted Gamma UCL	172795.7

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.837992
Shapiro-Wilk 5% Critical Value	0.911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	473162.8
95% Chebyshev (MVUE) UCL	421750.1
97.5% Chebyshev (MVUE) UCL	533723.2
99% Chebyshev (MVUE) UCL	753672.6

95% Non-parametric UCLs	
CLT UCL	142250.6
Adj-CLT UCL (Adjusted for skewness)	144548
Mod-t UCL (Adjusted for skewness)	144022.2
Jackknife UCL	143663.8
Standard Bootstrap UCL	141021.4
Bootstrap-t UCL	146095.9
Hall's Bootstrap UCL	145661.9
Percentile Bootstrap UCL	140529.5
BCA Bootstrap UCL	143909.1
95% Chebyshev (Mean, Sd) UCL	192791.1
97.5% Chebyshev (Mean, Sd) UCL	227913.6
99% Chebyshev (Mean, Sd) UCL	296905.2

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	21
Minimum	9
Maximum	26000
Mean	2524.273
Median	772.5
Standard Deviation	5514.82
Variance	30413243
Coefficient of Variation	2.184717
Skewness	4.01817

Gamma Statistics	
k hat	0.498025
k star (bias corrected)	0.460415
Theta hat	5068.57
Theta star	5482.601
nu hat	21.91308
nu star	20.25827
Approx.Chi Square Value (.05)	11.04025
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	10.53319

Log-transformed Statistics	
Minimum of log data	2.197225
Maximum of log data	10.16585
Mean of log data	6.557523
Standard Deviation of log data	1.756263
Variance of log data	3.084458

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

4854.884

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.449613
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	4547.459

Gamma Distribution Test	
A-D Test Statistic	0.79937
A-D 5% Critical Value	0.804678
K-S Test Statistic	0.19956
K-S 5% Critical Value	0.195922
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	4631.906
Adjusted Gamma UCL	4854.884

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.972202
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	13604.88
95% Chebyshev (MVUE) UCL	8568.208
97.5% Chebyshev (MVUE) UCL	11051.51
99% Chebyshev (MVUE) UCL	15929.47

95% Non-parametric UCLs	
CLT UCL	4458.232
Adj-CLT UCL (Adjusted for skewness)	5534.492
Mod-t UCL (Adjusted for skewness)	4715.334
Jackknife UCL	4547.459
Standard Bootstrap UCL	4435.954
Bootstrap-t UCL	8939.862
Hall's Bootstrap UCL	10764
Percentile Bootstrap UCL	4605.5
BCA Bootstrap UCL	6043.273
95% Chebyshev (Mean, Sd) UCL	7649.308
97.5% Chebyshev (Mean, Sd) UCL	9866.914
99% Chebyshev (Mean, Sd) UCL	14222.97

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	21
Minimum	1700
Maximum	250000
Mean	100040.9
Median	72000
Standard Deviation	87979.54
Variance	7.74E+09
Coefficient of Variation	0.879436
Skewness	0.491996

Gamma Statistics	
k hat	0.84084
k star (bias corrected)	0.756483
Theta hat	118977.4
Theta star	132244.8
nu hat	36.99695
nu star	33.28525
Approx.Chi Square Value (.05)	21.09174
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	20.36722

Log-transformed Statistics	
Minimum of log data	7.438384
Maximum of log data	12.42922
Mean of log data	10.81206
Standard Deviation of log data	1.533967
Variance of log data	2.353054

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

157876.3

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.873028
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	132317.4

Gamma Distribution Test	
A-D Test Statistic	0.528023
A-D 5% Critical Value	0.778548
K-S Test Statistic	0.158088
K-S 5% Critical Value	0.191979
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	157876.3
Adjusted Gamma UCL	163492.4

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.877679
Shapiro-Wilk 5% Critical Value	0.911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	492387.4
95% Chebyshev (MVUE) UCL	397143.6
97.5% Chebyshev (MVUE) UCL	506154.1
99% Chebyshev (MVUE) UCL	720284.1

95% Non-parametric UCLs	
CLT UCL	130893.9
Adj-CLT UCL (Adjusted for skewness)	132996.3
Mod-t UCL (Adjusted for skewness)	132645.3
Jackknife UCL	132317.4
Standard Bootstrap UCL	130819.3
Bootstrap-t UCL	135315.2
Hall's Bootstrap UCL	131661.9
Percentile Bootstrap UCL	131663.6
BCA Bootstrap UCL	134027.3
95% Chebyshev (Mean, Sd) UCL	181802.1
97.5% Chebyshev (Mean, Sd) UCL	217180.2
99% Chebyshev (Mean, Sd) UCL	286673.7

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	3
Number of Unique Samples	3
Minimum	770
Maximum	13000
Mean	6556.667
Median	5900

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	19
Minimum	4.5
Maximum	2500
Mean	363.7045
Median	187.5
Standard Deviation	534.2304
Variance	285402.2
Coefficient of Variation	1.468858
Skewness	3.294802

Gamma Statistics	
k hat	0.644068
k star (bias corrected)	0.586544
Theta hat	564.6987
Theta star	620.0808
nu hat	28.339
nu star	25.80793
Approx.Chi Square Value (.05)	15.22973
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	14.62353

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	7.824046
Mean of log data	4.946871
Standard Deviation of log data	1.678577
Variance of log data	2.817622

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

616.3248

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.613899
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	559.6942

Gamma Distribution Test	
A-D Test Statistic	0.32898
A-D 5% Critical Value	0.791987
K-S Test Statistic	0.10645
K-S 5% Critical Value	0.194032
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	616.3248
Adjusted Gamma UCL	641.8737

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.931259
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2131.679
95% Chebyshev (MVUE) UCL	1474.78
97.5% Chebyshev (MVUE) UCL	1894.846
99% Chebyshev (MVUE) UCL	2719.987

95% Non-parametric UCLs	
CLT UCL	551.0506
Adj-CLT UCL (Adjusted for skewness)	636.5407
Mod-t UCL (Adjusted for skewness)	573.0289
Jackknife UCL	559.6942
Standard Bootstrap UCL	544.6512
Bootstrap-t UCL	754.7291
Hall's Bootstrap UCL	1299.5
Percentile Bootstrap UCL	569.25
BCA Bootstrap UCL	637.1591
95% Chebyshev (Mean, Sd) UCL	860.1758
97.5% Chebyshev (Mean, Sd) UCL	1074.999
99% Chebyshev (Mean, Sd) UCL	1496.978

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETALDEHYDE

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	54
Maximum	54
Mean	54
Median	54

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	44
Maximum	8900
Mean	1922.682
Median	1425
Standard Deviation	1965.005
Variance	3861245
Coefficient of Variation	1.022013
Skewness	2.190528

Gamma Statistics	
k hat	0.957447
k star (bias corrected)	0.857189
Theta hat	2008.135
Theta star	2243.009
nu hat	42.12765
nu star	37.7163
Approx.Chi Square Value (.05)	24.6519
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	23.86339

Log-transformed Statistics	
Minimum of log data	3.78419
Maximum of log data	9.093807
Mean of log data	6.955485
Standard Deviation of log data	1.338012
Variance of log data	1.790276

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

2941.617

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.775596
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2643.571

Gamma Distribution Test	
A-D Test Statistic	0.380122
A-D 5% Critical Value	0.772872
K-S Test Statistic	0.130133
K-S 5% Critical Value	0.191079
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2941.617
Adjusted Gamma UCL	3038.816

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.924148
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6229.665
95% Chebyshev (MVUE) UCL	5929.306
97.5% Chebyshev (MVUE) UCL	7458.977
99% Chebyshev (MVUE) UCL	10463.72

95% Non-parametric UCLs	
CLT UCL	2611.778
Adj-CLT UCL (Adjusted for skewness)	2820.837
Mod-t UCL (Adjusted for skewness)	2676.18
Jackknife UCL	2643.571
Standard Bootstrap UCL	2599.809
Bootstrap-t UCL	2978.986
Hall's Bootstrap UCL	5558.23
Percentile Bootstrap UCL	2616.545
BCA Bootstrap UCL	2870.864
95% Chebyshev (Mean, Sd) UCL	3748.801
97.5% Chebyshev (Mean, Sd) UCL	4538.964
99% Chebyshev (Mean, Sd) UCL	6091.087

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	19
Minimum	4.5
Maximum	750
Mean	274.8864
Median	157.5
Standard Deviation	253.1233
Variance	64071.43
Coefficient of Variation	0.920829
Skewness	0.777573

Gamma Statistics	
k hat	0.897774
k star (bias corrected)	0.805654
Theta hat	306.1865
Theta star	341.1967
nu hat	39.50207
nu star	35.44876
Approx.Chi Square Value (.05)	22.82315
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	22.06689

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	6.620073
Mean of log data	4.96498
Standard Deviation of log data	1.418646
Variance of log data	2.012556

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

426.9516

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.8595
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	367.7481

Gamma Distribution Test	
A-D Test Statistic	0.425789
A-D 5% Critical Value	0.775776
K-S Test Statistic	0.176412
K-S 5% Critical Value	0.191539
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	426.9516
Adjusted Gamma UCL	441.5837

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.911817
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1042.561
95% Chebyshev (MVUE) UCL	932.415
97.5% Chebyshev (MVUE) UCL	1179.643
99% Chebyshev (MVUE) UCL	1665.274

95% Non-parametric UCLs	
CLT UCL	363.6527
Adj-CLT UCL (Adjusted for skewness)	373.2121
Mod-t UCL (Adjusted for skewness)	369.2392
Jackknife UCL	367.7481
Standard Bootstrap UCL	360.1573
Bootstrap-t UCL	377.2902
Hall's Bootstrap UCL	372.3547
Percentile Bootstrap UCL	361.7273
BCA Bootstrap UCL	369.2045
95% Chebyshev (Mean, Sd) UCL	510.119
97.5% Chebyshev (Mean, Sd) UCL	611.9044
99% Chebyshev (Mean, Sd) UCL	811.8421

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON DISULFIDE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	4.5
Maximum	8400
Mean	1245.045
Median	407.5
Standard Deviation	1949.83
Variance	3801838
Coefficient of Variation	1.566072
Skewness	2.690256

Gamma Statistics	
k hat	0.519435
k star (bias corrected)	0.478906
Theta hat	2396.925
Theta star	2599.772
nu hat	22.85512
nu star	21.07185
Approx.Chi Square Value (.05)	11.64349
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	11.12114

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	9.035987
Mean of log data	5.911274
Standard Deviation of log data	1.961736
Variance of log data	3.848407

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

2253.225

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.643571
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1960.367

Gamma Distribution Test	
A-D Test Statistic	0.428129
A-D 5% Critical Value	0.802596
K-S Test Statistic	0.17089
K-S 5% Critical Value	0.195622
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2253.225
Adjusted Gamma UCL	2359.057

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.929057
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	14276.41
95% Chebyshev (MVUE) UCL	6745.239
97.5% Chebyshev (MVUE) UCL	8778.026
99% Chebyshev (MVUE) UCL	12771.04

95% Non-parametric UCLs	
CLT UCL	1928.82
Adj-CLT UCL (Adjusted for skewness)	2183.59
Mod-t UCL (Adjusted for skewness)	2000.106
Jackknife UCL	1960.367
Standard Bootstrap UCL	1901.808
Bootstrap-t UCL	2623.159
Hall's Bootstrap UCL	4152.334
Percentile Bootstrap UCL	1977.932
BCA Bootstrap UCL	2214.477
95% Chebyshev (Mean, Sd) UCL	3057.063
97.5% Chebyshev (Mean, Sd) UCL	3841.124
99% Chebyshev (Mean, Sd) UCL	5381.26

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON TETRACHLORIDE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	4.5
Maximum	750
Mean	231.1364
Median	127.5
Standard Deviation	244.2685
Variance	59667.1
Coefficient of Variation	1.056816
Skewness	1.146372

Gamma Statistics	
k hat	0.736681
k star (bias corrected)	0.666527
Theta hat	313.7537
Theta star	346.777
nu hat	32.41396
nu star	29.32721
Approx.Chi Square Value (.05)	17.96276
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	17.29903

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	6.620073
Mean of log data	4.628414
Standard Deviation of log data	1.576203
Variance of log data	2.484415

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

377.3687

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.820812
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	320.7496

Gamma Distribution Test	
A-D Test Statistic	0.320013
A-D 5% Critical Value	0.784104
K-S Test Statistic	0.141104
K-S 5% Critical Value	0.19285
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	377.3687
Adjusted Gamma UCL	391.8475

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.922992
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1144.763
95% Chebyshev (MVUE) UCL	885.377
97.5% Chebyshev (MVUE) UCL	1131.209
99% Chebyshev (MVUE) UCL	1614.098

95% Non-parametric UCLs	
CLT UCL	316.7974
Adj-CLT UCL (Adjusted for skewness)	330.3978
Mod-t UCL (Adjusted for skewness)	322.871
Jackknife UCL	320.7496
Standard Bootstrap UCL	315.244
Bootstrap-t UCL	341.8902
Hall's Bootstrap UCL	323.8389
Percentile Bootstrap UCL	326.25
BCA Bootstrap UCL	327.4091
95% Chebyshev (Mean, Sd) UCL	458.1401
97.5% Chebyshev (Mean, Sd) UCL	556.3647
99% Chebyshev (Mean, Sd) UCL	749.3081

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	19
Maximum	3000
Mean	1016.364
Median	755
Standard Deviation	903.3773
Variance	816090.5
Coefficient of Variation	0.888833
Skewness	1.030707

Gamma Statistics	
k hat	1.019186
k star (bias corrected)	0.910509
Theta hat	997.2306
Theta star	1116.258
nu hat	44.84419
nu star	40.06241
Approx.Chi Square Value (.05)	26.55782
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	25.73694

Log-transformed Statistics	
Minimum of log data	2.944439
Maximum of log data	8.006368
Mean of log data	6.358891
Standard Deviation of log data	1.318148
Variance of log data	1.737514

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

1533.182

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.882434
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1347.78

Gamma Distribution Test	
A-D Test Statistic	0.230048
A-D 5% Critical Value	0.770335
K-S Test Statistic	0.131516
K-S 5% Critical Value	0.190665
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1533.182
Adjusted Gamma UCL	1582.083

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.919351
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3269.224
95% Chebyshev (MVUE) UCL	3155.758
97.5% Chebyshev (MVUE) UCL	3964.058
99% Chebyshev (MVUE) UCL	5551.807

95% Non-parametric UCLs	
CLT UCL	1333.164
Adj-CLT UCL (Adjusted for skewness)	1378.387
Mod-t UCL (Adjusted for skewness)	1354.834
Jackknife UCL	1347.78
Standard Bootstrap UCL	1318.902
Bootstrap-t UCL	1402.463
Hall's Bootstrap UCL	1397.631
Percentile Bootstrap UCL	1333.182
BCA Bootstrap UCL	1402
95% Chebyshev (Mean, Sd) UCL	1855.891
97.5% Chebyshev (Mean, Sd) UCL	2219.155
99% Chebyshev (Mean, Sd) UCL	2932.716

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CIS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	4.5
Maximum	9300
Mean	1189.886
Median	275
Standard Deviation	2612.361
Variance	6824432
Coefficient of Variation	2.195471
Skewness	2.921028

Gamma Statistics	
k hat	0.458718
k star (bias corrected)	0.426468
Theta hat	2593.94
Theta star	2790.093
nu hat	20.18358
nu star	18.76461
Approx.Chi Square Value (.05)	9.944269
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	9.466071

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	9.13777
Mean of log data	5.67812
Standard Deviation of log data	1.70426
Variance of log data	2.904502

RECOMMENDATION
Data are lognormal (0.05)

Use 95% Chebyshev (MVUE) UCL

3617.607

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.453513
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2148.267

Gamma Distribution Test	
A-D Test Statistic	1.616412
A-D 5% Critical Value	0.813198
K-S Test Statistic	0.27509
K-S 5% Critical Value	0.196958
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2245.289
Adjusted Gamma UCL	2358.714

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.952693
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4793.369
95% Chebyshev (MVUE) UCL	3217.704
97.5% Chebyshev (MVUE) UCL	4139.66
99% Chebyshev (MVUE) UCL	5950.663

95% Non-parametric UCLs	
CLT UCL	2106
Adj-CLT UCL (Adjusted for skewness)	2476.618
Mod-t UCL (Adjusted for skewness)	2206.075
Jackknife UCL	2148.267
Standard Bootstrap UCL	2090.076
Bootstrap-t UCL	6060.398
Hall's Bootstrap UCL	6345.057
Percentile Bootstrap UCL	2114.045
BCA Bootstrap UCL	2691.227
95% Chebyshev (Mean, Sd) UCL	3617.607
97.5% Chebyshev (Mean, Sd) UCL	4668.084
99% Chebyshev (Mean, Sd) UCL	6731.542

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	4.5
Maximum	750
Mean	238.4091
Median	157.5
Standard Deviation	240.3119
Variance	57749.8
Coefficient of Variation	1.007981
Skewness	1.135278

Gamma Statistics	
k hat	0.805572
k star (bias corrected)	0.726025
Theta hat	295.9499
Theta star	328.376
nu hat	35.44519
nu star	31.94509
Approx.Chi Square Value (.05)	20.02641
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	19.32205

Log-transformed Statistics	
Minimum of log data	1.504077
Maximum of log data	6.620073
Mean of log data	4.737927
Standard Deviation of log data	1.503449
Variance of log data	2.260359

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

380.2978

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.834280039
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	326.5707635

Gamma Distribution Test	
A-D Test Statistic	0.288571839
A-D 5% Critical Value	0.780264732
K-S Test Statistic	0.13198655
K-S 5% Critical Value	0.192250981
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	380.2978076
Adjusted Gamma UCL	394.1609937

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.922469247
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1041.565955
95% Chebyshev (MVUE) UCL	864.7233907
97.5% Chebyshev (MVUE) UCL	1100.026586
99% Chebyshev (MVUE) UCL	1562.234149

95% Non-parametric UCLs	
CLT UCL	322.6826163
Adj-CLT UCL (Adjusted for skewness)	335.9332042
Mod-t UCL (Adjusted for skewness)	328.6375875
Jackknife UCL	326.5707635
Standard Bootstrap UCL	320.5733914
Bootstrap-t UCL	349.1448026
Hall's Bootstrap UCL	332.7853642
Percentile Bootstrap UCL	323.6590909
BCA Bootstrap UCL	333.3181818
95% Chebyshev (Mean, Sd) UCL	461.7358202
97.5% Chebyshev (Mean, Sd) UCL	558.3694744
99% Chebyshev (Mean, Sd) UCL	748.187576

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	21
Minimum	2400
Maximum	500000
Mean	135781.8
Median	110000
Standard Deviation	116468
Variance	1.36E+10
Coefficient of Variation	0.857758
Skewness	1.463063

Gamma Statistics	
k hat	1.140655
k star (bias corrected)	1.015414
Theta hat	119038.5
Theta star	133720.6
nu hat	50.18882
nu star	44.67822
Approx.Chi Square Value (.05)	30.3441
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	29.46214

Log-transformed Statistics	
Minimum of log data	7.783224
Maximum of log data	13.12236
Mean of log data	11.32023
Standard Deviation of log data	1.262709
Variance of log data	1.594435

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

199923.2

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.871648
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	178509.7

Gamma Distribution Test	
A-D Test Statistic	0.318851
A-D 5% Critical Value	0.767391
K-S Test Statistic	0.121295
K-S 5% Critical Value	0.190128
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	199923.2
Adjusted Gamma UCL	205908

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.890715
Shapiro-Wilk 5% Critical Value	0.911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	409592.4
95% Chebyshev (MVUE) UCL	410194.3
97.5% Chebyshev (MVUE) UCL	513065.2
99% Chebyshev (MVUE) UCL	715135.3

95% Non-parametric UCLs	
CLT UCL	176625.3
Adj-CLT UCL (Adjusted for skewness)	184901.4
Mod-t UCL (Adjusted for skewness)	179800.6
Jackknife UCL	178509.7
Standard Bootstrap UCL	175890.8
Bootstrap-t UCL	191260.5
Hall's Bootstrap UCL	198149.7
Percentile Bootstrap UCL	177136.4
BCA Bootstrap UCL	183081.8
95% Chebyshev (Mean, Sd) UCL	244017.9
97.5% Chebyshev (Mean, Sd) UCL	290851.7
99% Chebyshev (Mean, Sd) UCL	382847.7

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	19
Minimum	20
Maximum	750
Mean	248.1818
Median	157.5
Standard Deviation	236.4253
Variance	55896.92
Coefficient of Variation	0.952629
Skewness	1.107473

Gamma Statistics	
k hat	1.084648
k star (bias corrected)	0.967044
Theta hat	228.8133
Theta star	256.6395
nu hat	47.72451
nu star	42.54995
Approx.Chi Square Value (.05)	28.59266
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	27.73845

Log-transformed Statistics	
Minimum of log data	2.995732
Maximum of log data	6.620073
Mean of log data	4.986925
Standard Deviation of log data	1.138051
Variance of log data	1.295161

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

369.33

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.830416
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	334.9176

Gamma Distribution Test	
A-D Test Statistic	0.516706
A-D 5% Critical Value	0.768748
K-S Test Statistic	0.133401
K-S 5% Critical Value	0.190376
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	369.33
Adjusted Gamma UCL	380.7035

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.935414
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	552.8504
95% Chebyshev (MVUE) UCL	593.7689
97.5% Chebyshev (MVUE) UCL	734.9058
99% Chebyshev (MVUE) UCL	1012.142

95% Non-parametric UCLs	
CLT UCL	331.0924
Adj-CLT UCL (Adjusted for skewness)	343.8094
Mod-t UCL (Adjusted for skewness)	336.9012
Jackknife UCL	334.9176
Standard Bootstrap UCL	328.2979
Bootstrap-t UCL	354.29
Hall's Bootstrap UCL	340.0714
Percentile Bootstrap UCL	329.9091
BCA Bootstrap UCL	334.3636
95% Chebyshev (Mean, Sd) UCL	467.8967
97.5% Chebyshev (Mean, Sd) UCL	562.9674
99% Chebyshev (Mean, Sd) UCL	749.7156

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	20
Minimum	6
Maximum	5300
Mean	1201.091
Median	750
Standard Deviation	1433.591
Variance	2055183
Coefficient of Variation	1.193574
Skewness	1.77829

Gamma Statistics	
k hat	0.643023
k star (bias corrected)	0.585641
Theta hat	1867.881
Theta star	2050.899
nu hat	28.29302
nu star	25.76822
Approx.Chi Square Value (.05)	15.19919
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	14.59366

Log-transformed Statistics	
Minimum of log data	1.791759
Maximum of log data	8.575462
Mean of log data	6.139749
Standard Deviation of log data	1.828874
Variance of log data	3.344779

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Recommer 2036.291

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.77636
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1727.023

Gamma Distribution Test	
A-D Test Statistic	0.226338
A-D 5% Critical Value	0.792076
K-S Test Statistic	0.088681
K-S 5% Critical Value	0.194045
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2036.291
Adjusted Gamma UCL	2120.782

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.895419
Shapiro-Wilk 5% Critical Value	0.911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	11350.84
95% Chebyshev (MVUE) UCL	6501.164
97.5% Chebyshev (MVUE) UCL	8413.603
99% Chebyshev (MVUE) UCL	12170.22

95% Non-parametric UCLs	
CLT UCL	1703.828
Adj-CLT UCL (Adjusted for skewness)	1827.647
Mod-t UCL (Adjusted for skewness)	1746.336
Jackknife UCL	1727.023
Standard Bootstrap UCL	1689.773
Bootstrap-t UCL	2058.076
Hall's Bootstrap UCL	2149.961
Percentile Bootstrap UCL	1701.136
BCA Bootstrap UCL	1819.318
95% Chebyshev (Mean, Sd) UCL	2533.356
97.5% Chebyshev (Mean, Sd) UCL	3109.829
99% Chebyshev (Mean, Sd) UCL	4242.197

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	19
Minimum	570
Maximum	84000
Mean	23361.36
Median	17500
Standard Deviation	22693.99
Variance	5.15E+08
Coefficient of Variation	0.971432
Skewness	1.608861

Gamma Statistics	
k hat	0.999166
k star (bias corrected)	0.893219
Theta hat	23380.86
Theta star	26154.12
nu hat	43.96331
nu star	39.30165
Approx.Chi Square Value (.05)	25.93834
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	25.12785

Log-transformed Statistics	
Minimum of log data	6.345636
Maximum of log data	11.33857
Mean of log data	9.481085
Standard Deviation of log data	1.314466
Variance of log data	1.72782

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

35397.03

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.821914
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	31686.96

Gamma Distribution Test	
A-D Test Statistic	0.226372
A-D 5% Critical Value	0.770841
K-S Test Statistic	0.082023
K-S 5% Critical Value	0.190756
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	35397.03
Adjusted Gamma UCL	36538.75

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.920887
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	73544.72
95% Chebyshev (MVUE) UCL	71174.07
97.5% Chebyshev (MVUE) UCL	89379.57
99% Chebyshev (MVUE) UCL	125140.7

95% Non-parametric UCLs	
CLT UCL	31319.78
Adj-CLT UCL (Adjusted for skewness)	33093.1
Mod-t UCL (Adjusted for skewness)	31963.56
Jackknife UCL	31686.96
Standard Bootstrap UCL	30933.6
Bootstrap-t UCL	36282.95
Hall's Bootstrap UCL	40806.65
Percentile Bootstrap UCL	31437.73
BCA Bootstrap UCL	32818.18
95% Chebyshev (Mean, Sd) UCL	44451.35
97.5% Chebyshev (Mean, Sd) UCL	53577
99% Chebyshev (Mean, Sd) UCL	71502.58

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	22
Minimum	760
Maximum	140000
Mean	48848.18
Median	34500
Standard Deviation	44415.71
Variance	1.97E+09
Coefficient of Variation	0.90926
Skewness	0.707355

Gamma Statistics	
k hat	0.865336
k star (bias corrected)	0.777639
Theta hat	56449.93
Theta star	62816.01
nu hat	38.0748
nu star	34.21612
Approx.Chi Square Value (.05)	21.83501
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	21.09671

Log-transformed Statistics	
Minimum of log data	6.633318
Maximum of log data	11.8494
Mean of log data	10.11755
Standard Deviation of log data	1.454719
Variance of log data	2.116208

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

76546.59

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892685
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	65142.69

Gamma Distribution Test	
A-D Test Statistic	0.384696
A-D 5% Critical Value	0.777355
K-S Test Statistic	0.142257
K-S 5% Critical Value	0.19179
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	76546.59
Adjusted Gamma UCL	79225.4

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.918691
Shapiro-Wilk 5% Critical Value	0.911
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	198109.8
95% Chebyshev (MVUE) UCL	171854
97.5% Chebyshev (MVUE) UCL	217941.8
99% Chebyshev (MVUE) UCL	308472.3

95% Non-parametric UCLs	
CLT UCL	64424.06
Adj-CLT UCL (Adjusted for skewness)	65949.98
Mod-t UCL (Adjusted for skewness)	65380.7
Jackknife UCL	65142.69
Standard Bootstrap UCL	63664.32
Bootstrap-t UCL	67348.27
Hall's Bootstrap UCL	65638.82
Percentile Bootstrap UCL	64022.73
BCA Bootstrap UCL	64936.36
95% Chebyshev (Mean, Sd) UCL	90124.61
97.5% Chebyshev (Mean, Sd) UCL	107984.9
99% Chebyshev (Mean, Sd) UCL	143068.1

A-1.5 Soil Gas – Other Parcels 5 to 6 feet bgs

Summary of UCLs for Other Parcels Soil Gas 5-6 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data follow gamma distribution (0.05)	1,418	7,744	Use Adjusted Gamma UCL	2,000	471	2,570	95% UCL-G
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Assuming gamma distribution (0.05)	626,365	4,797,958	Use Adjusted Gamma UCL	450,000	193,462	1,481,920	95% UCL-G assumed
1,1-DICHLOROETHANE	Data are normal (0.05)	551	2,231	Use Student's-t UCL	950	367	1,487	95% UCL-N
1,1-DICHLOROETHENE	Data are normal (0.05)	183,635	729,033	Use Student's-t UCL	270,000	128,381	509,674	95% UCL-N
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Too Few Observations To Calculate UCLs	No UCL	No UCL					
2,2,4-TRIMETHYLPENTANE	Data follow gamma distribution (0.05)	826	3,856	Use Approximate Gamma UCL	800	322	1,504	95% UCL-G
ACETONE	Data follow gamma distribution (0.05)	3,292	7,834	Use Approximate Gamma UCL	3,200	1,302	3,098	95% UCL-G
BENZENE	Data follow gamma distribution (0.05)	868	2,770	Use Approximate Gamma UCL	950	350	1,116	95% UCL-G
CHLOROFORM	Data are normal (0.05)	559	2,727	Use Student's-t UCL	950	376	1,837	95% UCL-N
DICHLORODIFLUOROMETHANE	Data follow gamma distribution (0.05)	1,497	7,408	Use Adjusted Gamma UCL	1,900	495	2,449	95% UCL-G
HEXANE (N-HEXANE)	Data follow gamma distribution (0.05)	1,186	4,175	Use Adjusted Gamma UCL	800	320	1,126	95% UCL-G
M,P-XYLENES	Data follow gamma distribution (0.05)	1,275	5,535	Use Adjusted Gamma UCL	1,900	433	1,880	95% UCL-G
TETRACHLOROETHENE	Data follow gamma distribution (0.05)	319,695	2,167,531	Use Adjusted Gamma UCL	310,000	90,201	611,562	95% UCL-G
TOLUENE	Data follow gamma distribution (0.05)	863	3,253	Use Approximate Gamma UCL	950	381	1,438	95% UCL-G
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	2,714	10,748	Use Adjusted Gamma UCL	2,500	590	2,335	95% UCL-G
TRICHLOROETHENE	Data follow gamma distribution (0.05)	73,276	393,490	Use Adjusted Gamma UCL	88,000	21,908	117,648	95% UCL-G
TRICHLOROFLUOROMETHANE (FREON 11)	Data follow gamma distribution (0.05)	234,217	1,316,299	Use Adjusted Gamma UCL	180,000	71,384	401,176	95% UCL-G

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	0.7
Maximum	2000
Mean	470.7
Median	282.5
Standard Deviation	585.0546
Variance	342288.9
Coefficient of Variation	1.242946
Skewness	1.810555

Gamma Statistics	
k hat	0.466875
k star (bias corrected)	0.405712
Theta hat	1008.192
Theta star	1160.183
nu hat	11.205
nu star	9.737087
Approx.Chi Square Value (.05)	3.777291
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.231285

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	7.600902
Mean of log data	4.779076
Standard Deviation of log data	2.507573
Variance of log data	6.287921

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1418.398

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.790791
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	774.0082

Gamma Distribution Test	
A-D Test Statistic	0.227659
A-D 5% Critical Value	0.791388
K-S Test Statistic	0.127546
K-S 5% Critical Value	0.259783
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1213.369
Adjusted Gamma UCL	1418.398

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.871148
Shapiro-Wilk 5% Critical Value	0.859
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	274532.8
95% Chebyshev (MVUE) UCL	5855.622
97.5% Chebyshev (MVUE) UCL	7795.683
99% Chebyshev (MVUE) UCL	11606.56

95% Non-parametric UCLs	
CLT UCL	748.5005
Adj-CLT UCL (Adjusted for skewness)	842.8212
Mod-t UCL (Adjusted for skewness)	788.7204
Jackknife UCL	774.0082
Standard Bootstrap UCL	733.6347
Bootstrap-t UCL	1005.218
Hall's Bootstrap UCL	1172.053
Percentile Bootstrap UCL	759.2833
BCA Bootstrap UCL	840.5
95% Chebyshev (Mean, Sd) UCL	1206.878
97.5% Chebyshev (Mean, Sd) UCL	1525.422
99% Chebyshev (Mean, Sd) UCL	2151.141

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	240
Maximum	450000
Mean	193462.1
Median	133000
Standard Deviation	187469.3
Variance	3.51E+10
Coefficient of Variation	0.969023
Skewness	0.270498

Gamma Statistics	
k hat	0.416221
k star (bias corrected)	0.367721
Theta hat	464806.5
Theta star	526110.9
nu hat	9.989297
nu star	8.825306
Approx.Chi Square Value (.05)	3.221036
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.725825

Log-transformed Statistics	
Minimum of log data	5.480639
Maximum of log data	13.017
Mean of log data	10.60192
Standard Deviation of log data	2.862891
Variance of log data	8.196147

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

Recommer 626365.3

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.829834
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	290651.3

Gamma Distribution Test	
A-D Test Statistic	0.810215
A-D 5% Critical Value	0.801248
K-S Test Statistic	0.226949
K-S 5% Critical Value	0.26147
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	530066.1
Adjusted Gamma UCL	626365.3

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.791972
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9.2E+08
95% Chebyshev (MVUE) UCL	3966185
97.5% Chebyshev (MVUE) UCL	5306216
99% Chebyshev (MVUE) UCL	7938448

95% Non-parametric UCLs	
CLT UCL	282477.8
Adj-CLT UCL (Adjusted for skewness)	286993.2
Mod-t UCL (Adjusted for skewness)	291355.6
Jackknife UCL	290651.3
Standard Bootstrap UCL	277504
Bootstrap-t UCL	294887.4
Hall's Bootstrap UCL	270743.5
Percentile Bootstrap UCL	277974.6
BCA Bootstrap UCL	282871.3
95% Chebyshev (Mean, Sd) UCL	429355.8
97.5% Chebyshev (Mean, Sd) UCL	531427.1
99% Chebyshev (Mean, Sd) UCL	731926.6

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	0.7
Maximum	950
Mean	367.15
Median	297.5
Standard Deviation	354.558
Variance	125711.4
Coefficient of Variation	0.965704
Skewness	0.494743

Gamma Statistics	
k hat	0.469058
k star (bias corrected)	0.407349
Theta hat	782.7382
Theta star	901.3146
nu hat	11.2574
nu star	9.776386
Approx.Chi Square Value (.05)	3.801663
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.253514

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.856462
Mean of log data	4.53803
Standard Deviation of log data	2.600697
Variance of log data	6.763624

RECOMMENDATION

Data are normal (0.05)

Use Student's-t UCL

550.9626

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.864622
Shapiro-Wilk 5% Critical Value	0.859
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	550.9626

Gamma Distribution Test	
A-D Test Statistic	0.670467
A-D 5% Critical Value	0.790963
K-S Test Statistic	0.191799
K-S 5% Critical Value	0.25971
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	944.1659
Adjusted Gamma UCL	1103.238

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.8086
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	382132.3
95% Chebyshev (MVUE) UCL	5507.507
97.5% Chebyshev (MVUE) UCL	7343.004
99% Chebyshev (MVUE) UCL	10948.48

95% Non-parametric UCLs	
CLT UCL	535.5042
Adj-CLT UCL (Adjusted for skewness)	551.1237
Mod-t UCL (Adjusted for skewness)	553.3989
Jackknife UCL	550.9626
Standard Bootstrap UCL	532.9113
Bootstrap-t UCL	586.9676
Hall's Bootstrap UCL	520.1508
Percentile Bootstrap UCL	531.3917
BCA Bootstrap UCL	543.0583
95% Chebyshev (Mean, Sd) UCL	813.2924
97.5% Chebyshev (Mean, Sd) UCL	1006.339
99% Chebyshev (Mean, Sd) UCL	1385.54

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	21
Maximum	270000
Mean	128381.3
Median	118500
Standard Deviation	106580.3
Variance	1.14E+10
Coefficient of Variation	0.830186
Skewness	0.02614

Gamma Statistics	
k hat	0.433503
k star (bias corrected)	0.380683
Theta hat	296148.5
Theta star	337239.5
nu hat	10.40408
nu star	9.136392
Approx.Chi Square Value (.05)	3.408774
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.895989

Log-transformed Statistics	
Minimum of log data	3.044522
Maximum of log data	12.50618
Mean of log data	10.26425
Standard Deviation of log data	3.104836
Variance of log data	9.640004

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

183635.5

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.880464
Shapiro-Wilk 5% Critical Value	0.859
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	183635.5

Gamma Distribution Test	
A-D Test Statistic	1.103883
A-D 5% Critical Value	0.797884
K-S Test Statistic	0.258294
K-S 5% Critical Value	0.260894
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	344095.1
Adjusted Gamma UCL	405023.1

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.746081
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3.72E+09
95% Chebyshev (MVUE) UCL	4607210
97.5% Chebyshev (MVUE) UCL	6178851
99% Chebyshev (MVUE) UCL	9266035

95% Non-parametric UCLs	
CLT UCL	178988.7
Adj-CLT UCL (Adjusted for skewness)	179236.8
Mod-t UCL (Adjusted for skewness)	183674.2
Jackknife UCL	183635.5
Standard Bootstrap UCL	176522.8
Bootstrap-t UCL	184507.7
Hall's Bootstrap UCL	172439.2
Percentile Bootstrap UCL	174916.7
BCA Bootstrap UCL	173998
95% Chebyshev (Mean, Sd) UCL	262492
97.5% Chebyshev (Mean, Sd) UCL	320521.8
99% Chebyshev (Mean, Sd) UCL	434510.1

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	15000
Maximum	15000
Mean	15000
Median	15000

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2,2,4-TRIMETHYLPENTANE

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	9
Minimum	7.8
Maximum	800
Mean	322.08
Median	230
Standard Deviation	332.2099
Variance	110363.4
Coefficient of Variation	1.031451
Skewness	0.56957

Gamma Statistics	
k hat	0.606595
k star (bias corrected)	0.491283
Theta hat	530.9637
Theta star	655.5892
nu hat	12.1319
nu star	9.825665
Approx.Chi Square Value (.05)	3.832266
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	3.208902

Log-transformed Statistics	
Minimum of log data	2.054124
Maximum of log data	6.684612
Mean of log data	4.757841
Standard Deviation of log data	1.869621
Variance of log data	3.495483

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Recommer 825.7908

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.817216
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	514.6558

Gamma Distribution Test	
A-D Test Statistic	0.537403
A-D 5% Critical Value	0.768454
K-S Test Statistic	0.188712
K-S 5% Critical Value	0.278774
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	825.7908
Adjusted Gamma UCL	986.2095

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.853856
Shapiro-Wilk 5% Critical Value	0.842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	15868.08
95% Chebyshev (MVUE) UCL	1736.701
97.5% Chebyshev (MVUE) UCL	2283.738
99% Chebyshev (MVUE) UCL	3358.286

95% Non-parametric UCLs	
CLT UCL	494.8784
Adj-CLT UCL (Adjusted for skewness)	515.0965
Mod-t UCL (Adjusted for skewness)	517.8094
Jackknife UCL	514.6558
Standard Bootstrap UCL	485.4117
Bootstrap-t UCL	562.1054
Hall's Bootstrap UCL	459.9775
Percentile Bootstrap UCL	496.58
BCA Bootstrap UCL	498.9
95% Chebyshev (Mean, Sd) UCL	779.9997
97.5% Chebyshev (Mean, Sd) UCL	978.1419
99% Chebyshev (Mean, Sd) UCL	1367.354

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	9
Minimum	34
Maximum	3200
Mean	1301.7
Median	925
Standard Deviation	1339.865
Variance	1795237
Coefficient of Variation	1.029319
Skewness	0.578332

Gamma Statistics	
k hat	0.623235
k star (bias corrected)	0.502931
Theta hat	2088.618
Theta star	2588.226
nu hat	12.4647
nu star	10.05863
Approx.Chi Square Value (.05)	3.97759
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	3.339889

Log-transformed Statistics	
Minimum of log data	3.526361
Maximum of log data	8.070906
Mean of log data	6.185533
Standard Deviation of log data	1.832642
Variance of log data	3.358575

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

Recommer 3291.77

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.812788
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2078.394

Gamma Distribution Test	
A-D Test Statistic	0.496468
A-D 5% Critical Value	0.767121
K-S Test Statistic	0.181231
K-S 5% Critical Value	0.278449
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	3291.77
Adjusted Gamma UCL	3920.284

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.863418
Shapiro-Wilk 5% Critical Value	0.842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	54966.41
95% Chebyshev (MVUE) UCL	6802.489
97.5% Chebyshev (MVUE) UCL	8934.966
99% Chebyshev (MVUE) UCL	13123.8

95% Non-parametric UCLs	
CLT UCL	1998.628
Adj-CLT UCL (Adjusted for skewness)	2081.426
Mod-t UCL (Adjusted for skewness)	2091.309
Jackknife UCL	2078.394
Standard Bootstrap UCL	1962.978
Bootstrap-t UCL	2180.463
Hall's Bootstrap UCL	1861.521
Percentile Bootstrap UCL	2005.4
BCA Bootstrap UCL	2082.8
95% Chebyshev (Mean, Sd) UCL	3148.576
97.5% Chebyshev (Mean, Sd) UCL	3947.721
99% Chebyshev (Mean, Sd) UCL	5517.486

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	2.6
Maximum	950
Mean	349.8417
Median	230
Standard Deviation	365.1131
Variance	133307.5
Coefficient of Variation	1.043652
Skewness	0.557804

Gamma Statistics	
k hat	0.50318
k star (bias corrected)	0.43294
Theta hat	695.2618
Theta star	808.0597
nu hat	12.07631
nu star	10.39057
Approx.Chi Square Value (.05)	4.186452
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.605304

Log-transformed Statistics	
Minimum of log data	0.955511
Maximum of log data	6.856462
Mean of log data	4.596385
Standard Deviation of log data	2.237378
Variance of log data	5.00586

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

868.2898

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.831048
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	539.1262

Gamma Distribution Test	
A-D Test Statistic	0.547127
A-D 5% Critical Value	0.784694
K-S Test Statistic	0.190312
K-S 5% Critical Value	0.258631
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	868.2898
Adjusted Gamma UCL	1008.252

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.851172
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	48910.49
95% Chebyshev (MVUE) UCL	2926.29
97.5% Chebyshev (MVUE) UCL	3875.687
99% Chebyshev (MVUE) UCL	5740.593

95% Non-parametric UCLs	
CLT UCL	523.2077
Adj-CLT UCL (Adjusted for skewness)	541.3423
Mod-t UCL (Adjusted for skewness)	541.9549
Jackknife UCL	539.1262
Standard Bootstrap UCL	513.0535
Bootstrap-t UCL	556.1759
Hall's Bootstrap UCL	500.0214
Percentile Bootstrap UCL	517.6667
BCA Bootstrap UCL	541.675
95% Chebyshev (Mean, Sd) UCL	809.2655
97.5% Chebyshev (Mean, Sd) UCL	1008.059
99% Chebyshev (Mean, Sd) UCL	1398.549

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	0.7
Maximum	950
Mean	376.45
Median	347.5
Standard Deviation	351.8849
Variance	123823
Coefficient of Variation	0.934746
Skewness	0.425178

Gamma Statistics	
k hat	0.509892
k star (bias corrected)	0.437974
Theta hat	738.2939
Theta star	859.5251
nu hat	12.2374
nu star	10.51139
Approx.Chi Square Value (.05)	4.262976
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.675438

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.856462
Mean of log data	4.688838
Standard Deviation of log data	2.472816
Variance of log data	6.114817

RECOMMENDATION
Data are normal (0.05)

Use Student's-t UCL

558.8767

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.871018
Shapiro-Wilk 5% Critical Value	0.859
Data are normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	558.8767

Gamma Distribution Test	
A-D Test Statistic	0.623957
A-D 5% Critical Value	0.784175
K-S Test Statistic	0.23588
K-S 5% Critical Value	0.258527
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	928.2274
Adjusted Gamma UCL	1076.609

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.814648
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	203670.8
95% Chebyshev (MVUE) UCL	5005.516
97.5% Chebyshev (MVUE) UCL	6660.019
99% Chebyshev (MVUE) UCL	9909.971

95% Non-parametric UCLs	
CLT UCL	543.5349
Adj-CLT UCL (Adjusted for skewness)	556.857
Mod-t UCL (Adjusted for skewness)	560.9547
Jackknife UCL	558.8767
Standard Bootstrap UCL	537.7704
Bootstrap-t UCL	582.6279
Hall's Bootstrap UCL	531.3898
Percentile Bootstrap UCL	545.4167
BCA Bootstrap UCL	546.8667
95% Chebyshev (Mean, Sd) UCL	819.2288
97.5% Chebyshev (Mean, Sd) UCL	1010.82
99% Chebyshev (Mean, Sd) UCL	1387.163

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.7
Maximum	1900
Mean	494.8167
Median	307.5
Standard Deviation	549.7399
Variance	302213.9
Coefficient of Variation	1.110997
Skewness	1.583217

Gamma Statistics	
k hat	0.464024
k star (bias corrected)	0.403574
Theta hat	1066.359
Theta star	1226.087
nu hat	11.13659
nu star	9.685774
Approx.Chi Square Value (.05)	3.745517
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.202313

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	7.549609
Mean of log data	4.819259
Standard Deviation of log data	2.607473
Variance of log data	6.798917

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1496.632

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.814861
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	779.8168

Gamma Distribution Test	
A-D Test Statistic	0.600522
A-D 5% Critical Value	0.791943
K-S Test Statistic	0.200049
K-S 5% Critical Value	0.259878
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1279.578
Adjusted Gamma UCL	1496.632

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.819447
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	528168
95% Chebyshev (MVUE) UCL	7392.691
97.5% Chebyshev (MVUE) UCL	9857.464
99% Chebyshev (MVUE) UCL	14699.04

95% Non-parametric UCLs	
CLT UCL	755.8487
Adj-CLT UCL (Adjusted for skewness)	833.3479
Mod-t UCL (Adjusted for skewness)	791.9051
Jackknife UCL	779.8168
Standard Bootstrap UCL	748.3167
Bootstrap-t UCL	911.2826
Hall's Bootstrap UCL	1024.806
Percentile Bootstrap UCL	770.725
BCA Bootstrap UCL	822.675
95% Chebyshev (Mean, Sd) UCL	1186.558
97.5% Chebyshev (Mean, Sd) UCL	1485.874
99% Chebyshev (Mean, Sd) UCL	2073.824

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEXANE (N-HEXANE)

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	9
Minimum	1.7
Maximum	800
Mean	319.81
Median	230
Standard Deviation	334.5875
Variance	111948.8
Coefficient of Variation	1.046207
Skewness	0.557831

Gamma Statistics	
k hat	0.454586
k star (bias corrected)	0.384877
Theta hat	703.5196
Theta star	830.9414
nu hat	9.091716
nu star	7.697535
Approx.Chi Square Value (.05)	2.560485
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	2.075548

Log-transformed Statistics	
Minimum of log data	0.530628
Maximum of log data	6.684612
Mean of log data	4.34945
Standard Deviation of log data	2.48316
Variance of log data	6.166084

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

Recommer 1186.072

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.819969
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	513.7641

Gamma Distribution Test	
A-D Test Statistic	0.600444
A-D 5% Critical Value	0.785308
K-S Test Statistic	0.201126
K-S 5% Critical Value	0.282437
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	961.4385
Adjusted Gamma UCL	1186.072

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.822184
Shapiro-Wilk 5% Critical Value	0.842
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	391705
95% Chebyshev (MVUE) UCL	3384.826
97.5% Chebyshev (MVUE) UCL	4511.301
99% Chebyshev (MVUE) UCL	6724.042

95% Non-parametric UCLs	
CLT UCL	493.8451
Adj-CLT UCL (Adjusted for skewness)	513.7883
Mod-t UCL (Adjusted for skewness)	516.8748
Jackknife UCL	513.7641
Standard Bootstrap UCL	479.5002
Bootstrap-t UCL	551.3335
Hall's Bootstrap UCL	461.11
Percentile Bootstrap UCL	500.34
BCA Bootstrap UCL	501.34
95% Chebyshev (Mean, Sd) UCL	781.007
97.5% Chebyshev (Mean, Sd) UCL	980.5673
99% Chebyshev (Mean, Sd) UCL	1372.565

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	3.2
Maximum	1900
Mean	433.2167
Median	230
Standard Deviation	555.7367
Variance	308843.2
Coefficient of Variation	1.282815
Skewness	1.851577

Gamma Statistics	
k hat	0.485358
k star (bias corrected)	0.419574
Theta hat	892.5717
Theta star	1032.516
nu hat	11.64859
nu star	10.06977
Approx.Chi Square Value (.05)	3.984571
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.420549

Log-transformed Statistics	
Minimum of log data	1.163151
Maximum of log data	7.549609
Mean of log data	4.756484
Standard Deviation of log data	2.227261
Variance of log data	4.960692

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1275.349

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.770259
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	721.3257

Gamma Distribution Test	
A-D Test Statistic	0.323381
A-D 5% Critical Value	0.78779
K-S Test Statistic	0.145202
K-S 5% Critical Value	0.259168
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1094.821
Adjusted Gamma UCL	1275.349

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.885492
Shapiro-Wilk 5% Critical Value	0.859
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	54368.48
95% Chebyshev (MVUE) UCL	3370.36
97.5% Chebyshev (MVUE) UCL	4462.828
99% Chebyshev (MVUE) UCL	6608.769

95% Non-parametric UCLs	
CLT UCL	697.0962
Adj-CLT UCL (Adjusted for skewness)	788.7203
Mod-t UCL (Adjusted for skewness)	735.6172
Jackknife UCL	721.3257
Standard Bootstrap UCL	683.5033
Bootstrap-t UCL	888.7327
Hall's Bootstrap UCL	1066.564
Percentile Bootstrap UCL	716.6833
BCA Bootstrap UCL	802.55
95% Chebyshev (Mean, Sd) UCL	1132.503
97.5% Chebyshev (Mean, Sd) UCL	1435.085
99% Chebyshev (Mean, Sd) UCL	2029.449

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	140
Maximum	310000
Mean	90200.83
Median	34500
Standard Deviation	112652.6
Variance	1.27E+10
Coefficient of Variation	1.248908
Skewness	0.938285

Gamma Statistics	
k hat	0.363322
k star (bias corrected)	0.328047
Theta hat	248267.1
Theta star	274963.3
nu hat	8.719722
nu star	7.873125
Approx.Chi Square Value (.05)	2.661099
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.221376

Log-transformed Statistics	
Minimum of log data	4.941642
Maximum of log data	12.64433
Mean of log data	9.570206
Standard Deviation of log data	2.767629
Variance of log data	7.65977

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

Recommer 319694.9

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.79015
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	148603

Gamma Distribution Test	
A-D Test Statistic	0.447163
A-D 5% Critical Value	0.811544
K-S Test Statistic	0.17438
K-S 5% Critical Value	0.263231
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	266868.1
Adjusted Gamma UCL	319694.9

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.892135
Shapiro-Wilk 5% Critical Value	0.859
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.72E+08
95% Chebyshev (MVUE) UCL	1170226
97.5% Chebyshev (MVUE) UCL	1563817
99% Chebyshev (MVUE) UCL	2336950

95% Non-parametric UCLs	
CLT UCL	143691.5
Adj-CLT UCL (Adjusted for skewness)	153103.3
Mod-t UCL (Adjusted for skewness)	150071.1
Jackknife UCL	148603
Standard Bootstrap UCL	140996.7
Bootstrap-t UCL	163774.7
Hall's Bootstrap UCL	138060.7
Percentile Bootstrap UCL	144008.3
BCA Bootstrap UCL	147880.8
95% Chebyshev (Mean, Sd) UCL	231952.2
97.5% Chebyshev (Mean, Sd) UCL	293288.2
99% Chebyshev (Mean, Sd) UCL	413770.7

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	7.8
Maximum	950
Mean	381.3167
Median	245
Standard Deviation	375.9178
Variance	141314.2
Coefficient of Variation	0.985841
Skewness	0.306075

Gamma Statistics	
k hat	0.612229
k star (bias corrected)	0.514727
Theta hat	622.8338
Theta star	740.8134
nu hat	14.69349
nu star	12.35345
Approx.Chi Square Value (.05)	5.459699
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	4.778517

Log-transformed Statistics	
Minimum of log data	2.054124
Maximum of log data	6.856462
Mean of log data	4.937395
Standard Deviation of log data	1.840678
Variance of log data	3.388096

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

862.7903

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.817084
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	576.2027

Gamma Distribution Test	
A-D Test Statistic	0.740891
A-D 5% Critical Value	0.776258
K-S Test Statistic	0.239624
K-S 5% Critical Value	0.256943
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	862.7903
Adjusted Gamma UCL	985.782

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.856424
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	9831.946
95% Chebyshev (MVUE) UCL	2005.017
97.5% Chebyshev (MVUE) UCL	2626.612
99% Chebyshev (MVUE) UCL	3847.615

95% Non-parametric UCLs	
CLT UCL	559.8131
Adj-CLT UCL (Adjusted for skewness)	570.0583
Mod-t UCL (Adjusted for skewness)	577.8007
Jackknife UCL	576.2027
Standard Bootstrap UCL	553.6052
Bootstrap-t UCL	591.3608
Hall's Bootstrap UCL	539.9917
Percentile Bootstrap UCL	550.75
BCA Bootstrap UCL	560.4
95% Chebyshev (Mean, Sd) UCL	854.3362
97.5% Chebyshev (Mean, Sd) UCL	1059.012
99% Chebyshev (Mean, Sd) UCL	1461.058

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	10
Minimum	0.7
Maximum	2500
Mean	589.58
Median	230
Standard Deviation	854.3529
Variance	729918.8
Coefficient of Variation	1.449087
Skewness	1.663641

Gamma Statistics	
k hat	0.342052
k star (bias corrected)	0.306103
Theta hat	1723.654
Theta star	1926.081
nu hat	6.841049
nu star	6.122068
Approx.Chi Square Value (.05)	1.702052
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	1.329857

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	7.824046
Mean of log data	4.40615
Standard Deviation of log data	2.950426
Variance of log data	8.705016

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

Recommer 2714.163

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.742744
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1084.832

Gamma Distribution Test	
A-D Test Statistic	0.250634
A-D 5% Critical Value	0.805918
K-S Test Statistic	0.166899
K-S 5% Critical Value	0.28637
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2120.646
Adjusted Gamma UCL	2714.163

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.89805
Shapiro-Wilk 5% Critical Value	0.842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	12873934
95% Chebyshev (MVUE) UCL	8504.397
97.5% Chebyshev (MVUE) UCL	11399.13
99% Chebyshev (MVUE) UCL	17085.28

95% Non-parametric UCLs	
CLT UCL	1033.97
Adj-CLT UCL (Adjusted for skewness)	1185.842
Mod-t UCL (Adjusted for skewness)	1108.521
Jackknife UCL	1084.832
Standard Bootstrap UCL	1019.835
Bootstrap-t UCL	1838.118
Hall's Bootstrap UCL	2961.077
Percentile Bootstrap UCL	1042.17
BCA Bootstrap UCL	1155.07
95% Chebyshev (Mean, Sd) UCL	1767.224
97.5% Chebyshev (Mean, Sd) UCL	2276.792
99% Chebyshev (Mean, Sd) UCL	3277.738

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	11
Minimum	61
Maximum	88000
Mean	21908.29
Median	7650
Standard Deviation	29117.63
Variance	8.48E+08
Coefficient of Variation	1.329069
Skewness	1.397346

Gamma Statistics	
k hat	0.395963
k star (bias corrected)	0.352528
Theta hat	55329.19
Theta star	62146.33
nu hat	9.503103
nu star	8.460661
Approx.Chi Square Value (.05)	3.003879
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.529606

Log-transformed Statistics	
Minimum of log data	4.110874
Maximum of log data	11.38509
Mean of log data	8.330033
Standard Deviation of log data	2.586277
Variance of log data	6.688831

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

73275.68

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.772924
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	37003.67

Gamma Distribution Test	
A-D Test Statistic	0.289278
A-D 5% Critical Value	0.805191
K-S Test Statistic	0.1389
K-S 5% Critical Value	0.262144
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	61706.42
Adjusted Gamma UCL	73275.68

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.898971
Shapiro-Wilk 5% Critical Value	0.859
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	15488840
95% Chebyshev (MVUE) UCL	237498.9
97.5% Chebyshev (MVUE) UCL	316581.6
99% Chebyshev (MVUE) UCL	471924.2

95% Non-parametric UCLs	
CLT UCL	35734.17
Adj-CLT UCL (Adjusted for skewness)	39357.09
Mod-t UCL (Adjusted for skewness)	37568.77
Jackknife UCL	37003.67
Standard Bootstrap UCL	34825.08
Bootstrap-t UCL	44077.85
Hall's Bootstrap UCL	35753.28
Percentile Bootstrap UCL	35422.38
BCA Bootstrap UCL	38552.46
95% Chebyshev (Mean, Sd) UCL	58547.17
97.5% Chebyshev (Mean, Sd) UCL	74400.85
99% Chebyshev (Mean, Sd) UCL	105542.3

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	98
Maximum	180000
Mean	71383.58
Median	38000
Standard Deviation	74372.99
Variance	5.53E+09
Coefficient of Variation	1.041878
Skewness	0.483935

Gamma Statistics	
k hat	0.407732
k star (bias corrected)	0.361355
Theta hat	175074.6
Theta star	197544.3
nu hat	9.785578
nu star	8.672517
Approx.Chi Square Value (.05)	3.129654
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.643171

Log-transformed Statistics	
Minimum of log data	4.584967
Maximum of log data	12.10071
Mean of log data	9.566893
Standard Deviation of log data	2.832568
Variance of log data	8.023439

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

Recommer 234216.9

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.815873
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	109940.6

Gamma Distribution Test	
A-D Test Statistic	0.636627
A-D 5% Critical Value	0.8029
K-S Test Statistic	0.183753
K-S 5% Critical Value	0.261753
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	197809.5
Adjusted Gamma UCL	234216.9

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.815916
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.65E+08
95% Chebyshev (MVUE) UCL	1326383
97.5% Chebyshev (MVUE) UCL	1773897
99% Chebyshev (MVUE) UCL	2652952

95% Non-parametric UCLs	
CLT UCL	106698
Adj-CLT UCL (Adjusted for skewness)	109902.8
Mod-t UCL (Adjusted for skewness)	110440.5
Jackknife UCL	109940.6
Standard Bootstrap UCL	105168.5
Bootstrap-t UCL	113490.1
Hall's Bootstrap UCL	100804.4
Percentile Bootstrap UCL	105008.2
BCA Bootstrap UCL	107361.7
95% Chebyshev (Mean, Sd) UCL	164967.5
97.5% Chebyshev (Mean, Sd) UCL	205461.4
99% Chebyshev (Mean, Sd) UCL	285003.7

A-1.6 Soil Gas – All Parcels 5 to 30 feet bgs

Summary of UCLs for All Parcels Soil Gas 5-30 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are lognormal (0.05)	77,471	422,993	Use H-UCL	450,000	12,501	68,256	95% UCL-T
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Assuming gamma distribution (0.05)	117,777	902,171	Use Adjusted Gamma UCL	450,000	95,280	729,843	95% UCL-G assumed
1,1,2-TRICHLOROETHANE	Data follow gamma distribution (0.05)	245	1,339	Use Approximate Gamma UCL	2,050	197	1,073	95% UCL-G
1,1-DICHLOROETHANE	Data are Non-parametric (0.05)	4,660	18,874	Use 99% Chebyshev (Mean, Sd) UCL	26,000	1,522	6,163	UCL-NP
1,1-DICHLOROETHENE	Assuming gamma distribution (0.05)	110,726	439,581	Use Adjusted Gamma UCL	480,000	88,789	352,491	95% UCL-G assumed
1,2,4-TRIMETHYLBENZENE	Data follow gamma distribution (0.05)	258	1,268	Use Approximate Gamma UCL	2,050	208	1,024	95% UCL-G
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Data follow gamma distribution (0.05)	12,244	76,525	Use Approximate Gamma UCL	15,000	5,671	35,444	95% UCL-G
1,2-DICHLOROETHANE	Data follow gamma distribution (0.05)	445	1,803	Use Adjusted Gamma UCL	2,500	350	1,418	95% UCL-G
1,3-BUTADIENE	Data follow gamma distribution (0.05)	310	688	Use Approximate Gamma UCL	850	232	513	95% UCL-G
2,2,4-TRIMETHYLPENTANE	Data follow gamma distribution (0.05)	301	1,407	Use Approximate Gamma UCL	850	226	1,058	95% UCL-G
2-BUTANONE	Data follow gamma distribution (0.05)	231	683	Use Approximate Gamma UCL	850	191	563	95% UCL-G
2-PROPANOL	Data follow gamma distribution (0.05)	1,900	4,675	Use Adjusted Gamma UCL	15,000	1,346	3,312	95% UCL-G
ACETALDEHYDE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		58	105	
ACETONE	Data are Non-parametric (0.05)	2,013	4,791	Use 97.5% Chebyshev (Mean, Sd) UCL	8,900	1,214	2,890	UCL-NP
BENZENE	Data are Non-parametric (0.05)	386	1,232	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	219	699	UCL-NP
BROMODICHLOROMETHANE	Assuming gamma distribution (0.05)	213	1,427	Use Approximate Gamma UCL	850	170	1,138	95% UCL-G assumed
BROMOFORM	Data follow gamma distribution (0.05)	215	2,225	Use Approximate Gamma UCL	850	171	1,772	95% UCL-G
CARBON DISULFIDE	Data follow gamma distribution (0.05)	926	2,881	Use Adjusted Gamma UCL	8,400	713	2,218	95% UCL-G
CARBON TETRACHLORIDE	Assuming gamma distribution (0.05)	236	1,487	Use Approximate Gamma UCL	2,050	189	1,189	95% UCL-G assumed
CHLOROFORM	Data follow gamma distribution (0.05)	1,227	5,987	Use Adjusted Gamma UCL	22,000	972	4,741	95% UCL-G
CIS-1,2-DICHLOROETHENE	Data are Non-parametric (0.05)	2,227	8,819	Use 99% Chebyshev (Mean, Sd) UCL	9,500	692	2,742	UCL-NP
CYCLOHEXANE	Assuming gamma distribution (0.05)	312	1,075	Use Approximate Gamma UCL	850	231	794	95% UCL-G assumed
DIBROMOCHLOROMETHANE	Data follow gamma distribution (0.05)	215	1,832	Use Approximate Gamma UCL	850	171	1,460	95% UCL-G
DICHLORODIFLUOROMETHANE	Data follow gamma distribution (0.05)	282	1,393	Use Approximate Gamma UCL	2,050	227	1,124	95% UCL-G
ETHANOL	Assuming gamma distribution (0.05)	1,263	2,375	Use Approximate Gamma UCL	3,400	935	1,758	95% UCL-G assumed
ETHYLBENZENE	Assuming gamma distribution (0.05)	227	983	Use Approximate Gamma UCL	2,050	181	785	95% UCL-G assumed
HEPTANE	Data follow gamma distribution (0.05)	303	1,244	Use Approximate Gamma UCL	850	225	922	95% UCL-G
HEXANE (N-HEXANE)	Data follow gamma distribution (0.05)	325	1,144	Use Approximate Gamma UCL	1,300	246	864	95% UCL-G
M,P-XYLENES	*Assuming gamma distribution (0.05)*	*279*	*1,210*	*Use Approximate Gamma UCL*	4,050	*228*	*988*	*95% UCL-G assumed*
METHYL TERT-BUTYL ETHER	Data are Non-parametric (0.05)	416	1,500	Use 97.5% Chebyshev (Mean, Sd) UCL	1,550	253	912	UCL-NP
METHYLENE CHLORIDE	Data follow gamma distribution (0.05)	418	1,451	Use Approximate Gamma UCL	6,700	337	1,168	95% UCL-G
O-XYLENE	Data are Non-parametric (0.05)	351	1,523	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	188	817	UCL-NP
PENTANE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		7,300	21,535	
TETRACHLOROETHENE	Data follow gamma distribution (0.05)	84,772	574,757	Use Adjusted Gamma UCL	500,000	66,822	451,697	95% UCL-G
TETRAHYDROFURAN	Data follow gamma distribution (0.05)	352	1,038	Use Adjusted Gamma UCL	1,300	254	751	95% UCL-G
TOLUENE	Data are lognormal (0.05)	361	1,362	Use H-UCL	4,000	256	965	95% UCL-T
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	1,112	4,402	Use Adjusted Gamma UCL	6,200	857	3,392	95% UCL-G
TRICHLOROETHENE	Data follow gamma distribution (0.05)	16,229	87,149	Use Adjusted Gamma UCL	88,000	13,007	69,849	95% UCL-G
TRICHLOROFLUOROMETHANE (FREON 11)	Data follow gamma distribution (0.05)	47,863	268,990	Use Adjusted Gamma UCL	220,000	38,562	216,718	95% UCL-G
VINYL CHLORIDE	Data follow gamma distribution (0.05)	236	605	Use Approximate Gamma UCL	2,050	189	483	95% UCL-G

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	127
Number of Unique Samples	100
Minimum	0.5
Maximum	450000
Mean	12501.05
Median	420
Standard Deviation	53114.46
Variance	2.82E+09
Coefficient of Variation	4.248799
Skewness	6.394473

Gamma Statistics	
k hat	0.210522
k star (bias corrected)	0.210798
Theta hat	59381.25
Theta star	59303.39
nu hat	53.47256
nu star	53.54276
Approx.Chi Square Value (.05)	37.72892
Adjusted Level of Significance	0.04811
Adjusted Chi Square Value	37.57698

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	13.017
Mean of log data	5.965848
Standard Deviation of log data	2.889534
Variance of log data	8.349404

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

77471.16

Normal Distribution Test	
Lilliefors Test Statisitic	0.406968
Lilliefors 5% Critical Value	0.07862
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	20310.91

Gamma Distribution Test	
A-D Test Statistic	10.0216
A-D 5% Critical Value	0.908111
K-S Test Statistic	0.254356
K-S 5% Critical Value	0.091171
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	17740.79
Adjusted Gamma UCL	17812.52

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.077492
Lilliefors 5% Critical Value	0.07862
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	77471.16
95% Chebyshev (MVUE) UCL	67864.04
97.5% Chebyshev (MVUE) UCL	87850.57
99% Chebyshev (MVUE) UCL	127110.2

95% Non-parametric UCLs	
CLT UCL	20253.49
Adj-CLT UCL (Adjusted for skewness)	23111.04
Mod-t UCL (Adjusted for skewness)	20756.63
Jackknife UCL	20310.91
Standard Bootstrap UCL	19963.44
Bootstrap-t UCL	30051.92
Hall's Bootstrap UCL	21882.07
Percentile Bootstrap UCL	21159.01
BCA Bootstrap UCL	24187.92
95% Chebyshev (Mean, Sd) UCL	33045.18
97.5% Chebyshev (Mean, Sd) UCL	41934.64
99% Chebyshev (Mean, Sd) UCL	59396.26

Data File C:\Documents and Settings\tzoukh\My Docum Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	146
Number of Unique Samples	100
Minimum	0.5
Maximum	450000
Mean	95279.81
Median	44000
Standard Deviation	108731.3
Variance	1.18E+10
Coefficient of Variation	1.141178
Skewness	1.369029

Gamma Statistics	
k hat	0.478673
k star (bias corrected)	0.473403
Theta hat	199049.9
Theta star	201265.6
nu hat	139.7725
nu star	138.2338
Approx.Chi Square Value (.05)	112.0624
Adjusted Level of Significance	0.048356
Adjusted Chi Square Value	111.8292

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	13.017
Mean of log data	10.12856
Standard Deviation of log data	2.564975
Variance of log data	6.579096

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

117776.8

Normal Distribution Test	
Lilliefors Test Statisitic	0.202204
Lilliefors 5% Critical Value	0.073326
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	110176.5

Gamma Distribution Test	
A-D Test Statistic	1.243236
A-D 5% Critical Value	0.82477
K-S Test Statistic	0.075392
K-S 5% Critical Value	0.082288
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	117531.7
Adjusted Gamma UCL	117776.8

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.160502
Lilliefors 5% Critical Value	0.073326
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1539362
95% Chebyshev (MVUE) UCL	1657580
97.5% Chebyshev (MVUE) UCL	2109363
99% Chebyshev (MVUE) UCL	2996802

95% Non-parametric UCLs	
CLT UCL	110081.3
Adj-CLT UCL (Adjusted for skewness)	111170.7
Mod-t UCL (Adjusted for skewness)	110346.4
Jackknife UCL	110176.5
Standard Bootstrap UCL	109883.7
Bootstrap-t UCL	111387.2
Hall's Bootstrap UCL	111827.3
Percentile Bootstrap UCL	*110390.6*
BCA Bootstrap UCL	109765.5
95% Chebyshev (Mean, Sd) UCL	134504.1
97.5% Chebyshev (Mean, Sd) UCL	151476.4
99% Chebyshev (Mean, Sd) UCL	184815.4

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	118
Number of Unique Samples	74
Minimum	0.5
Maximum	2050
Mean	196.5364
Median	87.5
Standard Deviation	282.4589
Variance	79783.06
Coefficient of Variation	1.437184
Skewness	3.168656

Gamma Statistics	
k hat	0.539167
k star (bias corrected)	0.531109
Theta hat	364.5187
Theta star	370.0491
nu hat	127.2434
nu star	125.3417
Approx.Chi Square Value (.05)	100.4795
Adjusted Level of Significance	0.047966
Adjusted Chi Square Value	100.2059

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.116346
Standard Deviation of log data	1.942192
Variance of log data	3.77211

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

245.1667

Normal Distribution Test	
Lilliefors Test Statisitic	0.24383
Lilliefors 5% Critical Value	0.081563
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	239.648

Gamma Distribution Test	
A-D Test Statistic	0.43459
A-D 5% Critical Value	0.815168
K-S Test Statistic	0.049597
K-S 5% Critical Value	0.089452
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	245.1667
Adjusted Gamma UCL	245.8359

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.131074
Lilliefors 5% Critical Value	0.081563
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	716.7818
95% Chebyshev (MVUE) UCL	861.5888
97.5% Chebyshev (MVUE) UCL	1066.985
99% Chebyshev (MVUE) UCL	1470.447

95% Non-parametric UCLs	
CLT UCL	239.3067
Adj-CLT UCL (Adjusted for skewness)	247.4112
Mod-t UCL (Adjusted for skewness)	240.9122
Jackknife UCL	239.648
Standard Bootstrap UCL	239.0958
Bootstrap-t UCL	251.2499
Hall's Bootstrap UCL	255.3833
Percentile Bootstrap UCL	242.1453
BCA Bootstrap UCL	249.939
95% Chebyshev (Mean, Sd) UCL	309.8785
97.5% Chebyshev (Mean, Sd) UCL	358.9217
99% Chebyshev (Mean, Sd) UCL	455.2576

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	130
Number of Unique Samples	101
Minimum	0.5
Maximum	26000
Mean	1521.745
Median	410
Standard Deviation	3596.378
Variance	12933935
Coefficient of Variation	2.363324
Skewness	4.813591

Gamma Statistics	
k hat	0.370299
k star (bias corrected)	0.366882
Theta hat	4109.507
Theta star	4147.784
nu hat	96.27767
nu star	95.38921
Approx.Chi Square Value (.05)	73.85839
Adjusted Level of Significance	0.048154
Adjusted Chi Square Value	73.64717

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	10.16585
Mean of log data	5.528253
Standard Deviation of log data	2.427496
Variance of log data	5.892735

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

4660.167

Normal Distribution Test	
Lilliefors Test Statisitic	0.33615
Lilliefors 5% Critical Value	0.077707
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2044.323

Gamma Distribution Test	
A-D Test Statistic	1.615763
A-D 5% Critical Value	0.850892
K-S Test Statistic	0.11306
K-S 5% Critical Value	0.087896
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1965.357
Adjusted Gamma UCL	1970.993

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.10756
Lilliefors 5% Critical Value	0.077707
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	10685.95
95% Chebyshev (MVUE) UCL	11635.49
97.5% Chebyshev (MVUE) UCL	14764.61
99% Chebyshev (MVUE) UCL	20911.16

95% Non-parametric UCLs	
CLT UCL	2040.57
Adj-CLT UCL (Adjusted for skewness)	2182.859
Mod-t UCL (Adjusted for skewness)	2066.517
Jackknife UCL	2044.323
Standard Bootstrap UCL	2036.956
Bootstrap-t UCL	2307.777
Hall's Bootstrap UCL	2319.933
Percentile Bootstrap UCL	2065.764
BCA Bootstrap UCL	2277.384
95% Chebyshev (Mean, Sd) UCL	2896.643
97.5% Chebyshev (Mean, Sd) UCL	3491.563
99% Chebyshev (Mean, Sd) UCL	4660.167

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	146
Number of Unique Samples	102
Minimum	0.5
Maximum	480000
Mean	88788.79
Median	44000
Standard Deviation	105032.2
Variance	1.1E+10
Coefficient of Variation	1.182945
Skewness	1.353971

Gamma Statistics	
k hat	0.442944
k star (bias corrected)	0.438409
Theta hat	200451.5
Theta star	202525.2
nu hat	129.3397
nu star	128.0153
Approx.Chi Square Value (.05)	102.8762
Adjusted Level of Significance	0.048356
Adjusted Chi Square Value	102.6531

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	13.08154
Mean of log data	9.932466
Standard Deviation of log data	2.70901
Variance of log data	7.338737

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

110725.6

Normal Distribution Test	
Lilliefors Test Statisitic	0.19896
Lilliefors 5% Critical Value	0.073326
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	103178.7

Gamma Distribution Test	
A-D Test Statistic	1.107847
A-D 5% Critical Value	0.833481
K-S Test Statistic	0.081034
K-S 5% Critical Value	0.082675
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	110485.5
Adjusted Gamma UCL	110725.6

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.140207
Lilliefors 5% Critical Value	0.073326
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2017244
95% Chebyshev (MVUE) UCL	2058444
97.5% Chebyshev (MVUE) UCL	2636103
99% Chebyshev (MVUE) UCL	3770803

95% Non-parametric UCLs	
CLT UCL	103086.7
Adj-CLT UCL (Adjusted for skewness)	104127.5
Mod-t UCL (Adjusted for skewness)	103341
Jackknife UCL	103178.7
Standard Bootstrap UCL	103028.3
Bootstrap-t UCL	104506.5
Hall's Bootstrap UCL	104771
Percentile Bootstrap UCL	103673
BCA Bootstrap UCL	104460.2
95% Chebyshev (Mean, Sd) UCL	126678.6
97.5% Chebyshev (Mean, Sd) UCL	143073.6
99% Chebyshev (Mean, Sd) UCL	175278.4

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	10
Number of Unique Samples	9
Minimum	480
Maximum	15000
Mean	5671
Median	3250
Standard Deviation	5835.338
Variance	34051166
Coefficient of Variation	1.028979
Skewness	0.746565

Gamma Statistics	
k hat	0.876762
k star (bias corrected)	0.6804
Theta hat	6468.118
Theta star	8334.802
nu hat	17.53524
nu star	13.608
Approx.Chi Square Value (.05)	6.302757
Adjusted Level of Significance	0.0267
Adjusted Chi Square Value	5.462408

Log-transformed Statistics	
Minimum of log data	6.173786
Maximum of log data	9.615805
Mean of log data	7.974152
Standard Deviation of log data	1.320253
Variance of log data	1.743067

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

12244

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.801449
Shapiro-Wilk 5% Critical Value	0.842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	9053.635

Gamma Distribution Test	
A-D Test Statistic	0.606952
A-D 5% Critical Value	0.752559
K-S Test Statistic	0.238223
K-S 5% Critical Value	0.274849
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	12244
Adjusted Gamma UCL	14127.65

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.886843
Shapiro-Wilk 5% Critical Value	0.842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	36900.22
95% Chebyshev (MVUE) UCL	17732.37
97.5% Chebyshev (MVUE) UCL	22781.33
99% Chebyshev (MVUE) UCL	32699.05

95% Non-parametric UCLs	
CLT UCL	8706.241
Adj-CLT UCL (Adjusted for skewness)	9171.735
Mod-t UCL (Adjusted for skewness)	9126.243
Jackknife UCL	9053.635
Standard Bootstrap UCL	8572.919
Bootstrap-t UCL	9961.05
Hall's Bootstrap UCL	8130.843
Percentile Bootstrap UCL	8673
BCA Bootstrap UCL	9007
95% Chebyshev (Mean, Sd) UCL	13714.46
97.5% Chebyshev (Mean, Sd) UCL	17194.87
99% Chebyshev (Mean, Sd) UCL	24031.46

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	119
Number of Unique Samples	82
Minimum	0.5
Maximum	2500
Mean	350.2076
Median	120
Standard Deviation	536.3076
Variance	287625.8
Coefficient of Variation	1.531399
Skewness	2.472994

Gamma Statistics	
k hat	0.469045
k star (bias corrected)	0.462822
Theta hat	746.6399
Theta star	756.6781
nu hat	111.6327
nu star	110.1517
Approx.Chi Square Value (.05)	86.92198
Adjusted Level of Significance	0.047983
Adjusted Chi Square Value	86.67047

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.824046
Mean of log data	4.490739
Standard Deviation of log data	2.121485
Variance of log data	4.500698

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

445.0878

Normal Distribution Test	
Lilliefors Test Statisitic	0.257179
Lilliefors 5% Critical Value	0.081219
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	431.7138

Gamma Distribution Test	
A-D Test Statistic	0.507165
A-D 5% Critical Value	0.826482
K-S Test Statistic	0.076104
K-S 5% Critical Value	0.089788
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	443.7999
Adjusted Gamma UCL	445.0878

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.124162
Lilliefors 5% Critical Value	0.081219
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1644.341
95% Chebyshev (MVUE) UCL	1911.117
97.5% Chebyshev (MVUE) UCL	2392.601
99% Chebyshev (MVUE) UCL	3338.382

95% Non-parametric UCLs	
CLT UCL	431.0739
Adj-CLT UCL (Adjusted for skewness)	442.9828
Mod-t UCL (Adjusted for skewness)	433.5713
Jackknife UCL	431.7138
Standard Bootstrap UCL	430.1398
Bootstrap-t UCL	451.947
Hall's Bootstrap UCL	440.4623
Percentile Bootstrap UCL	429.1693
BCA Bootstrap UCL	442.5761
95% Chebyshev (Mean, Sd) UCL	564.5051
97.5% Chebyshev (Mean, Sd) UCL	657.2319
99% Chebyshev (Mean, Sd) UCL	839.3756

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2,4-TRIMETHYLBENZENE

Raw Statistics	
Number of Valid Samples	121
Number of Unique Samples	83
Minimum	0.5
Maximum	2050
Mean	208.0388
Median	100
Standard Deviation	283.9967
Variance	80654.13
Coefficient of Variation	1.365114
Skewness	2.988052

Gamma Statistics	
k hat	0.559862
k star (bias corrected)	0.551491
Theta hat	371.5893
Theta star	377.2297
nu hat	135.4867
nu star	133.4608
Approx.Chi Square Value (.05)	107.7667
Adjusted Level of Significance	0.048017
Adjusted Chi Square Value	107.4902

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.222649
Standard Deviation of log data	1.889667
Variance of log data	3.570843

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

257.6403

Normal Distribution Test	
Lilliefors Test Statisitic	0.232457
Lilliefors 5% Critical Value	0.080545
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	250.8359

Gamma Distribution Test	
A-D Test Statistic	0.411882
A-D 5% Critical Value	0.813278
K-S Test Statistic	0.05128
K-S 5% Critical Value	0.088507
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	257.6403
Adjusted Gamma UCL	258.303

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.117562
Lilliefors 5% Critical Value	0.080545
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	696.5596
95% Chebyshev (MVUE) UCL	846.462
97.5% Chebyshev (MVUE) UCL	1043.568
99% Chebyshev (MVUE) UCL	1430.745

95% Non-parametric UCLs	
CLT UCL	250.5055
Adj-CLT UCL (Adjusted for skewness)	257.9992
Mod-t UCL (Adjusted for skewness)	252.0047
Jackknife UCL	250.8359
Standard Bootstrap UCL	249.8641
Bootstrap-t UCL	260.3328
Hall's Bootstrap UCL	267.2973
Percentile Bootstrap UCL	252.9657
BCA Bootstrap UCL	258.1178
95% Chebyshev (Mean, Sd) UCL	320.5764
97.5% Chebyshev (Mean, Sd) UCL	369.2715
99% Chebyshev (Mean, Sd) UCL	464.9235

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,3-BUTADIENE

Raw Statistics	
Number of Valid Samples	70
Number of Unique Samples	52
Minimum	0.5
Maximum	850
Mean	231.9271
Median	90
Standard Deviation	265.344
Variance	70407.42
Coefficient of Variation	1.144083
Skewness	1.122877

Gamma Statistics	
k hat	0.550385
k star (bias corrected)	0.536321
Theta hat	421.3906
Theta star	432.4409
nu hat	77.05392
nu star	75.08494
Approx.Chi Square Value (.05)	56.12399
Adjusted Level of Significance	0.046571
Adjusted Chi Square Value	55.78005

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	4.309218
Standard Deviation of log data	1.981792
Variance of log data	3.9275

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

310.2815

Normal Distribution Test	
Lilliefors Test Statisitic	0.220988
Lilliefors 5% Critical Value	0.105897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	284.8031

Gamma Distribution Test	
A-D Test Statistic	0.649922
A-D 5% Critical Value	0.811873
K-S Test Statistic	0.082499
K-S 5% Critical Value	0.112191
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	310.2815
Adjusted Gamma UCL	312.1947

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.128258
Lilliefors 5% Critical Value	0.105897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1188.614
95% Chebyshev (MVUE) UCL	1259.063
97.5% Chebyshev (MVUE) UCL	1591.595
99% Chebyshev (MVUE) UCL	2244.79

95% Non-parametric UCLs	
CLT UCL	284.0931
Adj-CLT UCL (Adjusted for skewness)	288.6412
Mod-t UCL (Adjusted for skewness)	285.5125
Jackknife UCL	284.8031
Standard Bootstrap UCL	283.0037
Bootstrap-t UCL	292.6394
Hall's Bootstrap UCL	287.5309
Percentile Bootstrap UCL	282.4286
BCA Bootstrap UCL	288.3786
95% Chebyshev (Mean, Sd) UCL	370.1682
97.5% Chebyshev (Mean, Sd) UCL	429.9852
99% Chebyshev (Mean, Sd) UCL	547.4841

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2,2,4-TRIMETHYLPENTANE

Raw Statistics	
Number of Valid Samples	74
Number of Unique Samples	56
Minimum	0.5
Maximum	850
Mean	226.148
Median	94
Standard Deviation	261.0626
Variance	68153.67
Coefficient of Variation	1.154388
Skewness	1.161852

Gamma Statistics	
k hat	0.533472
k star (bias corrected)	0.520854
Theta hat	423.9172
Theta star	434.1871
nu hat	78.95386
nu star	77.08636
Approx.Chi Square Value (.05)	57.85769
Adjusted Level of Significance	0.046757
Adjusted Chi Square Value	57.52758

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	4.24235
Standard Deviation of log data	2.01351
Variance of log data	4.054223

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

301.307

Normal Distribution Test	
Lilliefors Test Statisitic	0.211241
Lilliefors 5% Critical Value	0.102995
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	276.7075

Gamma Distribution Test	
A-D Test Statistic	0.758462
A-D 5% Critical Value	0.814297
K-S Test Statistic	0.082207
K-S 5% Critical Value	0.109491
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	301.307
Adjusted Gamma UCL	303.036

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.132864
Lilliefors 5% Critical Value	0.102995
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1178.915
95% Chebyshev (MVUE) UCL	1255.036
97.5% Chebyshev (MVUE) UCL	1586.551
99% Chebyshev (MVUE) UCL	2237.747

95% Non-parametric UCLs	
CLT UCL	276.0658
Adj-CLT UCL (Adjusted for skewness)	280.4455
Mod-t UCL (Adjusted for skewness)	277.3906
Jackknife UCL	276.7075
Standard Bootstrap UCL	274.9923
Bootstrap-t UCL	280.6384
Hall's Bootstrap UCL	278.6426
Percentile Bootstrap UCL	276.8162
BCA Bootstrap UCL	277.1635
95% Chebyshev (Mean, Sd) UCL	358.4314
97.5% Chebyshev (Mean, Sd) UCL	415.6706
99% Chebyshev (Mean, Sd) UCL	528.1058

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-BUTANONE

Raw Statistics	
Number of Valid Samples	119
Number of Unique Samples	79
Minimum	0.7
Maximum	850
Mean	190.7269
Median	90
Standard Deviation	226.6983
Variance	51392.1
Coefficient of Variation	1.188601
Skewness	1.572879

Gamma Statistics	
k hat	0.690788
k star (bias corrected)	0.678975
Theta hat	276.1005
Theta star	280.904
nu hat	164.4075
nu star	161.5961
Approx.Chi Square Value (.05)	133.1999
Adjusted Level of Significance	0.047983
Adjusted Chi Square Value	132.8861

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.745236
Mean of log data	4.374357
Standard Deviation of log data	1.57048
Variance of log data	2.466406

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

231.387

Normal Distribution Test	
Lilliefors Test Statisitic	0.200949
Lilliefors 5% Critical Value	0.081219
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	225.1797

Gamma Distribution Test	
A-D Test Statistic	0.627291
A-D 5% Critical Value	0.800853
K-S Test Statistic	0.065566
K-S 5% Critical Value	0.088232
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	231.387
Adjusted Gamma UCL	231.9333

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.085887
Lilliefors 5% Critical Value	0.081219
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	406.1389
95% Chebyshev (MVUE) UCL	504.7342
97.5% Chebyshev (MVUE) UCL	607.8548
99% Chebyshev (MVUE) UCL	810.4153

95% Non-parametric UCLs	
CLT UCL	224.9092
Adj-CLT UCL (Adjusted for skewness)	228.1109
Mod-t UCL (Adjusted for skewness)	225.6791
Jackknife UCL	225.1797
Standard Bootstrap UCL	224.9888
Bootstrap-t UCL	229.3197
Hall's Bootstrap UCL	227.2326
Percentile Bootstrap UCL	224.284
BCA Bootstrap UCL	226.679
95% Chebyshev (Mean, Sd) UCL	281.3109
97.5% Chebyshev (Mean, Sd) UCL	320.5067
99% Chebyshev (Mean, Sd) UCL	397.4992

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-PROPANOL

Raw Statistics	
Number of Valid Samples	68
Number of Unique Samples	54
Minimum	2
Maximum	15000
Mean	1346.148
Median	482.5
Standard Deviation	2243.012
Variance	5031104
Coefficient of Variation	1.666245
Skewness	3.939748

Gamma Statistics	
k hat	0.429997
k star (bias corrected)	0.42083
Theta hat	3130.599
Theta star	3198.79
nu hat	58.47957
nu star	57.23292
Approx.Chi Square Value (.05)	40.83986
Adjusted Level of Significance	0.046471
Adjusted Chi Square Value	40.54021

Log-transformed Statistics	
Minimum of log data	0.693147
Maximum of log data	9.615805
Mean of log data	5.692317
Standard Deviation of log data	2.345373
Variance of log data	5.500776

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1900.433

Normal Distribution Test	
Lilliefors Test Statisitic	0.2745
Lilliefors 5% Critical Value	0.107443
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1799.83

Gamma Distribution Test	
A-D Test Statistic	0.470191
A-D 5% Critical Value	0.833607
K-S Test Statistic	0.062559
K-S 5% Critical Value	0.115415
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1886.49
Adjusted Gamma UCL	1900.433

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.159007
Lilliefors 5% Critical Value	0.107443
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	14073.79
95% Chebyshev (MVUE) UCL	12111.2
97.5% Chebyshev (MVUE) UCL	15601.24
99% Chebyshev (MVUE) UCL	22456.76

95% *Non-parametric* UCLs	
CLT UCL	1793.557
Adj-CLT UCL (Adjusted for skewness)	1932.415
Mod-t UCL (Adjusted for skewness)	1821.489
Jackknife UCL	1799.83
Standard Bootstrap UCL	1794.809
Bootstrap-t UCL	2075.481
Hall's Bootstrap UCL	3364.23
Percentile Bootstrap UCL	1813.824
BCA Bootstrap UCL	1948.613
95% Chebyshev (Mean, Sd) UCL	2531.791
97.5% Chebyshev (Mean, Sd) UCL	3044.82
99% Chebyshev (Mean, Sd) UCL	4052.565

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETALDEHYDE

Raw Statistics	
Number of Valid Samples	3
Number of Unique Samples	3
Minimum	54
Maximum	62
Mean	58.33333
Median	59

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	125
Number of Unique Samples	86
Minimum	6.5
Maximum	8900
Mean	1214.428
Median	740
Standard Deviation	1430.044
Variance	2045027
Coefficient of Variation	1.177546
Skewness	2.107679

Gamma Statistics	
k hat	0.693601
k star (bias corrected)	0.682288
Theta hat	1750.903
Theta star	1779.935
nu hat	173.4003
nu star	170.572
Approx.Chi Square Value (.05)	141.3644
Adjusted Level of Significance	0.04808
Adjusted Chi Square Value	141.0565

Log-transformed Statistics	
Minimum of log data	1.871802
Maximum of log data	9.093807
Mean of log data	6.229595
Standard Deviation of log data	1.544981
Variance of log data	2.386967

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

2013.207

Normal Distribution Test	
Lilliefors Test Statisitic	0.199145
Lilliefors 5% Critical Value	0.079246
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1426.4

Gamma Distribution Test	
A-D Test Statistic	1.594792
A-D 5% Critical Value	0.800676
K-S Test Statistic	0.103462
K-S 5% Critical Value	0.086603
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1465.344
Adjusted Gamma UCL	1468.542

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.13522
Lilliefors 5% Critical Value	0.079246
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2443.431
95% Chebyshev (MVUE) UCL	3041.443
97.5% Chebyshev (MVUE) UCL	3647.692
99% Chebyshev (MVUE) UCL	4838.551

95% Non-parametric UCLs	
CLT UCL	1424.816
Adj-CLT UCL (Adjusted for skewness)	1450.581
Mod-t UCL (Adjusted for skewness)	1430.419
Jackknife UCL	1426.4
Standard Bootstrap UCL	1425.215
Bootstrap-t UCL	1443.187
Hall's Bootstrap UCL	1473.163
Percentile Bootstrap UCL	1427.46
BCA Bootstrap UCL	1448.824
95% Chebyshev (Mean, Sd) UCL	1771.962
97.5% Chebyshev (Mean, Sd) UCL	2013.207
99% Chebyshev (Mean, Sd) UCL	2487.087

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	126
Number of Unique Samples	87
Minimum	0.5
Maximum	2050
Mean	218.9817
Median	85
Standard Deviation	300.5877
Variance	90352.95
Coefficient of Variation	1.372661
Skewness	2.670831

Gamma Statistics	
k hat	0.598962
k star (bias corrected)	0.589992
Theta hat	365.602
Theta star	371.1605
nu hat	150.9384
nu star	148.678
Approx.Chi Square Value (.05)	121.4904
Adjusted Level of Significance	0.048095
Adjusted Chi Square Value	121.2081

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.357147
Standard Deviation of log data	1.706171
Variance of log data	2.911021

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

386.2133

Normal Distribution Test	
Lilliefors Test Statisitic	0.237012
Lilliefors 5% Critical Value	0.078931
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	263.3573

Gamma Distribution Test	
A-D Test Statistic	1.083812
A-D 5% Critical Value	0.809675
K-S Test Statistic	0.101171
K-S 5% Critical Value	0.086911
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	267.9863
Adjusted Gamma UCL	268.6106

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.093378
Lilliefors 5% Critical Value	0.078931
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	520.8672
95% Chebyshev (MVUE) UCL	645.6245
97.5% Chebyshev (MVUE) UCL	784.1713
99% Chebyshev (MVUE) UCL	1056.32

95% Non-parametric UCLs	
CLT UCL	263.0284
Adj-CLT UCL (Adjusted for skewness)	269.8365
Mod-t UCL (Adjusted for skewness)	264.4192
Jackknife UCL	263.3573
Standard Bootstrap UCL	262.2718
Bootstrap-t UCL	273.0945
Hall's Bootstrap UCL	272.7368
Percentile Bootstrap UCL	262.3913
BCA Bootstrap UCL	269.4405
95% Chebyshev (Mean, Sd) UCL	335.7064
97.5% Chebyshev (Mean, Sd) UCL	386.2133
99% Chebyshev (Mean, Sd) UCL	485.4242

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BROMOFORM

Raw Statistics	
Number of Valid Samples	112
Number of Unique Samples	72
Minimum	0.5
Maximum	850
Mean	171.3357
Median	80
Standard Deviation	228.0785
Variance	52019.78
Coefficient of Variation	1.331179
Skewness	1.721395

Gamma Statistics	
k hat	0.536959
k star (bias corrected)	0.528529
Theta hat	319.0852
Theta star	324.1749
nu hat	120.2788
nu star	118.3904
Approx.Chi Square Value (.05)	94.26213
Adjusted Level of Significance	0.047857
Adjusted Chi Square Value	93.98313

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	3.973604
Standard Deviation of log data	1.91384
Variance of log data	3.662784

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

215.1925

Normal Distribution Test	
Lilliefors Test Statisitic	0.259717
Lilliefors 5% Critical Value	0.083719
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	207.0829

Gamma Distribution Test	
A-D Test Statistic	0.780025
A-D 5% Critical Value	0.815239
K-S Test Statistic	0.080804
K-S 5% Critical Value	0.091098
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	215.1925
Adjusted Gamma UCL	215.8314

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.132295
Lilliefors 5% Critical Value	0.083719
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	590.1051
95% Chebyshev (MVUE) UCL	707.434
97.5% Chebyshev (MVUE) UCL	876.1351
99% Chebyshev (MVUE) UCL	1207.516

95% Non-parametric UCLs	
CLT UCL	206.7846
Adj-CLT UCL (Adjusted for skewness)	210.5302
Mod-t UCL (Adjusted for skewness)	207.6672
Jackknife UCL	207.0829
Standard Bootstrap UCL	207.2746
Bootstrap-t UCL	212.9509
Hall's Bootstrap UCL	210.8046
Percentile Bootstrap UCL	207.4379
BCA Bootstrap UCL	209.7406
95% Chebyshev (Mean, Sd) UCL	265.276
97.5% Chebyshev (Mean, Sd) UCL	305.9241
99% Chebyshev (Mean, Sd) UCL	385.7693

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BROMODICHLOROMETHANE

Raw Statistics	
Number of Valid Samples	113
Number of Unique Samples	74
Minimum	0.5
Maximum	850
Mean	169.8903
Median	80
Standard Deviation	227.5766
Variance	51791.1
Coefficient of Variation	1.33955
Skewness	1.733112

Gamma Statistics	
k hat	0.541082
k star (bias corrected)	0.532617
Theta hat	313.9824
Theta star	318.9728
nu hat	122.2846
nu star	120.3714
Approx.Chi Square Value (.05)	96.03179
Adjusted Level of Significance	0.047876
Adjusted Chi Square Value	95.75261

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	3.975399
Standard Deviation of log data	1.872353
Variance of log data	3.505706

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

212.9496

Normal Distribution Test	
Lilliefors Test Statisitic	0.260039
Lilliefors 5% Critical Value	0.083348
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	205.398

Gamma Distribution Test	
A-D Test Statistic	0.916847
A-D 5% Critical Value	0.814873
K-S Test Statistic	0.082531
K-S 5% Critical Value	0.0908
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	212.9496
Adjusted Gamma UCL	213.5705

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.127097
Lilliefors 5% Critical Value	0.083348
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	533.5282
95% Chebyshev (MVUE) UCL	644.5125
97.5% Chebyshev (MVUE) UCL	795.7098
99% Chebyshev (MVUE) UCL	1092.708

95% Non-parametric UCLs	
CLT UCL	205.1043
Adj-CLT UCL (Adjusted for skewness)	208.8338
Mod-t UCL (Adjusted for skewness)	205.9797
Jackknife UCL	205.398
Standard Bootstrap UCL	204.6629
Bootstrap-t UCL	207.2993
Hall's Bootstrap UCL	209.8399
Percentile Bootstrap UCL	206.9323
BCA Bootstrap UCL	208.2783
95% Chebyshev (Mean, Sd) UCL	263.2082
97.5% Chebyshev (Mean, Sd) UCL	303.587
99% Chebyshev (Mean, Sd) UCL	382.9032

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON DISULFIDE

Raw Statistics	
Number of Valid Samples	116
Number of Unique Samples	80
Minimum	0.5
Maximum	8400
Mean	713.0444
Median	290
Standard Deviation	1215.16
Variance	1476613
Coefficient of Variation	1.704185
Skewness	3.586234

Gamma Statistics	
k hat	0.408248
k star (bias corrected)	0.403437
Theta hat	1746.597
Theta star	1767.425
nu hat	94.71349
nu star	93.59734
Approx.Chi Square Value (.05)	72.28147
Adjusted Level of Significance	0.047931
Adjusted Chi Square Value	72.04701

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	9.035987
Mean of log data	4.962971
Standard Deviation of log data	2.368058
Variance of log data	5.607699

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

926.3265

Normal Distribution Test	
Lilliefors Test Statisitic	0.27881
Lilliefors 5% Critical Value	0.082263
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	900.1317

Gamma Distribution Test	
A-D Test Statistic	0.599035
A-D 5% Critical Value	0.841321
K-S Test Statistic	0.071696
K-S 5% Critical Value	0.091328
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	923.3217
Adjusted Gamma UCL	926.3265

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.131744
Lilliefors 5% Critical Value	0.082263
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5356.57
95% Chebyshev (MVUE) UCL	5752.373
97.5% Chebyshev (MVUE) UCL	7304.421
99% Chebyshev (MVUE) UCL	10353.12

95% Non-parametric UCLs	
CLT UCL	898.6246
Adj-CLT UCL (Adjusted for skewness)	938.7662
Mod-t UCL (Adjusted for skewness)	906.393
Jackknife UCL	900.1317
Standard Bootstrap UCL	896.5503
Bootstrap-t UCL	989.898
Hall's Bootstrap UCL	972.8926
Percentile Bootstrap UCL	911.9871
BCA Bootstrap UCL	944.5871
95% Chebyshev (Mean, Sd) UCL	1204.836
97.5% Chebyshev (Mean, Sd) UCL	1417.635
99% Chebyshev (Mean, Sd) UCL	1835.636

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON TETRACHLORIDE

Raw Statistics	
Number of Valid Samples	117
Number of Unique Samples	76
Minimum	0.5
Maximum	2050
Mean	189.1051
Median	80
Standard Deviation	284.9564
Variance	81200.13
Coefficient of Variation	1.506867
Skewness	3.187678

Gamma Statistics	
k hat	0.532783
k star (bias corrected)	0.52482
Theta hat	354.9384
Theta star	360.3239
nu hat	124.6712
nu star	122.8078
Approx.Chi Square Value (.05)	98.2107
Adjusted Level of Significance	0.047949
Adjusted Chi Square Value	97.93806

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.061706
Standard Deviation of log data	1.909287
Variance of log data	3.645377

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

236.467

Normal Distribution Test	
Lilliefors Test Statisitic	0.259056
Lilliefors 5% Critical Value	0.081911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	232.7864

Gamma Distribution Test	
A-D Test Statistic	0.739996
A-D 5% Critical Value	0.815748
K-S Test Statistic	0.091973
K-S 5% Critical Value	0.089764
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	236.467
Adjusted Gamma UCL	237.1253

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.113657
Lilliefors 5% Critical Value	0.081911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	628.2656
95% Chebyshev (MVUE) UCL	758.1837
97.5% Chebyshev (MVUE) UCL	937.1701
99% Chebyshev (MVUE) UCL	1288.754

95% Non-parametric UCLs	
CLT UCL	232.4375
Adj-CLT UCL (Adjusted for skewness)	240.7331
Mod-t UCL (Adjusted for skewness)	234.0803
Jackknife UCL	232.7864
Standard Bootstrap UCL	233.2146
Bootstrap-t UCL	246.7833
Hall's Bootstrap UCL	253.4814
Percentile Bootstrap UCL	235.7321
BCA Bootstrap UCL	240.4855
95% Chebyshev (Mean, Sd) UCL	303.9369
97.5% Chebyshev (Mean, Sd) UCL	353.6248
99% Chebyshev (Mean, Sd) UCL	451.2269

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	132
Number of Unique Samples	103
Minimum	0.7
Maximum	22000
Mean	971.5731
Median	340
Standard Deviation	2213.722
Variance	4900564
Coefficient of Variation	2.278492
Skewness	7.239391

Gamma Statistics	
k hat	0.443087
k star (bias corrected)	0.438067
Theta hat	2192.739
Theta star	2217.864
nu hat	116.9749
nu star	115.6497
Approx.Chi Square Value (.05)	91.81672
Adjusted Level of Significance	0.048182
Adjusted Chi Square Value	91.58379

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	9.998798
Mean of log data	5.417911
Standard Deviation of log data	2.151095
Variance of log data	4.627211

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1226.878

Normal Distribution Test	
Lilliefors Test Statisitic	0.330486
Lilliefors 5% Critical Value	0.077116
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1290.76

Gamma Distribution Test	
A-D Test Statistic	0.702463
A-D 5% Critical Value	0.833134
K-S Test Statistic	0.048909
K-S 5% Critical Value	0.08652
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1223.765
Adjusted Gamma UCL	1226.878

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.123
Lilliefors 5% Critical Value	0.077116
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4327.808
95% Chebyshev (MVUE) UCL	5093.313
97.5% Chebyshev (MVUE) UCL	6364.259
99% Chebyshev (MVUE) UCL	8860.788

95% Non-parametric UCLs	
CLT UCL	1288.503
Adj-CLT UCL (Adjusted for skewness)	1418.23
Mod-t UCL (Adjusted for skewness)	1310.995
Jackknife UCL	1290.76
Standard Bootstrap UCL	1286.465
Bootstrap-t UCL	1628.053
Hall's Bootstrap UCL	2745.207
Percentile Bootstrap UCL	1323.506
BCA Bootstrap UCL	1464.014
95% Chebyshev (Mean, Sd) UCL	1811.445
97.5% Chebyshev (Mean, Sd) UCL	2174.858
99% Chebyshev (Mean, Sd) UCL	2888.712

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CIS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	124
Number of Unique Samples	88
Minimum	0.5
Maximum	9500
Mean	692.4887
Median	155
Standard Deviation	1717.28
Variance	2949049
Coefficient of Variation	2.479867
Skewness	4.29837

Gamma Statistics	
k hat	0.398568
k star (bias corrected)	0.394301
Theta hat	1737.443
Theta star	1756.243
nu hat	98.84478
nu star	97.78671
Approx.Chi Square Value (.05)	75.97142
Adjusted Level of Significance	0.048065
Adjusted Chi Square Value	75.74655

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	9.159047
Mean of log data	4.888332
Standard Deviation of log data	2.110922
Variance of log data	4.455992

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

2226.921

Normal Distribution Test	
Lilliefors Test Statisitic	0.354072
Lilliefors 5% Critical Value	0.079565
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	948.0769

Gamma Distribution Test	
A-D Test Statistic	4.018544
A-D 5% Critical Value	0.843857
K-S Test Statistic	0.147166
K-S 5% Critical Value	0.089233
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	891.3377
Adjusted Gamma UCL	893.9839

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.119538
Lilliefors 5% Critical Value	0.079565
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2342.983
95% Chebyshev (MVUE) UCL	2750.548
97.5% Chebyshev (MVUE) UCL	3436.357
99% Chebyshev (MVUE) UCL	4783.495

95% Non-parametric UCLs	
CLT UCL	946.1519
Adj-CLT UCL (Adjusted for skewness)	1009.759
Mod-t UCL (Adjusted for skewness)	957.9983
Jackknife UCL	948.0769
Standard Bootstrap UCL	946.1605
Bootstrap-t UCL	1078.215
Hall's Bootstrap UCL	990.301
Percentile Bootstrap UCL	943.0496
BCA Bootstrap UCL	1013.25
95% Chebyshev (Mean, Sd) UCL	1364.702
97.5% Chebyshev (Mean, Sd) UCL	1655.569
99% Chebyshev (Mean, Sd) UCL	2226.921

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CYCLOHEXANE

Raw Statistics	
Number of Valid Samples	71
Number of Unique Samples	52
Minimum	0.5
Maximum	850
Mean	230.8514
Median	90
Standard Deviation	264.916
Variance	70180.5
Coefficient of Variation	1.147561
Skewness	1.111258

Gamma Statistics	
k hat	0.503648
k star (bias corrected)	0.491757
Theta hat	458.3583
Theta star	469.4419
nu hat	71.51807
nu star	69.82951
Approx.Chi Square Value (.05)	51.58916
Adjusted Level of Significance	0.04662
Adjusted Chi Square Value	51.26488

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	4.182034
Standard Deviation of log data	2.118686
Variance of log data	4.48883

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

312.4734

Normal Distribution Test	
Lilliefors Test Statisitic	0.211664
Lilliefors 5% Critical Value	0.105149
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	283.2588

Gamma Distribution Test	
A-D Test Statistic	0.974854
A-D 5% Critical Value	0.816605
K-S Test Statistic	0.088952
K-S 5% Critical Value	0.111842
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	312.4734
Adjusted Gamma UCL	314.45

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.145465
Lilliefors 5% Critical Value	0.105149
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1520.466
95% Chebyshev (MVUE) UCL	1522.946
97.5% Chebyshev (MVUE) UCL	1938.693
99% Chebyshev (MVUE) UCL	2755.349

95% Non-parametric UCLs	
CLT UCL	282.5652
Adj-CLT UCL (Adjusted for skewness)	286.9956
Mod-t UCL (Adjusted for skewness)	283.9498
Jackknife UCL	283.2588
Standard Bootstrap UCL	283.0868
Bootstrap-t UCL	291.1142
Hall's Bootstrap UCL	288.9074
Percentile Bootstrap UCL	282.5549
BCA Bootstrap UCL	285.1296
95% Chebyshev (Mean, Sd) UCL	367.8941
97.5% Chebyshev (Mean, Sd) UCL	427.1926
99% Chebyshev (Mean, Sd) UCL	543.673

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	121
Number of Unique Samples	78
Minimum	0.5
Maximum	2050
Mean	227.0211
Median	92
Standard Deviation	331.6642
Variance	110001.1
Coefficient of Variation	1.46094
Skewness	2.947927

Gamma Statistics	
k hat	0.55359
k star (bias corrected)	0.545375
Theta hat	410.0885
Theta star	416.2662
nu hat	133.9689
nu star	131.9807
Approx.Chi Square Value (.05)	106.4363
Adjusted Level of Significance	0.048017
Adjusted Chi Square Value	106.1615

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.295415
Standard Deviation of log data	1.884777
Variance of log data	3.552385

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

281.5056

Normal Distribution Test	
Lilliefors Test Statisitic	0.247309
Lilliefors 5% Critical Value	0.080545
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	277.0014

Gamma Distribution Test	
A-D Test Statistic	0.590776
A-D 5% Critical Value	0.813872
K-S Test Statistic	0.077382
K-S 5% Critical Value	0.088546
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	281.5056
Adjusted Gamma UCL	282.234

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.126942
Lilliefors 5% Critical Value	0.080545
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	740.4905
95% Chebyshev (MVUE) UCL	900.4201
97.5% Chebyshev (MVUE) UCL	1109.718
99% Chebyshev (MVUE) UCL	1520.844

95% Non-parametric UCLs	
CLT UCL	276.6155
Adj-CLT UCL (Adjusted for skewness)	285.2495
Mod-t UCL (Adjusted for skewness)	278.3481
Jackknife UCL	277.0014
Standard Bootstrap UCL	275.9958
Bootstrap-t UCL	290.276
Hall's Bootstrap UCL	294.5554
Percentile Bootstrap UCL	276.5893
BCA Bootstrap UCL	286.3707
95% Chebyshev (Mean, Sd) UCL	358.4475
97.5% Chebyshev (Mean, Sd) UCL	415.3158
99% Chebyshev (Mean, Sd) UCL	527.0226

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIBROMOCHLOROMETHANE

Raw Statistics	
Number of Valid Samples	112
Number of Unique Samples	73
Minimum	0.5
Maximum	850
Mean	171.3438
Median	80
Standard Deviation	228.0724
Variance	52017.02
Coefficient of Variation	1.331081
Skewness	1.721485

Gamma Statistics	
k hat	0.540508
k star (bias corrected)	0.531982
Theta hat	317.0052
Theta star	322.0855
nu hat	121.0737
nu star	119.164
Approx.Chi Square Value (.05)	94.95299
Adjusted Level of Significance	0.047857
Adjusted Chi Square Value	94.67292

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	3.982498
Standard Deviation of log data	1.894337
Variance of log data	3.588511

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

215.0328

Normal Distribution Test	
Lilliefors Test Statisitic	0.259733
Lilliefors 5% Critical Value	0.083719
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	207.09

Gamma Distribution Test	
A-D Test Statistic	0.811874
A-D 5% Critical Value	0.814904
K-S Test Statistic	0.081665
K-S 5% Critical Value	0.091075
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	215.0328
Adjusted Gamma UCL	215.6689

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.130684
Lilliefors 5% Critical Value	0.083719
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	567.9522
95% Chebyshev (MVUE) UCL	683.0307
97.5% Chebyshev (MVUE) UCL	844.8071
99% Chebyshev (MVUE) UCL	1162.586

95% Non-parametric UCLs	
CLT UCL	206.7917
Adj-CLT UCL (Adjusted for skewness)	210.5374
Mod-t UCL (Adjusted for skewness)	207.6743
Jackknife UCL	207.09
Standard Bootstrap UCL	207.0558
Bootstrap-t UCL	211.6538
Hall's Bootstrap UCL	210.638
Percentile Bootstrap UCL	207.8973
BCA Bootstrap UCL	209.0634
95% Chebyshev (Mean, Sd) UCL	265.2816
97.5% Chebyshev (Mean, Sd) UCL	305.9286
99% Chebyshev (Mean, Sd) UCL	385.7717

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ETHYLBENZENE

Raw Statistics	
Number of Valid Samples	122
Number of Unique Samples	82
Minimum	0.5
Maximum	2050
Mean	180.9533
Median	77.5
Standard Deviation	281.7514
Variance	7.94E+04
Coefficient of Variation	1.55704
Skewness	3.233369

Gamma Statistics	
k hat	0.505047
k star (bias corrected)	0.498092
Theta hat	358.2901
Theta star	363.2928
nu hat	123.2314
nu star	121.5345
Approx.Chi Square Value (.05)	97.0716
Adjusted Level of Significance	0.048033
Adjusted Chi Square Value	96.81188

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	3.942526
Standard Deviation of log data	1.917633
Variance of log data	3.677316

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

226.555

Normal Distribution Test	
Lilliefors Test Statisitic	0.261501
Lilliefors 5% Critical Value	0.080215
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	223.2349

Gamma Distribution Test	
A-D Test Statistic	1.024502
A-D 5% Critical Value	0.818492
K-S Test Statistic	0.087601
K-S 5% Critical Value	0.088575
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	226.555
Adjusted Gamma UCL	227.1628

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.113519
Lilliefors 5% Critical Value	0.080215
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	561.4045
95% Chebyshev (MVUE) UCL	680.246
97.5% Chebyshev (MVUE) UCL	839.9812
99% Chebyshev (MVUE) UCL	1153.75

95% Non-parametric UCLs	
CLT UCL	222.9112
Adj-CLT UCL (Adjusted for skewness)	230.89
Mod-t UCL (Adjusted for skewness)	224.4794
Jackknife UCL	223.2349
Standard Bootstrap UCL	222.9759
Bootstrap-t UCL	231.2721
Hall's Bootstrap UCL	238.0607
Percentile Bootstrap UCL	224.3766
BCA Bootstrap UCL	232.3029
95% Chebyshev (Mean, Sd) UCL	292.1426
97.5% Chebyshev (Mean, Sd) UCL	340.2543
99% Chebyshev (Mean, Sd) UCL	434.7604

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ETHANOL

Raw Statistics	
Number of Valid Samples	69
Number of Unique Samples	53
Minimum	2.9
Maximum	3400
Mean	935.0246
Median	360
Standard Deviation	1066.285
Variance	1136964
Coefficient of Variation	1.140382
Skewness	1.101845

Gamma Statistics	
k hat	0.524553
k star (bias corrected)	0.511408
Theta hat	1782.517
Theta star	1828.334
nu hat	72.3883
nu star	70.57432
Approx.Chi Square Value (.05)	52.23022
Adjusted Level of Significance	0.046522
Adjusted Chi Square Value	51.8941

Log-transformed Statistics	
Minimum of log data	1.064711
Maximum of log data	8.131531
Mean of log data	5.638592
Standard Deviation of log data	2.050688
Variance of log data	4.205319

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

1263.42

Normal Distribution Test	
Lilliefors Test Statisitic	0.223574
Lilliefors 5% Critical Value	0.106662
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1149.084

Gamma Distribution Test	
A-D Test Statistic	0.904084
A-D 5% Critical Value	0.814294
K-S Test Statistic	0.08808
K-S 5% Critical Value	0.113267
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1263.42
Adjusted Gamma UCL	1271.603

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.13796
Lilliefors 5% Critical Value	0.106662
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5466.226
95% Chebyshev (MVUE) UCL	5591.157
97.5% Chebyshev (MVUE) UCL	7098.134
99% Chebyshev (MVUE) UCL	10058.3

95% Non-parametric UCLs	
CLT UCL	1146.167
Adj-CLT UCL (Adjusted for skewness)	1164.361
Mod-t UCL (Adjusted for skewness)	1151.921
Jackknife UCL	1149.084
Standard Bootstrap UCL	1144.762
Bootstrap-t UCL	1183.893
Hall's Bootstrap UCL	1157.583
Percentile Bootstrap UCL	1152.216
BCA Bootstrap UCL	1161.865
95% Chebyshev (Mean, Sd) UCL	1494.557
97.5% Chebyshev (Mean, Sd) UCL	1736.668
99% Chebyshev (Mean, Sd) UCL	2212.247

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEPTANE

Raw Statistics	
Number of Valid Samples	72
Number of Unique Samples	53
Minimum	0.5
Maximum	850
Mean	224.8681
Median	87.5
Standard Deviation	264.8299
Variance	70134.87
Coefficient of Variation	1.177712
Skewness	1.155466

Gamma Statistics	
k hat	0.506649
k star (bias corrected)	0.494798
Theta hat	443.8341
Theta star	454.4646
nu hat	72.95744
nu star	71.25088
Approx.Chi Square Value (.05)	52.81302
Adjusted Level of Significance	0.046667
Adjusted Chi Square Value	52.48939

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.745236
Mean of log data	4.164384
Standard Deviation of log data	2.084224
Variance of log data	4.343991

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

303.3731

Normal Distribution Test	
Lilliefors Test Statisitic	0.223245
Lilliefors 5% Critical Value	0.104416
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	276.8835

Gamma Distribution Test	
A-D Test Statistic	0.785276
A-D 5% Critical Value	0.816529
K-S Test Statistic	0.083008
K-S 5% Critical Value	0.11111
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	303.3731
Adjusted Gamma UCL	305.2435

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.125485
Lilliefors 5% Critical Value	0.104416
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1344.345
95% Chebyshev (MVUE) UCL	1375.799
97.5% Chebyshev (MVUE) UCL	1747.476
99% Chebyshev (MVUE) UCL	2477.565

95% Non-parametric UCLs	
CLT UCL	276.2048
Adj-CLT UCL (Adjusted for skewness)	280.746
Mod-t UCL (Adjusted for skewness)	277.5918
Jackknife UCL	276.8835
Standard Bootstrap UCL	277.2605
Bootstrap-t UCL	283.0603
Hall's Bootstrap UCL	280.8612
Percentile Bootstrap UCL	277.8153
BCA Bootstrap UCL	278.5708
95% Chebyshev (Mean, Sd) UCL	360.9115
97.5% Chebyshev (Mean, Sd) UCL	419.7776
99% Chebyshev (Mean, Sd) UCL	535.4086

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEXANE (N-HEXANE)

Raw Statistics	
Number of Valid Samples	73
Number of Unique Samples	55
Minimum	1.1
Maximum	1300
Mean	245.5219
Median	90
Standard Deviation	293.4171
Variance	86093.6
Coefficient of Variation	1.195075
Skewness	1.368769

Gamma Statistics	
k hat	0.566184
k star (bias corrected)	0.552048
Theta hat	433.6436
Theta star	444.7472
nu hat	82.66281
nu star	80.59904
Approx.Chi Square Value (.05)	60.9088
Adjusted Level of Significance	0.046712
Adjusted Chi Square Value	60.56491

Log-transformed Statistics	
Minimum of log data	0.09531
Maximum of log data	7.17012
Mean of log data	4.40262
Standard Deviation of log data	1.845727
Variance of log data	3.406709

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

324.8928

Normal Distribution Test	
Lilliefors Test Statisitic	0.228446
Lilliefors 5% Critical Value	0.103698
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	302.7456

Gamma Distribution Test	
A-D Test Statistic	0.781641
A-D 5% Critical Value	0.810874
K-S Test Statistic	0.091861
K-S 5% Critical Value	0.109953
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	324.8928
Adjusted Gamma UCL	326.7376

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.10579
Lilliefors 5% Critical Value	0.103698
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	899.6177
95% Chebyshev (MVUE) UCL	1012.109
97.5% Chebyshev (MVUE) UCL	1267.162
99% Chebyshev (MVUE) UCL	1768.164

95% Non-parametric UCLs	
CLT UCL	302.0093
Adj-CLT UCL (Adjusted for skewness)	307.8879
Mod-t UCL (Adjusted for skewness)	303.6625
Jackknife UCL	302.7456
Standard Bootstrap UCL	302.7344
Bootstrap-t UCL	310.163
Hall's Bootstrap UCL	308.9439
Percentile Bootstrap UCL	305.9562
BCA Bootstrap UCL	307.6096
95% Chebyshev (Mean, Sd) UCL	395.2147
97.5% Chebyshev (Mean, Sd) UCL	459.9869
99% Chebyshev (Mean, Sd) UCL	587.2193

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	124
Number of Unique Samples	82
Minimum	2.3
Maximum	4050
Mean	227.6589
Median	97.5
Standard Deviation	419.1356
Variance	175674.6
Coefficient of Variation	1.841069
Skewness	6.489989

Gamma Statistics	
k hat	0.605211
k star (bias corrected)	0.595945
Theta hat	376.1643
Theta star	382.013
nu hat	150.0924
nu star	147.7944
Approx.Chi Square Value (.05)	120.6914
Adjusted Level of Significance	0.048065
Adjusted Chi Square Value	120.4054

Log-transformed Statistics	
Minimum of log data	0.832909
Maximum of log data	8.306472
Mean of log data	4.408222
Standard Deviation of log data	1.598015
Variance of log data	2.553653

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

278.783

Normal Distribution Test	
Lilliefors Test Statisitic	0.295401
Lilliefors 5% Critical Value	0.079565
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	290.0401

Gamma Distribution Test	
A-D Test Statistic	1.100336
A-D 5% Critical Value	0.809043
K-S Test Statistic	0.071491
K-S 5% Critical Value	0.087414
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	278.783
Adjusted Gamma UCL	279.4452

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.082388
Lilliefors 5% Critical Value	0.079565
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	439.7442
95% Chebyshev (MVUE) UCL	546.9129
97.5% Chebyshev (MVUE) UCL	659.0334
99% Chebyshev (MVUE) UCL	879.2726

95% Non-parametric UCLs	
CLT UCL	289.5703
Adj-CLT UCL (Adjusted for skewness)	313.0103
Mod-t UCL (Adjusted for skewness)	293.6963
Jackknife UCL	290.0401
Standard Bootstrap UCL	291.0886
Bootstrap-t UCL	333.5958
Hall's Bootstrap UCL	571.5482
Percentile Bootstrap UCL	293.8194
BCA Bootstrap UCL	322.9976
95% Chebyshev (Mean, Sd) UCL	391.7256
97.5% Chebyshev (Mean, Sd) UCL	462.7174
99% Chebyshev (Mean, Sd) UCL	602.167

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYL TERT-BUTYL ETHER

Raw Statistics	
Number of Valid Samples	113
Number of Unique Samples	77
Minimum	0.5
Maximum	1550
Mean	252.7279
Median	150
Standard Deviation	277.1859
Variance	76832
Coefficient of Variation	1.096776
Skewness	1.609535

Gamma Statistics	
k hat	0.60609
k star (bias corrected)	0.595899
Theta hat	416.9805
Theta star	424.1118
nu hat	136.9764
nu star	134.6732
Approx.Chi Square Value (.05)	108.857
Adjusted Level of Significance	0.047876
Adjusted Chi Square Value	108.5591

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.34601
Mean of log data	4.514383
Standard Deviation of log data	1.933081
Variance of log data	3.736801

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

415.569

Normal Distribution Test	
Lilliefors Test Statisitic	0.181422
Lilliefors 5% Critical Value	0.083348
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	295.9759

Gamma Distribution Test	
A-D Test Statistic	0.812962
A-D 5% Critical Value	0.808746
K-S Test Statistic	0.098908
K-S 5% Critical Value	0.090385
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	312.664
Adjusted Gamma UCL	313.5221

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.122426
Lilliefors 5% Critical Value	0.083348
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1058.976
95% Chebyshev (MVUE) UCL	1267.013
97.5% Chebyshev (MVUE) UCL	1570.639
99% Chebyshev (MVUE) UCL	2167.055

95% Non-parametric UCLs	
CLT UCL	295.6182
Adj-CLT UCL (Adjusted for skewness)	299.8368
Mod-t UCL (Adjusted for skewness)	296.6339
Jackknife UCL	295.9759
Standard Bootstrap UCL	296.315
Bootstrap-t UCL	300.0249
Hall's Bootstrap UCL	303.1534
Percentile Bootstrap UCL	296.1987
BCA Bootstrap UCL	301.323
95% Chebyshev (Mean, Sd) UCL	366.3881
97.5% Chebyshev (Mean, Sd) UCL	415.569
99% Chebyshev (Mean, Sd) UCL	512.1754

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYLENE CHLORIDE

Raw Statistics	
Number of Valid Samples	120
Number of Unique Samples	83
Minimum	0.5
Maximum	6700
Mean	336.5896
Median	180
Standard Deviation	676.6713
Variance	457884
Coefficient of Variation	2.010375
Skewness	7.344963

Gamma Statistics	
k hat	0.548152
k star (bias corrected)	0.540004
Theta hat	614.0443
Theta star	623.3097
nu hat	131.5565
nu star	129.6009
Approx.Chi Square Value (.05)	104.299
Adjusted Level of Significance	0.048
Adjusted Chi Square Value	104.0248

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	8.809863
Mean of log data	4.676323
Standard Deviation of log data	1.917193
Variance of log data	3.675628

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

418.243

Normal Distribution Test	
Lilliefors Test Statisitic	0.309707
Lilliefors 5% Critical Value	0.08088
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	438.9916

Gamma Distribution Test	
A-D Test Statistic	0.614393
A-D 5% Critical Value	0.814364
K-S Test Statistic	0.070409
K-S 5% Critical Value	0.088852
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	418.243
Adjusted Gamma UCL	419.3452

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.117592
Lilliefors 5% Critical Value	0.08088
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1174.278
95% Chebyshev (MVUE) UCL	1420.116
97.5% Chebyshev (MVUE) UCL	1754.629
99% Chebyshev (MVUE) UCL	2411.715

95% Non-parametric UCLs	
CLT UCL	438.1944
Adj-CLT UCL (Adjusted for skewness)	482.4498
Mod-t UCL (Adjusted for skewness)	445.8946
Jackknife UCL	438.9916
Standard Bootstrap UCL	435.8731
Bootstrap-t UCL	536.97
Hall's Bootstrap UCL	871.1986
Percentile Bootstrap UCL	448.2892
BCA Bootstrap UCL	501.9692
95% Chebyshev (Mean, Sd) UCL	605.8447
97.5% Chebyshev (Mean, Sd) UCL	722.3516
99% Chebyshev (Mean, Sd) UCL	951.2068

Data File C:\Documents and Settings\tzoukh\My Docun Variable: O-XYLENE

Raw Statistics	
Number of Valid Samples	122
Number of Unique Samples	82
Minimum	0.5
Maximum	2050
Mean	188.3148
Median	77.5
Standard Deviation	287.6859
Variance	82763.16
Coefficient of Variation	1.527686
Skewness	3.049499

Gamma Statistics	
k hat	0.514767
k star (bias corrected)	0.507573
Theta hat	365.8252
Theta star	371.0099
nu hat	125.6032
nu star	123.8479
Approx.Chi Square Value (.05)	99.14161
Adjusted Level of Significance	0.048033
Adjusted Chi Square Value	98.87903

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.009734
Standard Deviation of log data	1.871657
Variance of log data	3.5031

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

350.9711

Normal Distribution Test	
Lilliefors Test Statisitic	0.270233
Lilliefors 5% Critical Value	0.080215
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	231.4869

Gamma Distribution Test	
A-D Test Statistic	1.249397
A-D 5% Critical Value	0.817571
K-S Test Statistic	0.099708
K-S 5% Critical Value	0.088515
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	235.2432
Adjusted Gamma UCL	235.8679

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.108193
Lilliefors 5% Critical Value	0.080215
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	538.1877
95% Chebyshev (MVUE) UCL	656.0449
97.5% Chebyshev (MVUE) UCL	807.5531
99% Chebyshev (MVUE) UCL	1105.162

95% Non-parametric UCLs	
CLT UCL	231.1564
Adj-CLT UCL (Adjusted for skewness)	238.84
Mod-t UCL (Adjusted for skewness)	232.6854
Jackknife UCL	231.4869
Standard Bootstrap UCL	231.2222
Bootstrap-t UCL	243.3148
Hall's Bootstrap UCL	245.3795
Percentile Bootstrap UCL	233.643
BCA Bootstrap UCL	240.4873
95% Chebyshev (Mean, Sd) UCL	301.846
97.5% Chebyshev (Mean, Sd) UCL	350.9711
99% Chebyshev (Mean, Sd) UCL	447.4677

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PENTANE

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	7300
Maximum	7300
Mean	7300
Median	7300

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	146
Number of Unique Samples	106
Minimum	0.5
Maximum	500000
Mean	66622.02
Median	26500
Standard Deviation	95677.92
Variance	9.15E+09
Coefficient of Variation	1.436131
Skewness	2.042125

Gamma Statistics	
k hat	0.375314
k star (bias corrected)	0.372168
Theta hat	177510
Theta star	179010.4
nu hat	109.5917
nu star	108.6732
Approx.Chi Square Value (.05)	85.60821
Adjusted Level of Significance	0.048356
Adjusted Chi Square Value	85.40542

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	13.12236
Mean of log data	9.335345
Standard Deviation of log data	2.867971
Variance of log data	8.225259

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

84772.45

Normal Distribution Test	
Lilliefors Test Statisitic	0.243117
Lilliefors 5% Critical Value	0.073326
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	79730.31

Gamma Distribution Test	
A-D Test Statistic	0.404501
A-D 5% Critical Value	0.84997
K-S Test Statistic	0.046921
K-S 5% Critical Value	0.083407
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	84571.63
Adjusted Gamma UCL	84772.45

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.139773
Lilliefors 5% Critical Value	0.073326
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1913643
95% Chebyshev (MVUE) UCL	1819777
97.5% Chebyshev (MVUE) UCL	2345183
99% Chebyshev (MVUE) UCL	3377240

95% Non-parametric UCLs	
CLT UCL	79646.56
Adj-CLT UCL (Adjusted for skewness)	81076.52
Mod-t UCL (Adjusted for skewness)	79953.35
Jackknife UCL	79730.31
Standard Bootstrap UCL	79655.74
Bootstrap-t UCL	81262.63
Hall's Bootstrap UCL	81759.65
Percentile Bootstrap UCL	80511.43
BCA Bootstrap UCL	81600.3
95% Chebyshev (Mean, Sd) UCL	101137.4
97.5% Chebyshev (Mean, Sd) UCL	116072.2
99% Chebyshev (Mean, Sd) UCL	145408.7

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	130
Number of Unique Samples	84
Minimum	2
Maximum	4000
Mean	255.9377
Median	85
Standard Deviation	511.0636
Variance	261186
Coefficient of Variation	1.996828
Skewness	5.160208

Gamma Statistics	
k hat	0.631048
k star (bias corrected)	0.621614
Theta hat	405.5754
Theta star	411.731
nu hat	164.0726
nu star	161.6196
Approx.Chi Square Value (.05)	133.2213
Adjusted Level of Significance	0.048154
Adjusted Chi Square Value	132.9344

Log-transformed Statistics	
Minimum of log data	0.693147
Maximum of log data	8.29405
Mean of log data	4.573009
Standard Deviation of log data	1.411533
Variance of log data	1.992425

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

361.2238

Normal Distribution Test	
Lilliefors Test Statisitic	0.309637
Lilliefors 5% Critical Value	0.077707
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	330.1987

Gamma Distribution Test	
A-D Test Statistic	3.526156
A-D 5% Critical Value	0.806702
K-S Test Statistic	0.140767
K-S 5% Critical Value	0.085636
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	310.4951
Adjusted Gamma UCL	311.1652

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.045478
Lilliefors 5% Critical Value	0.077707
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	361.2238
95% Chebyshev (MVUE) UCL	448.6315
97.5% Chebyshev (MVUE) UCL	530.9746
99% Chebyshev (MVUE) UCL	692.7217

95% Non-parametric UCLs	
CLT UCL	329.6654
Adj-CLT UCL (Adjusted for skewness)	351.3414
Mod-t UCL (Adjusted for skewness)	333.5797
Jackknife UCL	330.1987
Standard Bootstrap UCL	327.4369
Bootstrap-t UCL	381.2676
Hall's Bootstrap UCL	614.0699
Percentile Bootstrap UCL	333.0738
BCA Bootstrap UCL	361.2569
95% Chebyshev (Mean, Sd) UCL	451.3177
97.5% Chebyshev (Mean, Sd) UCL	535.8587
99% Chebyshev (Mean, Sd) UCL	701.9233

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	119
Number of Unique Samples	85
Minimum	0.5
Maximum	6200
Mean	856.6706
Median	250
Standard Deviation	1377.585
Variance	1897740
Coefficient of Variation	1.608068
Skewness	2.296944

Gamma Statistics	
k hat	0.400775
k star (bias corrected)	0.396274
Theta hat	2137.534
Theta star	2161.815
nu hat	95.3845
nu star	94.31318
Approx.Chi Square Value (.05)	72.9112
Adjusted Level of Significance	0.047983
Adjusted Chi Square Value	72.6817

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	8.732305
Mean of log data	5.111654
Standard Deviation of log data	2.404887
Variance of log data	5.78348

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

1111.632

Normal Distribution Test	
Lilliefors Test Statisitic	0.267135
Lilliefors 5% Critical Value	0.081219
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1066.031

Gamma Distribution Test	
A-D Test Statistic	0.575748
A-D 5% Critical Value	0.843215
K-S Test Statistic	0.075277
K-S 5% Critical Value	0.090588
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1108.133
Adjusted Gamma UCL	1111.632

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.124201
Lilliefors 5% Critical Value	0.081219
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6857.302
95% Chebyshev (MVUE) UCL	7327.079
97.5% Chebyshev (MVUE) UCL	9313.313
99% Chebyshev (MVUE) UCL	13214.89

95% Non-parametric UCLs	
CLT UCL	1064.388
Adj-CLT UCL (Adjusted for skewness)	1092.8
Mod-t UCL (Adjusted for skewness)	1070.463
Jackknife UCL	1066.031
Standard Bootstrap UCL	1060.859
Bootstrap-t UCL	1096.331
Hall's Bootstrap UCL	1100.684
Percentile Bootstrap UCL	1058.05
BCA Bootstrap UCL	1086.042
95% Chebyshev (Mean, Sd) UCL	1407.125
97.5% Chebyshev (Mean, Sd) UCL	1645.308
99% Chebyshev (Mean, Sd) UCL	2113.171

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	145
Number of Unique Samples	104
Minimum	0.5
Maximum	88000
Mean	13007.19
Median	5100
Standard Deviation	17691.37
Variance	3.13E+08
Coefficient of Variation	1.360122
Skewness	2.146134

Gamma Statistics	
k hat	0.444218
k star (bias corrected)	0.439625
Theta hat	29281.09
Theta star	29587
nu hat	128.8233
nu star	127.4913
Approx.Chi Square Value (.05)	102.4062
Adjusted Level of Significance	0.048345
Adjusted Chi Square Value	102.1821

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	11.38509
Mean of log data	8.016565
Standard Deviation of log data	2.494513
Variance of log data	6.222593

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

16228.91

Normal Distribution Test	
Lilliefors Test Statisitic	0.231109
Lilliefors 5% Critical Value	0.073578
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	15439.44

Gamma Distribution Test	
A-D Test Statistic	0.394958
A-D 5% Critical Value	0.833148
K-S Test Statistic	0.053086
K-S 5% Critical Value	0.082936
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	16193.39
Adjusted Gamma UCL	16228.91

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.111986
Lilliefors 5% Critical Value	0.073578
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	150103.6
95% Chebyshev (MVUE) UCL	165057.6
97.5% Chebyshev (MVUE) UCL	209394.5
99% Chebyshev (MVUE) UCL	296485.7

95% Non-parametric UCLs	
CLT UCL	15423.79
Adj-CLT UCL (Adjusted for skewness)	15703.58
Mod-t UCL (Adjusted for skewness)	15483.08
Jackknife UCL	15439.44
Standard Bootstrap UCL	15411.37
Bootstrap-t UCL	15839.82
Hall's Bootstrap UCL	15795.33
Percentile Bootstrap UCL	15372.68
BCA Bootstrap UCL	15579.84
95% Chebyshev (Mean, Sd) UCL	19411.23
97.5% Chebyshev (Mean, Sd) UCL	22182.27
99% Chebyshev (Mean, Sd) UCL	27625.43

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRAHYDROFURAN

Raw Statistics	
Number of Valid Samples	67
Number of Unique Samples	49
Minimum	0.5
Maximum	1300
Mean	254.4239
Median	115
Standard Deviation	297.8519
Variance	88715.77
Coefficient of Variation	1.170692
Skewness	1.326534

Gamma Statistics	
k hat	0.488935
k star (bias corrected)	0.476992
Theta hat	520.3636
Theta star	533.3918
nu hat	65.51727
nu star	63.91699
Approx.Chi Square Value (.05)	46.52077
Adjusted Level of Significance	0.046418
Adjusted Chi Square Value	46.19485

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.17012
Mean of log data	4.235361
Standard Deviation of log data	2.22789
Variance of log data	4.963492

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

352.0308

Normal Distribution Test	
Lilliefors Test Statisitic	0.214169
Lilliefors 5% Critical Value	0.108242
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	315.1296

Gamma Distribution Test	
A-D Test Statistic	0.792478
A-D 5% Critical Value	0.819193
K-S Test Statistic	0.081137
K-S 5% Critical Value	0.115385
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	349.5645
Adjusted Gamma UCL	352.0308

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.161333
Lilliefors 5% Critical Value	0.108242
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2293.161
95% Chebyshev (MVUE) UCL	2108.946
97.5% Chebyshev (MVUE) UCL	2703.588
99% Chebyshev (MVUE) UCL	3871.646

95% Non-parametric UCLs	
CLT UCL	314.2775
Adj-CLT UCL (Adjusted for skewness)	320.5787
Mod-t UCL (Adjusted for skewness)	316.1124
Jackknife UCL	315.1296
Standard Bootstrap UCL	314.0009
Bootstrap-t UCL	324.0801
Hall's Bootstrap UCL	322.505
Percentile Bootstrap UCL	317.2194
BCA Bootstrap UCL	319.5336
95% Chebyshev (Mean, Sd) UCL	413.0373
97.5% Chebyshev (Mean, Sd) UCL	481.6694
99% Chebyshev (Mean, Sd) UCL	616.4839

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	146
Number of Unique Samples	107
Minimum	0.5
Maximum	220000
Mean	38561.88
Median	15500
Standard Deviation	48472.3
Variance	2.35E+09
Coefficient of Variation	1.257001
Skewness	1.500211

Gamma Statistics	
k hat	0.461506
k star (bias corrected)	0.456589
Theta hat	83556.68
Theta star	84456.46
nu hat	134.7596
nu star	133.3239
Approx.Chi Square Value (.05)	107.6436
Adjusted Level of Significance	0.048356
Adjusted Chi Square Value	107.4152

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	12.30138
Mean of log data	9.166337
Standard Deviation of log data	2.425391
Variance of log data	5.882523

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

47863.07

Normal Distribution Test	
Lilliefors Test Statisitic	0.213151
Lilliefors 5% Critical Value	0.073326
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	45202.79

Gamma Distribution Test	
A-D Test Statistic	0.529917
A-D 5% Critical Value	0.828956
K-S Test Statistic	0.066942
K-S 5% Critical Value	0.082474
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	47761.51
Adjusted Gamma UCL	47863.07

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.119064
Lilliefors 5% Critical Value	0.073326
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	383346.6
95% Chebyshev (MVUE) UCL	431154.3
97.5% Chebyshev (MVUE) UCL	544983.7
99% Chebyshev (MVUE) UCL	768579.5

95% Non-parametric UCLs	
CLT UCL	45160.36
Adj-CLT UCL (Adjusted for skewness)	45692.56
Mod-t UCL (Adjusted for skewness)	45285.8
Jackknife UCL	45202.79
Standard Bootstrap UCL	45208.46
Bootstrap-t UCL	46151.63
Hall's Bootstrap UCL	46129.07
Percentile Bootstrap UCL	44987.29
BCA Bootstrap UCL	45732.56
95% Chebyshev (Mean, Sd) UCL	56048.02
97.5% Chebyshev (Mean, Sd) UCL	63614.28
99% Chebyshev (Mean, Sd) UCL	78476.75

Data File C:\Documents and Settings\tzoukh\My Docun Variable: VINYL CHLORIDE

Raw Statistics	
Number of Valid Samples	117
Number of Unique Samples	76
Minimum	0.5
Maximum	2050
Mean	188.6821
Median	80
Standard Deviation	285.2063
Variance	81342.64
Coefficient of Variation	1.511571
Skewness	3.182259

Gamma Statistics	
k hat	0.524748
k star (bias corrected)	0.516991
Theta hat	359.5668
Theta star	364.9618
nu hat	122.7911
nu star	120.9759
Approx.Chi Square Value (.05)	96.57219
Adjusted Level of Significance	0.047949
Adjusted Chi Square Value	96.30192

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.625595
Mean of log data	4.038599
Standard Deviation of log data	1.924381
Variance of log data	3.703242

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

236.3619

Normal Distribution Test	
Lilliefors Test Statisitic	0.258409
Lilliefors 5% Critical Value	0.081911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	232.4016

Gamma Distribution Test	
A-D Test Statistic	0.721033
A-D 5% Critical Value	0.816507
K-S Test Statistic	0.089256
K-S 5% Critical Value	0.089815
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	236.3619
Adjusted Gamma UCL	237.0253

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.118393
Lilliefors 5% Critical Value	0.081911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	636.7611
95% Chebyshev (MVUE) UCL	766.6644
97.5% Chebyshev (MVUE) UCL	948.6117
99% Chebyshev (MVUE) UCL	1306.012

95% Non-parametric UCLs	
CLT UCL	232.0525
Adj-CLT UCL (Adjusted for skewness)	240.3412
Mod-t UCL (Adjusted for skewness)	233.6945
Jackknife UCL	232.4016
Standard Bootstrap UCL	232.9902
Bootstrap-t UCL	242.2568
Hall's Bootstrap UCL	252.0695
Percentile Bootstrap UCL	232.8393
BCA Bootstrap UCL	243.7718
95% Chebyshev (Mean, Sd) UCL	303.6146
97.5% Chebyshev (Mean, Sd) UCL	353.346
99% Chebyshev (Mean, Sd) UCL	451.0337

A-1.7 Soil Gas – Site Parcel 5 to 30 feet bgs

Summary of UCLs for Site Parcel Soil Gas 5-30 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are Non-parametric (0.05)	52,281	285,452	Use 95% Chebyshev (Mean, Sd) UCL	450,000	19,315	105,462	UCL-NP
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Assuming gamma distribution (0.05)	130,810	1,002,004	Use Approximate Gamma UCL	380,000	106,113	812,823	95% UCL-G assumed
1,1,2-TRICHLOROETHANE	Assuming gamma distribution (0.05)	253	1,383	Use Approximate Gamma UCL	2,050	198	1,069	95% UCL-G assumed
1,1-DICHLOROETHANE	Data are lognormal (0.05)	5,969	24,174	Use H-UCL	26,000	2,241	9,076	95% UCL-T
1,1-DICHLOROETHENE	Data follow gamma distribution (0.05)	135,580	538,251	Use Approximate Gamma UCL	480,000	107,305	426,003	95% UCL-G
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Data follow gamma distribution (0.05)	8,656	54,098	Use Approximate Gamma UCL	13,000	3,589	22,430	95% UCL-G
1,2-DICHLOROETHANE	Data are lognormal (0.05)	1,260	5,103	Use H-UCL	2,500	450	1,822	95% UCL-T
1,3-BUTADIENE	Data follow gamma distribution (0.05)	490	1,082	Use Approximate Gamma UCL	850	322	711	95% UCL-G
2,2,4-TRIMETHYLPENTANE	Data follow gamma distribution (0.05)	459	2,145	Use Approximate Gamma UCL	850	318	1,487	95% UCL-G
2-BUTANONE	Data follow gamma distribution (0.05)	243	717	Use Approximate Gamma UCL	850	194	572	95% UCL-G
ACETALDEHYDE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		58	105	
ACETONE	Data are Non-parametric (0.05)	2,719	6,471	Use 97.5% Chebyshev (Mean, Sd) UCL	8,900	1,561	3,715	UCL-NP
BENZENE	Data are Non-parametric (0.05)	405	1,293	Use 95% Chebyshev (Mean, Sd) UCL	2,050	240	764	UCL-NP
CARBON DISULFIDE	*Data follow gamma distribution (0.05)*	*1,420*	*4,417*	*Use Approximate Gamma UCL*	8,400	1,057	3,288	95% UCL-G
CARBON TETRACHLORIDE	Data are Non-parametric (0.05)	413	2,598	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	183	1,154	UCL-NP
CHLOROFORM	*Data follow gamma distribution (0.05)*	*1,430*	*6,980*	*Use Approximate Gamma UCL*	*10,000*	*1,134*	*5,534*	95% UCL-G
CIS-1,2-DICHLOROETHENE	Data are Non-parametric (0.05)	2,480	9,819	Use 97.5% Chebyshev (Mean, Sd) UCL	9,500	963	3,813	UCL-NP
CYCLOHEXANE	Data follow gamma distribution (0.05)	478	1,644	Use Approximate Gamma UCL	850	309	1,062	95% UCL-G
DICHLORODIFLUOROMETHANE	Data are Non-parametric (0.05)	424	2,099	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	197	977	UCL-NP
ETHYLBENZENE	Data are Non-parametric (0.05)	402	1,745	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	177	770	UCL-NP
HEPTANE	Data follow gamma distribution (0.05)	462	1,898	Use Approximate Gamma UCL	850	311	1,273	95% UCL-G
HEXANE (N-HEXANE)	Data follow gamma distribution (0.05)	528	1,859	Use Approximate Gamma UCL	1,300	353	1,242	95% UCL-G
M,P-XYLENES	Data are lognormal (0.05)	403	1,747	Use H-UCL	4,050	250	1,087	95% UCL-T
METHYLENE CHLORIDE	Data are lognormal (0.05)	721	2,503	Use H-UCL	6,700	430	1,493	95% UCL-T
O-XYLENE	Data are Non-parametric (0.05)	421	1,829	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	190	824	UCL-NP
TETRACHLOROETHENE	Data follow gamma distribution (0.05)	106,246	720,351	Use Approximate Gamma UCL	500,000	84,470	572,704	95% UCL-G
TETRAHYDROFURAN	Data follow gamma distribution (0.05)	574	1,693	Use Approximate Gamma UCL	1,300	380	1,120	95% UCL-G
TOLUENE	Data are lognormal (0.05)	316	1,191	Use H-UCL	4,000	252	951	95% UCL-T
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	1,644	6,512	Use Approximate Gamma UCL	6,200	1,238	4,903	95% UCL-G
TRICHLOROETHENE	Data follow gamma distribution (0.05)	20,191	108,427	Use Approximate Gamma UCL	84,000	16,261	87,323	95% UCL-G
TRICHLOROFLUOROMETHANE (FREON 11)	Assuming gamma distribution (0.05)	57,892	325,350	Use Approximate Gamma UCL	220,000	46,242	259,879	95% UCL-G assumed
VINYL CHLORIDE	Data are Non-parametric (0.05)	413	1,056	Use 97.5% Chebyshev (Mean, Sd) UCL	2,050	183	468	UCL-NP

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	78
Number of Unique Samples	67
Minimum	0
Maximum	450000
Mean	19315.43
Median	907.5
Standard Deviation	66792
Variance	4.46E+09
Coefficient of Variation	3.45796
Skewness	5.002319

Normal Distribution Test	
Lilliefors Test Statisitic	0.395693
Lilliefors 5% Critical Value	0.10032
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	31906.46

Gamma Statistics Not Available

Lognormal Statistics Not Available

95% Non-parametric UCLs	
CLT UCL	31754.98
Adj-CLT UCL (Adjusted for skewness)	36331.99
Mod-t UCL (Adjusted for skewness)	32620.38
Jackknife UCL	31906.46
Standard Bootstrap UCL	31480.97
Bootstrap-t UCL	45447.44
Hall's Bootstrap UCL	83394.25
Percentile Bootstrap UCL	32058.31
BCA Bootstrap UCL	37446.92
95% Chebyshev (Mean, Sd) UCL	52280.5
97.5% Chebyshev (Mean, Sd) UCL	66544.51
99% Chebyshev (Mean, Sd) UCL	94563.4

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

52280.5

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	87
Number of Unique Samples	57
Minimum	340
Maximum	380000
Mean	106112.6
Median	82000
Standard Deviation	95378.83
Variance	9.1E+09
Coefficient of Variation	0.898845
Skewness	0.9179

Gamma Statistics	
k hat	0.819683
k star (bias corrected)	0.799081
Theta hat	129455.8
Theta star	132793.4
nu hat	142.6248
nu star	139.04
Approx.Chi Square Value (.05)	112.7888
Adjusted Level of Significance	0.047241
Adjusted Chi Square Value	112.3927

Log-transformed Statistics	
Minimum of log data	5.828946
Maximum of log data	12.84793
Mean of log data	10.85051
Standard Deviation of log data	1.633136
Variance of log data	2.667133

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

130809.9

Normal Distribution Test	
Lilliefors Test Statisitic	0.184011
Lilliefors 5% Critical Value	0.094989
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	123115.6

Gamma Distribution Test	
A-D Test Statistic	1.087699
A-D 5% Critical Value	0.790402
K-S Test Statistic	0.099334
K-S 5% Critical Value	0.099395
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	130809.9
Adjusted Gamma UCL	131271

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.132398
Lilliefors 5% Critical Value	0.094989
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	325877.3
95% Chebyshev (MVUE) UCL	394828.9
97.5% Chebyshev (MVUE) UCL	483872.6
99% Chebyshev (MVUE) UCL	658781.8

95% Non-parametric UCLs	
CLT UCL	122932.4
Adj-CLT UCL (Adjusted for skewness)	124007.6
Mod-t UCL (Adjusted for skewness)	123283.3
Jackknife UCL	123115.6
Standard Bootstrap UCL	122957.6
Bootstrap-t UCL	124351.9
Hall's Bootstrap UCL	124698
Percentile Bootstrap UCL	123611.4
BCA Bootstrap UCL	122275.4
95% Chebyshev (Mean, Sd) UCL	150685.4
97.5% Chebyshev (Mean, Sd) UCL	169972
99% Chebyshev (Mean, Sd) UCL	207856.9

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	71
Number of Unique Samples	48
Minimum	3.15
Maximum	2050
Mean	195.8197
Median	95
Standard Deviation	303.6266
Variance	92189.12
Coefficient of Variation	1.550542
Skewness	3.857447

Gamma Statistics	
k hat	0.68288
k star (bias corrected)	0.663416
Theta hat	286.7555
Theta star	295.1688
nu hat	96.96902
nu star	94.20507
Approx.Chi Square Value (.05)	72.81607
Adjusted Level of Significance	0.04662
Adjusted Chi Square Value	72.42757

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	7.625595
Mean of log data	4.389124
Standard Deviation of log data	1.505119
Variance of log data	2.265383

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

253.3398

Normal Distribution Test	
Lilliefors Test Statisitic	0.262857
Lilliefors 5% Critical Value	0.105149
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	255.8851

Gamma Distribution Test	
A-D Test Statistic	0.847219
A-D 5% Critical Value	0.799172
K-S Test Statistic	0.099169
K-S 5% Critical Value	0.110471
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	253.3398
Adjusted Gamma UCL	254.6987

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.128907
Lilliefors 5% Critical Value	0.105149
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	413.4836
95% Chebyshev (MVUE) UCL	498.9048
97.5% Chebyshev (MVUE) UCL	610.0401
99% Chebyshev (MVUE) UCL	828.3438

95% Non-parametric UCLs	
CLT UCL	255.0901
Adj-CLT UCL (Adjusted for skewness)	272.7165
Mod-t UCL (Adjusted for skewness)	258.6344
Jackknife UCL	255.8851
Standard Bootstrap UCL	253.5521
Bootstrap-t UCL	288.7288
Hall's Bootstrap UCL	336.6118
Percentile Bootstrap UCL	260.2099
BCA Bootstrap UCL	275.8796
95% Chebyshev (Mean, Sd) UCL	352.8876
97.5% Chebyshev (Mean, Sd) UCL	420.851
99% Chebyshev (Mean, Sd) UCL	554.352

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	82
Number of Unique Samples	68
Minimum	6
Maximum	26000
Mean	2241.01
Median	772.5
Standard Deviation	4365.004
Variance	19053257
Coefficient of Variation	1.947784
Skewness	3.833378

Gamma Statistics	
k hat	0.50991
k star (bias corrected)	0.499385
Theta hat	4394.912
Theta star	4487.541
nu hat	83.62524
nu star	81.89911
Approx.Chi Square Value (.05)	62.04062
Adjusted Level of Significance	0.047073
Adjusted Chi Square Value	61.73237

Log-transformed Statistics	
Minimum of log data	1.791759
Maximum of log data	10.16585
Mean of log data	6.472786
Standard Deviation of log data	1.791439
Variance of log data	3.209255

RECOMMENDATION

Data are lognormal (0.05)

Use H-UCL

5968.78

Normal Distribution Test	
Lilliefors Test Statisitic	0.304315
Lilliefors 5% Critical Value	0.097842
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3043.058

Gamma Distribution Test	
A-D Test Statistic	1.5775
A-D 5% Critical Value	0.817824
K-S Test Statistic	0.133454
K-S 5% Critical Value	0.104239
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2958.331
Adjusted Gamma UCL	2973.103

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.089729
Lilliefors 5% Critical Value	0.097842
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5968.78
95% Chebyshev (MVUE) UCL	6977.786
97.5% Chebyshev (MVUE) UCL	8669.284
99% Chebyshev (MVUE) UCL	11991.9

95% Non-parametric UCLs	
CLT UCL	3033.885
Adj-CLT UCL (Adjusted for skewness)	3251.923
Mod-t UCL (Adjusted for skewness)	3077.068
Jackknife UCL	3043.058
Standard Bootstrap UCL	3018.557
Bootstrap-t UCL	3429.083
Hall's Bootstrap UCL	3493.318
Percentile Bootstrap UCL	3088.306
BCA Bootstrap UCL	3293.66
95% Chebyshev (Mean, Sd) UCL	4342.147
97.5% Chebyshev (Mean, Sd) UCL	5251.311
99% Chebyshev (Mean, Sd) UCL	7037.188

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	87
Number of Unique Samples	70
Minimum	385
Maximum	480000
Mean	107305.5
Median	67500
Standard Deviation	114329.1
Variance	1.31E+10
Coefficient of Variation	1.065455
Skewness	1.242309

Gamma Statistics	
k hat	0.663404
k star (bias corrected)	0.648191
Theta hat	161749.8
Theta star	165546.1
nu hat	115.4323
nu star	112.7852
Approx.Chi Square Value (.05)	89.26468
Adjusted Level of Significance	0.047241
Adjusted Chi Square Value	88.91384

Log-transformed Statistics	
Minimum of log data	5.953243
Maximum of log data	13.08154
Mean of log data	10.66554
Standard Deviation of log data	1.737736
Variance of log data	3.019726

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

135579.6

Normal Distribution Test	
Lilliefors Test Statisitic	0.192141
Lilliefors 5% Critical Value	0.094989
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	127686.6

Gamma Distribution Test	
A-D Test Statistic	0.539029
A-D 5% Critical Value	0.802144
K-S Test Statistic	0.088735
K-S 5% Critical Value	0.100255
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	135579.6
Adjusted Gamma UCL	136114.6

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.111976
Lilliefors 5% Critical Value	0.094989
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	341618
95% Chebyshev (MVUE) UCL	407346.3
97.5% Chebyshev (MVUE) UCL	503100.2
99% Chebyshev (MVUE) UCL	691190.2

95% Non-parametric UCLs	
CLT UCL	127467
Adj-CLT UCL (Adjusted for skewness)	129211.4
Mod-t UCL (Adjusted for skewness)	127958.7
Jackknife UCL	127686.6
Standard Bootstrap UCL	127217.3
Bootstrap-t UCL	129598.4
Hall's Bootstrap UCL	129582.4
Percentile Bootstrap UCL	127893.9
BCA Bootstrap UCL	127127.3
95% Chebyshev (Mean, Sd) UCL	160734.1
97.5% Chebyshev (Mean, Sd) UCL	183852.7
99% Chebyshev (Mean, Sd) UCL	229264.7

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	8
Number of Unique Samples	8
Minimum	480
Maximum	13000
Mean	3588.75
Median	1350
Standard Deviation	4326.495
Variance	18718555
Coefficient of Variation	1.205571
Skewness	1.771564

Gamma Statistics	
k hat	0.96036
k star (bias corrected)	0.683558
Theta hat	3736.88
Theta star	5250.101
nu hat	15.36576
nu star	10.93693
Approx.Chi Square Value (.05)	4.534568
Adjusted Level of Significance	0.01946
Adjusted Chi Square Value	3.55067

Log-transformed Statistics	
Minimum of log data	6.173786
Maximum of log data	9.472705
Mean of log data	7.581626
Standard Deviation of log data	1.165842
Variance of log data	1.359186

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

8655.712

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.753852
Shapiro-Wilk 5% Critical Value	0.818
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	6486.786

Gamma Distribution Test	
A-D Test Statistic	0.522417
A-D 5% Critical Value	0.737027
K-S Test Statistic	0.275138
K-S 5% Critical Value	0.301872
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	8655.712
Adjusted Gamma UCL	11054.23

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.920967
Shapiro-Wilk 5% Critical Value	0.818
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	21918.78
95% Chebyshev (MVUE) UCL	9729.428
97.5% Chebyshev (MVUE) UCL	12453
99% Chebyshev (MVUE) UCL	17802.92

95% Non-parametric UCLs	
CLT UCL	6104.795
Adj-CLT UCL (Adjusted for skewness)	7128.521
Mod-t UCL (Adjusted for skewness)	6646.466
Jackknife UCL	6486.786
Standard Bootstrap UCL	5903.469
Bootstrap-t UCL	9705.696
Hall's Bootstrap UCL	8867.116
Percentile Bootstrap UCL	6132.5
BCA Bootstrap UCL	7045
95% Chebyshev (Mean, Sd) UCL	10256.33
97.5% Chebyshev (Mean, Sd) UCL	13141.39
99% Chebyshev (Mean, Sd) UCL	18808.54

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	72
Number of Unique Samples	57
Minimum	3.15
Maximum	2500
Mean	449.8139
Median	152.5
Standard Deviation	641.8493
Variance	411970.5
Coefficient of Variation	1.426922
Skewness	1.975588

Gamma Statistics	
k hat	0.564426
k star (bias corrected)	0.550167
Theta hat	796.9409
Theta star	817.5949
nu hat	81.27729
nu star	79.22407
Approx.Chi Square Value (.05)	59.71328
Adjusted Level of Significance	0.046667
Adjusted Chi Square Value	59.36809

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	7.824046
Mean of log data	5.004124
Standard Deviation of log data	1.73424
Variance of log data	3.007587

RECOMMENDATION

Data are lognormal (0.05)

Use H-UCL

1260.077

Normal Distribution Test	
Lilliefors Test Statisitic	0.256235
Lilliefors 5% Critical Value	0.104416
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	575.8799

Gamma Distribution Test	
A-D Test Statistic	0.964845
A-D 5% Critical Value	0.81087
K-S Test Statistic	0.111496
K-S 5% Critical Value	0.110671
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	596.7867
Adjusted Gamma UCL	600.2566

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.101326
Lilliefors 5% Critical Value	0.104416
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1260.077
95% Chebyshev (MVUE) UCL	1457.967
97.5% Chebyshev (MVUE) UCL	1812.753
99% Chebyshev (MVUE) UCL	2509.662

95% Non-parametric UCLs	
CLT UCL	574.235
Adj-CLT UCL (Adjusted for skewness)	593.0532
Mod-t UCL (Adjusted for skewness)	578.8152
Jackknife UCL	575.8799
Standard Bootstrap UCL	572.8768
Bootstrap-t UCL	602.0855
Hall's Bootstrap UCL	604.4612
Percentile Bootstrap UCL	582.0972
BCA Bootstrap UCL	586.7049
95% Chebyshev (Mean, Sd) UCL	779.5326
97.5% Chebyshev (Mean, Sd) UCL	922.2022
99% Chebyshev (Mean, Sd) UCL	1202.449

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,3-BUTADIENE

Raw Statistics	
Number of Valid Samples	23
Number of Unique Samples	18
Minimum	3.9
Maximum	850
Mean	321.6957
Median	225
Standard Deviation	288.0629
Variance	82980.23
Coefficient of Variation	0.895452
Skewness	0.739462

Gamma Statistics	
k hat	0.930018
k star (bias corrected)	0.837697
Theta hat	345.9025
Theta star	384.0239
nu hat	42.78084
nu star	38.53406
Approx.Chi Square Value (.05)	25.3147
Adjusted Level of Significance	0.0389
Adjusted Chi Square Value	24.5379

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	6.745236
Mean of log data	5.147541
Standard Deviation of log data	1.450885
Variance of log data	2.105067

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

489.6855

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.845463
Shapiro-Wilk 5% Critical Value	0.914
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	424.8364

Gamma Distribution Test	
A-D Test Statistic	0.57455
A-D 5% Critical Value	0.772922
K-S Test Statistic	0.143503
K-S 5% Critical Value	0.187247
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	489.6855
Adjusted Gamma UCL	505.1874

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.852976
Shapiro-Wilk 5% Critical Value	0.914
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1320.941
95% Chebyshev (MVUE) UCL	1177.238
97.5% Chebyshev (MVUE) UCL	1490.611
99% Chebyshev (MVUE) UCL	2106.17

95% Non-parametric UCLs	
CLT UCL	420.4942
Adj-CLT UCL (Adjusted for skewness)	430.3901
Mod-t UCL (Adjusted for skewness)	426.3799
Jackknife UCL	424.8364
Standard Bootstrap UCL	418.6035
Bootstrap-t UCL	431.8453
Hall's Bootstrap UCL	426.8098
Percentile Bootstrap UCL	420
BCA Bootstrap UCL	421.4739
95% Chebyshev (Mean, Sd) UCL	583.5141
97.5% Chebyshev (Mean, Sd) UCL	696.8031
99% Chebyshev (Mean, Sd) UCL	919.3375

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2,2,4-TRIMETHYLPENTANE

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	19
Minimum	3.9
Maximum	850
Mean	318.4125
Median	207.5
Standard Deviation	280.1081
Variance	78460.55
Coefficient of Variation	0.879702
Skewness	0.838025

Gamma Statistics	
k hat	1.141111
k star (bias corrected)	1.02625
Theta hat	279.0373
Theta star	310.268
nu hat	54.77332
nu star	49.25999
Approx.Chi Square Value (.05)	34.14423
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	33.25887

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	6.745236
Mean of log data	5.264992
Standard Deviation of log data	1.214714
Variance of log data	1.47553

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

459.3747

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.829293
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	416.4062

Gamma Distribution Test	
A-D Test Statistic	0.662399
A-D 5% Critical Value	0.76894
K-S Test Statistic	0.146628
K-S 5% Critical Value	0.182494
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	459.3747
Adjusted Gamma UCL	471.6034

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.870663
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	825.4864
95% Chebyshev (MVUE) UCL	874.4903
97.5% Chebyshev (MVUE) UCL	1086.284
99% Chebyshev (MVUE) UCL	1502.311

95% Non-parametric UCLs	
CLT UCL	412.46
Adj-CLT UCL (Adjusted for skewness)	422.9109
Mod-t UCL (Adjusted for skewness)	418.0363
Jackknife UCL	416.4062
Standard Bootstrap UCL	409.9551
Bootstrap-t UCL	429.8994
Hall's Bootstrap UCL	414.5339
Percentile Bootstrap UCL	414.0833
BCA Bootstrap UCL	423.75
95% Chebyshev (Mean, Sd) UCL	567.6405
97.5% Chebyshev (Mean, Sd) UCL	675.4817
99% Chebyshev (Mean, Sd) UCL	887.3148

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-BUTANONE

Raw Statistics	
Number of Valid Samples	71
Number of Unique Samples	49
Minimum	3.9
Maximum	850
Mean	193.9775
Median	120
Standard Deviation	217.1699
Variance	47162.76
Coefficient of Variation	1.119562
Skewness	1.729458

Gamma Statistics	
k hat	0.876017
k star (bias corrected)	0.848392
Theta hat	221.4313
Theta star	228.6415
nu hat	124.3944
nu star	120.4716
Approx.Chi Square Value (.05)	96.12135
Adjusted Level of Significance	0.04662
Adjusted Chi Square Value	95.67237

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	6.745236
Mean of log data	4.598132
Standard Deviation of log data	1.30734
Variance of log data	1.709137

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

243.1174

Normal Distribution Test	
Lilliefors Test Statisitic	0.194692
Lilliefors 5% Critical Value	0.105149
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	236.9394

Gamma Distribution Test	
A-D Test Statistic	0.487912
A-D 5% Critical Value	0.786586
K-S Test Statistic	0.067876
K-S 5% Critical Value	0.109389
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	243.1174
Adjusted Gamma UCL	244.2583

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.116777
Lilliefors 5% Critical Value	0.105149
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	348.6905
95% Chebyshev (MVUE) UCL	428.2365
97.5% Chebyshev (MVUE) UCL	514.7065
99% Chebyshev (MVUE) UCL	684.56

95% Non-parametric UCLs	
CLT UCL	236.3708
Adj-CLT UCL (Adjusted for skewness)	242.0232
Mod-t UCL (Adjusted for skewness)	237.821
Jackknife UCL	236.9394
Standard Bootstrap UCL	236.336
Bootstrap-t UCL	244.1707
Hall's Bootstrap UCL	240.819
Percentile Bootstrap UCL	236.6676
BCA Bootstrap UCL	243.0408
95% Chebyshev (Mean, Sd) UCL	306.3208
97.5% Chebyshev (Mean, Sd) UCL	354.9318
99% Chebyshev (Mean, Sd) UCL	450.4188

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETALDEHYDE

Raw Statistics	
Number of Valid Samples	3
Number of Unique Samples	3
Minimum	54
Maximum	62
Mean	58.33333
Median	59

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	74
Number of Unique Samples	53
Minimum	44
Maximum	8900
Mean	1561.027
Median	1300
Standard Deviation	1594.914
Variance	2543750
Coefficient of Variation	1.021708
Skewness	1.961808

Gamma Statistics	
k hat	0.930852
k star (bias corrected)	0.902124
Theta hat	1676.987
Theta star	1730.391
nu hat	137.7661
nu star	133.5143
Approx.Chi Square Value (.05)	107.8148
Adjusted Level of Significance	0.046757
Adjusted Chi Square Value	107.3581

Log-transformed Statistics	
Minimum of log data	3.78419
Maximum of log data	9.093807
Mean of log data	6.727664
Standard Deviation of log data	1.290916
Variance of log data	1.666464

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

2718.881

Normal Distribution Test	
Lilliefors Test Statisitic	0.17076
Lilliefors 5% Critical Value	0.102995
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1869.911

Gamma Distribution Test	
A-D Test Statistic	0.81385
A-D 5% Critical Value	0.784314
K-S Test Statistic	0.110968
K-S 5% Critical Value	0.107094
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1933.125
Adjusted Gamma UCL	1941.349

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.151086
Lilliefors 5% Critical Value	0.102995
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2822.138
95% Chebyshev (MVUE) UCL	3473.315
97.5% Chebyshev (MVUE) UCL	4161.24
99% Chebyshev (MVUE) UCL	5512.534

95% Non-parametric UCLs	
CLT UCL	1865.991
Adj-CLT UCL (Adjusted for skewness)	1911.171
Mod-t UCL (Adjusted for skewness)	1876.958
Jackknife UCL	1869.911
Standard Bootstrap UCL	1864.692
Bootstrap-t UCL	1916.808
Hall's Bootstrap UCL	1960.787
Percentile Bootstrap UCL	1877.797
BCA Bootstrap UCL	1932.041
95% Chebyshev (Mean, Sd) UCL	2369.189
97.5% Chebyshev (Mean, Sd) UCL	2718.881
99% Chebyshev (Mean, Sd) UCL	3405.783

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	76
Number of Unique Samples	57
Minimum	0
Maximum	2050
Mean	239.5947
Median	90
Standard Deviation	331.7653
Variance	110068.2
Coefficient of Variation	1.384694
Skewness	2.903887

Normal Distribution Test	
Lilliefors Test Statisitic	0.235091
Lilliefors 5% Critical Value	0.101631
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	302.9743

Gamma Statistics Not Available

Lognormal Statistics Not Available

95% Non-parametric UCLs	
CLT UCL	302.1914
Adj-CLT UCL (Adjusted for skewness)	315.7364
Mod-t UCL (Adjusted for skewness)	305.087
Jackknife UCL	302.9743
Standard Bootstrap UCL	301.2807
Bootstrap-t UCL	325.0033
Hall's Bootstrap UCL	327.5708
Percentile Bootstrap UCL	301.6053
BCA Bootstrap UCL	318.4066
95% Chebyshev (Mean, Sd) UCL	405.4774
97.5% Chebyshev (Mean, Sd) UCL	477.255
99% Chebyshev (Mean, Sd) UCL	618.2481

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

405.4774

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON DISULFIDE

Raw Statistics	
Number of Valid Samples	70
Number of Unique Samples	54
Minimum	3.15
Maximum	8400
Mean	1057.183
Median	580
Standard Deviation	1455.335
Variance	2117999
Coefficient of Variation	1.376616
Skewness	2.824517

Gamma Statistics	
k hat	0.53618
k star (bias corrected)	0.522724
Theta hat	1971.695
Theta star	2022.448
nu hat	75.06515
nu star	73.18141
Approx.Chi Square Value (.05)	54.47843
Adjusted Level of Significance	0.046571
Adjusted Chi Square Value	54.13983

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	9.035987
Mean of log data	5.791382
Standard Deviation of log data	2.031072
Variance of log data	4.125252

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

1420.124

Normal Distribution Test	
Lilliefors Test Statisitic	0.234455
Lilliefors 5% Critical Value	0.105897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1347.192

Gamma Distribution Test	
A-D Test Statistic	0.502069
A-D 5% Critical Value	0.813245
K-S Test Statistic	0.077993
K-S 5% Critical Value	0.112301
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1420.124
Adjusted Gamma UCL	1429.006

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.151063
Lilliefors 5% Critical Value	0.105897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	5985.547
95% Chebyshev (MVUE) UCL	6209.221
97.5% Chebyshev (MVUE) UCL	7870.861
99% Chebyshev (MVUE) UCL	11134.83

95% Non-parametric UCLs	
CLT UCL	1343.298
Adj-CLT UCL (Adjusted for skewness)	1406.045
Mod-t UCL (Adjusted for skewness)	1356.979
Jackknife UCL	1347.192
Standard Bootstrap UCL	1341.239
Bootstrap-t UCL	1452.595
Hall's Bootstrap UCL	1481.032
Percentile Bootstrap UCL	1360.566
BCA Bootstrap UCL	1414.289
95% Chebyshev (Mean, Sd) UCL	1815.395
97.5% Chebyshev (Mean, Sd) UCL	2143.474
99% Chebyshev (Mean, Sd) UCL	2787.921

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON TETRACHLORIDE

Raw Statistics	
Number of Valid Samples	70
Number of Unique Samples	48
Minimum	3.15
Maximum	2050
Mean	183.3886
Median	80
Standard Deviation	307.685
Variance	94670.05
Coefficient of Variation	1.677776
Skewness	3.880179

Gamma Statistics	
k hat	0.668497
k star (bias corrected)	0.649371
Theta hat	274.3295
Theta star	282.4094
nu hat	93.58963
nu star	90.91198
Approx.Chi Square Value (.05)	69.92217
Adjusted Level of Significance	0.046571
Adjusted Chi Square Value	69.53624

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	7.625595
Mean of log data	4.301692
Standard Deviation of log data	1.441271
Variance of log data	2.077263

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

413.0508

Normal Distribution Test	
Lilliefors Test Statisitic	0.281611
Lilliefors 5% Critical Value	0.105897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	244.7019

Gamma Distribution Test	
A-D Test Statistic	1.616595
A-D 5% Critical Value	0.800463
K-S Test Statistic	0.160741
K-S 5% Critical Value	0.111279
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	238.4396
Adjusted Gamma UCL	239.763

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.118658
Lilliefors 5% Critical Value	0.105897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	334.6077
95% Chebyshev (MVUE) UCL	406.3711
97.5% Chebyshev (MVUE) UCL	494.5417
99% Chebyshev (MVUE) UCL	667.7357

95% Non-parametric UCLs	
CLT UCL	243.8787
Adj-CLT UCL (Adjusted for skewness)	262.1026
Mod-t UCL (Adjusted for skewness)	247.5445
Jackknife UCL	244.7019
Standard Bootstrap UCL	242.2193
Bootstrap-t UCL	274.0387
Hall's Bootstrap UCL	317.9402
Percentile Bootstrap UCL	246.8664
BCA Bootstrap UCL	264.3986
95% Chebyshev (Mean, Sd) UCL	343.6888
97.5% Chebyshev (Mean, Sd) UCL	413.0508
99% Chebyshev (Mean, Sd) UCL	549.2991

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	80
Number of Unique Samples	65
Minimum	3.9
Maximum	10000
Mean	1134.111
Median	770
Standard Deviation	1435.705
Variance	2061249
Coefficient of Variation	1.26593
Skewness	3.419388

Gamma Statistics	
k hat	0.734852
k star (bias corrected)	0.715628
Theta hat	1543.319
Theta star	1584.777
nu hat	117.5763
nu star	114.5005
Approx.Chi Square Value (.05)	90.79245
Adjusted Level of Significance	0.047
Adjusted Chi Square Value	90.40679

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	9.21034
Mean of log data	6.216705
Standard Deviation of log data	1.5555
Variance of log data	2.41958

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

1430.255

Normal Distribution Test	
Lilliefors Test Statisitic	0.215577
Lilliefors 5% Critical Value	0.099058
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1401.271

Gamma Distribution Test	
A-D Test Statistic	0.388692
A-D 5% Critical Value	0.794684
K-S Test Statistic	0.079069
K-S 5% Critical Value	0.103827
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1430.255
Adjusted Gamma UCL	1436.356

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.158524
Lilliefors 5% Critical Value	0.099058
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2754.161
95% Chebyshev (MVUE) UCL	3341.902
97.5% Chebyshev (MVUE) UCL	4084.01
99% Chebyshev (MVUE) UCL	5541.738

95% Non-parametric UCLs	
CLT UCL	1398.138
Adj-CLT UCL (Adjusted for skewness)	1463.708
Mod-t UCL (Adjusted for skewness)	1411.498
Jackknife UCL	1401.271
Standard Bootstrap UCL	1396.333
Bootstrap-t UCL	1503.543
Hall's Bootstrap UCL	1702.782
Percentile Bootstrap UCL	1406.186
BCA Bootstrap UCL	1500.538
95% Chebyshev (Mean, Sd) UCL	1833.787
97.5% Chebyshev (Mean, Sd) UCL	2136.538
99% Chebyshev (Mean, Sd) UCL	2731.232

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CIS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	76
Number of Unique Samples	59
Minimum	13
Maximum	9500
Mean	962.9934
Median	190
Standard Deviation	2117.034
Variance	4481835
Coefficient of Variation	2.198389
Skewness	3.393417

Gamma Statistics	
k hat	0.48349
k star (bias corrected)	0.473176
Theta hat	1991.757
Theta star	2035.168
nu hat	73.4904
nu star	71.9228
Approx.Chi Square Value (.05)	53.39226
Adjusted Level of Significance	0.046842
Adjusted Chi Square Value	53.08433

Log-transformed Statistics	
Minimum of log data	2.564949
Maximum of log data	9.159047
Mean of log data	5.549417
Standard Deviation of log data	1.521714
Variance of log data	2.315612

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

2479.532

Normal Distribution Test	
Lilliefors Test Statisitic	0.35023
Lilliefors 5% Critical Value	0.101631
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1367.426

Gamma Distribution Test	
A-D Test Statistic	5.31749
A-D 5% Critical Value	0.821953
K-S Test Statistic	0.213867
K-S 5% Critical Value	0.108561
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1297.214
Adjusted Gamma UCL	1304.739

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.118164
Lilliefors 5% Critical Value	0.101631
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1338.045
95% Chebyshev (MVUE) UCL	1621.925
97.5% Chebyshev (MVUE) UCL	1980.658
99% Chebyshev (MVUE) UCL	2685.322

95% Non-parametric UCLs	
CLT UCL	1362.431
Adj-CLT UCL (Adjusted for skewness)	1463.433
Mod-t UCL (Adjusted for skewness)	1383.18
Jackknife UCL	1367.426
Standard Bootstrap UCL	1359.192
Bootstrap-t UCL	1508.189
Hall's Bootstrap UCL	1384.329
Percentile Bootstrap UCL	1366.493
BCA Bootstrap UCL	1465.671
95% Chebyshev (Mean, Sd) UCL	2021.511
97.5% Chebyshev (Mean, Sd) UCL	2479.532
99% Chebyshev (Mean, Sd) UCL	3379.226

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CYCLOHEXANE

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	19
Minimum	3.9
Maximum	850
Mean	308.5792
Median	207.5
Standard Deviation	288.9661
Variance	83501.42
Coefficient of Variation	0.936441
Skewness	0.785268

Gamma Statistics	
k hat	0.822797
k star (bias corrected)	0.747725
Theta hat	375.0369
Theta star	412.6908
nu hat	39.49424
nu star	35.8908
Approx.Chi Square Value (.05)	23.17856
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	22.45986

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	6.745236
Mean of log data	5.013315
Standard Deviation of log data	1.564126
Variance of log data	2.446489

RECOMMENDATION
Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

477.8189

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.839861
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	409.6718

Gamma Distribution Test	
A-D Test Statistic	0.56821
A-D 5% Critical Value	0.779385
K-S Test Statistic	0.136263
K-S 5% Critical Value	0.184378
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	477.8189
Adjusted Gamma UCL	493.1087

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.860715
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1519.031
95% Chebyshev (MVUE) UCL	1257.999
97.5% Chebyshev (MVUE) UCL	1602.311
99% Chebyshev (MVUE) UCL	2278.645

95% Non-parametric UCLs	
CLT UCL	405.6008
Adj-CLT UCL (Adjusted for skewness)	415.7034
Mod-t UCL (Adjusted for skewness)	411.2476
Jackknife UCL	409.6718
Standard Bootstrap UCL	402.5853
Bootstrap-t UCL	423.2965
Hall's Bootstrap UCL	406.8452
Percentile Bootstrap UCL	404.375
BCA Bootstrap UCL	410.1625
95% Chebyshev (Mean, Sd) UCL	565.6887
97.5% Chebyshev (Mean, Sd) UCL	676.9402
99% Chebyshev (Mean, Sd) UCL	895.4722

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ETHYLBENZENE

Raw Statistics	
Number of Valid Samples	72
Number of Unique Samples	51
Minimum	3.15
Maximum	2050
Mean	177.3986
Median	80
Standard Deviation	305.294
Variance	93204.44
Coefficient of Variation	1.720949
Skewness	3.908776

Gamma Statistics	
k hat	0.609508
k star (bias corrected)	0.593371
Theta hat	291.0522
Theta star	298.9675
nu hat	87.76913
nu star	85.44542
Approx.Chi Square Value (.05)	65.13467
Adjusted Level of Significance	0.046667
Adjusted Chi Square Value	64.77339

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	7.625595
Mean of log data	4.167012
Standard Deviation of log data	1.547275
Variance of log data	2.394059

RECOMMENDATION

Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

402.0889

Normal Distribution Test	
Lilliefors Test Statisitic	0.284082
Lilliefors 5% Critical Value	0.104416
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	237.3616

Gamma Distribution Test	
A-D Test Statistic	1.478836
A-D 5% Critical Value	0.806455
K-S Test Statistic	0.14692
K-S 5% Critical Value	0.110329
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	232.7163
Adjusted Gamma UCL	234.0143

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.135959
Lilliefors 5% Critical Value	0.104416
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	359.8732
95% Chebyshev (MVUE) UCL	432.2532
97.5% Chebyshev (MVUE) UCL	530.0452
99% Chebyshev (MVUE) UCL	722.1385

95% Non-parametric UCLs	
CLT UCL	236.5792
Adj-CLT UCL (Adjusted for skewness)	254.2887
Mod-t UCL (Adjusted for skewness)	240.1239
Jackknife UCL	237.3616
Standard Bootstrap UCL	236.7294
Bootstrap-t UCL	271.0315
Hall's Bootstrap UCL	306.5477
Percentile Bootstrap UCL	238.366
BCA Bootstrap UCL	258.0528
95% Chebyshev (Mean, Sd) UCL	334.2285
97.5% Chebyshev (Mean, Sd) UCL	402.0889
99% Chebyshev (Mean, Sd) UCL	535.3876

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	70
Number of Unique Samples	48
Minimum	3.9
Maximum	2050
Mean	197.4486
Median	93.5
Standard Deviation	303.5191
Variance	92123.86
Coefficient of Variation	1.537206
Skewness	3.914697

Gamma Statistics	
k hat	0.829161
k star (bias corrected)	0.803149
Theta hat	238.1307
Theta star	245.843
nu hat	116.0825
nu star	112.4409
Approx.Chi Square Value (.05)	88.95816
Adjusted Level of Significance	0.046571
Adjusted Chi Square Value	88.52058

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	7.625595
Mean of log data	4.573043
Standard Deviation of log data	1.224748
Variance of log data	1.500007

RECOMMENDATION

Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

424.0013

Normal Distribution Test	
Lilliefors Test Statisitic	0.274647
Lilliefors 5% Critical Value	0.105897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	257.9318

Gamma Distribution Test	
A-D Test Statistic	1.644139
A-D 5% Critical Value	0.788755
K-S Test Statistic	0.135723
K-S 5% Critical Value	0.110289
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	249.57
Adjusted Gamma UCL	250.8037

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.117357
Lilliefors 5% Critical Value	0.105897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	295.6327
95% Chebyshev (MVUE) UCL	363.7115
97.5% Chebyshev (MVUE) UCL	433.9837
99% Chebyshev (MVUE) UCL	572.0199

95% Non-parametric UCLs	
CLT UCL	257.1197
Adj-CLT UCL (Adjusted for skewness)	275.2568
Mod-t UCL (Adjusted for skewness)	260.7608
Jackknife UCL	257.9318
Standard Bootstrap UCL	255.6461
Bootstrap-t UCL	292.3217
Hall's Bootstrap UCL	344.0218
Percentile Bootstrap UCL	261.3243
BCA Bootstrap UCL	278.8929
95% Chebyshev (Mean, Sd) UCL	355.5784
97.5% Chebyshev (Mean, Sd) UCL	424.0013
99% Chebyshev (Mean, Sd) UCL	558.4049

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEXANE (N-HEXANE)

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	20
Minimum	3.9
Maximum	1300
Mean	352.9125
Median	207.5
Standard Deviation	348.7722
Variance	121642.1
Coefficient of Variation	0.988268
Skewness	1.144448

Gamma Statistics	
k hat	0.956249
k star (bias corrected)	0.864495
Theta hat	369.0593
Theta star	408.2294
nu hat	45.89994
nu star	41.49578
Approx.Chi Square Value (.05)	27.72866
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	26.93689

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	7.17012
Mean of log data	5.259378
Standard Deviation of log data	1.312613
Variance of log data	1.722952

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

528.1316

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.829499
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	474.9279

Gamma Distribution Test	
A-D Test Statistic	0.683202
A-D 5% Critical Value	0.77371
K-S Test Statistic	0.181681
K-S 5% Critical Value	0.183348
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	528.1316
Adjusted Gamma UCL	543.6552

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.9043
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1022.996
95% Chebyshev (MVUE) UCL	1025.798
97.5% Chebyshev (MVUE) UCL	1284.358
99% Chebyshev (MVUE) UCL	1792.249

95% Non-parametric UCLs	
CLT UCL	470.0143
Adj-CLT UCL (Adjusted for skewness)	487.7851
Mod-t UCL (Adjusted for skewness)	477.6997
Jackknife UCL	474.9279
Standard Bootstrap UCL	464.1554
Bootstrap-t UCL	498.5851
Hall's Bootstrap UCL	496.7018
Percentile Bootstrap UCL	468.3292
BCA Bootstrap UCL	489.5792
95% Chebyshev (Mean, Sd) UCL	663.2349
97.5% Chebyshev (Mean, Sd) UCL	797.5116
99% Chebyshev (Mean, Sd) UCL	1061.272

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEPTANE

Raw Statistics	
Number of Valid Samples	24
Number of Unique Samples	19
Minimum	3.9
Maximum	850
Mean	310.5375
Median	207.5
Standard Deviation	286.8953
Variance	82308.93
Coefficient of Variation	0.923867
Skewness	0.804019

Gamma Statistics	
k hat	0.978809
k star (bias corrected)	0.884236
Theta hat	317.2604
Theta star	351.193
nu hat	46.98286
nu star	42.44333
Approx.Chi Square Value (.05)	28.50516
Adjusted Level of Significance	0.0392
Adjusted Chi Square Value	27.70153

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	6.745236
Mean of log data	5.1471
Standard Deviation of log data	1.321474
Variance of log data	1.746293

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

462.381

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.834337
Shapiro-Wilk 5% Critical Value	0.916
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	410.9057

Gamma Distribution Test	
A-D Test Statistic	0.526893
A-D 5% Critical Value	0.772751
K-S Test Statistic	0.160352
K-S 5% Critical Value	0.183174
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	462.381
Adjusted Gamma UCL	475.7949

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.909962
Shapiro-Wilk 5% Critical Value	0.916
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	933.4932
95% Chebyshev (MVUE) UCL	930.9335
97.5% Chebyshev (MVUE) UCL	1166.374
99% Chebyshev (MVUE) UCL	1628.851

95% Non-parametric UCLs	
CLT UCL	406.8638
Adj-CLT UCL (Adjusted for skewness)	417.1336
Mod-t UCL (Adjusted for skewness)	412.5075
Jackknife UCL	410.9057
Standard Bootstrap UCL	405.1054
Bootstrap-t UCL	419.9989
Hall's Bootstrap UCL	408.5185
Percentile Bootstrap UCL	406.8333
BCA Bootstrap UCL	414.9167
95% Chebyshev (Mean, Sd) UCL	565.8045
97.5% Chebyshev (Mean, Sd) UCL	676.2587
99% Chebyshev (Mean, Sd) UCL	893.2247

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	73
Number of Unique Samples	51
Minimum	3.9
Maximum	4050
Mean	250.4164
Median	150
Standard Deviation	499.0503
Variance	249051.2
Coefficient of Variation	1.992882
Skewness	6.376391

Gamma Statistics	
k hat	0.727809
k star (bias corrected)	0.707031
Theta hat	344.0691
Theta star	354.1802
nu hat	106.2601
nu star	103.2265
Approx.Chi Square Value (.05)	80.77853
Adjusted Level of Significance	0.046712
Adjusted Chi Square Value	80.37994

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	8.306472
Mean of log data	4.697231
Standard Deviation of log data	1.335619
Variance of log data	1.783879

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

402.502

Normal Distribution Test	
Lilliefors Test Statisitic	0.310663
Lilliefors 5% Critical Value	0.103698
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	347.7437

Gamma Distribution Test	
A-D Test Statistic	1.184817
A-D 5% Critical Value	0.794937
K-S Test Statistic	0.113879
K-S 5% Critical Value	0.108738
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	320.0061
Adjusted Gamma UCL	321.593

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.099609
Lilliefors 5% Critical Value	0.103698
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	402.502
95% Chebyshev (MVUE) UCL	494.2785
97.5% Chebyshev (MVUE) UCL	594.9602
99% Chebyshev (MVUE) UCL	792.7298

95% Non-parametric UCLs	
CLT UCL	346.4914
Adj-CLT UCL (Adjusted for skewness)	393.069
Mod-t UCL (Adjusted for skewness)	355.0088
Jackknife UCL	347.7437
Standard Bootstrap UCL	343.1621
Bootstrap-t UCL	457.8123
Hall's Bootstrap UCL	723.2041
Percentile Bootstrap UCL	368.6219
BCA Bootstrap UCL	400.7534
95% Chebyshev (Mean, Sd) UCL	505.0172
97.5% Chebyshev (Mean, Sd) UCL	615.1831
99% Chebyshev (Mean, Sd) UCL	831.5828

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYLENE CHLORIDE

Raw Statistics	
Number of Valid Samples	72
Number of Unique Samples	57
Minimum	3.9
Maximum	6700
Mean	430.2208
Median	242.5
Standard Deviation	839.42
Variance	704625.9
Coefficient of Variation	1.951137
Skewness	6.188072

Gamma Statistics	
k hat	0.743586
k star (bias corrected)	0.721863
Theta hat	578.5757
Theta star	595.9871
nu hat	107.0764
nu star	103.9482
Approx.Chi Square Value (.05)	81.41753
Adjusted Level of Significance	0.046667
Adjusted Chi Square Value	81.01159

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	8.809863
Mean of log data	5.258295
Standard Deviation of log data	1.346095
Variance of log data	1.811972

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

721.3916

Normal Distribution Test	
Lilliefors Test Statisitic	0.30577
Lilliefors 5% Critical Value	0.104416
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	595.0918

Gamma Distribution Test	
A-D Test Statistic	1.029907
A-D 5% Critical Value	0.793324
K-S Test Statistic	0.116455
K-S 5% Critical Value	0.109313
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	549.2759
Adjusted Gamma UCL	552.0282

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.103255
Lilliefors 5% Critical Value	0.104416
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	721.3916
95% Chebyshev (MVUE) UCL	884.8013
97.5% Chebyshev (MVUE) UCL	1066.639
99% Chebyshev (MVUE) UCL	1423.823

95% Non-parametric UCLs	
CLT UCL	592.9406
Adj-CLT UCL (Adjusted for skewness)	670.0279
Mod-t UCL (Adjusted for skewness)	607.1159
Jackknife UCL	595.0918
Standard Bootstrap UCL	592.4002
Bootstrap-t UCL	783.7821
Hall's Bootstrap UCL	1234.865
Percentile Bootstrap UCL	613.9514
BCA Bootstrap UCL	724.575
95% Chebyshev (Mean, Sd) UCL	861.4319
97.5% Chebyshev (Mean, Sd) UCL	1048.017
99% Chebyshev (Mean, Sd) UCL	1414.528

Data File C:\Documents and Settings\tzoukh\My Docun Variable: O-XYLENE

Raw Statistics	
Number of Valid Samples	72
Number of Unique Samples	51
Minimum	3.25
Maximum	2050
Mean	189.8396
Median	80
Standard Deviation	314.6446
Variance	99001.24
Coefficient of Variation	1.657424
Skewness	3.569309

Gamma Statistics	
k hat	0.617074
k star (bias corrected)	0.600622
Theta hat	307.6447
Theta star	316.0716
nu hat	88.85868
nu star	86.48957
Approx.Chi Square Value (.05)	66.04746
Adjusted Level of Significance	0.046667
Adjusted Chi Square Value	65.68355

Log-transformed Statistics	
Minimum of log data	1.178655
Maximum of log data	7.625595
Mean of log data	4.248998
Standard Deviation of log data	1.523569
Variance of log data	2.321263

RECOMMENDATION

Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

421.4118

Normal Distribution Test	
Lilliefors Test Statisitic	0.296162
Lilliefors 5% Critical Value	0.104416
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	251.6391

Gamma Distribution Test	
A-D Test Statistic	1.721588
A-D 5% Critical Value	0.805714
K-S Test Statistic	0.166471
K-S 5% Critical Value	0.110272
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	248.5961
Adjusted Gamma UCL	249.9735

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.11515
Lilliefors 5% Critical Value	0.104416
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	371.7881
95% Chebyshev (MVUE) UCL	448.1053
97.5% Chebyshev (MVUE) UCL	548.4459
99% Chebyshev (MVUE) UCL	745.5456

95% Non-parametric UCLs	
CLT UCL	250.8328
Adj-CLT UCL (Adjusted for skewness)	267.4996
Mod-t UCL (Adjusted for skewness)	254.2388
Jackknife UCL	251.6391
Standard Bootstrap UCL	249.8703
Bootstrap-t UCL	283.8121
Hall's Bootstrap UCL	309.9212
Percentile Bootstrap UCL	253.3903
BCA Bootstrap UCL	271.1917
95% Chebyshev (Mean, Sd) UCL	351.4729
97.5% Chebyshev (Mean, Sd) UCL	421.4118
99% Chebyshev (Mean, Sd) UCL	558.7931

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	87
Number of Unique Samples	68
Minimum	72
Maximum	500000
Mean	84469.56
Median	44000
Standard Deviation	102360.1
Variance	1.05E+10
Coefficient of Variation	1.211798
Skewness	1.973654

Gamma Statistics	
k hat	0.688363
k star (bias corrected)	0.67229
Theta hat	122710.7
Theta star	125644.6
nu hat	119.7752
nu star	116.9784
Approx.Chi Square Value (.05)	93.00182
Adjusted Level of Significance	0.047241
Adjusted Chi Square Value	92.64342

Log-transformed Statistics	
Minimum of log data	4.276666
Maximum of log data	13.12236
Mean of log data	10.46414
Standard Deviation of log data	1.683556
Variance of log data	2.834361

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

106246.4

Normal Distribution Test	
Lilliefors Test Statisitic	0.22293
Lilliefors 5% Critical Value	0.094989
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	102717

Gamma Distribution Test	
A-D Test Statistic	0.263508
A-D 5% Critical Value	0.799632
K-S Test Statistic	0.078889
K-S 5% Critical Value	0.100084
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	106246.4
Adjusted Gamma UCL	106657.5

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.1147
Lilliefors 5% Critical Value	0.094989
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	247216.9
95% Chebyshev (MVUE) UCL	297420.6
97.5% Chebyshev (MVUE) UCL	365886.5
99% Chebyshev (MVUE) UCL	500374.4

95% Non-parametric UCLs	
CLT UCL	102520.4
Adj-CLT UCL (Adjusted for skewness)	105001.6
Mod-t UCL (Adjusted for skewness)	103104
Jackknife UCL	102717
Standard Bootstrap UCL	102559.8
Bootstrap-t UCL	106669.7
Hall's Bootstrap UCL	104628.5
Percentile Bootstrap UCL	102215.5
BCA Bootstrap UCL	105016.7
95% Chebyshev (Mean, Sd) UCL	132304.8
97.5% Chebyshev (Mean, Sd) UCL	153003.1
99% Chebyshev (Mean, Sd) UCL	193661

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	77
Number of Unique Samples	55
Minimum	3.9
Maximum	4000
Mean	252.3818
Median	95
Standard Deviation	524.8903
Variance	275509.8
Coefficient of Variation	2.079747
Skewness	5.510163

Gamma Statistics	
k hat	0.73462
k star (bias corrected)	0.714656
Theta hat	343.5544
Theta star	353.1514
nu hat	113.1314
nu star	110.0571
Approx.Chi Square Value (.05)	86.83782
Adjusted Level of Significance	0.046883
Adjusted Chi Square Value	86.44596

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	8.29405
Mean of log data	4.71375
Standard Deviation of log data	1.191491
Variance of log data	1.41965

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

316.0059

Normal Distribution Test	
Lilliefors Test Statisitic	0.317965
Lilliefors 5% Critical Value	0.100969
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	351.9858

Gamma Distribution Test	
A-D Test Statistic	3.49916
A-D 5% Critical Value	0.794519
K-S Test Statistic	0.17871
K-S 5% Critical Value	0.10591
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	319.8652
Adjusted Gamma UCL	321.3152

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.08176
Lilliefors 5% Critical Value	0.100969
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	316.0059
95% Chebyshev (MVUE) UCL	389.3707
97.5% Chebyshev (MVUE) UCL	461.2596
99% Chebyshev (MVUE) UCL	602.4713

95% Non-parametric UCLs	
CLT UCL	350.7717
Adj-CLT UCL (Adjusted for skewness)	390.9066
Mod-t UCL (Adjusted for skewness)	358.2461
Jackknife UCL	351.9858
Standard Bootstrap UCL	350.2933
Bootstrap-t UCL	475.5061
Hall's Bootstrap UCL	791.959
Percentile Bootstrap UCL	359.7065
BCA Bootstrap UCL	406.0195
95% Chebyshev (Mean, Sd) UCL	513.1172
97.5% Chebyshev (Mean, Sd) UCL	625.9376
99% Chebyshev (Mean, Sd) UCL	847.5514

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRAHYDROFURAN

Raw Statistics	
Number of Valid Samples	22
Number of Unique Samples	18
Minimum	3.9
Maximum	1300
Mean	379.7227
Median	237.5
Standard Deviation	352.4067
Variance	124190.5
Coefficient of Variation	0.928063
Skewness	1.035029

Gamma Statistics	
k hat	1.009716
k star (bias corrected)	0.902331
Theta hat	376.0687
Theta star	420.8243
nu hat	44.42752
nu star	39.70255
Approx.Chi Square Value (.05)	26.26462
Adjusted Level of Significance	0.0386
Adjusted Chi Square Value	25.44864

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	7.17012
Mean of log data	5.368426
Standard Deviation of log data	1.318118
Variance of log data	1.737436

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

574.0026

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.85257
Shapiro-Wilk 5% Critical Value	0.911
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	509.0079

Gamma Distribution Test	
A-D Test Statistic	0.565286
A-D 5% Critical Value	0.770564
K-S Test Statistic	0.160327
K-S 5% Critical Value	0.190707
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	574.0026
Adjusted Gamma UCL	592.4073

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.884601
Shapiro-Wilk 5% Critical Value	0.911
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1214.116
95% Chebyshev (MVUE) UCL	1172.002
97.5% Chebyshev (MVUE) UCL	1472.189
99% Chebyshev (MVUE) UCL	2061.849

95% Non-parametric UCLs	
CLT UCL	503.3061
Adj-CLT UCL (Adjusted for skewness)	521.0216
Mod-t UCL (Adjusted for skewness)	511.7712
Jackknife UCL	509.0079
Standard Bootstrap UCL	498.2578
Bootstrap-t UCL	533.747
Hall's Bootstrap UCL	514.6267
Percentile Bootstrap UCL	506.0364
BCA Bootstrap UCL	518.1318
95% Chebyshev (Mean, Sd) UCL	707.2214
97.5% Chebyshev (Mean, Sd) UCL	848.9304
99% Chebyshev (Mean, Sd) UCL	1127.29

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	73
Number of Unique Samples	56
Minimum	3.9
Maximum	6200
Mean	1238.119
Median	460
Standard Deviation	1611.181
Variance	2595904
Coefficient of Variation	1.301313
Skewness	1.678924

Gamma Statistics	
k hat	0.552381
k star (bias corrected)	0.538813
Theta hat	2241.423
Theta star	2297.866
nu hat	80.6476
nu star	78.66665
Approx.Chi Square Value (.05)	59.22905
Adjusted Level of Significance	0.046712
Adjusted Chi Square Value	58.89016

Log-transformed Statistics	
Minimum of log data	1.360977
Maximum of log data	8.732305
Mean of log data	5.988872
Standard Deviation of log data	1.894778
Variance of log data	3.590182

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

1644.441

Normal Distribution Test	
Lilliefors Test Statisitic	0.223618
Lilliefors 5% Critical Value	0.103698
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1552.34

Gamma Distribution Test	
A-D Test Statistic	0.433506
A-D 5% Critical Value	0.812235
K-S Test Statistic	0.085135
K-S 5% Critical Value	0.110056
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1644.441
Adjusted Gamma UCL	1653.904

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.109346
Lilliefors 5% Critical Value	0.103698
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4974.791
95% Chebyshev (MVUE) UCL	5509.719
97.5% Chebyshev (MVUE) UCL	6919.468
99% Chebyshev (MVUE) UCL	9688.647

95% Non-parametric UCLs	
CLT UCL	1548.297
Adj-CLT UCL (Adjusted for skewness)	1587.891
Mod-t UCL (Adjusted for skewness)	1558.515
Jackknife UCL	1552.34
Standard Bootstrap UCL	1544.913
Bootstrap-t UCL	1613.341
Hall's Bootstrap UCL	1597.779
Percentile Bootstrap UCL	1543.71
BCA Bootstrap UCL	1593.9
95% Chebyshev (Mean, Sd) UCL	2060.096
97.5% Chebyshev (Mean, Sd) UCL	2415.766
99% Chebyshev (Mean, Sd) UCL	3114.411

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	87
Number of Unique Samples	65
Minimum	37
Maximum	84000
Mean	16261.25
Median	10000
Standard Deviation	16736.18
Variance	2.8E+08
Coefficient of Variation	1.029206
Skewness	1.693755

Gamma Statistics	
k hat	0.768427
k star (bias corrected)	0.749592
Theta hat	21161.74
Theta star	21693.46
nu hat	133.7063
nu star	130.4291
Approx.Chi Square Value (.05)	105.0425
Adjusted Level of Significance	0.047241
Adjusted Chi Square Value	104.6607

Log-transformed Statistics	
Minimum of log data	3.610918
Maximum of log data	11.33857
Mean of log data	8.920049
Standard Deviation of log data	1.594235
Variance of log data	2.541584

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

20191.26

Normal Distribution Test	
Lilliefors Test Statisitic	0.16617
Lilliefors 5% Critical Value	0.094989
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	19244.76

Gamma Distribution Test	
A-D Test Statistic	0.67943
A-D 5% Critical Value	0.792628
K-S Test Statistic	0.089152
K-S 5% Critical Value	0.09959
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	20191.26
Adjusted Gamma UCL	20264.91

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.121987
Lilliefors 5% Critical Value	0.094989
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	43526.66
95% Chebyshev (MVUE) UCL	52982.04
97.5% Chebyshev (MVUE) UCL	64734.72
99% Chebyshev (MVUE) UCL	87820.58

95% Non-parametric UCLs	
CLT UCL	19212.63
Adj-CLT UCL (Adjusted for skewness)	19560.78
Mod-t UCL (Adjusted for skewness)	19299.07
Jackknife UCL	19244.76
Standard Bootstrap UCL	19202.31
Bootstrap-t UCL	19723.13
Hall's Bootstrap UCL	19755.11
Percentile Bootstrap UCL	19343.18
BCA Bootstrap UCL	19326.21
95% Chebyshev (Mean, Sd) UCL	24082.46
97.5% Chebyshev (Mean, Sd) UCL	27466.7
99% Chebyshev (Mean, Sd) UCL	34114.38

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	87
Number of Unique Samples	67
Minimum	190
Maximum	220000
Mean	46241.84
Median	27000
Standard Deviation	48026.35
Variance	2.31E+09
Coefficient of Variation	1.038591
Skewness	1.196856

Gamma Statistics	
k hat	0.715865
k star (bias corrected)	0.698843
Theta hat	64595.76
Theta star	66169.16
nu hat	124.5605
nu star	121.5986
Approx.Chi Square Value (.05)	97.12899
Adjusted Level of Significance	0.047241
Adjusted Chi Square Value	96.76241

Log-transformed Statistics	
Minimum of log data	5.247024
Maximum of log data	12.30138
Mean of log data	9.900049
Standard Deviation of log data	1.63046
Variance of log data	2.658399

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

57891.52

Normal Distribution Test	
Lilliefors Test Statisitic	0.187735
Lilliefors 5% Critical Value	0.094989
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	54803.36

Gamma Distribution Test	
A-D Test Statistic	0.739203
A-D 5% Critical Value	0.796864
K-S Test Statistic	0.103556
K-S 5% Critical Value	0.099895
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	57891.52
Adjusted Gamma UCL	58110.84

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.124082
Lilliefors 5% Critical Value	0.094989
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	125250
95% Chebyshev (MVUE) UCL	151803.2
97.5% Chebyshev (MVUE) UCL	186000.3
99% Chebyshev (MVUE) UCL	253173.9

95% Non-parametric UCLs	
CLT UCL	54711.13
Adj-CLT UCL (Adjusted for skewness)	55417.1
Mod-t UCL (Adjusted for skewness)	54913.47
Jackknife UCL	54803.36
Standard Bootstrap UCL	54875.15
Bootstrap-t UCL	55425.16
Hall's Bootstrap UCL	56320.45
Percentile Bootstrap UCL	54646.67
BCA Bootstrap UCL	55326.44
95% Chebyshev (Mean, Sd) UCL	68685.66
97.5% Chebyshev (Mean, Sd) UCL	78397.11
99% Chebyshev (Mean, Sd) UCL	97473.39

Data File C:\Documents and Settings\tzoukh\My Docun Variable: VINYL CHLORIDE

Raw Statistics	
Number of Valid Samples	70
Number of Unique Samples	49
Minimum	3.15
Maximum	2050
Mean	182.6814
Median	80
Standard Deviation	308.0604
Variance	94901.22
Coefficient of Variation	1.686326
Skewness	3.871118

Gamma Statistics	
k hat	0.646927
k star (bias corrected)	0.628725
Theta hat	282.3835
Theta star	290.5585
nu hat	90.56975
nu star	88.02152
Approx.Chi Square Value (.05)	67.38813
Adjusted Level of Significance	0.046571
Adjusted Chi Square Value	67.00957

Log-transformed Statistics	
Minimum of log data	1.147402
Maximum of log data	7.625595
Mean of log data	4.263071
Standard Deviation of log data	1.480791
Variance of log data	2.192742

RECOMMENDATION
Data are Non-parametric (0.05)

Use 97.5% Chebyshev (Mean, Sd) UCL

412.6239

Normal Distribution Test	
Lilliefors Test Statisitic	0.280617
Lilliefors 5% Critical Value	0.105897
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	244.0696

Gamma Distribution Test	
A-D Test Statistic	1.497786
A-D 5% Critical Value	0.802547
K-S Test Statistic	0.154917
K-S 5% Critical Value	0.111446
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	238.6162
Adjusted Gamma UCL	239.9642

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.128943
Lilliefors 5% Critical Value	0.105897
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	348.3653
95% Chebyshev (MVUE) UCL	421.0728
97.5% Chebyshev (MVUE) UCL	514.1287
99% Chebyshev (MVUE) UCL	696.9191

95% Non-parametric UCLs	
CLT UCL	243.2454
Adj-CLT UCL (Adjusted for skewness)	261.4489
Mod-t UCL (Adjusted for skewness)	246.909
Jackknife UCL	244.0696
Standard Bootstrap UCL	241.4513
Bootstrap-t UCL	269.0334
Hall's Bootstrap UCL	322.2839
Percentile Bootstrap UCL	246.48
BCA Bootstrap UCL	267.4621
95% Chebyshev (Mean, Sd) UCL	343.1772
97.5% Chebyshev (Mean, Sd) UCL	412.6239
99% Chebyshev (Mean, Sd) UCL	549.0384

A-1.8 Soil Gas - Other Parcels 5 to 30 feet bgs

Summary of UCLs for Other Parcels Soil Gas 5-30 ft bgs

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are Non-parametric (0.05)	11,810	64,480	Use 99% Chebyshev (Mean, Sd) UCL	46,000	1,621	8,848	UCL-NP
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Data follow gamma distribution (0.05)	124,086	950,498	Use Adjusted Gamma UCL	450,000	79,306	607,484	95% UCL-G
1,1-DICHLOROETHANE	Data follow gamma distribution (0.05)	462	1,872	Use Adjusted Gamma UCL	2,200	293	1,187	95% UCL-G
1,1-DICHLOROETHENE	Data follow gamma distribution (0.05)	95,820	380,406	Use Adjusted Gamma UCL	270,000	61,485	244,094	95% UCL-G
1,2,4-TRIMETHYLBENZENE	Assuming gamma distribution (0.05)	291	1,431	Use Adjusted Gamma UCL	800	190	934	95% UCL-G assumed
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		14,000	87,500	
1,3-BUTADIENE	Data follow gamma distribution (0.05)	282	623	Use Adjusted Gamma UCL	800	188	415	95% UCL-G
2,2,4-TRIMETHYLPENTANE	Assuming gamma distribution (0.05)	273	1,275	Use Adjusted Gamma UCL	800	182	849	95% UCL-G assumed
2-BUTANONE	Data follow gamma distribution (0.05)	268	791	Use Approximate Gamma UCL	800	186	548	95% UCL-G
2-PROPANOL	Data follow gamma distribution (0.05)	2,065	5,081	Use Adjusted Gamma UCL	15,000	1,264	3,109	95% UCL-G
4-ETHYLTOLUENE	Data follow gamma distribution (0.05)	290	1,445	Use Adjusted Gamma UCL	800	185	932	95% UCL-G
ACETONE	Data are lognormal (0.05)	1,784	691	Use H-UCL	3,300	712	440	95% UCL-T
BENZENE	Data are Non-parametric (0.05)	312	5,690	Use 95% Chebyshev (Mean, Sd) UCL	800	171	2,270	UCL-NP
BROMODICHLOROMETHANE	Data follow gamma distribution (0.05)	294	2,089	Use Adjusted Gamma UCL	800	189	1,143	95% UCL-G
BROMOFORM	Data follow gamma distribution (0.05)	304	3,044	Use Adjusted Gamma UCL	800	193	1,956	95% UCL-G
CARBON DISULFIDE	Data follow gamma distribution (0.05)	294	945	Use Adjusted Gamma UCL	800	189	601	95% UCL-G
CHLOROFORM	Data are lognormal (0.05)	2,564	12,512	Use 95% Chebyshev (MVUE) UCL	22,000	722	3,521	95% UCL-T
CIS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	415	1,644	Use Adjusted Gamma UCL	3,300	264	1,046	95% UCL-G
CYCLOHEXANE	Data follow gamma distribution (0.05)	293	1,008	Use Adjusted Gamma UCL	800	191	658	95% UCL-G
DIBROMOCHLOROMETHANE	Data follow gamma distribution (0.05)	303	2,581	Use Adjusted Gamma UCL	800	193	1,646	95% UCL-G
DICHLORODIFLUOROMETHANE	Data follow gamma distribution (0.05)	411	2,034	Use Adjusted Gamma UCL	1,900	268	1,325	95% UCL-G
ETHANOL	Assuming gamma distribution (0.05)	1,147	2,156	Use Adjusted Gamma UCL	3,300	747	1,405	95% UCL-G assumed
ETHYLBENZENE	Assuming gamma distribution (0.05)	285	1,236	Use Adjusted Gamma UCL	800	186	808	95% UCL-G assumed
HEPTANE	Data follow gamma distribution (0.05)	279	1,143	Use Adjusted Gamma UCL	800	182	746	95% UCL-G
HEXANE (N-HEXANE)	Assuming gamma distribution (0.05)	284	1,000	Use Adjusted Gamma UCL	800	193	679	95% UCL-G assumed
M,P-XYLENES	Data are lognormal (0.05)	716	3,106	Use H-UCL	1,050	195	847	95% UCL-T
METHYL TERT-BUTYL ETHER	Data follow gamma distribution (0.05)	296	1,068	Use Adjusted Gamma UCL	800	189	683	95% UCL-G
METHYLENE CHLORIDE	Data follow gamma distribution (0.05)	298	1,035	Use Adjusted Gamma UCL	800	196	681	95% UCL-G
O-XYLENE	Assuming gamma distribution (0.05)	283	1,229	Use Adjusted Gamma UCL	800	186	808	95% UCL-G assumed
PENTANE	Too Few Observations To Calculate UCLs	No UCL	No UCL	Too Few Observations To Calculate UCLs		7,300	21,535	
TETRACHLOROETHENE	Data are lognormal (0.05)	104,155	706,170	Use 97.5% Chebyshev (MVUE) UCL	310,000	40,304	273,264	95% UCL-T
TETRAHYDROFURAN	Data follow gamma distribution (0.05)	303	894	Use Adjusted Gamma UCL	800	193	570	95% UCL-G
TOLUENE	Data are lognormal (0.05)	653	2,463	Use H-UCL	3,300	261	984	95% UCL-T
TRANS-1,2-DICHLOROETHENE	Data follow gamma distribution (0.05)	403	1,597	Use Adjusted Gamma UCL	2,500	251	995	95% UCL-G
TRICHLOROETHENE	Data are lognormal (0.05)	22,970	123,349	Use 97.5% Chebyshev (MVUE) UCL	88,000	8,126	43,637	95% UCL-T
TRICHLOROFLUOROMETHANE (FREON 11)	Data follow gamma distribution (0.05)	42,257	237,484	Use Adjusted Gamma UCL	180,000	27,237	153,073	95% UCL-G

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	50
Number of Unique Samples	43
Minimum	0.5
Maximum	46000
Mean	1620.592
Median	100
Standard Deviation	7240.974
Variance	5.24E+07
Coefficient of Variation	4.468104
Skewness	5.513583

Gamma Statistics	
k hat	0.21766
k star (bias corrected)	0.217934
Theta hat	7445.527
Theta star	7436.175
nu hat	21.76598
nu star	21.79336
Approx.Chi Square Value (.05)	12.18191
Adjusted Level of Significance	0.0452
Adjusted Chi Square Value	11.96774

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	10.7364
Mean of log data	4.054158
Standard Deviation of log data	2.732085
Variance of log data	7.46429

RECOMMENDATION
Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

11809.55

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.241238
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	3337.427

Gamma Distribution Test	
A-D Test Statistic	4.324623
A-D 5% Critical Value	0.899453
K-S Test Statistic	0.279061
K-S 5% Critical Value	0.138423
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2899.229
Adjusted Gamma UCL	2951.111

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.94251
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	14376.26
95% Chebyshev (MVUE) UCL	6521.345
97.5% Chebyshev (MVUE) UCL	8569.972
99% Chebyshev (MVUE) UCL	12594.1

95% Non-parametric UCLs	
CLT UCL	3304.969
Adj-CLT UCL (Adjusted for skewness)	4158.15
Mod-t UCL (Adjusted for skewness)	3470.506
Jackknife UCL	3337.427
Standard Bootstrap UCL	3260.883
Bootstrap-t UCL	32170.93
Hall's Bootstrap UCL	18773.78
Percentile Bootstrap UCL	3491.3
BCA Bootstrap UCL	4456.834
95% Chebyshev (Mean, Sd) UCL	6084.228
97.5% Chebyshev (Mean, Sd) UCL	8015.647
99% Chebyshev (Mean, Sd) UCL	11809.55

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	59
Number of Unique Samples	53
Minimum	0.5
Maximum	450000
Mean	79305.98
Median	22000
Standard Deviation	125027.2
Variance	1.56E+10
Coefficient of Variation	1.576516
Skewness	1.852903

Gamma Statistics	
k hat	0.309455
k star (bias corrected)	0.30502
Theta hat	256276.1
Theta star	260002.8
nu hat	36.51572
nu star	35.99232
Approx.Chi Square Value (.05)	23.26026
Adjusted Level of Significance	0.045932
Adjusted Chi Square Value	23.00348

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	13.017
Mean of log data	9.064006
Standard Deviation of log data	3.249369
Variance of log data	10.5584

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

124085.8

Normal Distribution Test	
Lilliefors Test Statisitic	0.262941
Lilliefors 5% Critical Value	0.115347
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	106514.1

Gamma Distribution Test	
A-D Test Statistic	0.332888
A-D 5% Critical Value	0.860935
K-S Test Statistic	0.077835
K-S 5% Critical Value	0.125462
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	122716
Adjusted Gamma UCL	124085.8

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.12168
Lilliefors 5% Critical Value	0.115347
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	14852077
95% Chebyshev (MVUE) UCL	4347230
97.5% Chebyshev (MVUE) UCL	5765693
99% Chebyshev (MVUE) UCL	8551989

95% Non-parametric UCLs	
CLT UCL	106079.5
Adj-CLT UCL (Adjusted for skewness)	110275
Mod-t UCL (Adjusted for skewness)	107168.5
Jackknife UCL	106514.1
Standard Bootstrap UCL	106433.1
Bootstrap-t UCL	113392
Hall's Bootstrap UCL	108713.7
Percentile Bootstrap UCL	107857.3
BCA Bootstrap UCL	110693.4
95% Chebyshev (Mean, Sd) UCL	150256.4
97.5% Chebyshev (Mean, Sd) UCL	180956.8
99% Chebyshev (Mean, Sd) UCL	241261.6

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHANE

Raw Statistics	
Number of Valid Samples	48
Number of Unique Samples	41
Minimum	0.5
Maximum	2200
Mean	293.0021
Median	100
Standard Deviation	467.4714
Variance	2.19E+05
Coefficient of Variation	1.595454
Skewness	2.551371

Gamma Statistics	
k hat	0.376401
k star (bias corrected)	0.366764
Theta hat	778.4315
Theta star	798.8835
nu hat	36.13446
nu star	35.20939
Approx.Chi Square Value (.05)	22.63092
Adjusted Level of Significance	0.045
Adjusted Chi Square Value	22.31769

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.696213
Mean of log data	3.914675
Standard Deviation of log data	2.535212
Variance of log data	6.4273

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

462.2531

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.661876
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	406.2179

Gamma Distribution Test	
A-D Test Statistic	0.421857
A-D 5% Critical Value	0.843763
K-S Test Statistic	0.083799
K-S 5% Critical Value	0.13749
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	455.8553
Adjusted Gamma UCL	462.2531

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.904724
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6189.153
95% Chebyshev (MVUE) UCL	3385.278
97.5% Chebyshev (MVUE) UCL	4426.444
99% Chebyshev (MVUE) UCL	6471.614

95% Non-parametric UCLs	
CLT UCL	403.9864
Adj-CLT UCL (Adjusted for skewness)	430.5366
Mod-t UCL (Adjusted for skewness)	410.3592
Jackknife UCL	406.2179
Standard Bootstrap UCL	403.0251
Bootstrap-t UCL	458.5501
Hall's Bootstrap UCL	445.3853
Percentile Bootstrap UCL	409.9458
BCA Bootstrap UCL	433.5448
95% Chebyshev (Mean, Sd) UCL	587.113
97.5% Chebyshev (Mean, Sd) UCL	714.3751
99% Chebyshev (Mean, Sd) UCL	964.3567

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	59
Number of Unique Samples	47
Minimum	0.5
Maximum	270000
Mean	61484.54
Median	14000
Standard Deviation	83219
Variance	6.93E+09
Coefficient of Variation	1.353495
Skewness	1.222537

Gamma Statistics	
k hat	0.314588
k star (bias corrected)	0.309891
Theta hat	195444.9
Theta star	198406.9
nu hat	37.12134
nu star	36.56715
Approx.Chi Square Value (.05)	23.7234
Adjusted Level of Significance	0.045932
Adjusted Chi Square Value	23.46388

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	12.50618
Mean of log data	8.851498
Standard Deviation of log data	3.445953
Variance of log data	11.87459

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

95820.24

Normal Distribution Test	
Lilliefors Test Statisitic	0.29257
Lilliefors 5% Critical Value	0.115347
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	79594.46

Gamma Distribution Test	
A-D Test Statistic	0.663508
A-D 5% Critical Value	0.859719
K-S Test Statistic	0.088813
K-S 5% Critical Value	0.125381
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	94772.02
Adjusted Gamma UCL	95820.24

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.144442
Lilliefors 5% Critical Value	0.115347
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	31267786
95% Chebyshev (MVUE) UCL	6411719
97.5% Chebyshev (MVUE) UCL	8532680
99% Chebyshev (MVUE) UCL	12698897

95% Non-parametric UCLs	
CLT UCL	79305.2
Adj-CLT UCL (Adjusted for skewness)	81147.72
Mod-t UCL (Adjusted for skewness)	79881.86
Jackknife UCL	79594.46
Standard Bootstrap UCL	78909.86
Bootstrap-t UCL	81758.67
Hall's Bootstrap UCL	80609.64
Percentile Bootstrap UCL	79442.28
BCA Bootstrap UCL	81153.45
95% Chebyshev (Mean, Sd) UCL	108709.7
97.5% Chebyshev (Mean, Sd) UCL	129144
99% Chebyshev (Mean, Sd) UCL	169283.4

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLORO-1,1,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	2
Number of Unique Samples	2
Minimum	13000
Maximum	15000
Mean	14000
Median	14000

Too Few Observations To Calculate UCLs

0

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2,4-TRIMETHYLBENZENE

Raw Statistics	
Number of Valid Samples	49
Number of Unique Samples	44
Minimum	0.5
Maximum	800
Mean	189.7551
Median	60
Standard Deviation	248.012
Variance	6.15E+04
Coefficient of Variation	1.307011
Skewness	1.320749

Gamma Statistics	
k hat	0.414582
k star (bias corrected)	0.402805
Theta hat	457.7017
Theta star	471.0839
nu hat	40.62908
nu star	39.47492
Approx.Chi Square Value (.05)	26.07931
Adjusted Level of Significance	0.045102
Adjusted Chi Square Value	25.74841

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.667616
Standard Deviation of log data	2.318956
Variance of log data	5.377557

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

290.9138

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.753138
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	249.1796

Gamma Distribution Test	
A-D Test Statistic	0.851051
A-D 5% Critical Value	0.834686
K-S Test Statistic	0.117853
K-S 5% Critical Value	0.135367
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	287.2226
Adjusted Gamma UCL	290.9138

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.905368
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2201.549
95% Chebyshev (MVUE) UCL	1539.525
97.5% Chebyshev (MVUE) UCL	1996.968
99% Chebyshev (MVUE) UCL	2895.525

95% Non-parametric UCLs	
CLT UCL	248.0327
Adj-CLT UCL (Adjusted for skewness)	255.1757
Mod-t UCL (Adjusted for skewness)	250.2938
Jackknife UCL	249.1796
Standard Bootstrap UCL	246.2156
Bootstrap-t UCL	257.0812
Hall's Bootstrap UCL	253.0487
Percentile Bootstrap UCL	247.999
BCA Bootstrap UCL	255.0357
95% Chebyshev (Mean, Sd) UCL	344.1922
97.5% Chebyshev (Mean, Sd) UCL	411.0172
99% Chebyshev (Mean, Sd) UCL	542.2821

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,3-BUTADIENE

Raw Statistics	
Number of Valid Samples	47
Number of Unique Samples	42
Minimum	0.5
Maximum	800
Mean	187.9979
Median	63
Standard Deviation	244.7938
Variance	5.99E+04
Coefficient of Variation	1.30211
Skewness	1.408604

Gamma Statistics	
k hat	0.478225
k star (bias corrected)	0.461884
Theta hat	393.1159
Theta star	407.0236
nu hat	44.95316
nu star	43.41714
Approx.Chi Square Value (.05)	29.30518
Adjusted Level of Significance	0.044894
Adjusted Chi Square Value	28.93734

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.898975
Standard Deviation of log data	2.088331
Variance of log data	4.361128

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

282.0691

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.746513
Shapiro-Wilk 5% Critical Value	0.946
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	247.9375

Gamma Distribution Test	
A-D Test Statistic	0.540543
A-D 5% Critical Value	0.819024
K-S Test Statistic	0.10363
K-S 5% Critical Value	0.136961
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	278.5286
Adjusted Gamma UCL	282.0691

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.928525
Shapiro-Wilk 5% Critical Value	0.946
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1369.767
95% Chebyshev (MVUE) UCL	1128.001
97.5% Chebyshev (MVUE) UCL	1450.43
99% Chebyshev (MVUE) UCL	2083.779

95% Non-parametric UCLs	
CLT UCL	246.7304
Adj-CLT UCL (Adjusted for skewness)	254.5696
Mod-t UCL (Adjusted for skewness)	249.1603
Jackknife UCL	247.9375
Standard Bootstrap UCL	246.3111
Bootstrap-t UCL	258.12
Hall's Bootstrap UCL	252.6451
Percentile Bootstrap UCL	246.0894
BCA Bootstrap UCL	253.7362
95% Chebyshev (Mean, Sd) UCL	343.6404
97.5% Chebyshev (Mean, Sd) UCL	410.9871
99% Chebyshev (Mean, Sd) UCL	543.2765

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2,2,4-TRIMETHYLPENTANE

Raw Statistics	
Number of Valid Samples	50
Number of Unique Samples	45
Minimum	0.5
Maximum	800
Mean	181.861
Median	60
Standard Deviation	241.9417
Variance	5.85E+04
Coefficient of Variation	1.330366
Skewness	1.421581

Gamma Statistics	
k hat	0.44552
k star (bias corrected)	0.432122
Theta hat	408.1992
Theta star	420.8553
nu hat	44.55203
nu star	43.21224
Approx.Chi Square Value (.05)	29.13668
Adjusted Level of Significance	0.0452
Adjusted Chi Square Value	28.79281

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.751481
Standard Deviation of log data	2.142259
Variance of log data	4.589273

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

272.937

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.742406
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	239.2254

Gamma Distribution Test	
A-D Test Statistic	0.840195
A-D 5% Critical Value	0.827381
K-S Test Statistic	0.116188
K-S 5% Critical Value	0.133397
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	269.7157
Adjusted Gamma UCL	272.937

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.929016
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1327.809
95% Chebyshev (MVUE) UCL	1095.556
97.5% Chebyshev (MVUE) UCL	1409.934
99% Chebyshev (MVUE) UCL	2027.469

95% Non-parametric UCLs	
CLT UCL	238.1408
Adj-CLT UCL (Adjusted for skewness)	245.4909
Mod-t UCL (Adjusted for skewness)	240.3718
Jackknife UCL	239.2254
Standard Bootstrap UCL	237.1918
Bootstrap-t UCL	248.4701
Hall's Bootstrap UCL	243.5838
Percentile Bootstrap UCL	238.12
BCA Bootstrap UCL	244.538
95% Chebyshev (Mean, Sd) UCL	331.0039
97.5% Chebyshev (Mean, Sd) UCL	395.5381
99% Chebyshev (Mean, Sd) UCL	522.3031

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-BUTANONE

Raw Statistics	
Number of Valid Samples	48
Number of Unique Samples	42
Minimum	0.7
Maximum	800
Mean	185.9188
Median	60
Standard Deviation	242.3737
Variance	5.87E+04
Coefficient of Variation	1.303654
Skewness	1.447954

Gamma Statistics	
k hat	0.532253
k star (bias corrected)	0.512876
Theta hat	349.3053
Theta star	362.5024
nu hat	51.09628
nu star	49.23609
Approx.Chi Square Value (.05)	34.12432
Adjusted Level of Significance	0.045
Adjusted Chi Square Value	33.73398

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	6.684612
Mean of log data	4.043357
Standard Deviation of log data	1.85989
Variance of log data	3.459192

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Approximate Gamma UCL

268.2519

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.739297
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	244.6187

Gamma Distribution Test	
A-D Test Statistic	0.748187
A-D 5% Critical Value	0.811087
K-S Test Statistic	0.120528
K-S 5% Critical Value	0.13489
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	268.2519
Adjusted Gamma UCL	271.3559

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.944329
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	804.9043
95% Chebyshev (MVUE) UCL	781.914
97.5% Chebyshev (MVUE) UCL	993.1061
99% Chebyshev (MVUE) UCL	1407.952

95% Non-parametric UCLs	
CLT UCL	243.4617
Adj-CLT UCL (Adjusted for skewness)	251.274
Mod-t UCL (Adjusted for skewness)	245.8373
Jackknife UCL	244.6187
Standard Bootstrap UCL	243.5888
Bootstrap-t UCL	255.1345
Hall's Bootstrap UCL	253.8736
Percentile Bootstrap UCL	245.0458
BCA Bootstrap UCL	253.1438
95% Chebyshev (Mean, Sd) UCL	338.4088
97.5% Chebyshev (Mean, Sd) UCL	404.3914
99% Chebyshev (Mean, Sd) UCL	534.0014

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 2-PROPANOL

Raw Statistics	
Number of Valid Samples	46
Number of Unique Samples	42
Minimum	2
Maximum	15000
Mean	1263.968
Median	275
Standard Deviation	2554.377
Variance	6.52E+06
Coefficient of Variation	2.020918
Skewness	4.013095

Gamma Statistics	
k hat	0.344422
k star (bias corrected)	0.336452
Theta hat	3669.829
Theta star	3756.756
nu hat	31.68679
nu star	30.9536
Approx.Chi Square Value (.05)	19.24202
Adjusted Level of Significance	0.044783
Adjusted Chi Square Value	18.94213

Log-transformed Statistics	
Minimum of log data	0.693147
Maximum of log data	9.615805
Mean of log data	5.184528
Standard Deviation of log data	2.562348
Variance of log data	6.565629

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

2065.468

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.532695
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1896.478

Gamma Distribution Test	
A-D Test Statistic	0.519673
A-D 5% Critical Value	0.851254
K-S Test Statistic	0.084963
K-S 5% Critical Value	0.140937
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2033.278
Adjusted Gamma UCL	2065.468

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.92554
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	25627.22
95% Chebyshev (MVUE) UCL	12909.99
97.5% Chebyshev (MVUE) UCL	16908.52
99% Chebyshev (MVUE) UCL	24762.85

95% Non-parametric UCLs	
CLT UCL	1883.457
Adj-CLT UCL (Adjusted for skewness)	2121.572
Mod-t UCL (Adjusted for skewness)	1933.619
Jackknife UCL	1896.478
Standard Bootstrap UCL	1876.508
Bootstrap-t UCL	2558.38
Hall's Bootstrap UCL	4718.36
Percentile Bootstrap UCL	1959.566
BCA Bootstrap UCL	2232.762
95% Chebyshev (Mean, Sd) UCL	2905.627
97.5% Chebyshev (Mean, Sd) UCL	3615.974
99% Chebyshev (Mean, Sd) UCL	5011.314

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	51
Number of Unique Samples	46
Minimum	6.5
Maximum	3300
Mean	711.5196
Median	225
Standard Deviation	960.2195
Variance	9.22E+05
Coefficient of Variation	1.349533
Skewness	1.567054

Gamma Statistics	
k hat	0.584843
k star (bias corrected)	0.563512
Theta hat	1216.6
Theta star	1262.652
nu hat	59.65394
nu star	57.47822
Approx.Chi Square Value (.05)	41.04733
Adjusted Level of Significance	0.045294
Adjusted Chi Square Value	40.64302

Log-transformed Statistics	
Minimum of log data	1.871802
Maximum of log data	8.101678
Mean of log data	5.506908
Standard Deviation of log data	1.608344
Variance of log data	2.586772

RECOMMENDATION

Data are lognormal (0.05)

Use H-UCL

1783.855

Normal Distribution Test	
Lilliefors Test Statisitic	0.273449
Lilliefors 5% Critical Value	0.124065
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	936.8578

Gamma Distribution Test	
A-D Test Statistic	1.536948
A-D 5% Critical Value	0.80724
K-S Test Statistic	0.152289
K-S 5% Critical Value	0.130607
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	996.3348
Adjusted Gamma UCL	1006.246

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.104044
Lilliefors 5% Critical Value	0.124065
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1783.855
95% Chebyshev (MVUE) UCL	1987.019
97.5% Chebyshev (MVUE) UCL	2478.801
99% Chebyshev (MVUE) UCL	3444.812

95% Non-parametric UCLs	
CLT UCL	932.6827
Adj-CLT UCL (Adjusted for skewness)	964.2084
Mod-t UCL (Adjusted for skewness)	941.7751
Jackknife UCL	936.8578
Standard Bootstrap UCL	932.6271
Bootstrap-t UCL	993.5697
Hall's Bootstrap UCL	960.2412
Percentile Bootstrap UCL	948.3627
BCA Bootstrap UCL	979.598
95% Chebyshev (Mean, Sd) UCL	1297.607
97.5% Chebyshev (Mean, Sd) UCL	1551.207
99% Chebyshev (Mean, Sd) UCL	2049.356

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	55
Number of Unique Samples	48
Minimum	0
Maximum	800
Mean	170.5909
Median	47
Standard Deviation	240.2808
Variance	5.77E+04
Coefficient of Variation	1.40852
Skewness	1.488648

Normal Distribution Test	
Lilliefors Test Statisitic	0.26226
Lilliefors 5% Critical Value	0.119468
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	224.8135

Gamma Statistics Not Available

Lognormal Statistics Not Available

95% Non-parametric UCLs	
CLT UCL	223.8833
Adj-CLT UCL (Adjusted for skewness)	230.8324
Mod-t UCL (Adjusted for skewness)	225.8974
Jackknife UCL	224.8135
Standard Bootstrap UCL	224.291
Bootstrap-t UCL	234.1153
Hall's Bootstrap UCL	228.8994
Percentile Bootstrap UCL	224.3309
BCA Bootstrap UCL	228.9327
95% Chebyshev (Mean, Sd) UCL	311.8169
97.5% Chebyshev (Mean, Sd) UCL	372.9254
99% Chebyshev (Mean, Sd) UCL	492.9614

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

RECOMMENDATION
Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

311.8169

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BROMOFORM

Raw Statistics	
Number of Valid Samples	45
Number of Unique Samples	39
Minimum	0.5
Maximum	800
Mean	193.1533
Median	65
Standard Deviation	249.236
Variance	6.21E+04
Coefficient of Variation	1.290353
Skewness	1.334431

Gamma Statistics	
k hat	0.409887
k star (bias corrected)	0.397376
Theta hat	471.2354
Theta star	486.0717
nu hat	36.88985
nu star	35.76386
Approx.Chi Square Value (.05)	23.07644
Adjusted Level of Significance	0.044667
Adjusted Chi Square Value	22.73793

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.664367
Standard Deviation of log data	2.407959
Variance of log data	5.798265

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

303.8055

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.757819
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	255.5804

Gamma Distribution Test	
A-D Test Statistic	0.670633
A-D 5% Critical Value	0.835268
K-S Test Statistic	0.095371
K-S 5% Critical Value	0.141076
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	299.349
Adjusted Gamma UCL	303.8055

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.894113
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	3256.596
95% Chebyshev (MVUE) UCL	1915.707
97.5% Chebyshev (MVUE) UCL	2497.62
99% Chebyshev (MVUE) UCL	3640.675

95% Non-parametric UCLs	
CLT UCL	254.2661
Adj-CLT UCL (Adjusted for skewness)	262.1633
Mod-t UCL (Adjusted for skewness)	256.8122
Jackknife UCL	255.5804
Standard Bootstrap UCL	254.0244
Bootstrap-t UCL	265.1025
Hall's Bootstrap UCL	261.1015
Percentile Bootstrap UCL	253.5622
BCA Bootstrap UCL	265.6067
95% Chebyshev (Mean, Sd) UCL	355.1034
97.5% Chebyshev (Mean, Sd) UCL	425.1794
99% Chebyshev (Mean, Sd) UCL	562.83

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BROMODICHLOROMETHANE

Raw Statistics	
Number of Valid Samples	46
Number of Unique Samples	41
Minimum	0.5
Maximum	800
Mean	189.1283
Median	62.5
Standard Deviation	247.9569
Variance	6.15E+04
Coefficient of Variation	1.311052
Skewness	1.365009

Gamma Statistics	
k hat	0.417133
k star (bias corrected)	0.404422
Theta hat	453.4001
Theta star	467.6512
nu hat	38.37626
nu star	37.20679
Approx.Chi Square Value (.05)	24.23979
Adjusted Level of Significance	0.044783
Adjusted Chi Square Value	23.90006

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.675499
Standard Deviation of log data	2.316172
Variance of log data	5.364654

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

294.4284

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.750842
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	250.5269

Gamma Distribution Test	
A-D Test Statistic	0.745367
A-D 5% Critical Value	0.833651
K-S Test Statistic	0.111153
K-S 5% Critical Value	0.139531
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	290.3018
Adjusted Gamma UCL	294.4284

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.908519
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2336.512
95% Chebyshev (MVUE) UCL	1546.659
97.5% Chebyshev (MVUE) UCL	2008.863
99% Chebyshev (MVUE) UCL	2916.773

95% Non-parametric UCLs	
CLT UCL	249.2629
Adj-CLT UCL (Adjusted for skewness)	257.1249
Mod-t UCL (Adjusted for skewness)	251.7532
Jackknife UCL	250.5269
Standard Bootstrap UCL	250.4591
Bootstrap-t UCL	260.765
Hall's Bootstrap UCL	257.4489
Percentile Bootstrap UCL	255.0804
BCA Bootstrap UCL	256.9359
95% Chebyshev (Mean, Sd) UCL	348.4863
97.5% Chebyshev (Mean, Sd) UCL	417.4407
99% Chebyshev (Mean, Sd) UCL	552.8882

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON DISULFIDE

Raw Statistics	
Number of Valid Samples	46
Number of Unique Samples	39
Minimum	0.5
Maximum	800
Mean	189.3554
Median	62.5
Standard Deviation	247.7853
Variance	6.14E+04
Coefficient of Variation	1.308572
Skewness	1.366576

Gamma Statistics	
k hat	0.423109
k star (bias corrected)	0.410008
Theta hat	447.5331
Theta star	461.8335
nu hat	38.92606
nu star	37.72074
Approx.Chi Square Value (.05)	24.65549
Adjusted Level of Significance	0.044783
Adjusted Chi Square Value	24.31263

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.702346
Standard Deviation of log data	2.305078
Variance of log data	5.313386

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

293.7826

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.75086
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	250.7115

Gamma Distribution Test	
A-D Test Statistic	0.64791
A-D 5% Critical Value	0.832204
K-S Test Statistic	0.09462
K-S 5% Critical Value	0.139415
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	289.6972
Adjusted Gamma UCL	293.7826

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.910236
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2311.011
95% Chebyshev (MVUE) UCL	1546.681
97.5% Chebyshev (MVUE) UCL	2008.047
99% Chebyshev (MVUE) UCL	2914.312

95% Non-parametric UCLs	
CLT UCL	249.4484
Adj-CLT UCL (Adjusted for skewness)	257.314
Mod-t UCL (Adjusted for skewness)	251.9384
Jackknife UCL	250.7115
Standard Bootstrap UCL	246.9812
Bootstrap-t UCL	264.4577
Hall's Bootstrap UCL	256.3279
Percentile Bootstrap UCL	249.8696
BCA Bootstrap UCL	261.2522
95% Chebyshev (Mean, Sd) UCL	348.6032
97.5% Chebyshev (Mean, Sd) UCL	417.5098
99% Chebyshev (Mean, Sd) UCL	552.8636

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 4-ETHYLTOLUENE

Raw Statistics	
Number of Valid Samples	47
Number of Unique Samples	40
Minimum	0.5
Maximum	800
Mean	185.0532
Median	60
Standard Deviation	246.8322
Variance	6.09E+04
Coefficient of Variation	1.333845
Skewness	1.393506

Gamma Statistics	
k hat	0.395188
k star (bias corrected)	0.384148
Theta hat	468.2659
Theta star	481.7238
nu hat	37.1477
nu star	36.1099
Approx.Chi Square Value (.05)	23.35492
Adjusted Level of Significance	0.044894
Adjusted Chi Square Value	23.02929

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.552267
Standard Deviation of log data	2.41537
Variance of log data	5.834011

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

290.1632

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.744688
Shapiro-Wilk 5% Critical Value	0.946
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	245.492

Gamma Distribution Test	
A-D Test Statistic	0.806216
A-D 5% Critical Value	0.839096
K-S Test Statistic	0.116046
K-S 5% Critical Value	0.138546
Data follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	286.1175
Adjusted Gamma UCL	290.1632

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.89963
Shapiro-Wilk 5% Critical Value	0.946
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2854.922
95% Chebyshev (MVUE) UCL	1742.509
97.5% Chebyshev (MVUE) UCL	2270.341
99% Chebyshev (MVUE) UCL	3307.166

95% Non-parametric UCLs	
CLT UCL	244.2748
Adj-CLT UCL (Adjusted for skewness)	252.0945
Mod-t UCL (Adjusted for skewness)	246.7117
Jackknife UCL	245.492
Standard Bootstrap UCL	243.2498
Bootstrap-t UCL	254.8955
Hall's Bootstrap UCL	250.9503
Percentile Bootstrap UCL	245.7319
BCA Bootstrap UCL	250.2851
95% Chebyshev (Mean, Sd) UCL	341.9918
97.5% Chebyshev (Mean, Sd) UCL	409.8992
99% Chebyshev (Mean, Sd) UCL	543.2902

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CHLOROFORM

Raw Statistics	
Number of Valid Samples	52
Number of Unique Samples	47
Minimum	0.7
Maximum	22000
Mean	721.5144
Median	80
Standard Deviation	3047.886
Variance	9.29E+06
Coefficient of Variation	4.22429
Skewness	6.935341

Gamma Statistics	
k hat	0.289858
k star (bias corrected)	0.285956
Theta hat	2489.197
Theta star	2523.164
nu hat	30.14526
nu star	29.73945
Approx.Chi Square Value (.05)	18.28611
Adjusted Level of Significance	0.045385
Adjusted Chi Square Value	18.02925

Log-transformed Statistics	
Minimum of log data	-0.356675
Maximum of log data	9.998798
Mean of log data	4.188998
Standard Deviation of log data	2.36577
Variance of log data	5.596866

RECOMMENDATION
Data are lognormal (0.05)

Use 95% Chebyshev (MVUE) UCL

2563.872

Normal Distribution Test	
Lilliefors Test Statisitic	0.406524
Lilliefors 5% Critical Value	0.122866
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	1429.6

Gamma Distribution Test	
A-D Test Statistic	2.280616
A-D 5% Critical Value	0.86717
K-S Test Statistic	0.156369
K-S 5% Critical Value	0.134026
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1173.428
Adjusted Gamma UCL	1190.146

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.101858
Lilliefors 5% Critical Value	0.122866
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4113.085
95% Chebyshev (MVUE) UCL	2899.455
97.5% Chebyshev (MVUE) UCL	3762.607
99% Chebyshev (MVUE) UCL	5458.103

95% Non-parametric UCLs	
CLT UCL	1416.738
Adj-CLT UCL (Adjusted for skewness)	1851.092
Mod-t UCL (Adjusted for skewness)	1497.35
Jackknife UCL	1429.6
Standard Bootstrap UCL	1407.587
Bootstrap-t UCL	4624.951
Hall's Bootstrap UCL	3820.636
Percentile Bootstrap UCL	1543.236
BCA Bootstrap UCL	2081.395
95% Chebyshev (Mean, Sd) UCL	2563.872
97.5% Chebyshev (Mean, Sd) UCL	3361.061
99% Chebyshev (Mean, Sd) UCL	4926.986

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CIS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	48
Number of Unique Samples	40
Minimum	0.5
Maximum	3300
Mean	264.1896
Median	77.5
Standard Deviation	510.0937
Variance	2.60E+05
Coefficient of Variation	1.930786
Skewness	4.728987

Gamma Statistics	
k hat	0.382079
k star (bias corrected)	0.372088
Theta hat	691.4533
Theta star	710.0197
nu hat	36.67956
nu star	35.72042
Approx.Chi Square Value (.05)	23.0415
Adjusted Level of Significance	0.045
Adjusted Chi Square Value	22.72523

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	8.101678
Mean of log data	3.841613
Standard Deviation of log data	2.478039
Variance of log data	6.140675

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

415.2637

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.516585
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	387.728

Gamma Distribution Test	
A-D Test Statistic	0.488913
A-D 5% Critical Value	0.842393
K-S Test Statistic	0.081643
K-S 5% Critical Value	0.137383
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	409.5636
Adjusted Gamma UCL	415.2637

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.904658
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4666.677
95% Chebyshev (MVUE) UCL	2721.463
97.5% Chebyshev (MVUE) UCL	3551.869
99% Chebyshev (MVUE) UCL	5183.041

95% Non-parametric UCLs	
CLT UCL	385.293
Adj-CLT UCL (Adjusted for skewness)	438.9909
Mod-t UCL (Adjusted for skewness)	396.1038
Jackknife UCL	387.728
Standard Bootstrap UCL	385.8004
Bootstrap-t UCL	509.9905
Hall's Bootstrap UCL	881.7377
Percentile Bootstrap UCL	403.0292
BCA Bootstrap UCL	453.5396
95% Chebyshev (Mean, Sd) UCL	585.1165
97.5% Chebyshev (Mean, Sd) UCL	723.9818
99% Chebyshev (Mean, Sd) UCL	996.7558

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CYCLOHEXANE

Raw Statistics	
Number of Valid Samples	47
Number of Unique Samples	42
Minimum	0.5
Maximum	800
Mean	191.1606
Median	65
Standard Deviation	245.5279
Variance	6.03E+04
Coefficient of Variation	1.284406
Skewness	1.349976

Gamma Statistics	
k hat	0.434239
k star (bias corrected)	0.420706
Theta hat	440.2198
Theta star	454.3805
nu hat	40.81847
nu star	39.54637
Approx.Chi Square Value (.05)	26.13747
Adjusted Level of Significance	0.044894
Adjusted Chi Square Value	25.79151

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.75755
Standard Deviation of log data	2.250099
Variance of log data	5.062944

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

293.1085

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.760067
Shapiro-Wilk 5% Critical Value	0.946
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	251.2801

Gamma Distribution Test	
A-D Test Statistic	0.763394
A-D 5% Critical Value	0.829656
K-S Test Statistic	0.096059
K-S 5% Critical Value	0.137801
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	289.2289
Adjusted Gamma UCL	293.1085

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.909894
Shapiro-Wilk 5% Critical Value	0.946
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1990.395
95% Chebyshev (MVUE) UCL	1430.292
97.5% Chebyshev (MVUE) UCL	1852.035
99% Chebyshev (MVUE) UCL	2680.467

95% Non-parametric UCLs	
CLT UCL	250.0693
Adj-CLT UCL (Adjusted for skewness)	257.6048
Mod-t UCL (Adjusted for skewness)	252.4554
Jackknife UCL	251.2801
Standard Bootstrap UCL	248.184
Bootstrap-t UCL	260.0659
Hall's Bootstrap UCL	260.2764
Percentile Bootstrap UCL	250.9596
BCA Bootstrap UCL	255.6766
95% Chebyshev (Mean, Sd) UCL	347.2699
97.5% Chebyshev (Mean, Sd) UCL	414.8186
99% Chebyshev (Mean, Sd) UCL	547.5047

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DIBROMOCHLOROMETHANE

Raw Statistics	
Number of Valid Samples	45
Number of Unique Samples	40
Minimum	0.5
Maximum	800
Mean	193.1733
Median	65
Standard Deviation	249.2202
Variance	6.21E+04
Coefficient of Variation	1.290138
Skewness	1.334585

Gamma Statistics	
k hat	0.414817
k star (bias corrected)	0.401977
Theta hat	465.6838
Theta star	480.5583
nu hat	37.33349
nu star	36.17792
Approx.Chi Square Value (.05)	23.4097
Adjusted Level of Significance	0.044667
Adjusted Chi Square Value	23.06857

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.686503
Standard Deviation of log data	2.371623
Variance of log data	5.624595

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

302.9495

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.757738
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	255.5965

Gamma Distribution Test	
A-D Test Statistic	0.687155
A-D 5% Critical Value	0.834073
K-S Test Statistic	0.098206
K-S 5% Critical Value	0.14098
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	298.5348
Adjusted Gamma UCL	302.9495

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.897897
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2927.095
95% Chebyshev (MVUE) UCL	1791.347
97.5% Chebyshev (MVUE) UCL	2332.514
99% Chebyshev (MVUE) UCL	3395.531

95% Non-parametric UCLs	
CLT UCL	254.2822
Adj-CLT UCL (Adjusted for skewness)	262.1798
Mod-t UCL (Adjusted for skewness)	256.8283
Jackknife UCL	255.5965
Standard Bootstrap UCL	254.6319
Bootstrap-t UCL	266.8162
Hall's Bootstrap UCL	259.0145
Percentile Bootstrap UCL	257.5144
BCA Bootstrap UCL	265.7267
95% Chebyshev (Mean, Sd) UCL	355.1132
97.5% Chebyshev (Mean, Sd) UCL	425.1847
99% Chebyshev (Mean, Sd) UCL	562.8266

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	51
Number of Unique Samples	41
Minimum	0.5
Maximum	1900
Mean	267.6108
Median	85
Standard Deviation	366.015
Variance	1.34E+05
Coefficient of Variation	1.367714
Skewness	2.166144

Gamma Statistics	
k hat	0.393806
k star (bias corrected)	0.383713
Theta hat	679.549
Theta star	697.4239
nu hat	40.16826
nu star	39.13875
Approx.Chi Square Value (.05)	25.80587
Adjusted Level of Significance	0.045294
Adjusted Chi Square Value	25.49021

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.549609
Mean of log data	3.914357
Standard Deviation of log data	2.489919
Variance of log data	6.199697

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

410.901

Normal Distribution Test	
Lilliefors Test Statisitic	0.232762
Lilliefors 5% Critical Value	0.124065
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	353.5048

Gamma Distribution Test	
A-D Test Statistic	0.818298
A-D 5% Critical Value	0.839951
K-S Test Statistic	0.094463
K-S 5% Critical Value	0.133209
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	405.8748
Adjusted Gamma UCL	410.901

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.147106
Lilliefors 5% Critical Value	0.124065
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4904.618
95% Chebyshev (MVUE) UCL	3013.328
97.5% Chebyshev (MVUE) UCL	3929.46
99% Chebyshev (MVUE) UCL	5729.022

95% Non-parametric UCLs	
CLT UCL	351.9134
Adj-CLT UCL (Adjusted for skewness)	368.5244
Mod-t UCL (Adjusted for skewness)	356.0958
Jackknife UCL	353.5048
Standard Bootstrap UCL	352.3933
Bootstrap-t UCL	369.9734
Hall's Bootstrap UCL	386.0533
Percentile Bootstrap UCL	355.4931
BCA Bootstrap UCL	365.8059
95% Chebyshev (Mean, Sd) UCL	491.0146
97.5% Chebyshev (Mean, Sd) UCL	587.6816
99% Chebyshev (Mean, Sd) UCL	777.5652

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ETHANOL

Raw Statistics	
Number of Valid Samples	47
Number of Unique Samples	42
Minimum	2.9
Maximum	3300
Mean	747.2064
Median	245
Standard Deviation	994.8892
Variance	9.90E+05
Coefficient of Variation	1.331478
Skewness	1.423367

Gamma Statistics	
k hat	0.432672
k star (bias corrected)	0.419239
Theta hat	1726.959
Theta star	1782.293
nu hat	40.67113
nu star	39.40844
Approx.Chi Square Value (.05)	26.02521
Adjusted Level of Significance	0.044894
Adjusted Chi Square Value	25.68005

Log-transformed Statistics	
Minimum of log data	1.064711
Maximum of log data	8.101678
Mean of log data	5.114494
Standard Deviation of log data	2.196325
Variance of log data	4.823843

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

1146.658

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.744342
Shapiro-Wilk 5% Critical Value	0.946
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	990.8127

Gamma Distribution Test	
A-D Test Statistic	0.895631
A-D 5% Critical Value	0.830035
K-S Test Statistic	0.117299
K-S 5% Critical Value	0.137831
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	1131.45
Adjusted Gamma UCL	1146.658

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.906211
Shapiro-Wilk 5% Critical Value	0.946
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	6486.944
95% Chebyshev (MVUE) UCL	4889.87
97.5% Chebyshev (MVUE) UCL	6317.702
99% Chebyshev (MVUE) UCL	9122.402

95% Non-parametric UCLs	
CLT UCL	985.9067
Adj-CLT UCL (Adjusted for skewness)	1018.101
Mod-t UCL (Adjusted for skewness)	995.8343
Jackknife UCL	990.8127
Standard Bootstrap UCL	984.8391
Bootstrap-t UCL	1052.301
Hall's Bootstrap UCL	1021.598
Percentile Bootstrap UCL	983.6745
BCA Bootstrap UCL	1010.196
95% Chebyshev (Mean, Sd) UCL	1379.768
97.5% Chebyshev (Mean, Sd) UCL	1653.477
99% Chebyshev (Mean, Sd) UCL	2191.127

Data File C:\Documents and Settings\tzoukh\My Docum Variable: ETHYLBENZENE

Raw Statistics	
Number of Valid Samples	50
Number of Unique Samples	44
Minimum	0.5
Maximum	800
Mean	186.072
Median	60
Standard Deviation	246.846
Variance	6.09E+04
Coefficient of Variation	1.326615
Skewness	1.348905

Gamma Statistics	
k hat	0.408183
k star (bias corrected)	0.397025
Theta hat	455.8544
Theta star	468.6653
nu hat	40.8183
nu star	39.70253
Approx.Chi Square Value (.05)	26.26461
Adjusted Level of Significance	0.0452
Adjusted Chi Square Value	25.93934

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.619265
Standard Deviation of log data	2.330471
Variance of log data	5.431097

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

284.8003

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.746857
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	244.5992

Gamma Distribution Test	
A-D Test Statistic	0.86064
A-D 5% Critical Value	0.836366
K-S Test Statistic	0.106258
K-S 5% Critical Value	0.13408
Data follow approximate gamma distibution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	281.2732
Adjusted Gamma UCL	284.8003

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.908839
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2138.941
95% Chebyshev (MVUE) UCL	1506.904
97.5% Chebyshev (MVUE) UCL	1954.618
99% Chebyshev (MVUE) UCL	2834.065

95% Non-parametric UCLs	
CLT UCL	243.4927
Adj-CLT UCL (Adjusted for skewness)	250.6084
Mod-t UCL (Adjusted for skewness)	245.7091
Jackknife UCL	244.5992
Standard Bootstrap UCL	244.4565
Bootstrap-t UCL	257.0505
Hall's Bootstrap UCL	247.3686
Percentile Bootstrap UCL	243.85
BCA Bootstrap UCL	246.95
95% Chebyshev (Mean, Sd) UCL	338.2381
97.5% Chebyshev (Mean, Sd) UCL	404.0805
99% Chebyshev (Mean, Sd) UCL	533.4151

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEPTANE

Raw Statistics	
Number of Valid Samples	48
Number of Unique Samples	42
Minimum	0.5
Maximum	800
Mean	182.0333
Median	60
Standard Deviation	245.047
Variance	6.00E+04
Coefficient of Variation	1.346166
Skewness	1.427272

Gamma Statistics	
k hat	0.425519
k star (bias corrected)	0.412813
Theta hat	427.7918
Theta star	440.9588
nu hat	40.84978
nu star	39.63
Approx.Chi Square Value (.05)	26.20555
Adjusted Level of Significance	0.045
Adjusted Chi Square Value	25.86661

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.673027
Standard Deviation of log data	2.228884
Variance of log data	4.967923

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

278.8917

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.738056
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	241.3807

Gamma Distribution Test	
A-D Test Statistic	0.77839
A-D 5% Critical Value	0.831908
K-S Test Statistic	0.101563
K-S 5% Critical Value	0.136566
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	275.2845
Adjusted Gamma UCL	278.8917

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.923106
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1673.942
95% Chebyshev (MVUE) UCL	1247.504
97.5% Chebyshev (MVUE) UCL	1613.147
99% Chebyshev (MVUE) UCL	2331.381

95% Non-parametric UCLs	
CLT UCL	240.211
Adj-CLT UCL (Adjusted for skewness)	247.9966
Mod-t UCL (Adjusted for skewness)	242.5951
Jackknife UCL	241.3807
Standard Bootstrap UCL	240.6365
Bootstrap-t UCL	254.3526
Hall's Bootstrap UCL	249.2415
Percentile Bootstrap UCL	238.4729
BCA Bootstrap UCL	246.5833
95% Chebyshev (Mean, Sd) UCL	336.2054
97.5% Chebyshev (Mean, Sd) UCL	402.9157
99% Chebyshev (Mean, Sd) UCL	533.9553

Data File C:\Documents and Settings\tzoukh\My Docun Variable: HEXANE (N-HEXANE)

Raw Statistics	
Number of Valid Samples	49
Number of Unique Samples	44
Minimum	1.1
Maximum	800
Mean	192.9224
Median	60
Standard Deviation	249.5253
Variance	6.23E+04
Coefficient of Variation	1.293397
Skewness	1.321553

Gamma Statistics	
k hat	0.496973
k star (bias corrected)	0.480152
Theta hat	388.1947
Theta star	401.7946
nu hat	48.7034
nu star	47.05489
Approx.Chi Square Value (.05)	32.31052
Adjusted Level of Significance	0.045102
Adjusted Chi Square Value	31.93941

Log-transformed Statistics	
Minimum of log data	0.09531
Maximum of log data	6.684612
Mean of log data	3.982984
Standard Deviation of log data	1.933314
Variance of log data	3.737702

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

284.2239

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.749286
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	252.7096

Gamma Distribution Test	
A-D Test Statistic	0.93027
A-D 5% Critical Value	0.814829
K-S Test Statistic	0.120342
K-S 5% Critical Value	0.133838
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	280.9594
Adjusted Gamma UCL	284.2239

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.931917
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	916.0026
95% Chebyshev (MVUE) UCL	861.1572
97.5% Chebyshev (MVUE) UCL	1097.523
99% Chebyshev (MVUE) UCL	1561.818

95% Non-parametric UCLs	
CLT UCL	251.5557
Adj-CLT UCL (Adjusted for skewness)	258.7466
Mod-t UCL (Adjusted for skewness)	253.8312
Jackknife UCL	252.7096
Standard Bootstrap UCL	249.6051
Bootstrap-t UCL	259.5781
Hall's Bootstrap UCL	260.2823
Percentile Bootstrap UCL	254.0204
BCA Bootstrap UCL	257.0102
95% Chebyshev (Mean, Sd) UCL	348.3018
97.5% Chebyshev (Mean, Sd) UCL	415.5346
99% Chebyshev (Mean, Sd) UCL	547.6003

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	51
Number of Unique Samples	45
Minimum	2.3
Maximum	1050
Mean	195.0843
Median	60
Standard Deviation	267.7451
Variance	7.17E+04
Coefficient of Variation	1.372458
Skewness	1.582112

Gamma Statistics	
k hat	0.497113
k star (bias corrected)	0.480943
Theta hat	392.4347
Theta star	405.6289
nu hat	50.70551
nu star	49.05616
Approx.Chi Square Value (.05)	33.97438
Adjusted Level of Significance	0.045294
Adjusted Chi Square Value	33.60871

Log-transformed Statistics	
Minimum of log data	0.832909
Maximum of log data	6.956545
Mean of log data	3.994542
Standard Deviation of log data	1.848432
Variance of log data	3.416699

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

715.6798

Normal Distribution Test	
Lilliefors Test Statisitic	0.262696
Lilliefors 5% Critical Value	0.124065
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	257.917

Gamma Distribution Test	
A-D Test Statistic	1.3354
A-D 5% Critical Value	0.815135
K-S Test Statistic	0.14444
K-S 5% Critical Value	0.131348
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	281.6854
Adjusted Gamma UCL	284.7502

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.112405
Lilliefors 5% Critical Value	0.124065
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	715.6798
95% Chebyshev (MVUE) UCL	719.7385
97.5% Chebyshev (MVUE) UCL	911.8561
99% Chebyshev (MVUE) UCL	1289.234

95% Non-parametric UCLs	
CLT UCL	256.7529
Adj-CLT UCL (Adjusted for skewness)	265.6279
Mod-t UCL (Adjusted for skewness)	259.3013
Jackknife UCL	257.917
Standard Bootstrap UCL	254.5938
Bootstrap-t UCL	270.3139
Hall's Bootstrap UCL	264.5691
Percentile Bootstrap UCL	257.8843
BCA Bootstrap UCL	267.4137
95% Chebyshev (Mean, Sd) UCL	358.5073
97.5% Chebyshev (Mean, Sd) UCL	429.2206
99% Chebyshev (Mean, Sd) UCL	568.1231

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYL TERT-BUTYL ETHER

Raw Statistics	
Number of Valid Samples	46
Number of Unique Samples	39
Minimum	0.5
Maximum	800
Mean	189.1598
Median	62.5
Standard Deviation	247.9337
Variance	6.15E+04
Coefficient of Variation	1.31071
Skewness	1.365204

Gamma Statistics	
k hat	0.409548
k star (bias corrected)	0.397331
Theta hat	461.8747
Theta star	476.0762
nu hat	37.6784
nu star	36.55445
Approx.Chi Square Value (.05)	23.71315
Adjusted Level of Significance	0.044783
Adjusted Chi Square Value	23.37741

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.641937
Standard Deviation of log data	2.382768
Variance of log data	5.677582

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

295.7826

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.751046
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	250.5526

Gamma Distribution Test	
A-D Test Statistic	0.655637
A-D 5% Critical Value	0.835488
K-S Test Statistic	0.086685
K-S 5% Critical Value	0.139677
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	291.5947
Adjusted Gamma UCL	295.7826

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.901822
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2846.149
95% Chebyshev (MVUE) UCL	1759.546
97.5% Chebyshev (MVUE) UCL	2290.949
99% Chebyshev (MVUE) UCL	3334.785

95% Non-parametric UCLs	
CLT UCL	249.2888
Adj-CLT UCL (Adjusted for skewness)	257.1512
Mod-t UCL (Adjusted for skewness)	251.779
Jackknife UCL	250.5526
Standard Bootstrap UCL	250.0216
Bootstrap-t UCL	261.3082
Hall's Bootstrap UCL	258.1024
Percentile Bootstrap UCL	246.7065
BCA Bootstrap UCL	256.8902
95% Chebyshev (Mean, Sd) UCL	348.5029
97.5% Chebyshev (Mean, Sd) UCL	417.4509
99% Chebyshev (Mean, Sd) UCL	552.8857

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYLENE CHLORIDE

Raw Statistics	
Number of Valid Samples	48
Number of Unique Samples	41
Minimum	0.5
Maximum	800
Mean	196.1427
Median	72.5
Standard Deviation	247.6157
Variance	6.13E+04
Coefficient of Variation	1.262426
Skewness	1.296066

Gamma Statistics	
k hat	0.439334
k star (bias corrected)	0.425764
Theta hat	446.4549
Theta star	460.6838
nu hat	42.17604
nu star	40.87337
Approx.Chi Square Value (.05)	27.21968
Adjusted Level of Significance	0.045
Adjusted Chi Square Value	26.87376

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.803364
Standard Deviation of log data	2.296089
Variance of log data	5.272024

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

298.3213

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.765059
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	256.1122

Gamma Distribution Test	
A-D Test Statistic	0.606463
A-D 5% Critical Value	0.828573
K-S Test Statistic	0.088659
K-S 5% Critical Value	0.136306
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	294.5301
Adjusted Gamma UCL	298.3213

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.900575
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2381.228
95% Chebyshev (MVUE) UCL	1670.148
97.5% Chebyshev (MVUE) UCL	2165.505
99% Chebyshev (MVUE) UCL	3138.537

95% Non-parametric UCLs	
CLT UCL	254.9302
Adj-CLT UCL (Adjusted for skewness)	262.0742
Mod-t UCL (Adjusted for skewness)	257.2265
Jackknife UCL	256.1122
Standard Bootstrap UCL	254.713
Bootstrap-t UCL	265.202
Hall's Bootstrap UCL	262.837
Percentile Bootstrap UCL	254.726
BCA Bootstrap UCL	260.8708
95% Chebyshev (Mean, Sd) UCL	351.9308
97.5% Chebyshev (Mean, Sd) UCL	419.3405
99% Chebyshev (Mean, Sd) UCL	551.7537

Data File C:\Documents and Settings\tzoukh\My Docun Variable: O-XYLENE

Raw Statistics	
Number of Valid Samples	50
Number of Unique Samples	45
Minimum	0.5
Maximum	800
Mean	186.119
Median	60
Standard Deviation	246.8101
Variance	6.09E+04
Coefficient of Variation	1.326088
Skewness	1.349237

Gamma Statistics	
k hat	0.418454
k star (bias corrected)	0.40668
Theta hat	444.7781
Theta star	457.655
nu hat	41.84536
nu star	40.66797
Approx.Chi Square Value (.05)	27.0519
Adjusted Level of Significance	0.0452
Adjusted Chi Square Value	26.72143

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.665195
Standard Deviation of log data	2.254285
Variance of log data	5.0818

RECOMMENDATION
Assuming gamma distribution (0.05)

Use Adjusted Gamma UCL

283.2588

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.746596
Shapiro-Wilk 5% Critical Value	0.947
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	244.6377

Gamma Distribution Test	
A-D Test Statistic	0.98945
A-D 5% Critical Value	0.833894
K-S Test Statistic	0.11356
K-S 5% Critical Value	0.133892
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	279.7985
Adjusted Gamma UCL	283.2588

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.910371
Shapiro-Wilk 5% Critical Value	0.947
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1739.406
95% Chebyshev (MVUE) UCL	1311.111
97.5% Chebyshev (MVUE) UCL	1695.51
99% Chebyshev (MVUE) UCL	2450.589

95% Non-parametric UCLs	
CLT UCL	243.5313
Adj-CLT UCL (Adjusted for skewness)	250.6478
Mod-t UCL (Adjusted for skewness)	245.7477
Jackknife UCL	244.6377
Standard Bootstrap UCL	242.8982
Bootstrap-t UCL	251.7198
Hall's Bootstrap UCL	251.9541
Percentile Bootstrap UCL	242.565
BCA Bootstrap UCL	247.409
95% Chebyshev (Mean, Sd) UCL	338.263
97.5% Chebyshev (Mean, Sd) UCL	404.0958
99% Chebyshev (Mean, Sd) UCL	533.4116

Data File C:\Documents and Settings\tzoukh\My Docun Variable: PENTANE

Raw Statistics	
Number of Valid Samples	1
Number of Unique Samples	1
Minimum	7300
Maximum	7300
Mean	7300
Median	7300

Too Few Observations To Calculate UCLs

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	59
Number of Unique Samples	51
Minimum	0.5
Maximum	310000
Mean	40304.45
Median	4100
Standard Deviation	78533.93
Variance	6.17E+09
Coefficient of Variation	1.948517
Skewness	2.156236

Gamma Statistics	
k hat	0.243217
k star (bias corrected)	0.242149
Theta hat	165714.3
Theta star	166444.8
nu hat	28.69955
nu star	28.57358
Approx.Chi Square Value (.05)	17.3733
Adjusted Level of Significance	0.045932
Adjusted Chi Square Value	17.15403

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	12.64433
Mean of log data	7.670851
Standard Deviation of log data	3.41041
Variance of log data	11.6309

RECOMMENDATION
Data are lognormal (0.05)

Use 97.5% Chebyshev (MVUE) UCL

Recommer 104154.9

Normal Distribution Test	
Lilliefors Test Statisitic	0.35998
Lilliefors 5% Critical Value	0.115347
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	57394.82

Gamma Distribution Test	
A-D Test Statistic	1.092737
A-D 5% Critical Value	0.88958
K-S Test Statistic	0.13466
K-S 5% Critical Value	0.127159
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	66288.08
Adjusted Gamma UCL	67135.41

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.103174
Lilliefors 5% Critical Value	0.115347
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	8027932
95% Chebyshev (MVUE) UCL	1763625
97.5% Chebyshev (MVUE) UCL	2345684
99% Chebyshev (MVUE) UCL	3489026

95% Non-parametric UCLs	
CLT UCL	57121.84
Adj-CLT UCL (Adjusted for skewness)	60188.62
Mod-t UCL (Adjusted for skewness)	57873.17
Jackknife UCL	57394.82
Standard Bootstrap UCL	56590.15
Bootstrap-t UCL	61929.62
Hall's Bootstrap UCL	59335.1
Percentile Bootstrap UCL	56771.92
BCA Bootstrap UCL	59516.61
95% Chebyshev (Mean, Sd) UCL	84870.91
97.5% Chebyshev (Mean, Sd) UCL	104154.9
99% Chebyshev (Mean, Sd) UCL	142034.4

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRAHYDROFURAN

Raw Statistics	
Number of Valid Samples	45
Number of Unique Samples	39
Minimum	0.5
Maximum	800
Mean	193.1667
Median	65
Standard Deviation	249.2254
Variance	6.21E+04
Coefficient of Variation	1.290209
Skewness	1.334534

Gamma Statistics	
k hat	0.413675
k star (bias corrected)	0.400912
Theta hat	466.9526
Theta star	481.8186
nu hat	37.23076
nu star	36.08204
Approx.Chi Square Value (.05)	23.33249
Adjusted Level of Significance	0.044667
Adjusted Chi Square Value	22.99196

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	6.684612
Mean of log data	3.681417
Standard Deviation of log data	2.37913
Variance of log data	5.660261

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

303.1428

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.757756
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	255.5911

Gamma Distribution Test	
A-D Test Statistic	0.689334
A-D 5% Critical Value	0.834349
K-S Test Statistic	0.097554
K-S 5% Critical Value	0.141002
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	298.7185
Adjusted Gamma UCL	303.1428

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.896648
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2990.309
95% Chebyshev (MVUE) UCL	1815.325
97.5% Chebyshev (MVUE) UCL	2364.365
99% Chebyshev (MVUE) UCL	3442.848

95% Non-parametric UCLs	
CLT UCL	254.2768
Adj-CLT UCL (Adjusted for skewness)	262.1743
Mod-t UCL (Adjusted for skewness)	256.823
Jackknife UCL	255.5911
Standard Bootstrap UCL	253.1072
Bootstrap-t UCL	269.0935
Hall's Bootstrap UCL	262.6303
Percentile Bootstrap UCL	254.9544
BCA Bootstrap UCL	258.7689
95% Chebyshev (Mean, Sd) UCL	355.1099
97.5% Chebyshev (Mean, Sd) UCL	425.1829
99% Chebyshev (Mean, Sd) UCL	562.8277

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	53
Number of Unique Samples	45
Minimum	2
Maximum	3300
Mean	261.1038
Median	60
Standard Deviation	495.2051
Variance	2.45E+05
Coefficient of Variation	1.896583
Skewness	4.694649

Gamma Statistics	
k hat	0.526681
k star (bias corrected)	0.509447
Theta hat	495.7535
Theta star	512.5238
nu hat	55.82815
nu star	54.0014
Approx.Chi Square Value (.05)	38.11449
Adjusted Level of Significance	0.045472
Adjusted Chi Square Value	37.74096

Log-transformed Statistics	
Minimum of log data	0.693147
Maximum of log data	8.101678
Mean of log data	4.368535
Standard Deviation of log data	1.672104
Variance of log data	2.79593

RECOMMENDATION
Data are lognormal (0.05)

Use H-UCL

653.3808

Normal Distribution Test	
Lilliefors Test Statisitic	0.300409
Lilliefors 5% Critical Value	0.121701
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	375.0189

Gamma Distribution Test	
A-D Test Statistic	1.413826
A-D 5% Critical Value	0.812454
K-S Test Statistic	0.164036
K-S 5% Critical Value	0.12887
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	369.9372
Adjusted Gamma UCL	373.5985

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.092996
Lilliefors 5% Critical Value	0.121701
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	653.3808
95% Chebyshev (MVUE) UCL	718.4641
97.5% Chebyshev (MVUE) UCL	899.0663
99% Chebyshev (MVUE) UCL	1253.825

95% Non-parametric UCLs	
CLT UCL	372.9894
Adj-CLT UCL (Adjusted for skewness)	419.8592
Mod-t UCL (Adjusted for skewness)	382.3296
Jackknife UCL	375.0189
Standard Bootstrap UCL	371.6086
Bootstrap-t UCL	475.3245
Hall's Bootstrap UCL	850.8034
Percentile Bootstrap UCL	384.1491
BCA Bootstrap UCL	449.4887
95% Chebyshev (Mean, Sd) UCL	557.6033
97.5% Chebyshev (Mean, Sd) UCL	685.8989
99% Chebyshev (Mean, Sd) UCL	937.9107

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRANS-1,2-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	46
Number of Unique Samples	40
Minimum	0.5
Maximum	2500
Mean	251.3283
Median	67.5
Standard Deviation	460.6844
Variance	2.12E+05
Coefficient of Variation	1.832999
Skewness	3.456124

Gamma Statistics	
k hat	0.368914
k star (bias corrected)	0.359347
Theta hat	681.2656
Theta star	699.4028
nu hat	33.94007
nu star	33.05992
Approx.Chi Square Value (.05)	20.91223
Adjusted Level of Significance	0.044783
Adjusted Chi Square Value	20.59851

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	7.824046
Mean of log data	3.719546
Standard Deviation of log data	2.488358
Variance of log data	6.191928

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

403.3734

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.579769
Shapiro-Wilk 5% Critical Value	0.945
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	365.402

Gamma Distribution Test	
A-D Test Statistic	0.446172
A-D 5% Critical Value	0.845325
K-S Test Statistic	0.080225
K-S 5% Critical Value	0.140463
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	397.3222
Adjusted Gamma UCL	403.3734

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.917338
Shapiro-Wilk 5% Critical Value	0.945
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	4495.82
95% Chebyshev (MVUE) UCL	2472.823
97.5% Chebyshev (MVUE) UCL	3231.206
99% Chebyshev (MVUE) UCL	4720.903

95% Non-parametric UCLs	
CLT UCL	363.0536
Adj-CLT UCL (Adjusted for skewness)	400.0378
Mod-t UCL (Adjusted for skewness)	371.1708
Jackknife UCL	365.402
Standard Bootstrap UCL	367.3102
Bootstrap-t UCL	461.8699
Hall's Bootstrap UCL	901.4577
Percentile Bootstrap UCL	370.4674
BCA Bootstrap UCL	401.7272
95% Chebyshev (Mean, Sd) UCL	547.403
97.5% Chebyshev (Mean, Sd) UCL	675.5148
99% Chebyshev (Mean, Sd) UCL	927.1655

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	58
Number of Unique Samples	48
Minimum	0.5
Maximum	88000
Mean	8126.1
Median	1200
Standard Deviation	18102.09
Variance	3.28E+08
Coefficient of Variation	2.227648
Skewness	3.254874

Gamma Statistics	
k hat	0.295263
k star (bias corrected)	0.291485
Theta hat	27521.55
Theta star	27878.26
nu hat	34.25053
nu star	33.81228
Approx.Chi Square Value (.05)	21.51224
Adjusted Level of Significance	0.045862
Adjusted Chi Square Value	21.26167

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	11.38509
Mean of log data	6.661339
Standard Deviation of log data	2.961554
Variance of log data	8.7708

RECOMMENDATION
Data are lognormal (0.05)

Use 97.5% Chebyshev (MVUE) UCL

Recommer 22969.97

Normal Distribution Test	
Lilliefors Test Statisitic	0.32676
Lilliefors 5% Critical Value	0.116337
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	12100.38

Gamma Distribution Test	
A-D Test Statistic	0.912002
A-D 5% Critical Value	0.865283
K-S Test Statistic	0.130135
K-S 5% Critical Value	0.126902
Data do not follow gamma distribution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	12772.36
Adjusted Gamma UCL	12922.88

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.107944
Lilliefors 5% Critical Value	0.116337
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	394086.9
95% Chebyshev (MVUE) UCL	168777.1
97.5% Chebyshev (MVUE) UCL	222541.3
99% Chebyshev (MVUE) UCL	328150.6

95% Non-parametric UCLs	
CLT UCL	12035.79
Adj-CLT UCL (Adjusted for skewness)	13121.25
Mod-t UCL (Adjusted for skewness)	12269.69
Jackknife UCL	12100.38
Standard Bootstrap UCL	11957.7
Bootstrap-t UCL	14993.97
Hall's Bootstrap UCL	12952.66
Percentile Bootstrap UCL	12335.84
BCA Bootstrap UCL	13416.35
95% Chebyshev (Mean, Sd) UCL	18486.86
97.5% Chebyshev (Mean, Sd) UCL	22969.97
99% Chebyshev (Mean, Sd) UCL	31776.16

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11)

Raw Statistics	
Number of Valid Samples	59
Number of Unique Samples	49
Minimum	0.5
Maximum	180000
Mean	27237.18
Median	4600
Standard Deviation	47275.25
Variance	2.23E+09
Coefficient of Variation	1.735688
Skewness	2.225365

Gamma Statistics	
k hat	0.320568
k star (bias corrected)	0.315567
Theta hat	84965.47
Theta star	86311.87
nu hat	37.82699
nu star	37.23691
Approx.Chi Square Value (.05)	24.26414
Adjusted Level of Significance	0.045932
Adjusted Chi Square Value	24.00145

Log-transformed Statistics	
Minimum of log data	-0.693147
Maximum of log data	12.10071
Mean of log data	8.084422
Standard Deviation of log data	2.960798
Variance of log data	8.766323

RECOMMENDATION

Data follow gamma distribution (0.05)

Use Adjusted Gamma UCL

42256.97

Normal Distribution Test	
Lilliefors Test Statisitic	0.282264
Lilliefors 5% Critical Value	0.115347
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	37525.11

Gamma Distribution Test	
A-D Test Statistic	0.481715
A-D 5% Critical Value	0.858303
K-S Test Statistic	0.084391
K-S 5% Critical Value	0.125287
Data follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	41799.49
Adjusted Gamma UCL	42256.97

Lognormal Distribution Test	
Lilliefors Test Statisitic	0.105757
Lilliefors 5% Critical Value	0.115347
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1586519
95% Chebyshev (MVUE) UCL	700139
97.5% Chebyshev (MVUE) UCL	922896.1
99% Chebyshev (MVUE) UCL	1360459

95% Non-parametric UCLs	
CLT UCL	37360.79
Adj-CLT UCL (Adjusted for skewness)	39266.09
Mod-t UCL (Adjusted for skewness)	37822.3
Jackknife UCL	37525.11
Standard Bootstrap UCL	37168.17
Bootstrap-t UCL	41127.73
Hall's Bootstrap UCL	38649
Percentile Bootstrap UCL	37856.46
BCA Bootstrap UCL	38996.63
95% Chebyshev (Mean, Sd) UCL	54064.96
97.5% Chebyshev (Mean, Sd) UCL	65673.36
99% Chebyshev (Mean, Sd) UCL	88475.81

A-1.9 Ambient Air – All Parcels

Ambient Air - All Parcels

Chemical	Distribution	95 UCL ppbv	95 UCL ug/m3		Maximum ppbv	Mean ppbv	Mean ug/m3	Statistic
1,1,1-TRICHLOROETHANE	Data are Non-parametric (0.05)	1.88	10.28	Use 99% Chebyshev (Mean, Sd) UCL	2.05	0.21	1.14	UCL-NP
1,1,2.2-TETRACHLOROETHANE	Data are Non-parametric (0.05)	1.87	12.88	Use 99% Chebyshev (Mean, Sd) UCL	2.05	0.20	1.36	UCL-NP
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	Data are Non-parametric (0.05)	1.02	7.81	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.33	2.56	UCL-NP
1,1-DICHLOROETHENE	Data are lognormal (0.05)	0.58	2.32	Use 95% Chebyshev (MVUE) UCL	2.05	0.25	0.99	95% UCL-T
1,2-DICHLOROBENZENE	Data are Non-parametric (0.05)	1.89	11.37	Use 99% Chebyshev (Mean, Sd) UCL	2.05	0.22	1.32	UCL-NP
1,4-DICHLOROBENZENE	Data are Non-parametric (0.05)	1.87	11.27	Use 99% Chebyshev (Mean, Sd) UCL	2.05	0.20	1.20	UCL-NP
ACETONE	Data are Non-parametric (0.05)	1,593	3,791.05	Use 99% Chebyshev (Mean, Sd) UCL	1,600	157	374.11	UCL-NP
BENZENE	Data are Non-parametric (0.05)	1.11	3.55	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.48	1.54	UCL-NP
CARBON TETRACHLORIDE	Data are Non-parametric (0.05)	0.97	6.08	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.26	1.61	UCL-NP
DICHLORODIFLUOROMETHANE	Data are Non-parametric (0.05)	0.92	4.57	Use Student's-t UCL	2.05	0.67	3.33	UCL-NP
ETHYLBENZENE	Data are Non-parametric (0.05)	1.01	4.40	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.33	1.44	UCL-NP
M,P-XYLENES	Assuming gamma distribution (0.05)	0.90	3.90	Use Approximate Gamma UCL	2.05	0.67	2.91	95% UCL-G assumed
METHYLENE CHLORIDE	Data are Non-parametric (0.05)	1.17	4.06	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.49	1.69	UCL-NP
O-XYLENE	Data are Non-parametric (0.05)	1.04	4.51	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.36	1.58	UCL-NP
TETRACHLOROETHENE	Data are Non-parametric (0.05)	1.00	6.75	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.29	2.00	UCL-NP
TOLUENE	Data are Non-parametric (0.05)	2.16	8.13	Use Student's-t UCL	4.20	1.68	6 33	UCL-NP
TRICHLOROETHENE	Data are Non-parametric (0.05)	1.88	10.11	Use 99% Chebyshev (Mean, Sd) UCL	2.05	0.23	1 23	UCL-NP
TRICHLOROFLUOROMETHANE (FREON 11)	Data are Non-parametric (0.05)	1.09	6.14	Use 95% Chebyshev (Mean, Sd) UCL	2.05	0.46	2.61	UCL-NP

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,1-TRICHLOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	7
Minimum	0.017
Maximum	2.05
Mean	0.209333
Median	0.0185
Standard Deviation	0.582454
Variance	0.339252
Coefficient of Variation	2.782422
Skewness	3.407202

Gamma Statistics	
k hat	0.384847
k star (bias corrected)	0.344191
Theta hat	0.54394
Theta star	0.60819
nu hat	9.236319
nu star	8.260573
Approx.Chi Square Value (.05)	2.886124
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.423501

Log-transformed Statistics	
Minimum of log data	-4.074542
Maximum of log data	0.71784
Mean of log data	-3.284392
Standard Deviation of log data	1.49581
Variance of log data	2.237449

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.882304

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.382241
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.511293

Gamma Distribution Test	
A-D Test Statistic	2.759924
A-D 5% Critical Value	0.807355
K-S Test Statistic	0.446396
K-S 5% Critical Value	0.262515
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.599147
Adjusted Gamma UCL	0.713519

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.601745
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.661986
95% Chebyshev (MVUE) UCL	0.298524
97.5% Chebyshev (MVUE) UCL	0.385501
99% Chebyshev (MVUE) UCL	0.556353

95% Non-parametric UCLs	
CLT UCL	0.485899
Adj-CLT UCL (Adjusted for skewness)	0.662608
Mod-t UCL (Adjusted for skewness)	0.538856
Jackknife UCL	0.511293
Standard Bootstrap UCL	0.473828
Bootstrap-t UCL	5.401076
Hall's Bootstrap UCL	5.461044
Percentile Bootstrap UCL	0.541792
BCA Bootstrap UCL	0.711417
95% Chebyshev (Mean, Sd) UCL	0.942238
97.5% Chebyshev (Mean, Sd) UCL	1.259366
99% Chebyshev (Mean, Sd) UCL	1.882304

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2,2-TETRACHLOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	8
Minimum	0.017
Maximum	2.05
Mean	0.197292
Median	0.0185
Standard Deviation	0.583879
Variance	0.340915
Coefficient of Variation	2.959473
Skewness	3.455107

Gamma Statistics	
k hat	0.38143
k star (bias corrected)	0.341628
Theta hat	0.517243
Theta star	0.577505
nu hat	9.15431
nu star	8.199066
Approx.Chi Square Value (.05)	2.850133
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.391116

Log-transformed Statistics	
Minimum of log data	-4.074542
Maximum of log data	0.71784
Mean of log data	-3.361557
Standard Deviation of log data	1.39332
Variance of log data	1.94134

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.874358

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.351458
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.499991

Gamma Distribution Test	
A-D Test Statistic	3.048146
A-D 5% Critical Value	0.80802
K-S Test Statistic	0.390213
K-S 5% Critical Value	0.262628
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.567555
Adjusted Gamma UCL	0.676507

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.580028
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.428804
95% Chebyshev (MVUE) UCL	0.233524
97.5% Chebyshev (MVUE) UCL	0.299917
99% Chebyshev (MVUE) UCL	0.430332

95% Non-parametric UCLs	
CLT UCL	0.474534
Adj-CLT UCL (Adjusted for skewness)	0.654166
Mod-t UCL (Adjusted for skewness)	0.52801
Jackknife UCL	0.499991
Standard Bootstrap UCL	0.45474
Bootstrap-t UCL	9.224529
Hall's Bootstrap UCL	8.689911
Percentile Bootstrap UCL	0.532625
BCA Bootstrap UCL	0.701458
95% Chebyshev (Mean, Sd) UCL	0.931991
97.5% Chebyshev (Mean, Sd) UCL	1.249895
99% Chebyshev (Mean, Sd) UCL	1.874358

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	0.09
Maximum	2.05
Mean	0.334167
Median	0.185
Standard Deviation	0.544814
Variance	0.296823
Coefficient of Variation	1.630367
Skewness	3.364101

Gamma Statistics	
k hat	1.142292
k star (bias corrected)	0.912275
Theta hat	0.29254
Theta star	0.366301
nu hat	27.41501
nu star	21.89459
Approx.Chi Square Value (.05)	12.2577
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	11.17093

Log-transformed Statistics	
Minimum of log data	-2.407946
Maximum of log data	0.71784
Mean of log data	-1.5939
Standard Deviation of log data	0.832946
Variance of log data	0.693798

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.01971

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.443101
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.616613

Gamma Distribution Test	
A-D Test Statistic	1.723629
A-D 5% Critical Value	0.753544
K-S Test Statistic	0.338398
K-S 5% Critical Value	0.251545
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.596885
Adjusted Gamma UCL	0.654954

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.780397
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.555439
95% Chebyshev (MVUE) UCL	0.583425
97.5% Chebyshev (MVUE) UCL	0.71596
99% Chebyshev (MVUE) UCL	0.976299

95% Non-parametric UCLs	
CLT UCL	0.59286
Adj-CLT UCL (Adjusted for skewness)	0.756059
Mod-t UCL (Adjusted for skewness)	0.642069
Jackknife UCL	0.616613
Standard Bootstrap UCL	0.585249
Bootstrap-t UCL	2.135553
Hall's Bootstrap UCL	1.95352
Percentile Bootstrap UCL	0.643917
BCA Bootstrap UCL	0.805833
95% Chebyshev (Mean, Sd) UCL	1.01971
97.5% Chebyshev (Mean, Sd) UCL	1.316345
99% Chebyshev (Mean, Sd) UCL	1.899027

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,1-DICHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.009
Maximum	2.05
Mean	0.249042
Median	0.078
Standard Deviation	0.57124
Variance	0.326315
Coefficient of Variation	2.293752
Skewness	3.3767

Gamma Statistics	
k hat	0.517163
k star (bias corrected)	0.443428
Theta hat	0.481554
Theta star	0.561629
nu hat	12.4119
nu star	10.64226
Approx.Chi Square Value (.05)	4.346166
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.751744

Log-transformed Statistics	
Minimum of log data	-4.710531
Maximum of log data	0.71784
Mean of log data	-2.611952
Standard Deviation of log data	1.495513
Variance of log data	2.236561

RECOMMENDATION

Data are lognormal (0.05)

Use 95% Chebyshev (MVUE) UCL

0.584523

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.432229
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.545188

Gamma Distribution Test	
A-D Test Statistic	1.077675
A-D 5% Critical Value	0.783612
K-S Test Statistic	0.267331
K-S 5% Critical Value	0.258414
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.609817
Adjusted Gamma UCL	0.706436

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.927397
Shapiro-Wilk 5% Critical Value	0.859
Data are lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	1.295448
95% Chebyshev (MVUE) UCL	0.584523
97.5% Chebyshev (MVUE) UCL	0.754818
99% Chebyshev (MVUE) UCL	1.08933

95% Non-parametric UCLs	
CLT UCL	0.520283
Adj-CLT UCL (Adjusted for skewness)	0.692038
Mod-t UCL (Adjusted for skewness)	0.571978
Jackknife UCL	0.545188
Standard Bootstrap UCL	0.506744
Bootstrap-t UCL	2.076021
Hall's Bootstrap UCL	1.755776
Percentile Bootstrap UCL	0.579125
BCA Bootstrap UCL	0.744292
95% Chebyshev (Mean, Sd) UCL	0.967836
97.5% Chebyshev (Mean, Sd) UCL	1.278859
99% Chebyshev (Mean, Sd) UCL	1.889803

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,2-DICHLOROBENZENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	9
Minimum	0.017
Maximum	2.05
Mean	0.220208
Median	0.0185
Standard Deviation	0.581856
Variance	0.338556
Coefficient of Variation	2.642297
Skewness	3.352983

Gamma Statistics	
k hat	0.404951
k star (bias corrected)	0.359269
Theta hat	0.54379
Theta star	0.612935
nu hat	9.718828
nu star	8.622455
Approx.Chi Square Value (.05)	3.099834
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.616224

Log-transformed Statistics	
Minimum of log data	-4.074542
Maximum of log data	0.71784
Mean of log data	-3.134946
Standard Deviation of log data	1.50024
Variance of log data	2.25072

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.891462

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.405926
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.521858

Gamma Distribution Test	
A-D Test Statistic	2.302993
A-D 5% Critical Value	0.803441
K-S Test Statistic	0.337193
K-S 5% Critical Value	0.261845
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.612528
Adjusted Gamma UCL	0.725754

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.690861
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.781104
95% Chebyshev (MVUE) UCL	0.349202
97.5% Chebyshev (MVUE) UCL	0.451046
99% Chebyshev (MVUE) UCL	0.651098

95% Non-parametric UCLs	
CLT UCL	0.49649
Adj-CLT UCL (Adjusted for skewness)	0.670208
Mod-t UCL (Adjusted for skewness)	0.548955
Jackknife UCL	0.521858
Standard Bootstrap UCL	0.480608
Bootstrap-t UCL	5.42992
Hall's Bootstrap UCL	4.601693
Percentile Bootstrap UCL	0.550125
BCA Bootstrap UCL	0.733375
95% Chebyshev (Mean, Sd) UCL	0.952361
97.5% Chebyshev (Mean, Sd) UCL	1.269164
99% Chebyshev (Mean, Sd) UCL	1.891462

Data File C:\Documents and Settings\tzoukh\My Docun Variable: 1,4-DICHLOROBENZENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	9
Minimum	0.017
Maximum	2.05
Mean	0.199542
Median	0.0185
Standard Deviation	0.583199
Variance	0.340121
Coefficient of Variation	2.922694
Skewness	3.454481

Gamma Statistics	
k hat	0.393568
k star (bias corrected)	0.350732
Theta hat	0.507007
Theta star	0.56893
nu hat	9.445636
nu star	8.41756
Approx.Chi Square Value (.05)	2.978428
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	2.506655

Log-transformed Statistics	
Minimum of log data	-4.074542
Maximum of log data	0.71784
Mean of log data	-3.288087
Standard Deviation of log data	1.379419
Variance of log data	1.902797

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.874654

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.354569
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.501888

Gamma Distribution Test	
A-D Test Statistic	2.853733
A-D 5% Critical Value	0.805657
K-S Test Statistic	0.37331
K-S 5% Critical Value	0.262224
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.56394
Adjusted Gamma UCL	0.670078

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.622676
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.440555
95% Chebyshev (MVUE) UCL	0.245719
97.5% Chebyshev (MVUE) UCL	0.315328
99% Chebyshev (MVUE) UCL	0.45206

95% Non-parametric UCLs	
CLT UCL	0.476461
Adj-CLT UCL (Adjusted for skewness)	0.655852
Mod-t UCL (Adjusted for skewness)	0.529869
Jackknife UCL	0.501888
Standard Bootstrap UCL	0.464029
Bootstrap-t UCL	7.535451
Hall's Bootstrap UCL	6.272745
Percentile Bootstrap UCL	0.533333
BCA Bootstrap UCL	0.70525
95% Chebyshev (Mean, Sd) UCL	0.933385
97.5% Chebyshev (Mean, Sd) UCL	1.250919
99% Chebyshev (Mean, Sd) UCL	1.874654

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ACETONE

Raw Statistics	
Number of Valid Samples	11
Number of Unique Samples	10
Minimum	6
Maximum	1600
Mean	157.1909
Median	14
Standard Deviation	478.563
Variance	229022.5
Coefficient of Variation	3.04447
Skewness	3.315677

Gamma Statistics	
k hat	0.316075
k star (bias corrected)	0.290479
Theta hat	497.3221
Theta star	541.1447
nu hat	6.953642
nu star	6.390528
Approx.Chi Square Value (.05)	1.842047
Adjusted Level of Significance	0.02783
Adjusted Chi Square Value	1.472451

Log-transformed Statistics	
Minimum of log data	1.791759
Maximum of log data	7.377759
Mean of log data	2.894317
Standard Deviation of log data	1.562771
Variance of log data	2.442255

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1592.88

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.356187
Shapiro-Wilk 5% Critical Value	0.85
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	418.7148

Gamma Distribution Test	
A-D Test Statistic	2.779452
A-D 5% Critical Value	0.816974
K-S Test Statistic	0.480136
K-S 5% Critical Value	0.275323
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	545.335
Adjusted Gamma UCL	682.2182

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.635271
Shapiro-Wilk 5% Critical Value	0.85
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	485.8359
95% Chebyshev (MVUE) UCL	161.64
97.5% Chebyshev (MVUE) UCL	209.7965
99% Chebyshev (MVUE) UCL	304.3907

95% Non-parametric UCLs	
CLT UCL	394.5304
Adj-CLT UCL (Adjusted for skewness)	548.6646
Mod-t UCL (Adjusted for skewness)	442.7567
Jackknife UCL	418.7148
Standard Bootstrap UCL	388.9274
Bootstrap-t UCL	15347.26
Hall's Bootstrap UCL	5881.761
Percentile Bootstrap UCL	445.3636
BCA Bootstrap UCL	587.5545
95% Chebyshev (Mean, Sd) UCL	786.1459
97.5% Chebyshev (Mean, Sd) UCL	1058.295
99% Chebyshev (Mean, Sd) UCL	1592.88

Data File C:\Documents and Settings\tzoukh\My Docun Variable: BENZENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.23
Maximum	2.05
Mean	0.481667
Median	0.32
Standard Deviation	0.502192
Variance	0.252197
Coefficient of Variation	1.042613
Skewness	3.268256

Gamma Statistics	
k hat	2.31707
k star (bias corrected)	1.793358
Theta hat	0.207877
Theta star	0.268584
nu hat	55.60969
nu star	43.0406
Approx.Chi Square Value (.05)	28.9956
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	27.24569

Log-transformed Statistics	
Minimum of log data	-1.469676
Maximum of log data	0.71784
Mean of log data	-0.961547
Standard Deviation of log data	0.585172
Variance of log data	0.342426

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.113578

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.485085
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.742017

Gamma Distribution Test	
A-D Test Statistic	1.771
A-D 5% Critical Value	0.740724
K-S Test Statistic	0.295855
K-S 5% Critical Value	0.248189
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.714978
Adjusted Gamma UCL	0.760899

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.720115
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.674883
95% Chebyshev (MVUE) UCL	0.785422
97.5% Chebyshev (MVUE) UCL	0.932099
99% Chebyshev (MVUE) UCL	1.220217

95% Non-parametric UCLs	
CLT UCL	0.720122
Adj-CLT UCL (Adjusted for skewness)	0.866267
Mod-t UCL (Adjusted for skewness)	0.764812
Jackknife UCL	0.742017
Standard Bootstrap UCL	0.706568
Bootstrap-t UCL	1.651599
Hall's Bootstrap UCL	1.548177
Percentile Bootstrap UCL	0.758333
BCA Bootstrap UCL	0.9
95% Chebyshev (Mean, Sd) UCL	1.113578
97.5% Chebyshev (Mean, Sd) UCL	1.387006
99% Chebyshev (Mean, Sd) UCL	1.924104

Data File C:\Documents and Settings\tzoukh\My Docun Variable: CARBON TETRACHLORIDE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	0.078
Maximum	2.05
Mean	0.255667
Median	0.0925
Standard Deviation	0.565128
Variance	0.31937
Coefficient of Variation	2.210411
Skewness	3.462781

Gamma Statistics	
k hat	0.781657
k star (bias corrected)	0.641798
Theta hat	0.327083
Theta star	0.39836
nu hat	18.75977
nu star	15.40316
Approx.Chi Square Value (.05)	7.541601
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	6.718433

Log-transformed Statistics	
Minimum of log data	-2.551046
Maximum of log data	0.71784
Mean of log data	-2.125491
Standard Deviation of log data	0.899774
Variance of log data	0.809593

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.966771

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.340324
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.548645

Gamma Distribution Test	
A-D Test Statistic	3.744602
A-D 5% Critical Value	0.764478
K-S Test Statistic	0.517426
K-S 5% Critical Value	0.254498
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.52218
Adjusted Gamma UCL	0.58616

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.420085
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.376061
95% Chebyshev (MVUE) UCL	0.376999
97.5% Chebyshev (MVUE) UCL	0.466008
99% Chebyshev (MVUE) UCL	0.640849

95% Non-parametric UCLs	
CLT UCL	0.524006
Adj-CLT UCL (Adjusted for skewness)	0.698255
Mod-t UCL (Adjusted for skewness)	0.575824
Jackknife UCL	0.548645
Standard Bootstrap UCL	0.514128
Bootstrap-t UCL	15.50164
Hall's Bootstrap UCL	6.564133
Percentile Bootstrap UCL	0.58125
BCA Bootstrap UCL	0.745333
95% Chebyshev (Mean, Sd) UCL	0.966771
97.5% Chebyshev (Mean, Sd) UCL	1.274466
99% Chebyshev (Mean, Sd) UCL	1.878874

Data File C:\Documents and Settings\tzoukh\My Docun Variable: DICHLORODIFLUOROMETHANE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.37
Maximum	2.05
Mean	0.672917
Median	0.5575
Standard Deviation	0.44575
Variance	0.198693
Coefficient of Variation	0.662415
Skewness	3.133572

Gamma Statistics	
k hat	4.582207
k star (bias corrected)	3.492211
Theta hat	0.146854
Theta star	0.192691
nu hat	109.973
nu star	83.81306
Approx.Chi Square Value (.05)	63.70928
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	61.04012

Log-transformed Statistics	
Minimum of log data	-0.994252
Maximum of log data	0.71784
Mean of log data	-0.509202
Standard Deviation of log data	0.433722
Variance of log data	0.188115

RECOMMENDATION

Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

0.923405

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.551575
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.904006

Gamma Distribution Test	
A-D Test Statistic	1.416288
A-D 5% Critical Value	0.733586
K-S Test Statistic	0.321455
K-S 5% Critical Value	0.246126
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.885259
Adjusted Gamma UCL	0.923969

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.767529
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.864709
95% Chebyshev (MVUE) UCL	1.018582
97.5% Chebyshev (MVUE) UCL	1.176025
99% Chebyshev (MVUE) UCL	1.485291

95% Non-parametric UCLs	
CLT UCL	0.884571
Adj-CLT UCL (Adjusted for skewness)	1.008945
Mod-t UCL (Adjusted for skewness)	0.923405
Jackknife UCL	0.904006
Standard Bootstrap UCL	0.885847
Bootstrap-t UCL	1.406656
Hall's Bootstrap UCL	1.773481
Percentile Bootstrap UCL	0.9075
BCA Bootstrap UCL	1.02875
95% Chebyshev (Mean, Sd) UCL	1.233806
97.5% Chebyshev (Mean, Sd) UCL	1.476504
99% Chebyshev (Mean, Sd) UCL	1.953236

Data File C:\Documents and Settings\tzoukh\My Docun Variable: ETHYLBENZENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	9
Minimum	0.1
Maximum	2.05
Mean	0.331667
Median	0.18
Standard Deviation	0.542433
Variance	0.294233
Coefficient of Variation	1.635476
Skewness	3.434234

Gamma Statistics	
k hat	1.238641
k star (bias corrected)	0.984536
Theta hat	0.267767
Theta star	0.336876
nu hat	29.72738
nu star	23.62887
Approx.Chi Square Value (.05)	13.56507
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	12.4145

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.71784
Mean of log data	-1.55878
Standard Deviation of log data	0.75368
Variance of log data	0.568033

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.014213

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.392373
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.612879

Gamma Distribution Test	
A-D Test Statistic	2.613469
A-D 5% Critical Value	0.75138
K-S Test Statistic	0.429425
K-S 5% Critical Value	0.250999
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.577727
Adjusted Gamma UCL	0.63127

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.62702
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.492857
95% Chebyshev (MVUE) UCL	0.541295
97.5% Chebyshev (MVUE) UCL	0.657991
99% Chebyshev (MVUE) UCL	0.887218

95% Non-parametric UCLs	
CLT UCL	0.589229
Adj-CLT UCL (Adjusted for skewness)	0.755102
Mod-t UCL (Adjusted for skewness)	0.638751
Jackknife UCL	0.612879
Standard Bootstrap UCL	0.578137
Bootstrap-t UCL	3.236788
Hall's Bootstrap UCL	2.442531
Percentile Bootstrap UCL	0.644167
BCA Bootstrap UCL	0.798333
95% Chebyshev (Mean, Sd) UCL	1.014213
97.5% Chebyshev (Mean, Sd) UCL	1.309551
99% Chebyshev (Mean, Sd) UCL	1.889686

Data File C:\Documents and Settings\tzoukh\My Docun Variable: M,P-XYLENES

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.3
Maximum	2.05
Mean	0.670833
Median	0.505
Standard Deviation	0.456398
Variance	0.208299
Coefficient of Variation	0.680345
Skewness	2.904662

Gamma Statistics	
k hat	4.079061
k star (bias corrected)	3.114851
Theta hat	0.164458
Theta star	0.215366
nu hat	97.89746
nu star	74.75643
Approx.Chi Square Value (.05)	55.83976
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	53.35107

Log-transformed Statistics	
Minimum of log data	-1.203973
Maximum of log data	0.71784
Mean of log data	-0.526791
Standard Deviation of log data	0.472176
Variance of log data	0.22295

RECOMMENDATION

Assuming gamma distribution (0.05)

Use Approximate Gamma UCL

0.898089

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.613494
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.907443

Gamma Distribution Test	
A-D Test Statistic	1.121409
A-D 5% Critical Value	0.735508
K-S Test Statistic	0.211804
K-S 5% Critical Value	0.246363
Data follow approximate gamma distibution at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.898089
Adjusted Gamma UCL	0.939983

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.839047
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.891104
95% Chebyshev (MVUE) UCL	1.050091
97.5% Chebyshev (MVUE) UCL	1.221691
99% Chebyshev (MVUE) UCL	1.558767

95% Non-parametric UCLs	
CLT UCL	0.887544
Adj-CLT UCL (Adjusted for skewness)	1.005587
Mod-t UCL (Adjusted for skewness)	0.925855
Jackknife UCL	0.907443
Standard Bootstrap UCL	0.874049
Bootstrap-t UCL	1.311522
Hall's Bootstrap UCL	1.774599
Percentile Bootstrap UCL	0.909167
BCA Bootstrap UCL	1.039167
95% Chebyshev (Mean, Sd) UCL	1.245122
97.5% Chebyshev (Mean, Sd) UCL	1.493617
99% Chebyshev (Mean, Sd) UCL	1.981737

Data File C:\Documents and Settings\tzoukh\My Docun Variable: METHYLENE CHLORIDE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	9
Minimum	0.17
Maximum	2.05
Mean	0.487917
Median	0.2275
Standard Deviation	0.542618
Variance	0.294434
Coefficient of Variation	1.112111
Skewness	2.525503

Gamma Statistics	
k hat	1.522902
k star (bias corrected)	1.197732
Theta hat	0.320386
Theta star	0.407367
nu hat	36.54965
nu star	28.74557
Approx.Chi Square Value (.05)	17.50763
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	16.181

Log-transformed Statistics	
Minimum of log data	-1.771957
Maximum of log data	0.71784
Mean of log data	-1.080544
Standard Deviation of log data	0.808209
Variance of log data	0.653203

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.170696

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.645048
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.769224

Gamma Distribution Test	
A-D Test Statistic	1.071213
A-D 5% Critical Value	0.745327
K-S Test Statistic	0.271061
K-S 5% Critical Value	0.249476
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.801105
Adjusted Gamma UCL	0.866785

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.82586
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.883006
95% Chebyshev (MVUE) UCL	0.941645
97.5% Chebyshev (MVUE) UCL	1.152266
99% Chebyshev (MVUE) UCL	1.565991

95% Non-parametric UCLs	
CLT UCL	0.745567
Adj-CLT UCL (Adjusted for skewness)	0.86759
Mod-t UCL (Adjusted for skewness)	0.788258
Jackknife UCL	0.769224
Standard Bootstrap UCL	0.74034
Bootstrap-t UCL	1.145949
Hall's Bootstrap UCL	1.755178
Percentile Bootstrap UCL	0.758333
BCA Bootstrap UCL	0.88625
95% Chebyshev (Mean, Sd) UCL	1.170696
97.5% Chebyshev (Mean, Sd) UCL	1.466135
99% Chebyshev (Mean, Sd) UCL	2.046467

Data File C:\Documents and Settings\tzoukh\My Docun Variable: O-XYLENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.1
Maximum	2.05
Mean	0.36375
Median	0.2
Standard Deviation	0.536839
Variance	0.288196
Coefficient of Variation	1.475846
Skewness	3.334268

Gamma Statistics	
k hat	1.335263
k star (bias corrected)	1.057003
Theta hat	0.272418
Theta star	0.344133
nu hat	32.04631
nu star	25.36807
Approx.Chi Square Value (.05)	14.89187
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	13.67956

Log-transformed Statistics	
Minimum of log data	-2.302585
Maximum of log data	0.71784
Mean of log data	-1.430338
Standard Deviation of log data	0.769921
Variance of log data	0.592779

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.039257

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.458162
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.642062

Gamma Distribution Test	
A-D Test Statistic	1.723076
A-D 5% Critical Value	0.74921
K-S Test Statistic	0.337894
K-S 5% Critical Value	0.250452
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.619642
Adjusted Gamma UCL	0.674557

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.78386
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.577782
95% Chebyshev (MVUE) UCL	0.629381
97.5% Chebyshev (MVUE) UCL	0.766619
99% Chebyshev (MVUE) UCL	1.036197

95% Non-parametric UCLs	
CLT UCL	0.618656
Adj-CLT UCL (Adjusted for skewness)	0.77804
Mod-t UCL (Adjusted for skewness)	0.666923
Jackknife UCL	0.642062
Standard Bootstrap UCL	0.603726
Bootstrap-t UCL	2.142427
Hall's Bootstrap UCL	1.906261
Percentile Bootstrap UCL	0.66875
BCA Bootstrap UCL	0.8275
95% Chebyshev (Mean, Sd) UCL	1.039257
97.5% Chebyshev (Mean, Sd) UCL	1.33155
99% Chebyshev (Mean, Sd) UCL	1.905702

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TETRACHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	0.048
Maximum	2.05
Mean	0.294375
Median	0.11075
Standard Deviation	0.556967
Variance	0.310212
Coefficient of Variation	1.892031
Skewness	3.374876

Gamma Statistics	
k hat	0.880221
k star (bias corrected)	0.715721
Theta hat	0.334433
Theta star	0.411298
nu hat	21.12531
nu star	17.17732
Approx.Chi Square Value (.05)	8.797717
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	7.897978

Log-transformed Statistics	
Minimum of log data	-3.036554
Maximum of log data	0.71784
Mean of log data	-1.88891
Standard Deviation of log data	0.958495
Variance of log data	0.918713

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

0.995209

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.433328
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.583122

Gamma Distribution Test	
A-D Test Statistic	1.712293
A-D 5% Critical Value	0.760985
K-S Test Statistic	0.318504
K-S 5% Critical Value	0.253529
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.57476
Adjusted Gamma UCL	0.640236

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.812013
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.544072
95% Chebyshev (MVUE) UCL	0.519988
97.5% Chebyshev (MVUE) UCL	0.646542
99% Chebyshev (MVUE) UCL	0.895132

95% Non-parametric UCLs	
CLT UCL	0.558839
Adj-CLT UCL (Adjusted for skewness)	0.726212
Mod-t UCL (Adjusted for skewness)	0.609229
Jackknife UCL	0.583122
Standard Bootstrap UCL	0.542003
Bootstrap-t UCL	2.179784
Hall's Bootstrap UCL	1.626024
Percentile Bootstrap UCL	0.607917
BCA Bootstrap UCL	0.782125
95% Chebyshev (Mean, Sd) UCL	0.995209
97.5% Chebyshev (Mean, Sd) UCL	1.298461
99% Chebyshev (Mean, Sd) UCL	1.89414

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TOLUENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	10
Minimum	0.98
Maximum	4.2
Mean	1.68
Median	1.4
Standard Deviation	0.857056
Variance	0.734545
Coefficient of Variation	0.510153
Skewness	2.664525

Gamma Statistics	
k hat	6.456165
k star (bias corrected)	4.897679
Theta hat	0.260216
Theta star	0.34302
nu hat	154.948
nu star	117.5443
Approx.Chi Square Value (.05)	93.50683
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	90.23891

Log-transformed Statistics	
Minimum of log data	-0.020203
Maximum of log data	1.435085
Mean of log data	0.439354
Standard Deviation of log data	0.379282
Variance of log data	0.143855

RECOMMENDATION

Data are Non-parametric (0.05)

Use Student's-t UCL
or Modified-t UCL

2.156039

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.665652
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	2.124321

Gamma Distribution Test	
A-D Test Statistic	1.011886
A-D 5% Critical Value	0.731498
K-S Test Statistic	0.246335
K-S 5% Critical Value	0.24577
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	2.111872
Adjusted Gamma UCL	2.188351

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.837668
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	2.096951
95% Chebyshev (MVUE) UCL	2.458973
97.5% Chebyshev (MVUE) UCL	2.806024
99% Chebyshev (MVUE) UCL	3.487739

95% Non-parametric UCLs	
CLT UCL	2.086955
Adj-CLT UCL (Adjusted for skewness)	2.290297
Mod-t UCL (Adjusted for skewness)	2.156039
Jackknife UCL	2.124321
Standard Bootstrap UCL	2.075634
Bootstrap-t UCL	2.761073
Hall's Bootstrap UCL	3.638709
Percentile Bootstrap UCL	2.146667
BCA Bootstrap UCL	2.295
95% Chebyshev (Mean, Sd) UCL	2.758439
97.5% Chebyshev (Mean, Sd) UCL	3.22508
99% Chebyshev (Mean, Sd) UCL	4.141707

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROETHENE

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	12
Minimum	0.017
Maximum	2.05
Mean	0.229917
Median	0.0615
Standard Deviation	0.575365
Variance	0.331045
Coefficient of Variation	2.502496
Skewness	3.418123

Gamma Statistics	
k hat	0.511734
k star (bias corrected)	0.439356
Theta hat	0.44929
Theta star	0.523304
nu hat	12.28161
nu star	10.54454
Approx.Chi Square Value (.05)	4.284021
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	3.694735

Log-transformed Statistics	
Minimum of log data	-4.074542
Maximum of log data	0.71784
Mean of log data	-2.706827
Standard Deviation of log data	1.316452
Variance of log data	1.733046

RECOMMENDATION

Data are Non-parametric (0.05)

Use 99% Chebyshev (Mean, Sd) UCL

1.882528

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.396383
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.528202

Gamma Distribution Test	
A-D Test Statistic	1.775533
A-D 5% Critical Value	0.784032
K-S Test Statistic	0.369647
K-S 5% Critical Value	0.258498
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.565909
Adjusted Gamma UCL	0.656167

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.836829
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.642164
95% Chebyshev (MVUE) UCL	0.397049
97.5% Chebyshev (MVUE) UCL	0.507611
99% Chebyshev (MVUE) UCL	0.724789

95% Non-parametric UCLs	
CLT UCL	0.503116
Adj-CLT UCL (Adjusted for skewness)	0.678234
Mod-t UCL (Adjusted for skewness)	0.555517
Jackknife UCL	0.528202
Standard Bootstrap UCL	0.493099
Bootstrap-t UCL	4.074882
Hall's Bootstrap UCL	2.144283
Percentile Bootstrap UCL	0.557292
BCA Bootstrap UCL	0.737125
95% Chebyshev (Mean, Sd) UCL	0.953902
97.5% Chebyshev (Mean, Sd) UCL	1.267171
99% Chebyshev (Mean, Sd) UCL	1.882528

Data File C:\Documents and Settings\tzoukh\My Docun Variable: TRICHLOROFLUOROMETHANE (FREON 11

Raw Statistics	
Number of Valid Samples	12
Number of Unique Samples	9
Minimum	0.28
Maximum	2.05
Mean	0.46375
Median	0.32
Standard Deviation	0.500278
Variance	0.250278
Coefficient of Variation	1.078766
Skewness	3.445754

Gamma Statistics	
k hat	2.417457
k star (bias corrected)	1.868648
Theta hat	0.191834
Theta star	0.248174
nu hat	58.01896
nu star	44.84755
Approx.Chi Square Value (.05)	30.48384
Adjusted Level of Significance	0.02896
Adjusted Chi Square Value	28.68573

Log-transformed Statistics	
Minimum of log data	-1.272966
Maximum of log data	0.71784
Mean of log data	-0.989271
Standard Deviation of log data	0.544266
Variance of log data	0.296225

RECOMMENDATION

Data are Non-parametric (0.05)

Use 95% Chebyshev (Mean, Sd) UCL

1.093252

Normal Distribution Test	
Shapiro-Wilk Test Statisitic	0.377205
Shapiro-Wilk 5% Critical Value	0.859
Data not normal at 5% significance level	

95% UCL (Assuming Normal Distribution)	
Student's-t UCL	0.723108

Gamma Distribution Test	
A-D Test Statistic	3.155635
A-D 5% Critical Value	0.740472
K-S Test Statistic	0.463907
K-S 5% Critical Value	0.248074
Data do not follow gamma distribution	
at 5% significance level	

95% UCLs (Assuming Gamma Distribution)	
Approximate Gamma UCL	0.682265
Adjusted Gamma UCL	0.725031

Lognormal Distribution Test	
Shapiro-Wilk Test Statisitic	0.475356
Shapiro-Wilk 5% Critical Value	0.859
Data not lognormal at 5% significance level	

95% UCLs (Assuming Lognormal Distribution)	
95% H-UCL	0.618365
95% Chebyshev (MVUE) UCL	0.724638
97.5% Chebyshev (MVUE) UCL	0.854148
99% Chebyshev (MVUE) UCL	1.108546

95% Non-parametric UCLs	
CLT UCL	0.701296
Adj-CLT UCL (Adjusted for skewness)	0.854791
Mod-t UCL (Adjusted for skewness)	0.74705
Jackknife UCL	0.723108
Standard Bootstrap UCL	0.696229
Bootstrap-t UCL	3.892706
Hall's Bootstrap UCL	2.294578
Percentile Bootstrap UCL	0.746667
BCA Bootstrap UCL	0.895417
95% Chebyshev (Mean, Sd) UCL	1.093252
97.5% Chebyshev (Mean, Sd) UCL	1.365639
99% Chebyshev (Mean, Sd) UCL	1.900688

Appendix A-2A
USEPA Adult Lead Model

CDM

Table A2A-1
Calculation of Lead
Exposure Using USEPA Adult Lead Model
Omega Chemical Site - Whittier, California
Current Industrial Worker

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/03

Exposure Variable	PbB Equation[1] 1*	2**	Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
					Using Equation 1		Using Equation 2	
					GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	65.4	65.4	65.4	65.4
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.100	0.100	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.100	0.100
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	250	250	250	250
$AT_{S,D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**			**ug/dL**	**1.7**	**1.9**	**1.7**	**1.9**
$PbB_{fetal,0.95}$	**95th percentile PbB among fetuses of adult workers**			**ug/dL**	**5.2**	**6.8**	**5.2**	**6.8**
PbB_t	**Target PbB level of concern (e.g., 10 ug/dL)**			**ug/dL**	**10.0**	**10.0**	**10.0**	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**			**%**	**0.6%**	**1.7%**	**0.6%**	**1.7%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

PbB_{adult} =	$(PbS*BKSF*IR_{S+D}*AF_{S,D}*EF_S/AT_{S,D}) + PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

PbB_{adult} =	$PbS*BKSF*([(IR_{S+D})*AF_S*EF_S*W_S]+[K_{SD}*(IR_{S+D})*(1-W_S)*AF_D*EF_D])/365+PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Table A2A-2
Calculation of Lead
Exposure Using USEPA Adult Lead Model
Omega Chemical Site - Whittier, California
Future Industrial and Construction Workers

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 05/19/03

Exposure Variable	PbB Equation[1] 1*	2**	Description of Exposure Variable	Units	Values for Non-Residential Exposure Scenario			
					Using Equation 1		Using Equation 2	
					GSDi = Hom	GSDi = Het	GSDi = Hom	GSDi = Het
PbS	X	X	Soil lead concentration	ug/g or ppm	59.9	59.9	59.9	59.9
$R_{fetal/maternal}$	X	X	Fetal/maternal PbB ratio	--	0.9	0.9	0.9	0.9
BKSF	X	X	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4	0.4	0.4
GSD_i	X	X	Geometric standard deviation PbB	--	2.1	2.3	2.1	2.3
PbB_0	X	X	Baseline PbB	ug/dL	1.5	1.7	1.5	1.7
IR_S	X		Soil ingestion rate (including soil-derived indoor dust)	g/day	0.100	0.100	--	--
IR_{S+D}		X	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--	0.100	0.100
W_S		X	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--	1.0	1.0
K_{SD}		X	Mass fraction of soil in dust	--	--	--	0.7	0.7
$AF_{S,D}$	X	X	Absorption fraction (same for soil and dust)	--	0.12	0.12	0.12	0.12
$EF_{S,D}$	X	X	Exposure frequency (same for soil and dust)	days/yr	250	250	250	250
$AT_{S,D}$	X	X	Averaging time (same for soil and dust)	days/yr	365	365	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**			**ug/dL**	**1.7**	**1.9**	**1.7**	**1.9**
$PbB_{fetal,0.95}$	**95th percentile PbB among fetuses of adult workers**			**ug/dL**	**5.2**	**6.7**	**5.2**	**6.7**
PbB_t	**Target PbB level of concern (e.g., 10 ug/dL)**			**ug/dL**	**10.0**	**10.0**	**10.0**	**10.0**
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**			**%**	**0.6%**	**1.7%**	**0.6%**	**1.7%**

[1] Equation 1 does not apportion exposure between soil and dust ingestion (excludes W_S, K_{SD}).
When $IR_S = IR_{S+D}$ and $W_S = 1.0$, the equations yield the same $PbB_{fetal,0.95}$.

***Equation 1, based on Eq. 1, 2 in USEPA (1996).**

PbB_{adult} =	$(PbS*BKSF*IR_{S+D}*AF_{S,D}*EF_S/AT_{S,D}) + PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

****Equation 2, alternate approach based on Eq. 1, 2, and A-19 in USEPA (1996).**

PbB_{adult} =	$PbS*BKSF*([(IR_{S+D})*AF_S*EF_S*W_S]+[K_{SD}*(IR_{S+D})*(1-W_S)*AF_D*EF_D])/365+PbB_0$
$PbB_{fetal,0.95}$ =	$PbB_{adult} * (GSD_i^{1.645} * R)$

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Appendix A-2B
Leadspread Model

CDM

Appendix Table A2B-1

LEAD RISK ASSESSMENT SPREADSHEET

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

USER'S GUIDE to version 7

INPUT	
MEDIUM	LEVEL
Lead in Air (ug/m^3)	0.028
Lead in Soil/Dust (ug/g)	59.9
Lead in Water (ug/l)	15
% Home-grown Produce	7%
Respirable Dust (ug/m^3)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (ug/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(ug/g)	(ug/g)
BLOOD Pb, ADULT	1.3	2.4	2.8	3.4	3.9	676	1063
BLOOD Pb, CHILD	2.3	4.1	4.9	5.9	6.7	146	247
BLOOD Pb, PICA CHILD	2.7	4.9	5.8	7.0	8.0	94	159
BLOOD Pb, OCCUPATIONAL	1.1	2.1	2.5	3.0	3.4	3475	5464

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (ug/dl)		10	
Skin area, residential	cm^2	5700	2900
Skin area occupational	cm^2	2900	
Soil adherence	ug/cm^2	70	200
Dermal uptake constant	(ug/dl)/(ug/d	0.0001	
Soil ingestion	mg/day	50	100
Soil ingestion, pica	mg/day		200
Ingestion constant	(ug/dl)/(ug/d	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m^3/day	20	6.8
Inhalation constant	(ug/dl)/(ug/d	0.08	0.19
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	ug/kg	3.1	
Lead in home-grown produce	ug/kg	27.0	

Click here for REFERENCES

PATHWAYS						
ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	3.8E-5	0.00	0%	1.4E-5	0.00	0%
Soil Ingestion	8.8E-4	0.05	4%	6.3E-4	0.04	3%
Inhalation, bkgrnd		0.05	4%		0.03	3%
Inhalation	2.5E-6	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.84	65%		0.84	73%
Food Ingestion, bkgrnd		0.22	17%		0.23	20%
Food Ingestion	2.4E-3	0.14	11%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	5.6E-5	0.00	0%		0.00	0%
Soil Ingestion	7.0E-3	0.42	19%	1.4E-2	0.84	31%
Inhalation	2.0E-6	0.00	0%		0.00	0%
Inhalation, bkgrnd		0.04	2%		0.04	1%
Water Ingestion		0.96	43%		0.96	36%
Food Ingestion, bkgrnd		0.50	22%		0.50	19%
Food Ingestion	5.5E-3	0.33	15%		0.33	12%

Appendix A-3
RAGS D Tables

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Omega Site - Whittier, CA

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	TABLE A3-2.4C - Parcel North - Medlin & Sons 12484		Current	Indoor Air	Indoor Air
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	TABLE A3-2.4E - Parcel West - Terrapave		Current	Indoor Air	Indoor Air
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	TABLE A3-3.4E - Parcel West - Terrapave		Current	Indoor Air	Indoor Air
	TABLE A3-3.4F - Parcel South - Bishop		Current	Indoor Air	Indoor Air
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Omega Site - Whittier, CA

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List of Tables Included in Appendix A-3

Omega Site - Whittier, CA

	TABLE A3-7.11 - All Parcels, RME, Minimum Outdoor Air Concentrations	Future	Industrial Worker - Outdoors	Adult
Calculation of Radiation Cancer Risks				
	NONE			
Summary of Receptor Risks and Hazards for COPCs - Reasonable Maximum Exposure		**Scenario/Timeframe**	**Receptor**	**Age**
	TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1C - Parcel North - Medlin & Sons 12484, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1C - Parcel North - Medlin & Sons 12484, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1D - Parcel North - Medlin & Sons North 12476, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1D - Parcel North - Medlin & Sons North 12476, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1E - Parcel West - Terrapave, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1E - Parcel West - Terrapave, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1F - Parcel South - Bishop, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1F - Parcel South - Bishop, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1G - Parcel South - LA Carts, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1G - Parcel South - LA Carts, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1H - Parcel South - Oncology Care, CTE, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.1H - Parcel South - Oncology Care, CTE, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2C - Parcel North - Medlin & Sons 12484, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2C - Parcel North - Medlin & Sons 12484, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2D - Parcel North - Medlin & Sons North 12476, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2D - Parcel North - Medlin & Sons North 12476, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2E - Parcel West - Terrapave, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2E - Parcel West - Terrapave, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2F - Parcel South - Bishop, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2F - Parcel South - Bishop, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2G - Parcel South - LA Carts, RME, Maximum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.2G - Parcel South - LA Carts, RME, Minimum Indoor Air Concentrations	Current	Industrial Worker	Adult
	TABLE A3-9.3A - All Parcels, CTE, Maximum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.3A - All Parcels, CTE, Minimum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations	Future	Construction Worker - CTE	Adult
	TABLE A3-9.4A - All Parcels, RME, Maximum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.4A - All Parcels, RME, Minimum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.4B - Site Parcels, RME, Maximum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.4B - Site Parcel, RME, Minimum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.4C - Other Parcels, RME, Maximum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.4C - Other Parcels, RME, Minimum Indoor Air Concentrations	Future	Construction Worker - RME	Adult
	TABLE A3-9.5A - Parcel Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Adult
	TABLE A3-9.5A - Parcel Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Adult
	TABLE A3-9.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Adult
	TABLE A3-9.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Adult
	TABLE A3-9.6A - Parcel Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Adult plus Child
	TABLE A3-9.6A - Parcel Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Adult plus Child
	TABLE A3-9.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Adult plus Child
	TABLE A3-9.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Adult plus Child
	TABLE A3-9.7A - Parcel Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Child
	TABLE A3-9.7A - Parcel Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Child
	TABLE A3-9.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations	Future	Resident	Child
	TABLE A3-9.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations	Future	Resident	Child

List of Tables Included in Appendix A-3

Omega Site - Whittier, CA

	TABLE A3-9.8 - All Parcels, CTE, Maximum Indoor Air Concentrations	Future	Industrial Worker - Indoors	Adult
	TABLE A3-9.8 - All Parcels, CTE, Minimum Indoor Air Concentrations	Future	Industrial Worker - Indoors	Adult
	TABLE A3-9.9 - All Parcels, RME, Maximum Indoor Air Concentrations	Future	Industrial Worker - Indoors	Adult
	TABLE A3-9.9 - All Parcels, RME, Minimum Indoor Air Concentrations	Future	Industrial Worker - Indoors	Adult
	TABLE A3-9.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations	Future	Industrial Worker - Outdoors	Adult
	TABLE A3-9.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations	Future	Industrial Worker - Outdoors	Adult
	TABLE A3-9.11 - All Parcels, RME, Maximum Outdoor Air Concentrations	Future	Industrial Worker - Outdoors	Adult
	TABLE A3-9.11 - All Parcels, RME, Minimum Outdoor Air Concentrations	Future	Industrial Worker - Outdoors	Adult

TABLE A3-0

SITE RISK ASSESSMENT IDENTIFICATION INFORMATION

Omega Chemical Site - Whittier, California

Site Name/OU:	Omega Chemical Site
Region:	USEPA Region 9
EPA ID Number:	CAD042245001
State:	California
Status:	Remedial Investigation
Federal Facility (Y/N):	No
EPA Project Manager:	Christopher Lichens
EPA Risk Assessor:	Dr. Stan Smucker
Prepared by (Organization):	Camp Dresser & McKee Inc.
Prepared for (Organization):	Omega Chemical Site PRP Organized Group
Document Title:	Human Health Risk Assessment for On-Site Soils, Omega Chemical Superfund Site
Document Date:	November 2007
Probabilistic Risk Assessment (Y/N):	No
Comments:	

TABLE A3-1.0
SELECTION OF EXPOSURE PATHWAYS
Omega Chemical Site - Whittier, California

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Onsite/ Offsite	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Soil	Surface Soil	Soil at Omega Site from 0' to 2.2'	Industrial Worker - Indoors	Adult	Ingestion	Onsite	Quantitative	Current industrial workers may incidentally ingest surface soil
						Dermal	Onsite	Quantitative	Current industrial workers may come into contact with surface soil
						Inhalation	Onsite	None	Current industrial workers are not expected to inhale soil particulates, site is paved
		Subsurface Soil	Soil at Omega Site from 2.2' to 12'	Industrial Worker - Indoors	Adult	Ingestion	Onsite	None	Current industrial workers are not expected to incidentally ingest subsurface soil
						Dermal	Onsite	None	Current industrial workers are not expected to come into contact with subsurface soil
						Inhalation	Onsite	None	Current industrial workers are not expected to inhale subsurface soil particulates
		Soil Gas	Outdoor Air[5]	Industrial Worker - Indoors	Adult	Inhalation	Onsite	Quantitative	Current industrial workers may be exposed to soil gas in outdoor air
			Indoor Air[1]	Industrial Worker - Indoors	Adult	Inhalation	Onsite	Quantitative	Current industrial workers may be exposed to soil gas in indoor air
	Groundwater	Groundwater	Groundwater in Drinking Water	Industrial Worker - Indoors	Adult	Ingestion	Onsite	None - See Text[2]	Current industrial workers are not expected to ingest groundwater from the site
						Dermal	Onsite	None - See Text[2]	Current industrial workers are not expected to come into contact with groundwater from the site
						Inhalation	Onsite	None - See Text[2]	Current industrial workers are not expected to inhale contaminants of groundwater origin
Future	Soil	Surface & Subsurface Soil regraded	Soil at Omega Site from 0' to 12'	Industrial Worker - Indoors	Adult	Ingestion	Onsite	Quantitative	Future industrial workers may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future industrial workers may come into contact with soil
						Inhalation	Onsite	Quantitative	Future industrial workers may inhale soil particulates, if site pavement is removed
				Industrial Worker - Outdoors	Adult	Ingestion	Onsite	Quantitative	Future industrial workers may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future industrial workers may come into contact with soil
						Inhalation	Onsite	Quantitative	Future industrial workers may inhale soil particulates, if site pavement is removed
				Resident	Adult	Ingestion	Onsite	Quantitative	Future adult resident may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future adult resident may come into contact with soil
						Inhalation	Onsite	Quantitative	Future adult resident may inhale soil particulates from soil
					Adult/Child	Ingestion	Onsite	Quantitative	Future adult/child resident may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future adult/child resident may come into contact with soil
						Inhalation	Onsite	Quantitative	Future adult/childresident may inhale soil particulates from soil
					Child	Ingestion	Onsite	Quantitative	Future child resident may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future child resident may come into contact with soil
						Inhalation	Onsite	Quantitative	Future child resident may inhale soil particulates from soil
				Construction Worker	Adult	Ingestion	Onsite	Quantitative	Future construction workers may incidentally ingest soil
						Dermal	Onsite	Quantitative	Future construction workers may come into contact with soil
						Inhalation	Onsite	Quantitative	Future construction workers may inhale soil particulates
		Soil Gas	Outdoor Air[3]	Construction Worker	Adult	Inhalation	Onsite	Quantitative	Future construction workers may be exposed to soil gas 5' to 30' bgs in outdoor air
				Resident	Adult	Inhalation	Onsite	None - See Text[2]	Indoor air exposure will be more significant than outdoor air exposure, thus future adult resident is not evaluated for soil gas 5' to 6' bgs in outdoor air
					Adult/Child	Inhalation	Onsite	None - See Text[2]	Indoor air exposure will be more significant than outdoor air exposure, thus future adult/child resident is not evaluated for soil gas 5' to 6' bgs in outdoor air
					Child	Inhalation	Onsite	None - See Text[2]	Indoor air exposure will be more significant than outdoor air exposure, thus future child resident is not evaluated for soil gas 5' to 6' bgs in outdoor air
				Industrial Worker - Outdoors	Adult	Inhalation	Onsite	Quantitative	Future industrial workers may be exposed to soil gas 5' to 6' bgs in outdoor air
			Indoor Air[4]	Resident	Adult	Inhalation	Onsite	Quantitative	Future adult resident may be exposed to soil gas 5' to 6' bgs in indoor air
					Adult/Child	Inhalation	Onsite	Quantitative	Future adult/child resident may be exposed to soil gas 5' to 6' bgs in indoor air
					Child	Inhalation	Onsite	Quantitative	Future child resident may be exposed to soil gas 5' to 6' bgs in indoor air
				Industrial Worker - Indoors	Adult	Inhalation	Onsite	Quantitative	Future industrial workers may be exposed to soil gas in indoor air
	Groundwater	Groundwater	Groundwater in Drinking Water	Industrial Worker - Indoors	Adult	Ingestion	Onsite	None - See Text[2]	Future industrial workers are not expected to ingest groundwater from the site
						Dermal	Onsite	None - See Text[2]	Future industrial workers are not expected to come into contact with groundwater from the site
						Inhalation	Onsite	None - See Text[2]	Future industrial workers are not expected to inhale contaminants of groundwater origin
				Industrial Worker - Outdoors	Adult	Ingestion	Onsite	None - See Text[2]	Future industrial workers are not expected to ingest groundwater from the site
						Dermal	Onsite	None - See Text[2]	Future industrial workers are not expected to come into contact with groundwater from the site
						Inhalation	Onsite	None - See Text[2]	Future industrial workers are not expected to inhale contaminants of groundwater origin
				Resident	Adult/ child	Ingestion	Onsite	None - See Text[2]	Future residents are not expected to ingest groundwater from the site
						Dermal	Onsite	None - See Text[2]	Future residents are not expected to come into contact with groundwater from the site
						Inhalation	Onsite	None - See Text[2]	Future residents are not expected to inhale contaminants of groundwater origin
				Construction Worker	Adult	Ingestion	Onsite	None - See Text[2]	Future construction workers are not expected to incidentally ingest groundwater
						Dermal	Onsite	None - See Text[2]	Future construction workers are not expected to come into contact with groundwater
						Inhalation	Onsite	None - See Text[2]	Future construction workers are not expected to inhale contaminants of groundwater origin

(1) Indoor air for current scenarios was evaluated using measured indoor air data for all parcels except for Skateland. The current Skateland building is slated for demolition, as such, soil gas result were used to evaluate this pathway on this parcel.
(2) Domestic use of groundwater risks are not evaluated in this analysis. They will be evaluated in EPA's Site-wide Risk Assessment
(3) Future outdoor air risks for the construction worker were evaluated using measured soil gas concentrations from 5 to 12 feet bgs in the Johnson and Ettinger Model. For the other scenarios, measured outdoor air concentrations were used
(4) Future indoor air risks were evaluated using measured soil gas concentrations from 5 to 6 feet bgs in the Johnson and Ettinger Model.
(5) Outdoor air for current scenarios was evaluated using measured outdoor air dat

TABLE A3-2.1 - Parcel Site
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface Soil
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface Soil															
	95-50-1	1,2-DICHLOROBENZENE	0.083	0.24	mg/kg	SS-20	2 / 34	0.09 - 8	0.24	NA	6.0E+01 sat			Yes	FD
	123-91-1	1,4-DIOXANE	0.014	14	mg/kg	SS-20	10 / 19	0.03 - 0.2	14	NA	1.6E+01 ca			Yes	FD
	91-57-6	2-METHYLNAPHTHALENE	0.48	0.54	mg/kg	SB-15	2 / 36	0.09 - 8	0.54	NA				Yes	FD
	72-54-8	4,4'-DDD	0.0015	0.032	mg/kg	SS-15	3 / 36	0.005 - 8.005	0.032	NA	1.0E+00 ca			Yes	FD
	72-55-9	4,4'-DDE	0.001	0.3	mg/kg	SS-15	8 / 36	0.005 - 8	0.3	NA	7.0E-01 ca			Yes	FD
	50-29-3	4,4'-DDT	0.0017	0.15	mg/kg	SS-16	10 / 36	0.005 - 8	0.15	NA	7.0E-01 ca*			Yes	FD
	7429-90-5	ALUMINUM	9410	9830	mg/kg	SS-12	2 / 2	NR - NR	9830	NA	1.0E+04 max			Yes	FD
	7440-36-0	ANTIMONY	0.6	18	mg/kg	SB-13	10 / 36	10 - 10	18	NA	4.1E+01 nc			Yes	FD
	7440-38-2	ARSENIC	1.4	21	mg/kg	SS-01	36 / 36	1 - 1	21	NA	2.5E-02 ca			No	STAT
	7440-39-3	BARIUM	38	230	mg/kg	SB-13	36 / 36	1 - 1	230	NA	6.7E+03 nc			Yes	FD
	56-55-3	BENZO(A)ANTHRACENE	0.032	2.4	mg/kg	SB-15	2 / 34	0.09 - 8	2.4	NA	2.1E-01 ca			Yes	FD
	50-32-8	BENZO(A)PYRENE	1.6	1.6	mg/kg	SB-15	1 / 34	0.09 - 8	1.6	NA	2.1E-02 ca			Yes	ASL
	205-99-2	BENZO(B)FLUORANTHENE	0.91	0.91	mg/kg	SB-15	1 / 34	0.09 - 8	0.91	NA	2.1E-01 ca			Yes	ASL
	191-24-2	BENZO(G,H,I)PERYLENE	0.49	0.49	mg/kg	SB-15	1 / 34	0.09 - 8	0.49	NA				No	NTX1
	100-51-6	BENZYL ALCOHOL (PHENYLMETHANOL)	5.2	5.2	mg/kg	SB-09	1 / 34	0.09 - 8	5.2	NA	1.0E+04 max			No	IFD1
	7440-41-7	BERYLLIUM	0.18	0.75	mg/kg	SB-12	36 / 36	1 - 1	0.75	NA	1.9E+02 ca**			Yes	FD
	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.03	51	mg/kg	SS-20	11 / 34	0.2 - 20	51	NA	1.2E+01 ca			Yes	FD
	85-68-7	BUTYLBENZYL PHTHALATE	0.85	1.9	mg/kg	SS-01	2 / 34	0.09 - 8	1.9	NA	1.0E+04 max			Yes	FD
	7440-43-9	CADMIUM	0.25	2.1	mg/kg	SS-04, SS-07	23 / 36	1 - 1	2.10	NA	4.5E+01 nc			Yes	FD
	7440-23-5	CALCIUM	5910	7170	mg/kg	SS-12	2 / 2	NR - NR	7170.0	NA				No	NUT
	16065-83-1	CHROMIUM III	7.03	308.571	mg/kg	SS-09	36 / 36	1 - 1	308.6	NA	1.0E+04 max			Yes	FD
	18540-29-9	CHROMIUM VI	1.17	51.4286	mg/kg	SS-09	36 / 36	1 - 1	51.4	NA	6.4E+00 ca			Yes	FD
	218-01-9	CHRYSENE	0.038	6	mg/kg	SB-15	2 / 34	0.09 - 8	6	NA	2.1E+01 ca			Yes	FD
	7440-48-4	COBALT	4.7	16	mg/kg	SB-12	36 / 36	5 - 5	16	NA	1.9E+02 ca*			Yes	FD
	7440-50-8	COPPER	13	150	mg/kg	SB-12	36 / 36	2 - 2	150	NA	4.1E+03 nc			Yes	FD
	60-57-1	DIELDRIN	0.0084	0.05	mg/kg	SS-15	2 / 36	0.005 - 8.005	0.05	NA	1.1E-02 ca			Yes	FD
	84-66-2	DIETHYL PHTHALATE	0.037	0.037	mg/kg	SS-14	1 / 34	0.09 - 8	0	NA	1.0E+04 max			No	IFD1
	84-74-2	DI-N-BUTYLPHTHALATE	0.33	0.33	mg/kg	SS-20	1 / 34	0.09 - 8	0.3	NA	6.2E+03 nc			No	IFD1
	117-84-0	DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)	0.24	0.24	mg/kg	SB-11	1 / 34	0.09 - 8	0.24	NA	2.5E+03 nc			No	IFD1
	72-20-8	ENDRIN	0.032	0.032	mg/kg	SS-15	1 / 36	0.005 - 20.01	0.032	NA	1.8E+01 nc			No	IFD1
	206-44-0	FLUORANTHENE (IDRYL)	0.033	0.66	mg/kg	SB-15	2 / 34	0.09 - 8	0.66	NA	2.2E+03 nc			Yes	FD
	7439-89-6	IRON	22100	23300	mg/kg	SS-04	2 / 2	NR - NR	23300	NA	1.0E+04 max			Yes	FD
	78-59-1	ISOPHORONE	0.54	9.9	mg/kg	SB-09	2 / 36	0.09 - 8	9.9	NA	5.1E+01 ca*			Yes	FD
	7439-92-1	LEAD	5	890	mg/kg	SB-12	36 / 36	5 - 5	890	NA	8.0E+01 nc			Yes	FD
	7439-95-4	MAGNESIUM	5190	5590	mg/kg	SS-04	2 / 2	NR - NR	5590	NA				No	NUT

TABLE A3-2.1 - Parcel Site
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface Soil
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2 2'
Exposure Medium	Surface Soil 0' to 2.2'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	7439-96-5	MANGANESE	193	353	mg/kg	SS-12	2 / 2	NR - NR	353	NA	1.9E+03 nc			Yes	FD
	7487-94-7	MERCURY	0.029	0.85	mg/kg	SS-01	22 / 36	0.2 - 0.2	0.85	NA	3 1E+01 nc			Yes	FD
	7439-98-7	MOLYBDENUM	1.5	4.2	mg/kg	SB-13	14 / 34	5 - 5	4.2	NA	5.1E+02 nc			Yes	FD
	91-20-3	NAPHTHALENE	1.2	1.2	mg/kg	SS-20	1 / 36	0.09 - 8	1.2	NA	4.2E-01 ca			Yes	ASL
	7440-02-0	NICKEL	7.5	55	mg/kg	SB-12	36 / 36	1 - 1	55	NA	2.0E+03 nc			Yes	FD
	11097-69-1	PCB-1254 (AROCLOR 1254)	0.21	0.5	mg/kg	SS-16	2 / 36	0.01 - 0.05	0.5	NA	7.4E-02 ca*			Yes	FD
	85-01-8	PHENANTHRENE	0.013	5	mg/kg	SB-15	3 / 34	0.09 - 8	5	NA				Yes	FD
	12674-11-2	POLYCHLORINATED BI PHENYLS, TOTAL	0 5	0.5	mg/kg	SS-16	1 / 20	0.01 - 0.02	0.5	NA	2.1E+00 ca**			Yes	FD
	7440-09-7	POTASSIUM	4330	4520	mg/kg	SS-12	2 / 2	NR - NR	4520	NA				No	NUT
	129-00-0	PYRENE	0.018	3.1	mg/kg	SB-15	3 / 34	0.09 - 8	3.1	NA	2.9E+03 nc			Yes	FD
	7440-22-4	SILVER	0.55	1.2	mg/kg	SS-06	3 / 36	1 - 1	1.2	NA	5.1E+02 nc			Yes	FD
	7440-23-5	SODIUM	290	324	mg/kg	SS-04	2 / 2	NR - NR	324	NA				No	NUT
	7440-28-0	THALLIUM	0.9	2	mg/kg	SS-06, SS-07, SS-08, SS-13,	14 / 36	10 - 10	2	NA	6.7E+00 nc			Yes	FD
	7440-62-2	VANADIUM	20	71	mg/kg	SB-05	36 / 36	1 - 1	71	NA	1.0E+02 nc			Yes	FD
	7440-66-6	ZINC	34	350	mg/kg	SB-12	36 / 36	5 - 5	350	NA	1.0E+04 max			Yes	FD

(1) Detection limits for detected chemicals in historical data were not available.
(2) Maximum detected concentration used for screening.
(3) Maximum detected background concentration.
(4) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c) to account for additivity of multiple chemcials.
(5) Not available.
(6) Chromium concentrations were divided between Chromium III and Chromium VI assuming a 1:6 ratio of Cr VI:Cr III
(7) Rationale Codes.

Selection Reason.
- ASL: Above Screening Level
- TOX: Chemical is a Class A Carcinogen
- DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
- NSL: No Screening Level
- FD: Frequent Detection
- CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason:
- BSL: Below Screening Level
- BSL1: Infrequent Detection and Below Screening Level
- NUT: Essential Nutrient
- NTX: No Toxicity Information Available
- NTX1: Infrequent Detection and No Toxicity Information Available
- IFD: Infrequent Detection
- IFD1: Infrequent Detection and Below Screening Level
- STAT: Not a site contaminant according to separate statistical analysis, see text

Definitions:
- NA: Not Available.
- ND: Not Detected.
- nc: Screening Toxicity Value is based on noncancer effects
- ca: Screening Toxicity Value is based on cancer effects.
- COPC: Chemical of Potential Concern
- ARAR/TBC Applicable or Relevant and Appropriate Requirement/To Be Considered.
- VOCs: Volatile Organic Compounds
- ug/kg: microgram per kilogram.
- ca*: where: nc PRG < 100X ca PRG
- ca**: where nc PRG < 10X ca PRG

TABLE A3-2.2 - Parcel Site
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface and Subsurface Soil to 12 feet bgs
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Subsurface Soil	71-55-6	1,1,1-TRICHLOROETHANE	0.047	0.047	mg/kg	MIP3-B2	1 / 2	0.00084 - 0.085	0.047	NA	1.2E+02 sat			Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	0.0034	0.0034	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0034	NA	1.6E-01 ca*			Yes	FD
	75-34-3	1,1-DICHLOROETHANE	0.0084	0.0084	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0084	NA	6.0E-01 ca			Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.0039	0.0039	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.21	0.0039	NA	4.1E+01 nc			Yes	FD
	95-50-1	1,2-DICHLOROBENZENE	0.00088	0.24	mg/kg	SS-20	3 / 40	0.00084 - 8	0.24	NA	6.0E+01 sat			Yes	FD
	107-06-2	1,2-DICHLOROETHANE	0.0063	0.0063	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0063	NA	8.0E-02 ca*			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.0016	0.0016	mg/kg	MIP3-B2	1 / 40	0.0008 - 8	0.0016	NA	7.9E-01 ca			No	IFD1
	123-91-1	1,4-DIOXANE	0.014	28	mg/kg	MIP3-B2	12 / 21	0.03 - 2.5	28	NA	1.6E+01 ca			Yes	FD
	91-57-6	2-METHYLNAPHTHALENE	0.48	0.54	mg/kg	SB-15	2 / 40	0.09 - 8	0.54	NA				Yes	FD
	72-54-8	4,4'-DDD	0.0015	0.032	mg/kg	SS-15	3 / 60	0.005 - 8.005	0.032	NA	1.0E+00 ca			Yes	FD
	72-55-9	4,4'-DDE	0.001	0.3	mg/kg	SS-15	8 / 60	0.005 - 8	0.3	NA	7.0E-01 ca			Yes	FD
	50-29-3	4,4'-DDT	0.0017	0.15	mg/kg	SS-16	10 / 60	0.005 - 8	0.15	NA	7.0E-01 ca*			Yes	FD
	7429-90-5	ALUMINUM	9410	9830	mg/kg	SS-12	2 / 2	NR - NR	9830	NA	1.0E+04 max			Yes	FD
	7440-36-0	ANTIMONY	0.6	18	mg/kg	SB-13	10 / 40	10 - 10	18	NA	4.1E+01 nc			Yes	FD
	7440-38-2	ARSENIC	0.81	21	mg/kg	SS-01	40 / 40	1 - 1	21	NA	2.5E-02 ca			No	STAT
	7440-39-3	BARIUM	28	230	mg/kg	SB-13	40 / 40	1 - 1	230	NA	6.7E+03 nc			Yes	FD
	56-55-3	BENZO(A)ANTHRACENE	0.032	2.4	mg/kg	SB-15	2 / 38	0.09 - 8	2.4	NA	2.1E-01 ca			Yes	FD
	50-32-8	BENZO(A)PYRENE	1.6	1.6	mg/kg	SB-15	1 / 38	0.09 - 8	1.6	NA	2.1E-02 ca			Yes	ASL
	205-99-2	BENZO(B)FLUORANTHENE	0.91	0.91	mg/kg	SB-15	1 / 38	0.09 - 8	0.91	NA	2.1E-01 ca			Yes	ASL
	191-24-2	BENZO(G,H,I)PERYLENE	0.49	0.49	mg/kg	SB-15	1 / 38	0.09 - 8	0.49	NA				No	NTX1
	100-51-6	BENZYL ALCOHOL (PHENYLMETHANOL)	5.2	22	mg/kg	SB-09	2 / 38	0.09 - 8	22	NA	1.0E+04 max			Yes	FD
	7440-41-7	BERYLLIUM	0.18	0.75	mg/kg	SB-12	40 / 40	1 - 1	0.75	NA	1.9E+02 ca**			Yes	FD
	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.03	51	mg/kg	SS-20	13 / 38	0.2 - 20	51	NA	1.2E+01 ca			Yes	FD
	85-68-7	BUTYLBENZYL PHTHALATE	0.85	1.9	mg/kg	SS-01	2 / 38	0.09 - 8	1.9	NA	1.0E+04 max			Yes	FD
	7440-43-9	CADMIUM	0.25	2.1	mg/kg	SS-04, SS-07	23 / 40	1 - 1	2.1	NA	4.5E+01 nc			Yes	FD
	7440-23-5	CALCIUM	5910	7170	mg/kg	SS-12	2 / 2	0 - 0	7170	NA				No	NUT
	67-66-3	CHLOROFORM	0.0047	0.0047	mg/kg	MIP3-B2	1 / 2	0.0008 - 0.085	0.0047	NA	2.0E-01 ca			Yes	FD
	16065-83-1	CHROMIUM III	4.8	308.571	mg/kg	SS-09	40 / 40	1 - 1	309	NA	1.0E+04 max			Yes	FD
	18540-29-9	CHROMIUM VI	0.8	51.4286	mg/kg	SS-09	40 / 40	1 - 1	51	NA	6.4E+00 ca			Yes	FD
	218-01-9	CHRYSENE	0.038	6	mg/kg	SB-15	2 / 38	0.09 - 8	6	NA	2.1E+01 ca			Yes	FD
	7440-48-4	COBALT	4.7	16	mg/kg	SB-12	39 / 40	5 - 5	16	NA	1.9E+02 ca*			Yes	FD
	7440-50-8	COPPER	13	150	mg/kg	SB-12	40 / 40	2 - 2	150	NA	4.1E+03 nc			Yes	FD
	60-57-1	DIELDRIN	0.0084	0.05	mg/kg	SS-15	2 / 60	0.005 - 8.005	0.05	NA	1.1E-02 ca			Yes	ASL
	84-66-2	DIETHYL PHTHALATE	0.037	0.037	mg/kg	SS-14	1 / 38	0.09 - 8	0.037	NA	1.0E+04 max			No	IFD1
	84-74-2	DI-N-BUTYLPHTHALATE	0.33	0.33	mg/kg	SS-20	1 / 38	0.09 - 8	0.33	NA	8.2E+03 nc			No	IFD1
	117-84-0	DI-N-OCTYL PHTHALATE (DIOCTYL PHTHALATE)	0.24	0.24	mg/kg	SB-11	1 / 38	0.09 - 8	0.24	NA	2.5E+03 nc			No	IFD1
	72-20-8	ENDRIN	0.032	0.032	mg/kg	SS-15	1 / 60	0.005 - 20.01	0.032	NA	1.8E+01 nc			No	IFD1
	206-44-0	FLUORANTHENE (IDRYL)	0.033	0.66	mg/kg	SB-15	2 / 38	0.09 - 8	0.66	NA	2.2E+03 nc			Yes	FD
	7439-89-6	IRON	22100	23300	mg/kg	SS-04	2 / 2	NR - NR	23300	NA	1.0E+04 max			Yes	FD
	78-59-1	ISOPHORONE	0.54	9.9	mg/kg	SB-09	3 / 40	0.09 - 8	9.9	NA	5.1E+01 ca*			Yes	FD
	7439-92-1	LEAD	5	890	mg/kg	SB-12	39 / 40	5 - 5	890	NA	8.0E+01 nc			Yes	FD
	7439-95-4	MAGNESIUM	5190	5590	mg/kg	SS-04	2 / 2	NR - NR	5590	NA				No	NUT
	7439-96-5	MANGANESE	193	353	mg/kg	SS-12	2 / 2	NR - NR	353	NA	1.9E+03 nc			Yes	FD
	7487-94-7	MERCURY	0.029	0.85	mg/kg	SS-01	22 / 40	0.2 - 0.2	0.85	NA	3.1E+01 nc			Yes	FD
	7439-98-7	MOLYBDENUM	1.5	4.2	mg/kg	SB-13	17 / 38	5 - 5	4.2	NA	5.1E+02 nc			Yes	FD
	91-20-3	NAPHTHALENE	1.2	1.2	mg/kg	SS-20	1 / 42	0.0084 - 8	1.2	NA	4.2E-01 ca			Yes	ASL
	7440-02-0	NICKEL	4.9	55	mg/kg	SB-12	40 / 40	1 - 1	55	NA	2.0E+03 nc			Yes	FD
	11097-69-1	PCB-1254 (AROCLOR 1254)	0.052	0.5	mg/kg	SS-16	3 / 40	NR - NR	0.5	NA	7.4E-02 ca*			Yes	FD

TABLE A3-2.2 - Parcel Site
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Surface and Subsurface Soil to 12 feet bgs
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium	Surface & Subsurface Soil to 12'

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits (1)	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (nc/ca) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (5)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	85-01-8	PHENANTHRENE	0.013	5	mg/kg	SB-15	3 / 38	NR - NR	5	NA				Yes	FD
	12674-11-2	POLYCHLORINATED BI PHENYLS, TOTAL	0.5	0.5	mg/kg	SS-16	1 / 20	0.01 - 0.05	0.5	NA	2.1E+00 ca**			Yes	FD
	7440-09-7	POTASSIUM	4330	4520	mg/kg	SS-12	2 / 2	0.09 - 8	4520	NA				No	NUT
	129-00-0	PYRENE	0.018	3.1	mg/kg	SB-15	3 / 38	0.01 - 0.02	3.1	NA	2.9E+03 nc			Yes	FD
	7440-22-4	SILVER	0.55	1.2	mg/kg	SS-06	3 / 40	NR - NR	1.2	NA	5.1E+02 nc			Yes	FD
	7440-23-5	SODIUM	290	324	mg/kg	SS-04	2 / 2	0.09 - 8	324	NA				No	NUT
	127-18-4	TETRACHLOROETHENE	3.2	4.3	mg/kg	MIP3-B2	2 / 2	1 - 1	4.3	NA	1.3E-01 ca			Yes	FD
	7440-28-0	THALLIUM	0.9	2	mg/kg	2, SS-02, SS-06, SS-07, SS-08, SS-13, S	14 / 40	NR - NR	2	NA	6.7E+00 nc			Yes	FD
	79-01-6	TRICHLOROETHENE	0.028	0.028	mg/kg	MIP3-B2	1 / 2	0.08 - 0.085	0.028	NA	6.5E-01 ca			Yes	FD
	7440-62-2	VANADIUM	20	71	mg/kg	SB-05	40 / 40	10 - 10	71	NA	1.0E+02 nc			Yes	FD
	7440-66-6	ZINC	34	350	mg/kg	SB-12	40 / 40	0.001 - 0.085	350	NA	1.0E+04 max			Yes	FD

(1) Detection limits for detected chemicals in historical data were not available.
(2) Maximum detected concentration used for screening.
(3) Maximum detected background concentration.
(4) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c) to account for additivity of multiple chemicals.
(5) Not available.
(6) Chromium concentrations were divided between Chromium III and Chromium VI assuming a 1 6 ratio of Cr VI:Cr III
(7) Rationale Codes:

Selection Reason:
- ASL: Above Screening Level
- TOX: Chemical is a Class A Carcinogen
- DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
- NSL: No Screening Level
- FD: Frequent Detection
- CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason:
- BSL: Below Screening Level
- BSL1: Infrequent Detection and Below Screening Level
- NUT: Essential Nutrient
- NTX: No Toxicity Information Available
- NTX1: Infrequent Detection and No Toxicity Information Available
- IFD: Infrequent Detection
- IFD1: Infrequent Detection and Below Screening Level
- STAT: Not a site contaminant according to separate statistical analysis, see text

Definitions:
- NA: Not Available.
- ND: Not Detected.
- nc: Screening Toxicity Value is based on noncancer effects.
- ca: Screening Toxicity Value is based on cancer effects.
- COPC: Chemical of Potential Concern.
- ARAR/TBC Applicable or Relevant and Appropriate Requirement/To Be Considered
- VOCs Volatile Organic Compounds.
- ug/kg: microgram per kilogram.
- ca*: where: nc PRG < 100X ca PRG
- ca**: where nc PRG < 10X ca PRG

TABLE A3-2.4A - Parcel Site - 3 Kings Construction
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.21	0.22	ug/m^3	OC-AA-FS-13-051104	2 / 4	0.180 - 0.51	2.2E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6	6.8	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.260 - 0.72	6.8E+00	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.7	9.2	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.066 - 0.18	9.2E+00	NA				Yes	FD
	67-64-1	ACETONE	24	50	ug/m^3	OC-IA-FS-14-091405	4 / 4	2.000 - 5.6	5.0E+01	NA				Yes	FD
	71-43-2	BENZENE	2.8	11	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.270 - 0.75	1.1E+01	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.57	0.65	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.210 - 0.59	6.5E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.25	0.25	ug/m^3	OC-AA-FS-13-051104	1 / 4	0.160 - 0.46	2.5E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.4	3.1	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.160 - 0.46	3.1E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	3.2	16	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.140 - 0.41	1.6E+01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	14	82	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.290 - 0.81	8.2E+01	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.8	260	ug/m^3	OC-IA-FS-14-091405	4 / 4	1.200 - 3.2	2.6E+02	NA				Yes	FD
	95-47-6	O-XYLENE	2.9	17	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.140 - 0.41	1.7E+01	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	1	13	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.230 - 0.63	1.3E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	34	170	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.120 - 0.35	1.7E+02	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	0.25	3.3	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.180 - 0.5	3.3E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	2	5.9	ug/m^3	OC-IA-FS-14-091405	4 / 4	0.190 - 0.52	5.9E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.4B - Parcel Site - Star City Auto Body
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.32	0.33	ug/m³	OC-IA-FS-07-091405	1 / 4	0.190 - 18	3.3E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.6	31	ug/m³	OC-AA-FD-07-051104	3 / 4	0.270 - 26	3.1E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	1.6	18	ug/m³	OC-AA-FD-07-051104	3 / 4	0.069 - 6.7	1.8E+01	NA				Yes	FD
	67-64-1	ACETONE	330	6000	ug/m³	OC-IA-FD-09-091405	4 / 4	2.100 - 200	6.0E+03	NA				Yes	FD
	71-43-2	BENZENE	2.6	5.3	ug/m³	OC-IA-FS-07-091405	2 / 4	0.280 - 27	5.3E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.66	0.67	ug/m³	OC-IA-FS-07-091405	1 / 4	0.220 - 21	6.7E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.19	0.19	ug/m³	FS-07-091405,OC-IA-FD-07-(	1 / 4	0.170 - 16	1.9E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.9	2.7	ug/m³	OC-AA-FD-07-051104	2 / 4	0.170 - 17	2.7E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	4.6	48	ug/m³	OC-AA-FS-09-051104	3 / 4	0.150 - 14	4.8E+01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	21	270	ug/m³	OC-AA-FS-09-051104	3 / 4	0.300 - 29	2.7E+02	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.5	4.8	ug/m³	OC-AA-FD-07-051104	1 / 4	1.200 - 120	4.8E+00	NA				Yes	FD
	95-47-6	O-XYLENE	5.1	78	ug/m³	OC-AA-FS-09-051104	3 / 4	0.150 - 14	7.8E+01	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	6	34	ug/m³	OC-IA-FS-07-091405	3 / 4	0.240 - 23	3.4E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	36	2400	ug/m³	OC-AA-FS-09-051104	4 / 4	0.130 - 13	2.4E+03	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	3.5	6.5	ug/m³	OC-IA-FS-07-091405	2 / 4	0.190 - 18	6.5E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	11	14	ug/m³	OC-AA-FD-07-051104	2 / 4	0.200 - 19	1.4E+01	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE A3-2.4C - Parcel North - Medlin & Sons 12484
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.21	0.21	ug/m^3	OC-AA-FS-11-051104	1 / 4	0.180 - 0.46	2.1E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	17	40	ug/m^3	OC-AA-FS-10-051104	4 / 4	0.250 - 0.65	4.0E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	2.9	10	ug/m^3	OC-AA-FS-10-091405	4 / 4	0.064 - 0.17	1.0E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.2	0.95	ug/m^3	OC-AA-FS-10-051104	2 / 4	0.190 - 0.51	9.5E-01	NA				Yes	FD
	67-64-1	ACETONE	22	3400	ug/m^3	OC-AA-FS-10-051104	4 / 4	1.900 - 5.1	3.4E+03	NA				Yes	FD
	71-43-2	BENZENE	0.91	1.1	ug/m^3	OC-AA-FS-11-051104	4 / 4	0.260 - 0.68	1.1E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.87	1.3	ug/m^3	OC-AA-FS-11-091405	4 / 4	0.200 - 0.54	1.3E+00	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.2	0.32	ug/m^3	OC-AA-FS-11-091405	3 / 4	0.160 - 0.42	3.2E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.2	3.3	ug/m^3	OC-AA-FS-11-051104	4 / 4	0.160 - 0.42	3.3E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.72	0.85	ug/m^3	OC-AA-FS-11-051104	4 / 4	0.140 - 0.37	8.5E-01	NA	0.0E+00			Yes	FD
		M,P-XYLENES	2.2	2.7	ug/m^3	OC-AA-FS-11-051104, OC-AA-FS-11-091405	4 / 4	0.280 - 0.74	2.7E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.7	5.1	ug/m^3	OC-AA-FS-11-051104	3 / 4	1.100 - 3	5.1E+00	NA				Yes	FD
	95-47-6	O-XYLENE	0.87	1	ug/m^3	OC-AA-FS-11-051104	4 / 4	0.140 - 0.37	1.0E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	4.3	22	ug/m^3	OC-AA-FS-10-091405	4 / 4	0.220 - 0.58	2.2E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	4.8	7.4	ug/m^3	OC-AA-FS-10-091405	4 / 4	0.120 - 0.32	7.4E+00	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	2.3	14	ug/m^3	OC-AA-FS-10-091405	4 / 4	0.170 - 0.46	1.4E+01	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	5.4	12	ug/m^3	OC-AA-FS-10-091405	4 / 4	0.180 - 0.48	1.2E+01	NA				Yes	FD

(1) Maximum detected concentration used for screening
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND. Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.4D - Parcel North - Medlin & Sons North 12476
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9	1.9	ug/m^3	IA-37	1 / 1	1.8 - 1.8	1.9E+00	NA				Yes	FD
	67-64-1	ACETONE	430	430	ug/m^3	IA-37	1 / 1	14 - 14	4.3E+02	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.6	2.6	ug/m^3	IA-37	1 / 1	1.2 - 1.2	2.6E+00	NA				Yes	FD
	108-88-3	TOLUENE	2.8	2.8	ug/m^3	IA-37	1 / 1	0.9 - 0.9	2.8E+00	NA	4.4E+01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.6	1.6	ug/m^3	IA-37	1 / 1	1.3 - 1.3	1.6E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.4E - Parcel West - Terrapave
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.45	0.49	ug/m³	OC-AA-FS-06-051104	2 / 4	0.170 - 0.2	4.9E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.3	26	ug/m³	OC-AA-FS-06-051104, OC-AA-FS-05-051104	4 / 4	0.240 - 0.28	2.6E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	5.5	23	ug/m³	OC-AA-FS-05-051104	4 / 4	0.063 - 0.072	2.3E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.23	0.27	ug/m³	OC-IA-FD-05-091405	2 / 4	0.190 - 0.22	2.7E-01	NA				Yes	FD
	67-64-1	ACETONE	22	43	ug/m³	OC-AA-FS-06-051104	4 / 4	1.900 - 2.2	4.3E+01	NA				Yes	FD
	71-43-2	BENZENE	1.1	1.4	ug/m³	OC-AA-FS-06-051104	4 / 4	0.250 - 0.29	1.4E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.56	0.67	ug/m³	OC-IA-FD-05-091405	4 / 4	0.200 - 0.23	6.7E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.21	0.24	ug/m³	OC-AA-FS-05-051104	4 / 4	0.150 - 0.18	2.4E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.5	2.9	ug/m³	OC-AA-FS-05-051104	4 / 4	0.160 - 0.18	2.9E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.93	1.6	ug/m³	OC-AA-FS-05-051104	4 / 4	0.140 - 0.16	1.6E+00	NA	0.0E+00			Yes	FD
		M,P-XYLENES	3.3	5.5	ug/m³	OC-AA-FS-06-051104	4 / 4	0.270 - 0.32	5.5E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1.2	1.5	ug/m³	OC-AA-FS-05-051104	4 / 4	1.100 - 1.3	1.5E+00	NA				Yes	FD
	95-47-6	O-XYLENE	0.96	2.1	ug/m³	OC-AA-FS-05-051104, OC-AA-FS-06-051104	4 / 4	0.140 - 0.16	2.1E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	39	110	ug/m³	OC-AA-FS-05-051104	4 / 4	0.210 - 0.25	1.1E+02	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	6.5	10.0	ug/m³	OC-AA-FS-05-051104	4 / 4	0.120 - 0.14	1.0E+01	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	1.6	4.4	ug/m³	OC-AA-FS-05-051104	4 / 4	0.170 - 0.2	4.4E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	3.4	7	ug/m³	OC-AA-FS-05-051104	4 / 4	0.180 - 0.2	7.0E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: *Above Screening Level*
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE A3-2.4F - Parcel South - Bishop
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	71-55-6	1,1,1-TRICHLOROETHANE	0.19	0.19	ug/m³	OC-IA-BIS-STORE-090806	1 / 3	0.160 - 0.34	1.9E-01	NA	3.2E+02			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4	10	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.230 - 0.48	1.0E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	3.6	14	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.059 - 0.12	1.4E+01	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.21	0.32	ug/m³	OC-IA-BIS-AO-090806	2 / 3	0.180 - 0.37	3.2E-01	NA				Yes	FD
	67-64-1	ACETONE	28	41	ug/m³	OC-IA-BIS-AO-090806	3 / 3	1.800 - 3.7	4.1E+01	NA				Yes	FD
	71-43-2	BENZENE	1.15	1.2	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.240 - 0.5	1.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.51	0.575	ug/m³	OC-IA-BIS-AO-090806	3 / 3	0.190 - 0.39	5.8E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.15	0.18	ug/m³	OC-IA-BIS-STORE-090806	2 / 3	0.140 - 0.3	1.8E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.7	3	ug/m³	OC-IA-BIS-AO-090806	3 / 3	0.150 - 0.31	3.0E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.61	1.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.130 - 0.27	1.7E+00	NA				Yes	FD
		M,P-XYLENES	2.7	4.9	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.260 - 0.54	4.9E+00	NA	1.0E+02			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	0.67	0.67	ug/m³	OC-IA-BIS-STORE-090806	1 / 3	0.540 - 1.1	6.7E-01	NA	1.6E+00			Yes	FD
	75-09-2	METHYLENE CHLORIDE	1	1.7	ug/m³	OC-IA-BIS-STORE-090806	2 / 3	1.000 - 2.2	1.7E+00	NA				Yes	FD
	95-47-6	O-XYLENE	1.015	1.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.130 - 0.27	1.7E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	7.1	29.0	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.200 - 0.42	2.9E+01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	6.9	8.4	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.110 - 0.23	8.4E+00	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	0.44	1.5	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.160 - 0.33	1.5E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	2.2	3.7	ug/m³	OC-IA-BIS-STORE-090806	3 / 3	0.170 - 0.35	3.7E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE A3-2.4G - Parcel South - LA Carts
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.7	14	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.200 - 1.2	1.4E+01	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.06	3.6	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.053 - 0.32	3.6E+00	NA				Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.16	0.16	ug/m^3	OC-IA-LAC-AO-090806	1 / 3	0.160 - 0.99	1.6E-01	NA				Yes	FD
	67-64-1	ACETONE	74	1200	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	1.600 - 9.7	1.2E+03	NA				Yes	FD
	71-43-2	BENZENE	1.3	2.2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.210 - 1.3	2.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.5	0.52	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.170 - 1	5.2E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.14	0.37	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.130 - 0.8	3.7E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.6	3.2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.130 - 0.81	3.2E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.95	2	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.120 - 0.71	2.0E+00	NA				Yes	FD
		M,P-XYLENES	2.9	7.3	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.230 - 1.4	7.3E+00	NA	1.0E+02			Yes	FD
	75-09-2	METHYLENE CHLORIDE	5.2	5.9	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.930 - 5.7	5.9E+00	NA				Yes	FD
	95-47-6	O-XYLENE	1	2.6	ug/m^3	OC-IA-LAC-Lg Prod-090806	3 / 3	0.120 - 0.71	2.6E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	0.24	1.8	ug/m^3	OC-IA-LAC-Lg Prod-090806	2 / 3	0.180 - 1.1	1.6E+00	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	10	570	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.100 - 0.62	5.7E+02	NA	4.4E+01			Yes	FD
	79-01-6	TRICHLOROETHENE	1.2	1.2	ug/m^3	OC-IA-LAC-AO-090806	1 / 3	0.140 - 0.88	1.2E+00	NA	2.0E-01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.5	3.2	ug/m^3	OC-IA-LAC-Sm Prod-090806	3 / 3	0.150 - 0.92	3.2E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening *levels and frequency of detection were not used to eliminate COPCs*
NSL No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL. Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2 4H - Parcel South - Oncology Care
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Indoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air															
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.2	1.6	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.480 - 0.49	1.6E+00	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.2	0.23	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.120 - 0.13	2.3E-01	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	0.32	0.32	ug/m^3	OC-IA-ONC-NS-090806	1 / 2	0.260 - 0.26	3.2E-01	NA	2.0E-02			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.39	0.39	ug/m^3	OC-IA-ONC-NS-090806	1 / 2	0.380 - 0.39	3.9E-01	NA				Yes	FD
	67-64-1	ACETONE	95	99	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	3.800 - 3.8	9.9E+01	NA				Yes	FD
	71-43-2	BENZENE	1.1	1.2	ug/m^3	OC-IA-ONC-AO-090806	2 / 2	0.500 - 0.51	1.2E+00	NA	1.4E-02			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.5	0.52	ug/m^3	OC-IA-ONC-AO-090806	2 / 2	0.400 - 0.4	5.2E-01	NA	9.7E-03			Yes	FD
	67-66-3	CHLOROFORM	0.57	0.66	ug/m^3	OC-IA-ONC-AO-090806	2 / 2	0.310 - 0.31	6.6E-01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	2.9	3.4	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.310 - 0.32	3.4E+00	NA				Yes	FD
	100-41-4	ETHYLBENZENE	0.94	1	ug/m^3	OC-IA-ONC-AO-090806	2 / 2	0.270 - 0.28	1.0E+00	NA				Yes	FD
		M,P-XYLENES	3	3.1	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.550 - 0.56	3.1E+00	NA	1.0E+02			Yes	FD
	95-47-6	O-XYLENE	1.2	1.3	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.270 - 0.28	1.3E+00	NA	1.0E+02			Yes	FD
	127-18-4	TETRACHLOROETHENE	0.44	0.44	ug/m^3	OC-IA-ONC-NS-090806	1 / 2	0.430 - 0.44	4.4E-01	NA	6.9E-02			Yes	FD
	108-88-3	TOLUENE	16	17	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.240 - 0.24	1.7E+01	NA	4.4E+01			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.7	1.8	ug/m^3	OC-IA-ONC-NS-090806	2 / 2	0.360 - 0.36	1.8E+00	NA				Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th CalEPA's CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5A All Parcels - 5 to 6 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 6 ft bgs
Exposure Medium:	Indoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	1528800	ug/m^3	OC-SG-006-VP08-081905	18 / 36	7.644 - 42042	1.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1838	3447000	ug/m^3	OC-SG-06-01-041204	34 / 36	10.724 - 114900	3.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	1420	1419.8	ug/m^3	OC-SG-006-VP02-082205	1 / 36	7.644 - 10374	1.4E+03	NA				No	IFD1
	75-34-3	1,1-DICHLOROETHANE	36	105300	ug/m^3	OC-SG-006-VP05-081705	17 / 36	5.87 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1071900	ug/m^3	OC-SG-06-03-041204	34 / 36	5.558 - 22232	1.1E+06	NA				Yes	FD
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4813	93750	ug/m^3	OC-SG-06-03-041204	4 / 4	NR - NR	9.4E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	93	10125	ug/m^3	OC-SG-006-VP08-081905	5 / 36	5.87 - 7695	1.0E+04	NA	1.7E+01			Yes	FD
	540-84-1	2,2,4-TRIMETHYLPENTANE	36	56.04	ug/m^3	UC-10	3 / 23	6.538 - 7472	5.6E+01	NA				Yes	FD
	78-93-3	2-BUTANONE	103	103.25	ug/m^3	OC-SG-006-VP19-121305	1 / 35	4.13 - 4720	1.0E+02	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	97.2	ug/m^3	OC-SG-006-VP19-121305	1 / 1	NR - NR	9.7E+01	NA				Yes	FD
	67-64-1	ACETONE	81	21182	ug/m^3	OC-SG-006-VP08-081905	15 / 35	13.804 - 15232	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	8	2074	ug/m^3	OC-SG-006-VP05-081705	9 / 36	4.466 - 6061	2.1E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	373	26124	ug/m^3	OC-SG-006-VP08-081905	10 / 35	4.354 - 4976	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	233	232.73	ug/m^3	OC-SG-006-VP11-081505	1 / 36	8.808 - 11951	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	73	14640	ug/m^3	OC-SG-006-VP04-082205, OC-SG-006-VP05-081705	18 / 36	6.832 - 9272	1.5E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	285	38828	ug/m^3	OC-SG-006-VP10-081505	9 / 36	5.544 - 7524	3.7E+04	NA	4.4E+03			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	18	9405	ug/m^3	OC1-SG14A-G-0-28	7 / 36	6.93 - 7920	9.4E+03	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	11	10.56	ug/m^3	UC-10	1 / 23	4.928 - 5632	1.1E+01	NA				No	IFD1
		M,P-XYLENES	14	607.6	ug/m^3	OC-SG-006-VP11-081505	3 / 36	8.076 - 16492	6.1E+02	NA	8.9E+04			Yes	FD
	95-47-6	O-XYLENE	304	303.8	ug/m^3	OC-SG-006-VP11-081505	1 / 36	8.076 - 8246	3.0E+02	NA	8.8E+04			No	IFD1
	127-18-4	TETRACHLOROETHENE	949	3390000	ug/m^3	OC-SG-006-VP08-081905	34 / 36	9.492 - 52206	3.4E+06	NA	6.0E+01			Yes	FD
	108-88-3	TOLUENE	29	2601.3	ug/m^3	SG-14-6FT	10 / 36	5.278 - 7163	2.6E+03	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	55	20988	ug/m^3	OC-SG-006-VP04-082205	16 / 35	5.544 - 6336	2.1E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	328	472560	ug/m^3	OC-SG-06-03-041204	34 / 36	7.518 - 29535	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	551	1011600	ug/m^3	OC-SG-06-03-041204	34 / 36	7.868 - 61820	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5A Site Parcels - 5 to 6 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 6 ft bgs
Exposure Medium:	Indoor Air/Outdoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	1529	1528800	ug/m^3	OC-SG-006-VP08-081905	15 / 22	49.14 - 42042	1.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4979	2374600	ug/m^3	OC-SG-06-11-041304	22 / 22	68.94 - 114900	2.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	1420	1419.6	ug/m^3	OC-SG-006-VP02-082205	1 / 22	49.14 - 8190	1.4E+03	NA				No	IFD1
	75-34-3	1,1-DICHLOROETHANE	36	105300	ug/m^3	OC-SG-006-VP05-081705	16 / 22	36.45 - 16605	1.1E+05	NA				Yes	FD
	354-23-4	1,1-DICHLOROETHENE	6749	992500	ug/m^3	OC-SG-006-VP01-081905	22 / 22	35.73 - 22232	9.9E+05	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4813	81250	ug/m^3	OC-SG-06-05-041204	3 / 3	NR - NR	8.1E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	93	10125	ug/m^3	OC-SG-006-VP08-081905	5 / 22	36.45 - 6075	1.0E+04	NA	1.7E+01			Yes	FD
	78-93-3	2-BUTANONE	103	103.25	ug/m^3	OC-SG-006-VP19-121305	1 / 22	26.55 - 4425	1.0E+02	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	97.2	ug/m^3	OC-SG-006-VP19-121305	1 / 1	NR - NR	9.7E+01	NA				Yes	FD
	67-64-1	ACETONE	105	21182	ug/m^3	OC-SG-006-VP08-081905	12 / 22	57.12 - 14518	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	45	2073.5	ug/m^3	OC-SG-006-VP05-081705	7 / 22	28.71 - 4785	2.1E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	373	26124	ug/m^3	OC-SG-006-VP08-081905	10 / 22	27.99 - 4665	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	233	232.73	ug/m^3	OC-SG-006-VP11-081505	1 / 22	56.61 - 9435	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	93	14640	ug/m^3	OC-SG-006-VP04-082205, OC-SG-006-VP05-081705	16 / 22	43.92 - 7320	1.5E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	285	36828	ug/m^3	OC-SG-006-VP10-081505	9 / 22	35.64 - 5940	3.7E+04	NA	4.4E+03			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	84	940.5	ug/m^3	OC-SG-006-VP11-081505	2 / 22	44.55 - 7425	9.4E+02	NA				Yes	FD
		M,P-XYLENES	608	607.6	ug/m^3	OC-SG-006-VP11-081505	1 / 22	39.06 - 6510	6.1E+02	NA	8.9E+04			No	IFD1
		O-XYLENE	304	303.8	ug/m^3	OC-SG-006-VP11-081505	1 / 22	39.06 - 6510	3.0E+02	NA	8.8E+04			No	IFD1
	127-18-4	TETRACHLOROETHENE	16272	3390000	ug/m^3	OC-SG-006-VP08-081905	22 / 22	61.02 - 52206	3.4E+06	NA	6.0E+01			Yes	FD
	108-88-3	TOLUENE	75	1168.7	ug/m^3	OC-SG-006-VP05-081705	6 / 22	33.93 - 5655	1.2E+03	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	55	20988	ug/m^3	OC-SG-006-VP04-082205	14 / 22	35.64 - 5940	2.1E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	3061	451080	ug/m^3	OC-SG-006-VP01-081905	22 / 22	48.33 - 29535	4.5E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	4271	786800	ug/m^3	OC-SG-06-11-041304	22 / 22	50.58 - 61820	7.9E+05	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5A Other Parcels - 5 to 6 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 6 ft bgs
Exposure Medium:	Indoor Air/Outdoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	10920	ug/m^3	OC-SG-06-02-041204	3 / 12	7.644 - 10374	1.1E+04	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1838	3447000	ug/m^3	OC-SG-06-01-041204	12 / 12	10.724 - 12256	3.4E+06	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	1053	1053	ug/m^3	OC1-LC3-G-0-8	1 / 12	5.67 - 7695	1.1E+03	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1071900	ug/m^3	OC-SG-06-03-041204	12 / 12	5.558 - 6352	1.1E+06	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	93750	93750	ug/m^3	OC-SG-06-03-041204	1 / 1	NR - NR	9.4E+04	NA				Yes	FD
	354-23-4	2,2,4-TRIMETHYLPENTANE	38	56.04	ug/m^3	UC-10	3 / 10	6.538 - 7472	5.6E+01	NA				Yes	FD
	67-64-1	ACETONE	81	185.64	ug/m^3	SG-15-6FT	3 / 10	13.804 - 15232	1.9E+02	NA				Yes	FD
	540-84-1	BENZENE	8	16.269	ug/m^3	SG-15-6FT	2 / 12	4.466 - 6061	1.6E+01	NA	1.2E+01			Yes	FD
	67-66-3	CHLOROFORM	73	1756.8	ug/m^3	OC1-LC3-G-0-8	2 / 12	6.832 - 9272	1.8E+03	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	18	9405	ug/m^3	OC1-SG14A-G-0-28	5 / 12	6.93 - 7920	9.4E+03	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	11	10.56	ug/m^3	UC-10	1 / 10	4.928 - 5632	1.1E+01	NA				Yes	FD
		M,P-XYLENES	14	30	ug/m^3	SG-15-6FT	2 / 12	6.076 - 16492	3.0E+01	NA	8.9E+04			Yes	FD
		TETRACHLOROETHENE	949	2101800		OC-SG-06-01-041204	12 / 12	9.492 - 10848	2.1E+06	NA	6.0E+01				
	127-18-4				ug/m^3									Yes	FD
	108-88-3	TOLUENE	29	2601.3	ug/m^3	SG-14-6FT	4 / 12	5.278 - 7163	2.6E+03	NA	3.8E+04			Yes	FD
		TRANS-1,2-DICHLOROETHENE	6732	9900		OC-SG-06-02-041204	2 / 10	5.544 - 6336	9.9E+03	NA	6.9E+03				
	156-60-5				ug/m^3									Yes	FD
	79-01-6	TRICHLOROETHENE	328	472560	ug/m^3	OC-SG-06-03-041204	12 / 12	7.518 - 8592	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	551	1011600	ug/m^3	OC-SG-06-03-041204	12 / 12	7.868 - 8992	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5B All Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	2457000	ug/m³	OC-SG-018-VP08-081905	66 / 127	4.368 - 51870	2.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	3447000	ug/m³	OC-SG-06-01-041204	144 / 146	7.66 - 145540	3.4E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	328	1419.6	ug/m³	OC-SG-008-VP02-082205	9 / 118	4.368 - 22386	1.4E+03	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	24	105300	ug/m³	OC-SG-008-VP05-081705	71 / 130	3.24 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1905600	ug/m³	OC1-SG11A-G-0-24	142 / 146	3.97 - 24217	1.9E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	9	33.456	ug/m³	OC-SG-018-VP19-121305	7 / 121	3.936 - 20172	3.3E+01	NA				Yes	FD
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3000	93750	ug/m³	OC-SG-06-03-041204	10 / 10	NR - NR	9.4E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	32	10125	ug/m³	OC-SG-024-VP08-081605, OC-SG-006-VP08-081905	24 / 119	3.24 - 16605	1.0E+04	NA	1.7E+01			Yes	FD
	106-99-0	1,3-BUTADIENE	3	139.23	ug/m³	OC-SG-029-VP30-060106	10 / 70	2.21 - 3757	1.4E+02	NA				Yes	FD
	540-84-1	2,2,4-TRIMETHYLPENTANE	5	1541.1	ug/m³	OC-SG-008-VP13-121205	15 / 74	4.67 - 7939	1.5E+03	NA				Yes	FD
	78-93-3	2-BUTANONE	4	174.05	ug/m³	OC-SG-029-VP30-060106	18 / 119	2.95 - 5015	1.7E+02	NA				Yes	FD
		2-PROPANOL	9840	36900	ug/m³	OC-SG-029-VP13-121205	4 / 68	9.84 - 16728	3.7E+04	NA				Yes	FD
		4-ETHYLTOLUENE	7	41.82	ug/m³	OC-SG-018-VP19-121305	5 / 116	4.92 - 8364	4.2E+01	NA				No	IFD1
		4-METHYL-2-PENTANONE	16	15.58	ug/m³	OC-SG-025-VP25-030606	1 / 112	4.1 - 6970	1.6E+01	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	111.8	ug/m³	OC-SG-012-VP19-121305	3 / 3	NR - NR	1.1E+02	NA				Yes	FD
	67-64-1	ACETONE	15	21182	ug/m³	OC-SG-006-VP08-081905	71 / 125	9.52 - 16184	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	3	3828	ug/m³	OC-SG-018-VP03-081805	42 / 126	3.19 - 13079	3.8E+03	NA	1.2E+01			Yes	FD
	75-27-4	BROMODICHLOROMETHANE	9	24.12	ug/m³	OC-SG-008-VP30-060106	4 / 113	6.7 - 11390	2.4E+01	NA				Yes	CARC
	75-25-2	BROMOFORM	13	13.442	ug/m³	OC-SG-010-VP26-053106	1 / 112	10.34 - 17578	1.3E+01	NA				Yes	CARC
	75-15-0	CARBON DISULFIDE	3	26124	ug/m³	OC-SG-006-VP08-081905	44 / 116	3.11 - 5287	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	126	232.73	ug/m³	OC-SG-012-VP04-082205, OC-SG-006-VP11-081505	4 / 117	5.032 - 25789	2.3E+02	NA	8.5E+00			Yes	ASL
	67-66-3	CHLOROFORM	7	107360	ug/m³	OC-SG-029-VP13-121205	78 / 132	3.904 - 20008	1.1E+05	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	51	37620	ug/m³	OC-SG-018-VP10-081505, OC-SG-012-VP10-081505	39 / 124	3.168 - 16236	3.8E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	4	963.2	ug/m³	OC-SG-008-VP13-121205	8 / 71	3.44 - 5848	9.6E+02	NA				Yes	FD
	124-48-1	DIBROMOCHLOROMETHANE	9	13.632	ug/m³	OC-SG-010-VP26-053106	2 / 112	8.52 - 14484	1.4E+01	NA				Yes	CARC
	75-71-8	DICHLORODIFLUOROMETHANE	11	9405	ug/m³	OC1-SG14A-G-0-28	29 / 121	3.96 - 20295	9.4E+03	NA				Yes	FD
		ETHANOL	13	253.8	ug/m³	OC-SG-12-01-041204	8 / 69	7.52 - 12784	2.5E+02	NA				Yes	FD
	100-41-4	ETHYLBENZENE	6	30.38	ug/m³	OC-SG-018-VP19-121305	9 / 122	3.472 - 17794	3.0E+01	NA	0.0E+00			Yes	FD
		HEPTANE	5	127.1	ug/m³	OC-SG-018-VP19-121305	10 / 72	4.1 - 6970	1.3E+02	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	4	4578	ug/m³	SG-8-18FT	19 / 73	3.52 - 5984	4.6E+03	NA				Yes	FD
		M,P-XYLENES	10	607.6	ug/m³	OC-SG-006-VP11-081505	22 / 124	4.34 - 35154	6.1E+02	NA	8.9E+04			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	19	20.938	ug/m³	OC-SG-029-VP25-030606	2 / 113	3.61 - 11191	2.1E+01	NA	1.3E+03			Yes	CARC

TABLE A3-2.5B All Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	75-09-2	METHYLENE CHLORIDE	8	23249	ug/m^3	OC-SG-018-VP03-081805	14 / 120	2.776 - 14227	2.3E+04	NA				Yes	FD
	95-47-6	O-XYLENE	5	3472	ug/m^3	OC-SG-018-VP08-081905	14 / 122	3.472 - 17794	3.5E+03	NA	8.8E+04			Yes	FD
		PENTANE	21535	21535	ug/m^3	OC-SG-008-VP13-121205	1 / 1	NR - NR	2.2E+04	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	12	3390000	ug/m^3	OC-SG-006-VP08-081905	143 / 146	6.78 - 64410	3.4E+06	NA	6.0E+01			Yes	FD
	109-99-9	TETRAHYDROFURAN	3	3835	ug/m^3	SG-8-18FT	3 / 67	2.95 - 5015	3.8E+03	NA				Yes	CARC
	108-88-3	TOLUENE	8	15080	ug/m^3	OC1-SG8A-G-0-25	57 / 130	3.77 - 15457	1.5E+04	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	35	24552	ug/m^3	OC-SG-018-VP02-082205	54 / 119	3.96 - 6732	2.5E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	54	472560	ug/m^3	OC-SG-08-03-041204	137 / 145	5.37 - 29535	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	6	1236400	ug/m^3	OC1-SG11A-G-0-24	145 / 146	5.62 - 61820	1.2E+06	NA				Yes	FD
	75-01-4	VINYL CHLORIDE	33	79.36	ug/m^3	OC-SG-012-VP04-082205	2 / 117	2.048 - 10498	7.9E+01	NA	4.5E+00			Yes	ASL

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason. BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions:
NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5B Site Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium	Soil Gas - 5 to 30 ft bgs
Exposure Medium	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	197	2457000	ug/m³	OC-SG-018-VP08-081905	58 / 77	17.472 - 51870	2.5E+06	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2604	2910800	ug/m³	OC1-SG11A-G-0-24	87 / 87	24.512 - 145540	2.9E+06	NA				Yes	FD
	79-00-5	1,1,2-TRICHLOROETHANE	328	1419.6	ug/m³	OC-SG-006-VP02-082205	9 / 71	17.472 - 22386	1.4E+03	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	24	105300	ug/m³	OC-SG-006-VP05-081705	65 / 82	12.96 - 16605	1.1E+05	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	1528	1905600	ug/m³	OC1-SG11A-G-0-24	87 / 87	12.704 - 24217	1.9E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	17	33.456	ug/m³	OC-SG-018-VP19-121305	2 / 72	15.744 - 20172	3.3E+01	NA				No	IFD1
	354-23-4	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3000	81250	ug/m³	OC-SG-06-05-041204	8 / 8	NR - NR	8.1E+04	NA				Yes	FD
	107-06-2	1,2-DICHLOROETHANE	32	10125	ug/m³	OC-SG-024-VP06-081605,OC-SG-006-VP08-081905	24 / 72	12.96 - 16605	1.0E+04	NA	1.7E+01			Yes	FD
	106-99-0	1,3-BUTADIENE	11	11.271	ug/m³	OC-SG-024-VP19-121305	1 / 23	7.072 - 3757	1.1E+01	NA				Yes	CARC
	540-84-1	2,2,4-TRIMETHYLPENTANE	458	700.5	ug/m³	OC-SG-024-VP19-121305	2 / 24	14.944 - 7939	7.0E+02	NA				Yes	FD
	78-93-3	2-BUTANONE	103	171.1	ug/m³	OC-SG-018-VP19-121305	4 / 71	9.44 - 5015	1.7E+02	NA				Yes	FD
		2-PROPANOL	13284	13284	ug/m³	SG-8-18FT	1 / 22	31.98 - 16728	1.3E+04	NA				No	IFD1
		4-ETHYLTOLUENE	20	41.82	ug/m³	OC-SG-018-VP19-121305	2 / 69	15.744 - 8364	4.2E+01	NA				No	IFD1
	75-07-0	ACETALDEHYDE	97	111.6	ug/m³	OC-SG-012-VP19-121305	3 / 3	NR - NR	1.1E+02	NA				Yes	FD
	67-64-1	ACETONE	105	21182	ug/m³	OC-SG-006-VP08-081905	51 / 74	30.94 - 16184	2.1E+04	NA				Yes	FD
	71-43-2	BENZENE	31	3828	ug/m³	OC-SG-018-VP03-081805	28 / 75	10.208 - 13079	3.8E+03	NA	1.2E+01			Yes	FD
	75-15-0	CARBON DISULFIDE	249	26124	ug/m³	OC-SG-006-VP08-081905	39 / 70	9.952 - 5287	2.6E+04	NA				Yes	FD
	56-23-5	CARBON TETRACHLORIDE	126	232.73	ug/m³	OC-SG-012-VP04-082205,OC-SG-006-VP11-081505	4 / 70	20.128 - 25789	2.3E+02	NA	8.5E+00			Yes	FD
	67-66-3	CHLOROFORM	49	48800	ug/m³	OC-SG-018-VP03-081805	61 / 80	15.616 - 20008	4.9E+04	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	51	37620	ug/m³	OC-SG-018-VP10-081505,OC-SG-012-	36 / 76	12.672 - 16236	3.8E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	17	24.08	ug/m³	OC-SG-018-VP19-121305	2 / 24	11.008 - 5848	2.4E+01	NA				Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	59	1237.5	ug/m³	OC-SG-024-VP02-082205	13 / 70	15.84 - 20295	1.2E+03	NA				Yes	FD
		ETHANOL	128	127.84	ug/m³	SG-9-24FT	1 / 22	24.44 - 12784	1.3E+02	NA				No	IFD1
	100-41-4	ETHYLBENZENE	17	30.38	ug/m³	OC-SG-018-VP19-121305	2 / 72	13.888 - 17794	3.0E+01	NA	0.0E+00			Yes	ASL
		HEPTANE	115	127.1	ug/m³	OC-SG-018-VP19-121305	2 / 24	13.12 - 6970	1.3E+02	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	197	4576	ug/m³	SG-8-18FT	3 / 24	11.264 - 5984	4.6E+03	NA				Yes	FD
		M,P-XYLENES	61	607.6	ug/m³	OC-SG-006-VP11-081505	6 / 73	13.888 - 35154	6.1E+02	NA	8.9E+04			Yes	FD
	75-09-2	METHYLENE CHLORIDE	555	23249	ug/m³	OC-SG-018-VP03-081805	7 / 72	11.104 - 14227	2.3E+04	NA				Yes	FD
	95-47-6	O-XYLENE	29	3472	ug/m³	OC-SG-018-VP08-081905	6 / 72	13.888 - 17794	3.5E+03	NA	8.8E+04			Yes	FD
	127-18-4	TETRACHLOROETHENE	488	3390000	ug/m³	OC-SG-006-VP08-081905	87 / 87	21.696 - 64410	3.4E+06	NA	6.0E+01			Yes	FD
	109-99-9	TETRAHYDROFURAN	3835	3835	ug/m³	SG-8-18FT	1 / 22	9.44 - 5015	3.8E+03	NA				Yes	CARC
	108-88-3	TOLUENE	60	15080	ug/m³	OC1-SG8A-G-0-25	33 / 77	12.084 - 15457	1.5E+04	NA	3.8E+04			Yes	FD

TABLE A3-2.5B Site Percels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	156-60-5	TRANS-1,2-DICHLOROETHENE	35	24552	ug/m^3	OC-SG-018-VP02-082205	51 / 73	12.672 - 6732	2.5E+04	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	199	451080	ug/m^3	OC-SG-006-VP01-081905	87 / 87	17.184 - 29535	4.5E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1068	1236400	ug/m^3	OC1-SG11A-G-0-24	87 / 87	17.984 - 61820	1.2E+06	NA				Yes	FD
	75-01-4	VINYL CHLORIDE	33	79.36	ug/m^3	OC-SG-012-VP04-082205	2 / 70	8.192 - 10496	7.9E+01	NA	4.5E+00			Yes	ASL

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen
Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.5B Other Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Gas															
	71-55-6	1,1,1-TRICHLOROETHANE	142	251160	ug/m³	OC-SG-018-VP08-081905	8 / 50	4.368 - 10374	2.5E+05	NA	2.8E+05			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	3447000	ug/m³	OC-SG-06-01-041204	57 / 59	7.66 - 12256	3.4E+06	NA				Yes	FD
	75-34-3	1,1-DICHLOROETHANE	486	8910	ug/m³	OC-SG-006-VP02-082205	6 / 48	3.24 - 7695	8.9E+03	NA				Yes	FD
	75-35-4	1,1-DICHLOROETHENE	83	1071900	ug/m³	OC-SG-006-VP05-081705	55 / 59	3.97 - 6352	1.1E+06	NA				Yes	FD
	95-63-6	1,2,4-TRIMETHYLBENZENE	9	15.744	ug/m³	OC1-SG11A-G-0-24	5 / 49	3.936 - 9348	1.6E+01	NA				Yes	FD
		1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	81250	93750	ug/m³	OC-SG-018-VP19-121305	2 / 2	NR - NR	9.4E+04	NA				Yes	FD
	106-99-0	1,3-BUTADIENE	3	139.23	ug/m³	OC-SG-06-03-041204	9 / 47	2.21 - 3536	1.4E+02	NA				Yes	FD
		2,2,4-TRIMETHYLPENTANE	5	1541.1	ug/m³	OC-SG-024-VP06-081605, OC-SG-006-VP08-081905	13 / 50	4.67 - 7472	1.5E+03	NA				Yes	FD
	78-93-3	2-BUTANONE	4	174.05	ug/m³	OC-SG-029-VP30-060106	14 / 48	2.95 - 4720	1.7E+02	NA				Yes	FD
		2-PROPANOL	9840	36900	ug/m³	OC-SG-008-VP13-121205	3 / 48	9.84 - 16236	3.7E+04	NA				Yes	FD
		4-ETHYLTOLUENE	7	16.728	ug/m³	OC-SG-029-VP30-060106	3 / 47	4.92 - 7872	1.7E+01	NA				Yes	FD
		4-METHYL-2-PENTANONE	16	16	ug/m³	OC-SG-029-VP13-121205	1 / 45	4.1 - 6560	1.6E+01	NA				No	IFD1
	67-64-1	ACETONE	15	499.8	ug/m³	OC-SG-018-VP19-121305	20 / 51	9.52 - 15708	5.0E+02	NA				Yes	FD
	71-43-2	BENZENE	3	89.32	ug/m³	OC-SG-025-VP25-030606	14 / 51	3.19 - 6061	8.9E+01	NA	1.2E+01			Yes	FD
	75-27-4	BROMODICHLOROMETHANE	9	24.12	ug/m³	OC-SG-012-VP19-121305	4 / 46	6.7 - 10720	2.4E+01	NA				Yes	FD
	75-25-2	BROMOFORM	13	13.442	ug/m³	OC-SG-006-VP08-081905	1 / 45	10.34 - 16544	1.3E+01	NA				Yes	CARC
	75-15-0	CARBON DISULFIDE	3	26.435	ug/m³	OC-SG-018-VP03-081805	5 / 46	3.11 - 4976	2.6E+01	NA				Yes	FD
	67-66-3	CHLOROFORM	7	107360	ug/m³	OC-SG-008-VP30-060106	17 / 52	3.904 - 9272	1.1E+05	NA				Yes	FD
	156-59-2	CIS-1,2-DICHLOROETHENE	713	13068	ug/m³	OC-SG-010-VP26-053106	3 / 48	3.168 - 7524	1.3E+04	NA	4.4E+03			Yes	FD
	110-82-7	CYCLOHEXANE	4	963.2	ug/m³	OC-SG-006-VP08-081905	6 / 47	3.44 - 5504	9.6E+02	NA				Yes	FD
		DIBROMOCHLOROMETHANE	9	13.632	ug/m³	OC-SG-012-VP04-082205, OC-SG-006-VP11-081505	2 / 45	8.52 - 13632	1.4E+01	NA				Yes	CARC
	124-48-1														
	75-71-8	DICHLORODIFLUOROMETHANE	11	9405	ug/m³	OC-SG-029-VP13-121205	16 / 51	3.96 - 7920	9.4E+03	NA				Yes	FD
		ETHANOL	13	253.8	ug/m³	OC-SG-018-VP10-081505, OC-SG-012-VP10-081505	7 / 47	7.52 - 12408	2.5E+02	NA				Yes	FD
	100-41-4	ETHYLBENZENE	6	20.398	ug/m³	OC-SG-008-VP13-121205	7 / 50	3.472 - 8246	2.0E+01	NA	0.0E+00			Yes	FD
		HEPTANE	5	98.4	ug/m³	OC-SG-010-VP26-053106	8 / 48	4.1 - 6560	9.8E+01	NA				Yes	FD
	110-54-3	HEXANE (N-HEXANE)	4	2217.6	ug/m³	OC1-SG14A-G-0-28	16 / 49	3.52 - 5632	2.2E+03	NA				Yes	FD
		M,P-XYLENES	10	125.86	ug/m³	OC-SG-12-01-041204	16 / 51	4.34 - 16492	1.3E+02	NA	8.9E+04			Yes	FD
	1634-04-4	METHYL TERT-BUTYL ETHER	19	20.938	ug/m³	OC-SG-018-VP19-121305	2 / 46	3.61 - 5776	2.1E+01	NA	1.3E+03			Yes	CARC
	75-09-2	METHYLENE CHLORIDE	8	298.42	ug/m³	OC-SG-018-VP19-121305	7 / 48	2.776 - 6593	3.0E+02	NA				Yes	FD
	95-47-6	O-XYLENE	5	23.87	ug/m³	SG-8-18FT	8 / 50	3.472 - 8246	2.4E+01	NA	8.8E+04			Yes	FD
		PENTANE	21535	21535	ug/m³	OC-SG-006-VP11-081505	1 / 1	NR - NR	2.2E+04	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	12	2101800	ug/m³	OC-SG-029-VP25-030606	56 / 59	6.78 - 10848	2.1E+06	NA	6.0E+01			Yes	FD

TABLE A3-2.5B Other Parcels - 5 to 30 feet bgs
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Soil Gas
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas - 5 to 30 ft bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
	109-99-9	TETRAHYDROFURAN	3	4.13	ug/m^3	OC-SG-018-VP03-081805	2 / 45	2.95 - 4720	4.1E+00	NA				Yes	CARC
	108-88-3	TOLUENE	8	12441	ug/m^3	OC-SG-018-VP08-081905	24 / 53	3.77 - 7163	1.2E+04	NA	3.8E+04			Yes	FD
	156-60-5	TRANS-1,2-DICHLOROETHENE	673	9900	ug/m^3	OC-SG-008-VP13-121205	3 / 46	3.96 - 6336	9.9E+03	NA	8.9E+03			Yes	FD
	79-01-6	TRICHLOROETHENE	54	472560	ug/m^3	OC-SG-006-VP08-081905	50 / 58	5.37 - 8592	4.7E+05	NA	1.8E+02			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	6	1011600	ug/m^3	SG-8-18FT	58 / 59	5.62 - 8992	1.0E+06	NA				Yes	FD

(1) Maximum detected concentration from onsite samples
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Shallow Soil Gas Screening Levels for Human Health (Vapor Intrusion) for Commercial/Industrial Use (EPA 2005) to account for additivity of multiple chemicals.
(4) Rationale Codes:

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD. Frequent Detection
CARC: Infrequent Detection but Chemical is a Carcinogen

Deletion Reason: BSL: Below Screening Level
BSL1 Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions: NA: Not Available.
ND: Not Detected.
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m^3: microgram per cubic meter.

TABLE A3-2.6 - Parcel Site
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - Outdoor Air
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Outdoor Air
Exposure Medium:	Outdoor Air

Exposure Point	CAS Number	Chemical	Minimum Concentration	Maximum Concentration	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limts	Concentration Used for Screening (1)	Background Value (2)	Screening Toxicity Value (nc/ca) (3)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Outdoor Air	71-55-6	1,1,1-TRICHLOROETHANE	1.1466	1.1466	ug/m³	OC-AA-FS-08-051104	1 / 12	0.158 - 0.9828	1.1E+00	NA	2.3E+02 nc			Yes	FD
	79-34-5	1,1,2,2-TETRACHLOROETHANE	0.3916	0.3916	ug/m³	OC-AA-FS-03-051104	1 / 12	0.199 - 1.2366	3.9E-01	NA	3.3E-03 ca			Yes	FD
	76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.7124	1.7618	ug/m³	OC-AA-FS-08-051104	7 / 12	0.222 - 1.3788	1.8E+00	NA	3.1E+03 nc			Yes	FD
	75-35-4	1,1-DICHLOROETHENE	0.131	0.6352	ug/m³	OC-AA-FS-08-051104	6 / 12	0.060 - 0.36524	6.4E-01	NA	2.1E+01 nc			Yes	FD
	95-50-1	1,2-DICHLOROBENZENE	0.2945	0.2945	ug/m³	OC-AA-FS-03-051104	1 / 12	0.174 - 1.0818	2.9E-01	NA	2.1E+01 nc			Yes	FD
	106-46-7	1,4-DICHLOROBENZENE	0.3907	0.3907	ug/m³	OC-AA-FS-03-051104	1 / 12	0.174 - 1.0818	3.9E-01	NA	3.1E-02 ca			Yes	FD
	67-64-1	ACETONE	14.28	3808	ug/m³	OC-AA-FS-15-051104	8 / 11	1.737 - 10.948	3.8E+03	NA	3.3E+02 nc			Yes	FD
	71-43-2	BENZENE	0.7975	1.0846	ug/m³	OC-AA-FS-04-051104	7 / 12	0.233 - 1.4674	1.1E+00	NA	2.5E-02 ca			Yes	FD
	56-23-5	CARBON TETRACHLORIDE	0.4906	0.629	ug/m³	OC-AA-FS-03-091405	7 / 12	0.182 - 1.1322	6.3E-01	NA	1.3E-02 ca*			Yes	FD
	75-71-8	DICHLORODIFLUOROMETHANE	1.8315	3.3165	ug/m³	FS-12-051104,OC-AA-FS-24	8 / 12	0.144 - 0.891	3.3E+00	NA	2.1E+01 nc			Yes	FD
	100-41-4	ETHYLBENZENE	0.434	0.9548	ug/m³	OC-AA-FS-04-051104	8 / 12	0.126 - 0.7812	9.5E-01	NA	1.1E+02 nc			Yes	FD
		M,P-XYLENES	1.302	3.1248	ug/m³	OC-AA-FS-04-051104	8 / 12	0.252 - 1.6058	3.1E+00	NA				Yes	FD
	75-09-2	METHYLENE CHLORIDE	2.082	2.082	ug/m³	OC-AA-FS-12-051104	1 / 12	1.006 - 6.246	2.1E+00	NA	4.1E-01 ca			Yes	FD
	95-47-6	O-XYLENE	0.434	1.1935	ug/m³	OC-AA-FS-04-051104	8 / 12	0.126 - 0.7812	1.2E+00	NA				Yes	FD
	127-18-4	TETRACHLOROETHENE	0.5424	1.8	ug/m³	OC-AA-FS-08-091405	7 / 12	0.197 - 1.2204	1.8E+00	NA	3.2E-02 ca			Yes	FD
	108-88-3	TOLUENE	3.6946	15.8	ug/m³	OC-AA-BIS-090806	9 / 12	0.109 - 0.6786	1.6E+01	NA	4.0E+01 nc			Yes	FD
	79-01-6	TRICHLOROETHENE	0.2255	1.1	ug/m³	OC-AA-FS-08-051104	5 / 12	0.156 - 0.9666	1.1E+00	NA	9.6E-02 ca			Yes	FD
	75-69-4	TRICHLOROFLUOROMETHANE (FREON 11)	1.5736	1.967	ug/m³	OC-AA-FS-08-091405	8 / 12	0.163 - 1.0116	2.0E+00	NA	7.3E+01 nc			Yes	FD

(1) Maximum detected concentration used for screening.
(2) Maximum detected background concentration.
(3) Screened against 1/10th EPA's Region 9 Preliminary Remediation Goals (PRGs) for Ambient air (EPA 2004c) to account for additivity of multiple chemcials.
(4) Rationale Codes

Selection Reason: ASL: Above Screening Level
TOX: Chemical is a Class A Carcinogen
DET: Relatively few chemicals detected at site, so comparison with screening levels and frequency of detection were not used to eliminate COPCs
NSL: No Screening Level
FD: Frequent Detection

Deletion Reason: BSL: Below Screening Level
BSL1: Infrequent Detection and Below Screening Level
NUT: Essential Nutrient
NTX: No Toxicity Information Available
IFD: Infrequent Detection

Definitions:
NA: Not Available.
ND: Not Detected
nc: Screening Toxicity Value is based on noncancer effects.
ca: Screening Toxicity Value is based on cancer effects.
COPC: Chemical of Potential Concern.
ARAR/TBC: Applicable or Relevant and Appropriate Requirement/To Be Considered
ug/m³: microgram per cubic meter.

TABLE A3-3.1 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium:	Surface Soil 0' to 2.2'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
Surface Soil	1,2-DICHLOROBENZENE	mg/kg	0.13	0.45	0.24	0.24	mg/kg	Max	UCL is greater than Max
	1,4-DIOXANE	mg/kg	1.73	9.62	14	9.62	mg/kg	95% UCL-T	
	2-METHYLNAPHTHALENE	mg/kg	0.19	0.39	0.54	0.39	mg/kg	UCL-NP	
	4,4'-DDD	mg/kg	0.00	0.02	0.032	0.02	mg/kg	UCL-NP	
	4,4'-DDE	mg/kg	0.02	0.17	0.3	0.17	mg/kg	UCL-NP	
	4,4'-DDT	mg/kg	0.02	0.11	0.15	0.11	mg/kg	UCL-NP	
	ALUMINUM	mg/kg	9,707.50	No UCL	9830	9830.00	mg/kg	Max	UCL is greater than Max
	ANTIMONY	mg/kg	4.39	13.71	18	13.71	mg/kg	UCL-NP	
	BARIUM	mg/kg	150.54	161.51	230	161.51	mg/kg	UCL-NP	
	BENZO(A)ANTHRACENE	mg/kg	0.29	1.93	2.4	1.93	mg/kg	UCL-NP	
	BENZO(A)PYRENE	mg/kg	0.25	0.76	1.6	0.76	mg/kg	UCL-NP	
	BENZO(B)FLUORANTHENE	mg/kg	0.19	0.49	0.91	0.49	mg/kg	UCL-NP	
	BERYLLIUM	mg/kg	0 48	0.51	0.75	0.51	mg/kg	UCL-NP	
	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	3 26	27.15	51	27 15	mg/kg	UCL-NP	
	BUTYLBENZYL PHTHALATE	mg/kg	0.31	0.90	1.9	0.90	mg/kg	UCL-NP	
	CADMIUM	mg/kg	0.88	1.34	2.1	1.34	mg/kg	UCL-NP	
	CHROMIUM III	mg/kg	34.23	76 09	308.5714286	76.09	mg/kg	UCL-NP	
	CHROMIUM VI	mg/kg	5.70	12.68	51.42857143	12.68	mg/kg	UCL-NP	
	CHRYSENE	mg/kg	0.55	4.73	6	4.73	mg/kg	UCL-NP	
	COBALT	mg/kg	8.95	9.51	16	9.51	mg/kg	UCL-NP	
	COPPER	mg/kg	32.65	40.02	150	40.02	mg/kg	UCL-NP	
	DIELDRIN	mg/kg	0.00	0.04	0 05	0.04	mg/kg	UCL-NP	
	FLUORANTHENE (IDRYL)	mg/kg	0.16	0.37	0.66	0.37	mg/kg	UCL-NP	
	IRON	mg/kg	22,650.00	No UCL	23300	23300.00	mg/kg	Max	UCL is greater than Max
	ISOPHORONE	mg/kg	0.95	9.05	9.9	9.05	mg/kg	UCL-NP	
	LEAD	mg/kg	55.72	65.38	890	65.38	mg/kg	95% UCL-T	
	MANGANESE	mg/kg	296.00	No UCL	353	353.00	mg/kg	Max	UCL is greater than Max
	MERCURY	mg/kg	0.15	0.30	0.85	0.30	mg/kg	UCL-NP	
	MOLYBDENUM	mg/kg	2.93	3.38	4.2	3.38	mg/kg	95% UCL-N	
	NAPHTHALENE	mg/kg	0.22	0.60	1.2	0.60	mg/kg	UCL-NP	
	NICKEL	mg/kg	22.51	24.93	55	24.93	mg/kg	% UCL-G assur	
	PCB-1254 (AROCLOR 1254)	mg/kg	0.06	0.43	0.5	0.43	mg/kg	UCL-NP	
	PHENANTHRENE	mg/kg	0.44	3.69	5	3.69	mg/kg	UCL-NP	
	POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	0.50	No UCL	0.5	0.50	mg/kg	Max	UCL is greater than Max
	PYRENE	mg/kg	0.32	2.31	3.1	2.31	mg/kg	UCL-NP	
	SILVER	mg/kg	0.56	0.65	1.2	0.65	mg/kg	UCL-NP	

TABLE A3-3 1 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Surface Soil 0' to 2.2'
Exposure Medium.	Surface Soil 0' to 2.2'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
	THALLIUM	mg/kg	2.42	3.34	2	2.00	mg/kg	Max	UCL is greater than Max
	VANADIUM	mg/kg	44.10	47.09	71	47.09	mg/kg	95% UCL-N	
	ZINC	mg/kg	81.53	97.28	350	97.28	mg/kg	UCL-NP	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0 05 significance level The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

NA: too few detections to calculate a UCL

mg/kg: milligram per kilogram.

TABLE A3-3.2 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
Surface/Subsurface	1,1,1-TRICHLOROETHANE	mg/kg	58.19	456.46	0.047	0.047	mg/kg	Max	UCL is greater than Max
	1,1,2-TRICHLOROETHANE	mg/kg	2.68	14.44	0.0034	0.0034	mg/kg	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	mg/kg	2.68	14.44	0.0084	0.0084	mg/kg	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	mg/kg	3.53	21.58	0.0039	0.0039	mg/kg	Max	UCL is greater than Max
	1,2-DICHLOROBENZENE	mg/kg	0 76	7.11	0.24	0.24	mg/kg	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	mg/kg	2.73	14.47	0.0063	0.0063	mg/kg	Max	UCL is greater than Max
	1,4-DIOXANE	mg/kg	4.27	43.42	28	28	mg/kg	Max	UCL is greater than Max
	2-METHYLNAPHTHALENE	mg/kg	0.20	0.37	0.54	0.37	mg/kg	UCL-NP	
	4,4'-DDE	mg/kg	0.01	0 14	0.3	0.14	mg/kg	UCL-NP	
	4,4'-DDT	mg/kg	0.01	0.09	0.15	0.09	mg/kg	UCL-NP	
	ALUMINUM	mg/kg	9,707.50	No UCL	9830	9830	mg/kg	Max	UCL is greater than Max
	ANTIMONY	mg/kg	4.48	12.30	18	12.30	mg/kg	UCL-NP	
	BARIUM	mg/kg	146.44	157.66	230	157.66	mg/kg	UCL-NP	
	BENZO(A)ANTHRACENE	mg/kg	0.27	0.84	2 4	0.84	mg/kg	UCL-NP	
	BENZO(A)PYRENE	mg/kg	0.24	0.64	1 6	0.64	mg/kg	UCL-NP	
	BENZO(B)FLUORANTHENE	mg/kg	0.20	0.44	0.91	0.44	mg/kg	UCL-NP	
	BENZYL ALCOHOL (PHENYLMETHANOL)	mg/kg	1.89	15.58	22	15.58	mg/kg	UCL-NP	
	BERYLLIUM	mg/kg	0.48	0.51	0.75	0.51	mg/kg	UCL-NP	
	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	3.07	23.13	51	23.13	mg/kg	UCL-NP	
	BUTYLBENZYL PHTHALATE	mg/kg	0.29	0.76	1.9	0.76	mg/kg	UCL-NP	
	CADMIUM	mg/kg	0.82	1.25	2.1	1.25	mg/kg	UCL-NP	
	CHLOROFORM	mg/kg	2.68	14.44	0.0047	0.0047	mg/kg	Max	UCL is greater than Max
	CHROMIUM III	mg/kg	32.87	70.82	308.57	70.82	mg/kg	UCL-NP	
	CHROMIUM VI	mg/kg	5.48	11.80	51.43	11.80	mg/kg	UCL-NP	
	CHRYSENE	mg/kg	0.47	3.72	6	3.72	mg/kg	UCL-NP	
	COBALT	mg/kg	8.72	9.31	16	9.31	mg/kg	UCL-NP	
	COPPER	mg/kg	33.74	40.47	150	40 47	mg/kg	UCL-NP	
	DIELDRIN	mg/kg	0.00	0.03	0.05	0.03	mg/kg	UCL-NP	
	FLUORANTHENE (IDRYL)	mg/kg	0.18	0.36	0.66	0.36	mg/kg	UCL-NP	
	IRON	mg/kg	22,650.00	No UCL	23300	23300	mg/kg	Max	UCL is greater than Max
	ISOPHORONE	mg/kg	1.15	8.17	9.9	8.17	mg/kg	UCL-NP	
	LEAD	mg/kg	51.02	59.89	890	59.89	mg/kg	95% UCL-T	
	MANGANESE	mg/kg	296.00	No UCL	353	353	mg/kg	Max	UCL is greater than Max
	MERCURY	mg/kg	0.14	0.28	0 85	0.28	mg/kg	UCL-NP	
	MOLYBDENUM	mg/kg	2.84	3.91	4.2	3.91	mg/kg	UCL-NP	
	NAPHTHALENE	mg/kg	0.19	0.79	1.2	0.79	mg/kg	UCL-NP	

TABLE A3-3.2 - Parcel Site

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Surface & Subsurface Soil to 12'
Exposure Medium:	Surface & Subsurface Soil to 12'

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations			
						Value	Units	Statistic [2]	Rationale
	NICKEL	mg/kg	22.28	24.51	55	24.51	mg/kg	UCL-NP	
	PCB-1254 (AROCLOR 1254)	mg/kg	0.06	0.34	0.5	0.34	mg/kg	UCL-NP	
	PHENANTHRENE	mg/kg	0.40	2.96	5	2.96	mg/kg	UCL-NP	
	POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	0.50	No UCL	0.5	0.5	mg/kg	Max	UCL is greater than Max
	PYRENE	mg/kg	0.30	1.88	3.1	1.88	mg/kg	UCL-NP	
	SILVER	mg/kg	0.54	0.61	1.2	0 61	mg/kg	UCL-NP	
	TETRACHLOROETHENE	mg/kg	85.68	922.68	4.3	4.3	mg/kg	Max	UCL is greater than Max
	THALLIUM	mg/kg	2.56	3.41	2	2	mg/kg	Max	UCL is greater than Max
	TRICHLOROETHENE	mg/kg	7.56	51.89	0.028	0.028	mg/kg	Max	UCL is greater than Max
	VANADIUM	mg/kg	43.89	46.95	71	46.95	mg/kg	95% UCL-N	
	ZINC	mg/kg	80.23	94.57	350	94.57	mg/kg	UCL-NP	

Statistics. Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T), Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0 05 significance level The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data

NA: too few detections to calculate a UCL

mg/kg: milligram per kilogram.

TABLE A3-3.4A - *Parcel Site - 3 Kings Construction*
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.20	No UCL	0.2	0.2	ug/m^3	0.2	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	4.18	No UCL	6.8	1.6	ug/m^3	6.8	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	4.38	No UCL	9	0.7	ug/m^3	9.2	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	34.75	No UCL	50.00	24.0	ug/m^3	50.0	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	6.23	No UCL	11.00	2.8	ug/m^3	11.0	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.60	No UCL	0.65	0.6	ug/m^3	0.7	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.16	No UCL	0.25	0.3	ug/m^3	0 3	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.45	No UCL	3	1.4	ug/m^3	3.1	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	6.85	No UCL	16	3.2	ug/m^3	16.0	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	33.50	No UCL	82.0	14.0	ug/m^3	82.0	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	78.23	No UCL	260	1.8	ug/m^3	260.0	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	7.63	No UCL	17.0	2 9	ug/m^3	17.0	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	6.20	No UCL	13.0	1.0	ug/m^3	13.0	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	70.00	No UCL	170.0	34.0	ug/m^3	170.0	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	1.67	No UCL	3.3	0.3	ug/m^3	3.3	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	3.68	No UCL	5.9	2.0	ug/m^7	5.9	ug/m^7	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE A3-3.4B - Parcel Site - Star City Auto Body
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,1-TRICHLOROETHANE	ug/m3	2.92	No UCL	0.33	0 32	ug/m^3	0.33	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	16.65	No UCL	31	5.6	ug/m^3	31	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	9.61	No UCL	18	1.6	ug/m^3	18	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	3222.50	No UCL	6000	330	ug/m^3	6000	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	6.11	No UCL	5.3	2.6	ug/m^3	5.3	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	3.47	No UCL	0.67	0.66	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	2 58	No UCL	0.19	0.19	ug/m^3	0.19	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	3.70	No UCL	2.7	1.9	ug/m^3	2.7	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	17.15	No UCL	48	4.6	ug/m^3	48	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	88 38	No UCL	270	21	ug/m^3	270	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	19.70	No UCL	4.8	1.5	ug/m^3	4.8	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	25 94	No UCL	78	5.1	ug/m^3	78	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	16.88	No UCL	34	6	ug/m^3	34	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	735.25	No UCL	2400	36	ug/m^3	2400	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	5.13	No UCL	6.5	3.5	ug/m^3	6 5	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	9 01	No UCL	14	11	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T), Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE A3-3 4C - Parcel North - Medlin & Sons 12484
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.16	No UCL	0.21	0.21	ug/m^3	0.21	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	31.75	No UCL	40	17	ug/m^3	40	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	6.15	No UCL	10	2.9	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.34	No UCL	0.95	0.2	ug/m^3	0.95	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	997.75	No UCL	3400	22	ug/m^3	3400	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.00	No UCL	1.1	0.91	ug/m^3	1.1	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.90	No UCL	1.3	0.67	ug/m^3	1.3	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.25	No UCL	0.32	0.2	ug/m^3	0.32	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.23	No UCL	3.3	1.2	ug/m^3	3.3	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	0.79	No UCL	0.85	0.72	ug/m^3	0.85	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	2.53	No UCL	2 7	2.2	ug/m^3	2.7	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	2.84	No UCL	5.1	1.7	ug/m^3	5.1	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	0.94	No UCL	1	0.87	ug/m^3	1	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	9.28	No UCL	22	4 3	ug/m^3	22	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	6 20	No UCL	7.4	4.8	ug/m^3	7.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	5.40	No UCL	14	2 3	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	8 75	No UCL	12	5.4	ug/m^3	12	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE A3-3.4D - Parcel North - Medlin & Sons North 12476
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3		No UCL	1.9	1.9	ug/m^3	1.9	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3		No UCL	430.0	430.0	ug/m^3	430	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3		No UCL	2.6	2.60	ug/m^3	2.6	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3		No UCL	2.8	2.80	ug/m^3	2.8	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3		No UCL	1.6	1.6	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE A3-3.4E - Parcel West - Terrapave
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	0.28	No UCL	0.49	0.45	ug/m^3	0.49	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	16.28	No UCL	26	6.3	ug/m^3	26	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	13.88	No UCL	23	5.5	ug/m^3	23	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.18	No UCL	0.27	0.23	ug/m^3	0.27	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	35.75	No UCL	43	22	ug/m^3	43	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.25	No UCL	1.4	1.1	ug/m^3	1.4	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.62	No UCL	0.67	0.56	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.22	No UCL	0.24	0.21	ug/m^3	0.24	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.25	No UCL	2.9	1.5	ug/m^3	2.9	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.25	No UCL	1.6	0.93	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	4.43	No UCL	5.5	3.3	ug/m^3	5.5	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	1.35	No UCL	1.5	1.2	ug/m^3	1.5	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.54	No UCL	2.1	0.96	ug/m^3	2.1	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	73.50	No UCL	110	39	ug/m^3	110	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	8.03	No UCL	10	6.5	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	2.93	No UCL	4.4	1.6	ug/m^3	4.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	5.18	No UCL	7	3.4	ug/m^3	7	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).
(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.
ug/m^3: microgram per cubic meter.

TABLE A3-3.4F - Parcel South - Bishop
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,1-TRICHLOROETHANE	ug/m3	0.12	No UCL	0.19	0.19	ug/m^3	0.19	ug/m^3	Max	Too Few Samples for UCL
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	5.78	No UCL	10	3.4	ug/m^3	10	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	7.72	No UCL	14	3.6	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.21	No UCL	0.32	0.21	ug/m^3	0.32	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	33.33	No UCL	41	28	ug/m^3	41	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.18	No UCL	1.2	1.15	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.54	No UCL	0.575	0.51	ug/m^3	0.575	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.14	No UCL	0.18	0.15	ug/m^3	0.18	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.87	No UCL	3	2.7	ug/m^3	3	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.17	No UCL	1 7	0.81	ug/m^3	1.7	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	3.77	No UCL	4.9	2.7	ug/m^3	4.9	ug/m^3	Max	Too Few Samples for UCL
	METHYL TERT-BUTYL ETHER	ug/m3	0.41	No UCL	0.67	0 67	ug/m^3	0.67	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	1.08	No UCL	1 7	1	ug/m^3	1.7	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.37	No UCL	1.7	1.015	ug/m^3	1.7	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	15.42	No UCL	29	7.1	ug/m^3	29	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	7.47	No UCL	8.4	6 9	ug/m^3	8.4	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	0.82	No UCL	1.5	0.44	ug/m^3	1.5	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.75	No UCL	3.7	2.2	ug/m^3	3 7	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE A3-3.4G - Parcel South - LA Carts
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air											
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	7.80	No UCL	14	0.70	ug/m^3	14	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	2.05	No UCL	3.6	0.06	ug/m^3	3.6	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.29	No UCL	0.16	0.16	ug/m^3	0.16	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	584.67	No UCL	1200	74.00	ug/m^3	1200	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.70	No UCL	2.2	1.30	ug/m^3	2.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.51	No UCL	0.52	0.50	ug/m^3	0.52	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.30	No UCL	0.37	0.14	ug/m^3	0.37	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	2.90	No UCL	3.2	2.60	ug/m^3	3.2	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	1.38	No UCL	2	0.95	ug/m^3	2	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	4.90	No UCL	7.30	2.90	ug/m^3	7.3	ug/m^3	Max	Too Few Samples for UCL
	METHYLENE CHLORIDE	ug/m3	4.65	No UCL	5.9	5.20	ug/m^3	5.9	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.77	No UCL	2.6	1.00	ug/m^3	2.6	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	0.80	No UCL	1.6	0.24	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	263.33	No UCL	570	10.00	ug/m^3	570	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROETHENE	ug/m3	0.61	No UCL	1.2	1.20	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.53	No UCL	3.2	1.50	ug/m^3	3.2	ug/m^3	Max	Too Few Samples for UCL

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N), 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE A3-3 4H - Parcel South - Oncology Care
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Indoor Air
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value	Units	Maximum EPC Value	Units	Statistic [2]	Rationale
Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1.40	No UCL	1.6	1.2	ug/m^3	1.6	ug/m^3	Max	Too Few Samples for UCL
	1,1-DICHLOROETHENE	ug/m3	0.22	No UCL	0.23	0.2	ug/m^3	0.23	ug/m^3	Max	Too Few Samples for UCL
	1,2-DICHLOROETHANE	ug/m3	0.23	No UCL	0.32	0.32	ug/m^3	0.32	ug/m^3	Max	Too Few Samples for UCL
	1,4-DICHLOROBENZENE	ug/m3	0.29	No UCL	0.39	0.39	ug/m^3	0.39	ug/m^3	Max	Too Few Samples for UCL
	ACETONE	ug/m3	97.00	No UCL	99	95	ug/m^3	99	ug/m^3	Max	Too Few Samples for UCL
	BENZENE	ug/m3	1.15	No UCL	1.2	1.1	ug/m^3	1.2	ug/m^3	Max	Too Few Samples for UCL
	CARBON TETRACHLORIDE	ug/m3	0.51	No UCL	0.52	0.5	ug/m^3	0.52	ug/m^3	Max	Too Few Samples for UCL
	CHLOROFORM	ug/m3	0.62	No UCL	0.66	0.57	ug/m^3	0.66	ug/m^3	Max	Too Few Samples for UCL
	DICHLORODIFLUOROMETHANE	ug/m3	3.15	No UCL	3.4	2.9	ug/m^3	3.4	ug/m^3	Max	Too Few Samples for UCL
	ETHYLBENZENE	ug/m3	0.97	No UCL	1	0.94	ug/m^3	1	ug/m^3	Max	Too Few Samples for UCL
	M,P-XYLENES	ug/m3	3.05	No UCL	3.1	3	ug/m^3	3.1	ug/m^3	Max	Too Few Samples for UCL
	O-XYLENE	ug/m3	1.25	No UCL	1.3	1.2	ug/m^3	1.3	ug/m^3	Max	Too Few Samples for UCL
	TETRACHLOROETHENE	ug/m3	0.33	No UCL	0.44	0.44	ug/m^3	0.44	ug/m^3	Max	Too Few Samples for UCL
	TOLUENE	ug/m3	16.50	No UCL	17	16	ug/m^3	17	ug/m^3	Max	Too Few Samples for UCL
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	1.75	No UCL	1.8	1.7	ug/m^3	1.8	ug/m^3	Max	Too Few Samples for UCL

Statistics Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametnc (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Due to the small dataset, 95% UCL was not calculated. Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE A3-3.5A - *All Parcels, Future Industrial Worker Exposure*
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Indoor Air Value [2]	Units	Soil Gas *Minimum* Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	70,537	352,624	1,528,800	352,624	ug/m^3	1.2E+02	ug/m^3	141.96	ug/m^3	4.6E-02	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,076,274	1,611,795	3,447,000	1,611,795	ug/m^3	5.3E+02	ug/m^3	1838.40	ug/m^3	6.0E-01	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	7,140	38,423	105,300	38,423	ug/m^3	1.2E+01	ug/m^3	36.45	ug/m^3	1.1E-02	ug/m^3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	436,872	659,877	1,071,900	659,877	ug/m^3	2.4E+02	ug/m^3	83.37	ug/m^3	3.0E-02	ug/m^3	95% UCL-G assumed	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	54,172	102,378	93,750	93,750	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	ug/m3	1,453	2,253	10,125	2,253	ug/m^3	8.9E-01	ug/m^3	93.15	ug/m^3	3.7E-02	ug/m^3	95% UCL-G	
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,869	3,105	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	4.3E-02	ug/m^3	97.20	ug/m^3	4.3E-02	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,114	5,971	21,182	5,971	ug/m^3	2.7E+00	ug/m^3	80.92	ug/m^3	3.6E-02	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	961	1,418	2,074	1,418	ug/m^3	5.0E-01	ug/m^3	8.29	ug/m^3	2.9E-03	ug/m^3	95% UCL-G assumed	
	CARBON DISULFIDE	ug/m3	2,973	5,132	26,124	5,132	ug/m^3	2.0E+00	ug/m^3	373.20	ug/m^3	1.5E-01	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,716	2,629	233	233	ug/m^3	7.6E-02	ug/m^3	232.73	ug/m^3	7.6E-02	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,858	5,726	14,640	5,726	ug/m^3	2.3E+00	ug/m^3	73.20	ug/m^3	2.9E-02	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,537	17,957	36,828	17,957	ug/m^3	5.6E+00	ug/m^3	285.12	ug/m^3	8.9E-02	ug/m^3	UCL-NP	
	DICHLORODIFLUOROMETHANE	ug/m3	1,628	2,478	9,405	2,478	ug/m^3	7.2E-01	ug/m^3	18.32	ug/m^3	5.3E-03	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,469	2,173	608	608	ug/m^3	1.8E-01	ug/m^3	13.89	ug/m^3	4.2E-03	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	811,528	1,225,830	3,390,000	1,225,830	ug/m^3	3.8E+02	ug/m^3	949.20	ug/m^3	2.9E-01	ug/m^3	95% UCL-G assumed	
	TOLUENE	ug/m3	1,113	1,586	2,601	1,586	ug/m^3	5.6E-01	ug/m^3	29.41	ug/m^3	1.0E-02	ug/m^3	95% UCL-G	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,000	6,704	20,988	6,704	ug/m^3	2.0E+00	ug/m^3	55.44	ug/m^3	1.7E-02	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	122,697	184,300	472,560	184,300	ug/m^3	6.1E+01	ug/m^3	327.57	ug/m^3	1.1E-01	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	319,226	485,399	1,011,600	485,399	ug/m^3	1.7E+02	ug/m^3	550.76	ug/m^3	1.9E-01	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected. The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix Table A4-1

ug/m^3: microgram per cubic meter.

ND. Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5A - Site Parcel, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Indoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	107,610	553,427	1,528,800	553,427	ug/m^3	4.1E+02	ug/m^3	1528.80	ug/m^3	1.1E+00	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	855,013	1,100,465	2,374,600	1,100,465	ug/m^3	8.1E+02	ug/m^3	4979.00	ug/m^3	3.7E+00	ug/m^3	95% UCL-N	
	1,1-DICHLOROETHANE	ug/m3	10,223	19,662	105,300	19,662	ug/m^3	1.4E+01	ug/m^3	36.45	ug/m^3	2.6E-02	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHENE	ug/m3	397,162	626,769	992,500	626,769	ug/m^3	5.1E+02	ug/m^3	6749.00	ug/m^3	5.5E+00	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	40,979	No UCL	81,250	81,250	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	No UCL
	1,2-DICHLOROETHANE	ug/m3	1,473	2,496	10,125	2,496	ug/m^3	2.2E+00	ug/m^3	93.15	ug/m^3	8.3E-02	ug/m^3	95% UCL-G	
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9.7E-02	ug/m^3	97.20	ug/m^3	9.7E-02	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,576	7,001	21,182	7,001	ug/m^3	7.0E+00	ug/m^3	104.72	ug/m^3	1.1E-01	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	877	1,362	2,074	1,362	ug/m^3	1.1E+00	ug/m^3	44.66	ug/m^3	3.6E-02	ug/m^3	95% UCL-G	
	CARBON DISULFIDE	ug/m3	3,872	7,008	26,124	7,008	ug/m^3	6.3E+00	ug/m^3	373.20	ug/m^3	3.3E-01	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,454	2,374	233	233	ug/m^3	1.7E-01	ug/m^3	232.73	ug/m^3	1.7E-01	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,960	7,482	14,640	7,482	ug/m^3	6.7E+00	ug/m^3	92.72	ug/m^3	8.3E-02	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	4,712	14,326	36,828	14,326	ug/m^3	1.0E+01	ug/m^3	285.12	ug/m^3	2.0E-01	ug/m^3	95% UCL-T	
	DICHLORODIFLUOROMETHANE	ug/m3	1,180	1,882	941	941	ug/m^3	6.2E-01	ug/m^3	64.35	ug/m^3	4.2E-02	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	920,601	1,355,479	3,390,000	1,355,479	ug/m^3	9.5E+02	ug/m^3	16272.00	ug/m^3	1 1E+01	ug/m^3	95% UCL-G	
	TOLUENE	ug/m3	936	1,392	1,169	1,169	ug/m^3	9.3E-01	ug/m^3	75.40	ug/m^3	6.0E-02	ug/m^3	Max	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,756	8,064	20,988	8,064	ug/m^3	5.6E+00	ug/m^3	55.44	ug/m^3	3.8E-02	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	125,451	190,082	451,080	190,082	ug/m^3	1.4E+02	ug/m^3	3060.90	ug/m^3	2.3E+00	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	274,527	430,192	786,800	430,192	ug/m^3	3.4E+02	ug/m^3	4271.20	ug/m^3	3.4E+00	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL)

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix Table A4-2.

ug/m^3: microgram per cubic meter.

ND: Not determined Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5A - Other Parcels, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Indoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Indoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Indoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Indoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	4,106	7,744	10,920	7,744	ug/m^3	5.7E+00	ug/m^3	141.96	ug/m^3	1.0E-01	ug/m^3	95% UCL-G	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,481,920	4,797,958	3,447,000	3,447,000	ug/m^3	2.5E+03	ug/m^3	1838.40	ug/m^3	1.4E+00	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	ug/m3	1,053	2,231	1,053	1,053	ug/m^3	7.5E-01	ug/m^3	1053.00	ug/m^3	7.5E-01	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	509,674	729,033	1,071,900	729,033	ug/m^3	5.9E+02	ug/m^3	83 37	ug/m^3	6.8E-02	ug/m^3	95% UCL-N	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	93,750	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	93750.00	ug/m^3	ND	ug/m^3	Max	No UCL
	2,2,4-TRIMETHYLPENTANE	ug/m3	48	3,856	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	117	7,834	186	186	ug/m^3	1.9E-01	ug/m^3	80.92	ug/m^3	8.1E-02	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	12	2,770	16	16	ug/m^3	1.3E-02	ug/m^3	8.29	ug/m^3	6 7E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	915	2,727	1,757	1,757	ug/m^3	1.6E+00	ug/m^3	73.20	ug/m^3	6.5E-02	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3,112	7,408	9,405	7,408	ug/m^3	4.9E+00	ug/m^3	18.32	ug/m^3	1.2E-02	ug/m^3	95% UCL-G	
	HEXANE (N-HEXANE)	ug/m3	11	4,175	11	11	ug/m^3	1.4E-02	ug/m^3	10.56	ug/m^3	1.4E-02	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	22	5,535	30	30	ug/m^3	2.1E-02	ug/m^3	13.89	ug/m^3	9.5E-03	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	611,562	2,167,531	2,101,800	2,101,800	ug/m^3	1.5E+03	ug/m^3	949.20	ug/m^3	6.6E-01	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	682	3,253	2,601	2,601	ug/m^3	2.1E+00	ug/m^3	29.41	ug/m^3	2.3E-02	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	8,316	10,748	9,900	9,900	ug/m^3	6.8E+00	ug/m^3	6732.00	ug/m^3	4.6E+00	ug/m^3	Max	UCL is greater than Max
	TRICHLOROETHENE	ug/m3	117,648	393,490	472,560	393,490	ug/m^3	2.9E+02	ug/m^3	327.57	ug/m^3	2.4E-01	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	401,176	1,316,299	1,011,600	1,011,600	ug/m^3	8.0E+02	ug/m^3	550.76	ug/m^3	4.4E-01	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using EPA Advance Soil Gas Model using Johnson and Ettinger algorithms for Commercial Worker Exposure. See Appendix Table A4-3.

ug/m^3: microgram per cubic meter.

ND. Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - All Parcels, Future Industrial Worker Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	70,537	352,624	1,528,800	352,624	ug/m^3	2.2E+00	ug/m^3	141.96	ug/m^3	8.8E-04	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,076,274	1,611,795	3,447,000	1,611,795	ug/m^3	3.7E+00	ug/m^3	1838.40	ug/m^3	4.2E-03	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	7,140	38,423	105,300	38,423	ug/m^3	2.3E-01	ug/m^3	36.45	ug/m^3	2.1E-04	ug/m^3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	436,872	659,877	1,071,900	659,877	ug/m^3	4.7E+00	ug/m^3	83.37	ug/m^3	5 9E-04	ug/m^3	95% UCL-G assumed	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	54,172	102,378	93,750	93,750	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROETHANE	ug/m3	1,453	2,253	10,125	2,253	ug/m^3	1.9E-02	ug/m^3	93.15	ug/m^3	7.7E-04	ug/m^3	95% UCL-G	
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,869	3,105	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9 6E-04	ug/m^3	97 20	ug/m^3	9.6E-04	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,114	5,971	21,182	5,971	ug/m^3	5.9E-02	ug/m^3	80 92	ug/m^3	8.0E-04	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	961	1,418	2,074	1,418	ug/m^3	9.9E-03	ug/m^3	8 29	ug/m^3	5.8E-05	ug/m^3	95% UCL-G assumed	
	CARBON DISULFIDE	ug/m3	2,973	5,132	26,124	5,132	ug/m^3	4.2E-02	ug/m^3	373 20	ug/m^3	3 1E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,716	2,629	233	233	ug/m^3	1.4E-03	ug/m^3	232.73	ug/m^3	1.4E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,858	5,726	14,640	5,726	ug/m^3	4.7E-02	ug/m^3	73.20	ug/m^3	6.0E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,537	17,957	36,828	17,957	ug/m^3	1 0E-01	ug/m^3	285.12	ug/m^3	1.7E-03	ug/m^3	UCL-NP	
	DICHLORODIFLUOROMETHANE	ug/m3	1,628	2,478	9,405	2,478	ug/m^3	1.6E-02	ug/m^3	18.32	ug/m^3	1.2E-04	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,469	2,173	608	608	ug/m^3	3.4E-03	ug/m^3	13.89	ug/m^3	7.7E-05	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	811,528	1,225,830	3,390,000	1,225,830	ug/m^3	7.0E+00	ug/m^3	949.20	ug/m^3	5.4E-03	ug/m^3	95% UCL-G assumed	
	TOLUENE	ug/m3	1,113	1,586	2,601	1,586	ug/m^3	1.1E-02	ug/m^3	29.41	ug/m^3	2.0E-04	ug/m^3	95% UCL-G	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,000	6,704	20,988	6,704	ug/m^3	3.8E-02	ug/m^3	55.44	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	122,697	184,300	472,560	184,300	ug/m^3	1.2E+00	ug/m^3	327.57	ug/m^3	2.1E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	319,226	485,399	1,011,600	485,399	ug/m^3	3.3E+00	ug/m^3	550.76	ug/m^3	3.8E-03	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N), 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate outdoor air concentrations from soil gas. See Appendix Tables A5-1 and A5-2.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - Site Parcel, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Ambient Air															
	1,1,1-TRICHLOROETHANE	ug/m3	107,610	553,427	1,528,800	553,427	ug/m^3	3.4E+00	ug/m^3	1528.80	ug/m^3	9.5E-03	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	855,013	1,100,465	2,374,600	1,100,465	ug/m^3	2.5E+00	ug/m^3	4979.00	ug/m^3	1.1E-02	ug/m^3	95% UCL-N	
	1,1-DICHLOROETHANE	ug/m3	10,223	19,662	105,300	19,662	ug/m^3	1.2E-01	ug/m^3	36.45	ug/m^3	2.1E-04	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHENE	ug/m3	397,162	626,769	992,500	626,769	ug/m^3	4.5E+00	ug/m^3	6749.00	ug/m^3	4.8E-02	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	40,979	No UCL	81,250	81,250	ug/m^3	ND	ug/m^3	4812.50	ug/m^3	ND	ug/m^3	Max	No UCL
	1,2-DICHLOROETHANE	ug/m3	1,473	2,496	10,125	2,496	ug/m^3	2.1E-02	ug/m^3	93.15	ug/m^3	7.7E-04	ug/m^3	95% UCL-G	
	ACETALDEHYDE	ug/m3	97	No UCL	97	97	ug/m^3	9.6E-04	ug/m^3	97.20	ug/m^3	9.6E-04	ug/m^3	Max	No UCL
	ACETONE	ug/m3	4,576	7,001	21,182	7,001	ug/m^3	6.9E-02	ug/m^3	104.72	ug/m^3	1.0E-03	ug/m^3	95% UCL-G	
	BENZENE	ug/m3	877	1,362	2,074	1,362	ug/m^3	9.5E-03	ug/m^3	44.66	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	CARBON DISULFIDE	ug/m3	3,872	7,008	26,124	7,008	ug/m^3	5.8E-02	ug/m^3	373.20	ug/m^3	3.1E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,454	2,374	233	233	ug/m^3	1.4E-03	ug/m^3	232.73	ug/m^3	1.4E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,960	7,482	14,640	7,482	ug/m^3	6.2E-02	ug/m^3	92.72	ug/m^3	7.6E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	4,712	14,326	36,828	14,326	ug/m^3	8.4E-02	ug/m^3	285.12	ug/m^3	1.7E-03	ug/m^3	95% UCL-T	
	DICHLORODIFLUOROMETHANE	ug/m3	1,180	1,882	941	941	ug/m^3	6.0E-03	ug/m^3	64.35	ug/m^3	4.1E-04	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	920,601	1,355,479	3,390,000	1,355,479	ug/m^3	7.7E+00	ug/m^3	16272.00	ug/m^3	9.3E-02	ug/m^3	95% UCL-G	
	TOLUENE	ug/m3	936	1,392	1,169	1,169	ug/m^3	8.1E-03	ug/m^3	75.40	ug/m^3	5.2E-04	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,756	8,064	20,988	8,064	ug/m^3	4.5E-02	ug/m^3	55.44	ug/m^3	3.1E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	125,451	190,082	451,080	190,082	ug/m^3	1.2E+00	ug/m^3	3060.90	ug/m^3	1.9E-02	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	274,527	430,192	786,800	430,192	ug/m^3	3.0E+00	ug/m^3	4271.20	ug/m^3	2.9E-02	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate ambient air concentrations from soil gas. See Appendix Tables A5-3 and A5-4.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - Other Parcels, Future Resident Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Outdoor Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	4,106	7,744	10,920	7,744	ug/m^3	4.8E-02	ug/m^3	141.96	ug/m^3	8.8E-04	ug/m^3	95% UCL-G	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	1,481,920	4,797,958	3,447,000	3,447,000	ug/m^3	7.9E+00	ug/m^3	1838.40	ug/m^3	4.2E-03	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHANE	ug/m3	1,053	2,231	1,053	1,053	ug/m^3	6.2E-03	ug/m^3	1053.00	ug/m^3	6.2E-03	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	509,674	729,033	1,071,900	729,033	ug/m^3	5.2E+00	ug/m^3	83.37	ug/m^3	5.9E-04	ug/m^3	95% UCL-N	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	93,750	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	93750.00	ug/m^3	ND	ug/m^3	Max	No UCL
	2,2,4-TRIMETHYLPENTANE	ug/m3	48	3,856	56	56	ug/m^3	ND	ug/m^3	36.43	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	117	7,834	186	186	ug/m^3	1.8E-03	ug/m^3	80.92	ug/m^3	8.0E-04	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	12	2,770	16	16	ug/m^3	1.1E-04	ug/m^3	8.29	ug/m^3	5.8E-05	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	915	2,727	1,757	1,757	ug/m^3	1.4E-02	ug/m^3	73.20	ug/m^3	6.0E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3,112	7,408	9,405	7,408	ug/m^3	4.7E-02	ug/m^3	18.32	ug/m^3	1.2E-04	ug/m^3	95% UCL-G	
	HEXANE (N-HEXANE)	ug/m3	11	4,175	11	11	ug/m^3	1.7E-04	ug/m^3	10.56	ug/m^3	1.7E-04	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	22	5,535	30	30	ug/m^3	1.7E-04	ug/m^3	13.89	ug/m^3	7.7E-05	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	611,562	2,167,531	2,101,800	2,101,800	ug/m^3	1.2E+01	ug/m^3	949.20	ug/m^3	5.4E-03	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	682	3,253	2,601	2,601	ug/m^3	1.8E-02	ug/m^3	29.41	ug/m^3	2.0E-04	ug/m^3	Max	UCL is greater than Max
	TRANS-1,2-DICHLOROETHENE	ug/m3	8,316	10,748	9,900	9,900	ug/m^3	5.5E-02	ug/m^3	6732.00	ug/m^3	3.8E-02	ug/m^3	Max	UCL is greater than Max
	TRICHLOROETHENE	ug/m3	117,648	393,490	472,560	393,490	ug/m^3	2.5E+00	ug/m^3	327.57	ug/m^3	2.1E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	401,176	1,316,299	1,011,600	1,011,600	ug/m^3	7.0E+00	ug/m^3	550.76	ug/m^3	3.8E-03	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide indoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) to estimate outdoor air concentrations from soil gas. See Appendix Tables A5-5 and A5-6.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - All Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium.	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	68,256	422,993	2,457,000	422,993	ug/m^3	4.1E+00	ug/m^3	142	ug/m^3	1.38E-03	ug/m^3	95% UCL-T	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	729,843	902,171	3,447,000	902,171	ug/m^3	3.2E+00	ug/m^3	13	ug/m^3	4.67E-05	ug/m^3	95% UCL-G assumed	
	1,1,2-TRICHLOROETHANE	ug/m3	1,073	1,339	1,420	1,339	ug/m^3	1.3E-02	ug/m^3	328	ug/m^3	3.18E-03	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	6,163	18,874	105,300	18,874	ug/m^3	1.7E-01	ug/m^3	24	ug/m^3	2.25E-04	ug/m^3	UCL-NP	
	1,1-DICHLOROETHENE	ug/m3	352,491	439,581	1,905,600	439,581	ug/m^3	4.9E+00	ug/m^3	83	ug/m^3	9.35E-04	ug/m^3	95% UCL-G assumed	
	1,2,4-TRIMETHYLBENZENE	ug/m3	1,024	1,268	33	33	ug/m^3	3.13E-04	ug/m^3	9	ug/m^3	8.27E-05	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	35,444	76,525	93,750	76,525	ug/m^3	ND	ug/m^3	3,000	ug/m^3	ND	ug/m^3	95% UCL-G	
	1,2-DICHLOROETHANE	ug/m3	1,418	1,803	10,125	1,803	ug/m^3	2.3E-02	ug/m^3	32	ug/m^3	4.09E-04	ug/m^3	95% UCL-G	
	1,3-BUTADIENE	ug/m3	513	686	139	139	ug/m^3	1.70E-03	ug/m^3	3	ug/m^3	3.51E-05	ug/m^3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,056	1,407	1,541	1,407	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	95% UCL-G	
	2-BUTANONE	ug/m3	563	683	174	174	ug/m^3	1.94E-03	ug/m^3	4	ug/m^3	4.93E-05	ug/m^3	Max	UCL is greater than Max
	2-PROPANOL	ug/m3	3,312	4,675	36,900	4,675	ug/m^3	ND	ug/m^3	9,840	ug/m^3	ND	ug/m^3	95% UCL-G	
	ACETALDEHYDE	ug/m3	105	No UCL	112	112	ug/m^3	1.7E-03	ug/m^3	97	ug/m^3	1.50E-03	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	2,890	4,791	21,182	4,791	ug/m^3	7.4E-02	ug/m^3	15	ug/m^3	2.39E-04	ug/m^3	UCL-NP	
	BENZENE	ug/m3	699	1,232	3,828	1,232	ug/m^3	1.4E-02	ug/m^3	3	ug/m^3	3.15E-05	ug/m^3	UCL-NP	
	BROMODICHLOROMETHANE	ug/m3	1,138	1,427	24	24	ug/m^3	9.0E-05	ug/m^3	9	ug/m^3	3.48E-05	ug/m^3	Max	UCL is greater than Max
	BROMOFORM	ug/m3	1,772	2,225	13	13	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	CARBON DISULFIDE	ug/m3	2,218	2,881	26,124	2,881	ug/m^3	3.7E-02	ug/m^3	3	ug/m^3	4.03E-05	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,189	1,487	233	233	ug/m^3	2.3E-03	ug/m^3	126	ug/m^3	1.22E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	4,741	5,987	107,360	5,987	ug/m^3	7.8E-02	ug/m^3	7	ug/m^3	9.48E-05	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	2,742	8,819	37,620	8,819	ug/m^3	8.1E-02	ug/m^3	51	ug/m^3	4 72E-04	ug/m^3	UCL-NP	
	CYCLOHEXANE	ug/m3	794	1,075	963	963	ug/m^3	9.60E-03	ug/m^3	4	ug/m^3	4.11E-05	ug/m^3	Max	UCL is greater than Max
	DIBROMOCHLOROMETHANE	ug/m3	1,460	1,832	14	14	ug/m^3	1.6E-04	ug/m^3	9	ug/m^3	1.12E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	1,124	1,393	9,405	1,393	ug/m^3	1.4E-02	ug/m^3	11	ug/m^3	1.13E-04	ug/m^3	95% UCL-G	
	ETHANOL	ug/m3	1,758	2,375	254	254	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	785	983	30	30	ug/m^3	2.8E-04	ug/m^3	6	ug/m^3	5.27E-05	ug/m^3	Max	UCL is greater than Max
	HEPTANE	ug/m3	922	1,244	127	127	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	864	1,144	4,576	1,144	ug/m^3	2.8E-02	ug/m^3	4	ug/m^3	9.65E-05	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	988	1,210	608	608	ug/m^3	5.3E-03	ug/m^3	10	ug/m^3	8.71E-05	ug/m^3	Max	UCL is greater than Max
	METHYL TERT-BUTYL ETHER	ug/m3	912	1,500	21	21	ug/m^3	2.1E-04	ug/m^3	19	ug/m^3	1.91E-04	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1,168	1,451	23,249	1,451	ug/m^3	1.8E-02	ug/m^3	8	ug/m^3	1.05E-04	ug/m^3	95% UCL-G	
	O-XYLENE	ug/m3	817	1,523	3,472	1,523	ug/m^3	1.3E-02	ug/m^3	5	ug/m^3	4.16E-05	ug/m^3	UCL-NP	
	PENTANE	ug/m3	21,535	No UCL	21,535	21,535	ug/m^3	ND	ug/m^3	21,535	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	451,697	574,757	3,390,000	574,757	ug/m^3	5.2E+00	ug/m^3	12	ug/m^3	1.09E-04	ug/m^3	95% UCL-G	
	TETRAHYDROFURAN	ug/m3	751	1,038	3,835	1,038	ug/m^3	1.3E-02	ug/m^3	3	ug/m^3	3 60E-05	ug/m^3	95% UCL-G	

TABLE A3-3.5B - All Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
	TOLUENE	ug/m3	965	1,362	15,080	1,362	ug/m^3	1.5E-02	ug/m^3	8	ug/m^3	8.17E-05	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	3,392	4,402	24,552	4,402	ug/m^3	3.9E-02	ug/m^3	35	ug/m^3	3.10E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	69,849	87,149	472,560	87,149	ug/m^3	8.6E-01	ug/m^3	54	ug/m^3	5.29E-04	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	216,718	268,990	1,236,400	268,990	ug/m^3	2.9E+00	ug/m^3	6	ug/m^3	6.09E-05	ug/m^3	95% UCL-G	
	VINYL CHLORIDE	ug/m3	483	605	79	79	ug/m^3	1.0E-03	ug/m^3	33	ug/m^3	4.39E-04	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0 05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide outdoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994) See Appendix Tables A5-7 and A5-8.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - Site Parcel, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	105,462	285,452	2,457,000	285,452	ug/m^3	2.8E+00	ug/m^3	197	ug/m^3	1.91E-03	ug/m^3	UCL-NP	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	812,823	1,002,004	2,910,800	1,002,004	ug/m^3	3.6E+00	ug/m^3	2,604	ug/m^3	9.34E-03	ug/m^3	95% UCL-G assumed	
	1,1,2-TRICHLOROETHANE	ug/m3	1,069	1,383	1,420	1,383	ug/m^3	1.3E-02	ug/m^3	328	ug/m^3	3.18E-03	ug/m^3	95% UCL-G assumed	
	1,1-DICHLOROETHANE	ug/m3	9,076	24,174	105,300	24,174	ug/m^3	2.2E-01	ug/m^3	24	ug/m^3	2.25E-04	ug/m^3	95% UCL-T	
	1,1-DICHLOROETHENE	ug/m3	426,003	538,251	1,905,600	538,251	ug/m^3	6.0E+00	ug/m^3	1,528	ug/m^3	1.71E-02	ug/m^3	95% UCL-G	
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	22,430	54,098	81,250	54,098	ug/m^3	ND	ug/m^3	3,000	ug/m^3	ND	ug/m^3	95% UCL-G	
	1,2-DICHLOROETHANE	ug/m3	1,822	5,103	10,125	5,103	ug/m^3	6.6E-02	ug/m^3	32	ug/m^3	4.09E-04	ug/m^3	95% UCL-T	
	1,3-BUTADIENE	ug/m3	711	1,082	11	11	ug/m^3	1.4E-04	ug/m^3	11	ug/m^3	1.38E-04	ug/m^3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	1,487	2,145	701	701	ug/m^3	ND	ug/m^3	458	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	2-BUTANONE	ug/m3	572	717	171	171	ug/m^3	1.9E-03	ug/m^3	103	ug/m^3	1.15E-03	ug/m^3	Max	UCL is greater than Max
	ACETALDEHYDE	ug/m3	105	No UCL	112	112	ug/m^3	1.72E-03	ug/m^3	97	ug/m^3	1.50E-03	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	3,715	6,471	21,182	6,471	ug/m^3	1.0E-01	ug/m^3	105	ug/m^3	1.62E-03	ug/m^3	UCL-NP	
	BENZENE	ug/m3	764	1,293	3,828	1,293	ug/m^3	1.4E-02	ug/m^3	31	ug/m^3	3.43E-04	ug/m^3	UCL-NP	
	CARBON DISULFIDE	ug/m3	3,288	4,417	26,124	4,417	ug/m^3	5.7E-02	ug/m^3	249	ug/m^3	3.22E-03	ug/m^3	95% UCL-G	
	CARBON TETRACHLORIDE	ug/m3	1,154	2,598	233	233	ug/m^3	2.3E-03	ug/m^3	126	ug/m^3	1.22E-03	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	5,534	6,980	48,800	6,980	ug/m^3	9.0E-02	ug/m^3	49	ug/m^3	6.32E-04	ug/m^3	95% UCL-G	
	CIS-1,2-DICHLOROETHENE	ug/m3	3,813	9,819	37,620	9,819	ug/m^3	9.0E-02	ug/m^3	51	ug/m^3	4.72E-04	ug/m^3	UCL-NP	
	CYCLOHEXANE	ug/m3	1,062	1,644	24	24	ug/m^3	2.4E-04	ug/m^3	17	ug/m^3	1.71E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	977	2,099	1,238	1,238	ug/m^3	1.2E-02	ug/m^3	59	ug/m^3	5.92E-04	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	770	1,745	30	30	ug/m^3	2.8E-04	ug/m^3	17	ug/m^3	1.62E-04	ug/m^3	Max	UCL is greater than Max
	HEPTANE	ug/m3	1,273	1,896	127	127	ug/m^3	ND	ug/m^3	115	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	1,242	1,859	4,576	1,859	ug/m^3	4.63E-02	ug/m^3	197	ug/m^3	4.91E-03	ug/m^3	95% UCL-G	
	M,P-XYLENES	ug/m3	1,087	1,747	608	608	ug/m^3	5.3E-03	ug/m^3	61	ug/m^3	5.30E-04	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1,493	2,503	23,249	2,503	ug/m^3	3.1E-02	ug/m^3	555	ug/m^3	6.99E-03	ug/m^3	95% UCL-T	
	O-XYLENE	ug/m3	824	1,829	3,472	1,829	ug/m^3	1.60E-02	ug/m^3	29	ug/m^3	2.50E-04	ug/m^3	UCL-NP	
	TETRACHLOROETHENE	ug/m3	572,704	720,351	3,390,000	720,351	ug/m^3	6.5E+00	ug/m^3	488	ug/m^3	4.38E-03	ug/m^3	95% UCL-G	
	TETRAHYDROFURAN	ug/m3	1,120	1,693	3,835	1,693	ug/m^3	2.1E-02	ug/m^3	3,835	ug/m^3	4.68E-02	ug/m^3	95% UCL-G	

TABLE A3-3 5B - Site Parcel, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
	TOLUENE	ug/m3	951	1,191	15,080	1,191	ug/m^3	1.3E-02	ug/m^3	60	ug/m^3	6.54E-04	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	4,903	6,512	24,552	6,512	ug/m^3	5.7E-02	ug/m^3	35	ug/m^3	3.10E-04	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	87,323	108,427	451,080	108,427	ug/m^3	1.1E+00	ug/m^3	199	ug/m^3	1.96E-03	ug/m^3	95% UCL-G	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	*259,879*	*325,350*	*1,236,400*	*325,350*	ug/m^3	*3.5E+00*	ug/m^3	*1,068*	ug/m^3	*1.16E-02*	ug/m^3	*95% UCL-G assumed*	
	VINYL CHLORIDE	ug/m3	468	1,056	79	79	ug/m^3	1.0E-03	ug/m^3	33	ug/m^3	4.39E-04	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max), 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data

(2) Soil gas values modeled to provide outdoor air concentrations using Karami, et al. (1987) equations along with the USEPA Draft Soil Screening Guidance (1994). See Appendix Tables A5-9 and A5-10.

ug/m^3: microgram per cubic meter.

ND: Not determined. Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.5B - Other Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
Outdoor Air															
	1,1,1-TRICHLOROETHANE	ug/m3	8,848	64,480	251,160	64,480	ug/m^3	6.3E-01	ug/m^3	142	ug/m^3	1.38E-03	ug/m^3	UCL-NP	
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	607,484	950,498	3,447,000	950,498	ug/m^3	3.4E+00	ug/m^3	13	ug/m^3	4.67E-05	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHANE	ug/m3	1,187	1,872	8,910	1,872	ug/m^3	1.7E-02	ug/m^3	486	ug/m^3	4.49E-03	ug/m^3	95% UCL-G	
	1,1-DICHLOROETHENE	ug/m3	244,094	380,406	1,071,900	380,406	ug/m^3	4.3E+00	ug/m^3	83	ug/m^3	9.35E-04	ug/m^3	95% UCL-G	
	1,2,4-TRIMETHYLBENZENE	ug/m3	934	1,431	16	16	ug/m^3	1.5E-04	ug/m^3	9	ug/m^3	8.27E-05	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ug/m3	87,500	No UCL	93,750	93,750	ug/m^3	ND	ug/m^3	81,250	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	1,3-BUTADIENE .	ug/m3	415	623	139	139	ug/m^3	1.7E-03	ug/m^3	3	ug/m^3	3.51E-05	ug/m^3	Max	UCL is greater than Max
	2,2,4-TRIMETHYLPENTANE	ug/m3	849	1,275	1,541	1,275	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	95% UCL-G assumed	
	2-BUTANONE	ug/m3	548	791	174	174	ug/m^3	1.94E-03	ug/m^3	4	ug/m^3	4.93E-05	ug/m^3	Max	UCL is greater than Max
	2-PROPANOL	ug/m3	3,109	5,081	36,900	5,081	ug/m^3	ND	ug/m^3	9,840	ug/m^3	ND	ug/m^3	95% UCL-G	
	4-ETHYLTOLUENE	ug/m3	932	1,445	17	17	ug/m^3	ND	ug/m^3	7	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	440	691	500	500	ug/m^3	7.7E-03	ug/m^3	15	ug/m^3	2.39E-04	ug/m^3	Max	UCL is greater than Max
	BENZENE	ug/m3	2,270	5,690	89	89	ug/m^3	9.8E-04	ug/m^3	3	ug/m^3	3.15E-05	ug/m^3	Max	UCL is greater than Max
	BROMODICHLOROMETHANE	ug/m3	1,143	2,089	24	24	ug/m^3	9.0E-05	ug/m^3	9	ug/m^3	3.48E-05	ug/m^3	Max	UCL is greater than Max
	BROMOFORM	ug/m3	1,956	3,044	13	13	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	CARBON DISULFIDE	ug/m3	601	945	26	26	ug/m^3	3.4E-04	ug/m^3	3	ug/m^3	4.03E-05	ug/m^3	Max	UCL is greater than Max
	CHLOROFORM	ug/m3	3,521	12,512	107,360	12,512	ug/m^3	1.6E-01	ug/m^3	7	ug/m^3	9.48E-05	ug/m^3	95% UCL-T	
	CIS-1,2-DICHLOROETHENE	ug/m3	1,046	1,644	13,068	1,644	ug/m^3	1.5E-02	ug/m^3	713	ug/m^3	6.54E-03	ug/m^3	95% UCL-G	
	CYCLOHEXANE	ug/m3	658	1,008	963	963	ug/m^3	9.6E-03	ug/m^3	4	ug/m^3	4.11E-05	ug/m^3	Max	UCL is greater than Max
	DIBROMOCHLOROMETHANE	ug/m3	1,646	2,581	14	14	ug/m^3	1.6E-04	ug/m^3	9	ug/m^3	1.12E-04	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	1,325	2,034	9,405	2,034	ug/m^3	2.03E-02	ug/m^3	11	ug/m^3	1.13E-04	ug/m^3	95% UCL-G	
	ETHANOL	ug/m3	1,405	2,156	254	254	ug/m^3	ND	ug/m^3	13	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	808	1,236	20	20	ug/m^3	1.9E-04	ug/m^3	6	ug/m^3	5.27E-05	ug/m^3	Max	UCL is greater than Max
	HEPTANE	ug/m3	746	1,143	98	98	ug/m^3	ND	ug/m^3	5	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	HEXANE (N-HEXANE)	ug/m3	679	1,000	2,218	1,000	ug/m^3	2.5E-02	ug/m^3	4	ug/m^3	9.65E-05	ug/m^3	95% UCL-G assumed	
	M,P-XYLENES	ug/m3	847	3,106	126	126	ug/m^3	1.1E-03	ug/m^3	10	ug/m^3	8.71E-05	ug/m^3	Max	UCL is greater than Max
	METHYL TERT-BUTYL ETHER	ug/m3	683	1,068	21	21	ug/m^3	2.1E-04	ug/m^3	19	ug/m^3	1.91E-04	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	681	1,035	298	298	ug/m^3	3.8E-03	ug/m^3	8	ug/m^3	1.05E-04	ug/m^3	Max	UCL is greater than Max
	O-XYLENE	ug/m3	808	1,229	24	24	ug/m^3	2.1E-04	ug/m^3	5	ug/m^3	4.16E-05	ug/m^3	Max	UCL is greater than Max
	PENTANE	ug/m3	21,535	No UCL	21,535	21,535	ug/m^3	ND	ug/m^3	21,535	ug/m^3	ND	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	273,264	706,170	2,101,800	706,170	ug/m^3	6.3E+00	ug/m^3	12	ug/m^3	1.09E-04	ug/m^3	95% UCL-T	
	TETRAHYDROFURAN	ug/m3	570	894	4	4	ug/m^3	5.0E-05	ug/m^3	3	ug/m^3	3.60E-05	ug/m^3	Max	UCL is greater than Max

TABLE A3-3 5B - Other Parcels, Construction Exposure
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Outdoor Air in Excavation

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations									
						Soil Gas EPC Value	Units	EPC Outdoor Air Value [2]	Units	Soil Gas Minimum Detected Value	Units	Minimum EPC Excavation Air Value [2]	Units	Statistic for the Soil Gas EPC Value	Rationale
	TOLUENE	ug/m3	984	2,463	12,441	2,463	ug/m^3	2.7E-02	ug/m^3	8	ug/m^3	8.17E-05	ug/m^3	95% UCL-T	
	TRANS-1,2-DICHLOROETHENE	ug/m3	995	1,597	9,900	1,597	ug/m^3	1.4E-02	ug/m^3	673	ug/m^3	5.93E-03	ug/m^3	95% UCL-G	
	TRICHLOROETHENE	ug/m3	43,637	123,349	472,560	123,349	ug/m^3	1.2E+00	ug/m^3	54	ug/m^3	5.29E-04	ug/m^3	95% UCL-T	
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	153,073	237,484	1,011,600	237,484	ug/m^3	2.6E+00	ug/m^3	6	ug/m^3	6.09E-05	ug/m^3	95% UCL-G	

Statistics: Maximum Detected Value (Max), 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.
The Shapiro-Wilk test was used to test the normality/ lognormality of all data sets at the 0.05 significance level. The UCL procedures listed were selected based on the recommendations of the ProUCL statistical program and based on the results of the W Test, the number of samples, and the standard deviation of the log-transformed data.

(2) Soil gas values modeled to provide outdoor air concentrations using Karami, et al (1987) equations along with the USEPA Draft Soil Screening Guidance (1994). See Appendix Tables A5-11 and A5-12.

ug/m^3 microgram per cubic meter.

ND Not determined Indoor air concentration could not be calculated because physical parameters for constituent were not available.

TABLE A3-3.6 - All Parcels
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Medium:	Outdoor Air
Exposure Medium:	Outdoor Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean [1]	95% UCL of Distribution [1]	Maximum Detected Concentration	Exposure Point Concentrations					
						Minimum Detected Value [2]	Units	Outdoor Air EPC Value	Units	Statistic for the Outdoor Air EPC Value	Rationale
Outdoor Air											
	1,1,1-TRICHLOROETHANE	ug/m3	1.14	10.3	1.1466	1.1466	ug/m^3	1.1466	ug/m^3	Max	UCL is greater than Max
	1,1,2,2-TETRACHLOROETHANE	ug/m3	1 36	12.9	0.39159	0.39159	ug/m^3	0.39159	ug/m^3	Max	UCL is greater than Max
	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/m3	2.56	7.8	1.7618	0.71238	ug/m^3	1.7618	ug/m^3	Max	UCL is greater than Max
	1,1-DICHLOROETHENE	ug/m3	0.99	2.3	0.6352	0.13101	ug/m^3	0.6352	ug/m^3	Max	UCL is greater than Max
	1,2-DICHLOROBENZENE	ug/m3	1.32	11.4	0.29449	0.29449	ug/m^3	0.29449	ug/m^3	Max	UCL is greater than Max
	1,4-DICHLOROBENZENE	ug/m3	1.20	11 3	0.39065	0.39065	ug/m^3	0.39065	ug/m^3	Max	UCL is greater than Max
	ACETONE	ug/m3	374.11	3,791.1	3808	14.28	ug/m^3	3791.05403	ug/m^3	UCL-NP	
	BENZENE	ug/m3	1.54	3.6	1.0846	0.7975	ug/m^3	1.0846	ug/m^3	Max	UCL is greater than Max
	CARBON TETRACHLORIDE	ug/m3	1.61	6.1	0.629	0.49062	ug/m^3	0.629	ug/m^3	Max	UCL is greater than Max
	DICHLORODIFLUOROMETHANE	ug/m3	3.33	4 6	3.3165	1.8315	ug/m^3	3.3165	ug/m^3	Max	UCL is greater than Max
	ETHYLBENZENE	ug/m3	1.44	4.4	0.9548	0.434	ug/m^3	0.9548	ug/m^3	Max	UCL is greater than Max
	M,P-XYLENES	ug/m3	2.91	3.9	3.1248	1.302	ug/m^3	3.1248	ug/m^3	Max	UCL is greater than Max
	METHYLENE CHLORIDE	ug/m3	1.69	4.1	2.082	2.082	ug/m^3	2.082	ug/m^3	Max	UCL is greater than Max
	O-XYLENE	ug/m3	1.58	4.5	1.1935	0.434	ug/m^3	1.1935	ug/m^3	Max	UCL is greater than Max
	TETRACHLOROETHENE	ug/m3	2.00	6.7	1.7628	0.5424	ug/m^3	1.7628	ug/m^3	Max	UCL is greater than Max
	TOLUENE	ug/m3	6.33	8.1	15.834	3.6946	ug/m^3	8.12826571	ug/m^3	UCL-NP	
	TRICHLOROETHENE	ug/m3	1.23	10.1	1.074	0.22554	ug/m^3	1.074	ug/m^3	Max	UCL is greater than Max
	TRICHLOROFLUOROMETHANE (FREON 11)	ug/m3	2.61	6.1	1.967	1.5736	ug/m^3	1.967	ug/m^3	Max	UCL is greater than Max

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Non-parametric (UCL-NP); 95% UCL assuming Gamma distribution (95% G-UCL).

(1) The arithmetic mean and the 95UCL were calculated including half the detection limit for the non-detects. As a result, in some cases these values are above the maximum detected.

(2) Minimum and maximum detections were used to represent the range of exposure concentrations.

ug/m^3: microgram per cubic meter.

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Industrial Worker CTE Indoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				IR-S	Ingestion Rate of Soil	50	mg/day	EPA 2002a (1)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	1.7E-07		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	4.9E-07		Intake*CS=CDI	
	Industrial Worker RME Indoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				IR-S	Ingestion Rate of Soil	100	mg/day	EPA 2002a (1)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	3.5E-07		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	9.8E-07		Intake*CS=CDI	
	Industrial Worker CTE Outdoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				IR-S	Ingestion Rate of Soil	100	mg/day	EPA 2002a (1)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	3.1E-07		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	8.8E-07		Intake*CS=CDI	
	Industrial Worker RME Outdoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				IR-S	Ingestion Rate of Soil	150	mg/day	professional judgment (5)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	4.7E-07		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.3E-06		Intake*CS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Construction Worker CTE	Adult	Surface and Subsurface Soil	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				IR-S	Ingestion Rate of Soil	100	mg/day	EPA 2002a	
				EF	Exposure Frequency	60	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	3.4E-09		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	2.3E-07		Intake*CS=CDI	
	Construction Worker RME	Adult	Surface and Subsurface Soil	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				IR-S	Ingestion Rate of Soil	330	mg/day	EPA 2002a	
				EF	Exposure Frequency	250	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	4.6E-08		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	3.2E-06		Intake*CS=CDI	
	Resident RME	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				IR-S	Ingestion Rate of Soil	100	mg/day	EPA 2004b	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	30	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	5.9E-07		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.4E-06		Intake*CS=CDI	
	Resident RME	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				IR-Sa	Ingestion Rate of Soil	100	mg/day	EPA 2004b	
				IR-Sc	Ingestion Rate of Soil	200	mg/day	EPA 2004b	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				EDa	Exposure Duration	24	years	EPA 1991b, 2002a	(24 years as adult, 6 years as child)
				EDc	Exposure Duration	6	years	EPA 1991b, 2002a	Chronic Daily Intake (CDI) (mg/kg-day) =
				BWa	Body Weight	70	kg	EPA 1991b, 2002a	CS x CF1 x EF x ((IR-Sa x EDa x 1/BWa) +
				BWc	Body Weight	15	kg	EPA 1991b, 2002a	(IR-Sc x EDc x 1/BWc)) x 1/AT
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	1.6E-06		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	3.7E-06		Intake*CS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident RME	Child	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	Chronic Daily Intake (CDI) (mg/kg-day) = CS x CF1 x IR-S x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				IR-S	Ingestion Rate of Soil	200	mg/day	EPA 2004b	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	6	years	EPA 1991b, 2002a	
				BW	Body Weight	15	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	1.1E-06		Intake*CS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.3E-05		Intake*CS=CDI	
Dermal	Industrial Worker Indoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	CDI (mg/kg-day) = CS x CF1 x SA x AF x ABS x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a (6)	
				AF	Adherence Factor	0.2	mg/cm^2	EPA 2002a	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	2.31E-06		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	6.46E-06		Intake*CS*ABS=CDI	
	Industrial Worker Outdoor	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	CDI (mg/kg-day) = CS x CF1 x SA x AF x ABS x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a (6)	
				AF	Adherence Factor	0.2	mg/cm^2	EPA 2002a	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	2.08E-06		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	5.81E-06		Intake*CS*ABS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Dermal	Construction Worker CTE	Adult	Surface and Subsurface Soil	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	CDI (mg/kg-day) = CS x CF1 x SA x AF x ABS x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a (6)	
				AF	Adherence Factor	0.8	mg/cm^2	CalEPA 2005b	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	60	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	8.86E-08		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	6.20E-06		Intake*CS*ABS=CDI	
	Construction Worker RME	Adult	Surface and Subsurface Soil	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	CDI (mg/kg-day) = CS x CF1 x SA x AF x ABS x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a (6)	
				AF	Adherence Factor	0.37	mg/cm^2	EPA 2004a	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	250	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	1.71E-07		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.19E-05		Intake*CS*ABS=CDI	
	Resident RME	Adult	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	CDI (mg/kg-day) = CS x CF1 x SA x AF x ABS x EF x ED x 1/BW x 1/AT
				CF1	Conversion Factor 1	1E-06	kg/mg	--	
				SA	Skin Surface Area Available for Contact	5,700	cm^2	CalEPA 2005	
				AF	Adherence Factor	0.07	mg/cm^2	EPA 2004b	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	30	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	2.34E-06		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	5.47E-06		Intake*CS*ABS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident RME	Adult/Child	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	CDI (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x SA x AF x ABS x EF x ED x
				SAa	Skin Surface Area Available for Contact - adu	5,700	cm^2	CalEPA 2005	1/BW x 1/AT
				SAc	Skin Surface Area Available for Contact - chil	2,900	cm^2	CalEPA 2005	
				AFa	Adherence Factor - adult	0.07	mg/cm^2	EPA 2004b	
				AFc	Adherence Factor - child	0.2	mg/cm^2	EPA 2004b	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5.1 and 6.1	unitless	EPA 2004a	
									(24 years as adult, 6 years as child)
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	Dermally Absorbed Dose (DAD) (mg/kg-day) =
				EDa	Exposure Duration - adult	24	years	EPA 1991b, 2002a	Cs x CF1 x ((EDa x SAa x AFa x 1/BWa) +
				EDc	Exposure Duration - child	6	years	EPA 1991b, 2002a	(EDc x SAc x AFc x 1/BWc)) x ABS x EF x 1/AT
				BWa	Body Weight - adult	70	kg	EPA 1991b, 2002a	
				BWc	Body Weight - child	15	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	5.05E-06		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.18E-05		Intake*CS*ABS=CDI	
	Resident RME	Child	Surface Soil	CS	Chemical Concentration in Soil	See Table B-3.1	mg/kg	See Table B-3.1	CDI (mg/kg-day) =
				CF1	Conversion Factor 1	1E-06	kg/mg	--	CS x CF1 x SA x AF x ABS x EF x ED x
				SA	Skin Surface Area Available for Contact	2,900	cm^2	CalEPA 2005	1/BW x 1/AT
				AF	Adherence Factor	0.2	mg/cm^2	EPA 2004b	
				ABS_d	Absorption Factor	Chemical Specific, See Tables 5 1 and 6.1	unitless	EPA 2004a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	6	years	EPA 1991b, 2002a	
				BW	Body Weight	15	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989	
					Intake factor, cancer [kg-soil/(kg-bw*d)]	3.18E-06		Intake*CS*ABS=CDI	
					Intake factor, noncancer [kg-soil/(kg-bw*d)]	3.71E-05		Intake*CS*ABS=CDI	
Inhalation	Construction Worker CTE	Adult	Surface and Subsurface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	2.5	m^3/hr	EPA 1991b, 2002	CS x IR-A x ET x EF x ED x 1/PEF x
				ET	Exposure Time	10	hrs/day	professional judgment (5)	1/BW x 1/AT
				EF	Exposure Frequency	60	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
				Fugitive Dust	Intake factor, cancer [kg-soil/(kg-bw*d)]	6.2E-13		Intake*CS=CDI	
				Fugitive Dust	Intake factor, noncancer [kg-soil/(kg-bw*d)]	4.3E-11		Intake*CS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker RME	Adult	Surface and Subsurface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	4.8	m^3/hr	EPA 1991b, 2002	
				ET	Exposure Time	10	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	1	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
				Fugitive Dust	Intake factor, cancer [kg-soil/(kg-bw*d)]	4.9E-12		Intake*CS=CDI	
				Fugitive Dust	Intake factor, noncancer [kg-soil/(kg-bw*d)]	3.5E-10		Intake*CS=CDI	
	Industrial Worker CTE Indoor	Adult	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	1.2	m^3/hr	EPA 1997	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
				Fugitive Dust	Intake factor, cancer [kg-soil/(kg-bw*d)]	2.5E-11		Intake*CS=CDI	
				Fugitive Dust	Intake factor, noncancer [kg-soil/(kg-bw*d)]	6.9E-11		Intake*CS=CDI	
	Industrial Worker RME Indoor	Adult	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
				Fugitive Dust	Intake factor, cancer [kg-soil/(kg-bw*d)]	3.9E-11		Intake*CS=CDI	
				Fugitive Dust	Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.1E-10		Intake*CS=CDI	
	Industrial Worker CTE Outdoor	Adult	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
				Fugitive Dust	Intake factor, cancer [kg-soil/(kg-bw*d)]	3.5E-11		Intake*CS=CDI	
				Fugitive Dust	Intake factor, noncancer [kg-soil/(kg-bw*d)]	9.8E-11		Intake*CS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker RME Outdoor	Adult	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	2.5	m^3/hr	EPA 2002a	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
			Fugitive Dust		Intake factor, cancer [kg-soil/(kg-bw*d)]	4.6E-11		Intake*CS=CDI	
			Fugitive Dust		Intake factor, noncancer [kg-soil/(kg-bw*d)]	1.3E-10		Intake*CS=CDI	
	Resident RME	Adult	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	0.83	m^3/hr	EPA 2002a	
				ET	Exposure Time	24	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	350	days/year	professional judgment (5)	
				ED	Exposure Duration	30	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	70	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
			Fugitive Dust		Intake factor, cancer [kg-soil/(kg-bw*d)]	8.6E-11		Intake*CS=CDI	
			Fugitive Dust		Intake factor, noncancer [kg-soil/(kg-bw*d)]	2.0E-10		Intake*CS=CDI	
	Resident RME	Adult/Child	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-Aa	Inhalation Rate of Air - adult	0.83	m^3/hr	EPA 2004b	
				IR-Ac	Inhalation Rate of Air - child	0.42	m^3/hr	EPA 2004b	
				ET	Exposure Time	24	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	350	days/year	professional judgment (5)	
				EDa	Exposure Duration - adult	24	years	EPA 1991b, 2002	
				EDc	Exposure Duration - child	6	years	EPA 1991b, 2002a	(24 years as adult, 6 years as child)
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	Chronic Daily Intake (CDI) (mg/kg-day) =
				BWa	Body Weight - adult	70	kg	EPA 1991b, 2002	CS x EF x ET x ((IR-Aa x EDa x 1/BWa) +
				BWc	Body Weight - child	15	kg	EPA 1991b, 2002a	(IR-Ac x EDc x 1/BWc)) x 1/AT x 1/PEF
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	8,760	days	EPA 1989	
			Fugitive Dust		Intake factor, cancer [kg-soil/(kg-bw*d)]	1.1E-10		Intake*CS=CDI	
			Fugitive Dust		Intake factor, noncancer [kg-soil/(kg-bw*d)]	3.2E-10		Intake*CS=CDI	
	Resident RME	Child	Surface Soil as Fugitive Dust	CS	Chemical Concentration in Soil	See Table B-3.2	mg/kg	See Table B-3.2	Chronic Daily Intake (CDI) (mg/kg-day) = CS x IR-A x ET x EF x ED x 1/PEF x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	0.42	m^3/hr	EPA 2004b	
				ET	Exposure Time	24	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	350	days/year	professional judgment (5)	
				ED	Exposure Duration	6	years	EPA 1991b, 2002	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002	
				BW	Body Weight	15	kg	EPA 1991b, 2002	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989	
			Fugitive Dust		Intake factor, cancer [kg-soil/(kg-bw*d)]	4.1E-11		Intake*CS=CDI	
			Fugitive Dust		Intake factor, noncancer [kg-soil/(kg-bw*d)]	4.7E-10		Intake*CS=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Worker CTE	Adult	Outdoor Air and Outdoor Air in Excavation	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	2.5	m^3/hr	EPA 2004b	
				ET	Exposure Time	10	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	60	days/year	EPA 1991b, 2002a	
				EFex	Exposure Frequency in Excavation	60	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
			Outdoor Air in Excavation		Intake factor, cancer [m^3/(kg-bw*d)]	8.4E-04		Intake*Camb_air=CDI	
			Outdoor Air in Excavation		Intake factor, noncancer [m^3/(kg-bw*d)]	5.9E-02		Intake*Camb_air=CDI	
	Construction Worker RME	Adult	Outdoor Air and Outdoor Air in Excavation	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	4.8	m^3/hr	EPA 2004b	
				ET	Exposure Time	10	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				EFex	Exposure Frequency in Excavation	250	days/year	professional judgment (5)	
				ED	Exposure Duration	1	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	365	days	EPA 1989	
			Outdoor Air in Excavation		Intake factor, cancer [m^3/(kg-bw*d)]	6.7E-03		Intake*Camb_air=CDI	
			Outdoor Air In Excavation		Intake factor, noncancer [m^3/(kg-bw*d)]	4.7E-01		Intake*Camb_air=CDI	
	Resident RME	Adult	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	0.83	m^3/hr	EPA 2004b	
				ET	Exposure Time	2	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	30	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	9.7E-03		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	2.3E-02		Intake*Cbuilding=CDI	
	Resident RME	Adult/Child	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-Aa	Inhalation Rate of Air - adult	0.83	m^3/hr	EPA 2004b	
				IR-Ac	Inhalation Rate of Air - child	0.42	m^3/hr	EPA 2004b	
				ET	Exposure Time	2	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				EDa	Exposure Duration - adult	24	years	EPA 1991b, 2002a	(24 years as adult, 6 years as child)
				EDc	Exposure Duration - child	6	years	EPA 1991b, 2002a	Chronic Daily Intake (CDI) (mg/gk-day) =
				BWa	Body Weight - adult	70	kg	EPA 1991b, 2002a	
				BWc	Body Weight - child	15	kg	EPA 1991b, 2002a	Cbuilding x EF x ET x ((IR-Aa x EDa x 1/BWa) +
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	(IR-Ac x EDc x 1/BWc)) x 1/AT
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	1.2E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	2.9E-02		Intake*Cbuilding=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident RME	Child	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	0.42	m^3/hr	EPA 2004b	C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	2	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	6	years	EPA 1991b, 2002a	
				BW	Body Weight	15	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	4.6E-03		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	5.4E-02		Intake*Cbuilding=CDI	
	Industrial Worker CTE Indoor	Adult	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	1.2	m^3/hr	EPA 1997	C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	1	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	4.2E-03		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	1.2E-02		Intake*Cbuilding=CDI	
	Industrial Worker RME Indoor	Adult	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997	C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	1	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	6.6E-03		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	1.9E-02		Intake*Cbuilding=CDI	
	Industrial Worker CTE Outdoor	Adult	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997	C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	4.8E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	1.3E-01		Intake*Cbuilding=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker RME Outdoor	Adult	Outdoor Air	C_{amb_air}	Chemical Concentration in Outdoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	2.5	m^3/hr	EPA 2002a	C_{amb_air} x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	225	days/year	EPA 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	6.3E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	1.8E-01		Intake*Cbuilding=CDI	
Inhalation	Resident RME	Adult	Soil Gas Migration to Indoor Air	$C_{building}$	Chemical Concentration in Indoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	0.83	m^3/hr	EPA 2004b	$C_{building}$ x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	24	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	30	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	1.2E-01		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	2.7E-01		Intake*Cbuilding=CDI	
	Resident RME	Adult/Child	Soil Gas Migration to Indoor Air	$C_{building}$	Chemical Concentration in Indoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-Aa	Inhalation Rate of Air - adult	0.83	m^3/hr	EPA 2004b	$C_{building}$ x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-Ac	Inhalation Rate of Air - child	0.42	m^3/hr	EPA 2004b	
				ET	Exposure Time	24	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				EDa	Exposure Duration - adult	24	years	EPA 1991b, 2002a	(24 years as adult, 6 years as child)
				EDc	Exposure Duration - child	6	years	EPA 1991b, 2002a	Chronic Daily Intake (CDI) (mg/gk-day) =
				BWa	Body Weight - adult	70	kg	EPA 1991b, 2002a	
				BWc	Body Weight - child	15	kg	EPA 1991b, 2002a	$C_{building}$ x EF x ET x ((IR-Aa x EDa x 1/BWa) +
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	(IR-Ac x EDc x 1/BWc)) x 1/AT
				AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	1.5E-01		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	3.5E-01		Intake*Cbuilding=CDI	
	Resident RME	Child	Soil Gas Migration to Indoor Air	$C_{building}$	Chemical Concentration in Indoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) =
				IR-A	Inhalation Rate of Air	0.42	m^3/hr	EPA 2004b	$C_{building}$ x IR-A x ET x EF x ED x 1/BW x 1/AT
				ET	Exposure Time	24	hrs/day	EPA 1991b, 2002a	
				EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	6	years	EPA 1991b, 2002a	
				BW	Body Weight	15	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	5.5E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	6.4E-01		Intake*Cbuilding=CDI	

TABLE A3-4.1
VALUES USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil (& Particulates and Vapors from Soil)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	RME Value	Units	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Worker CTE Indoor	Adult	Soil Gas Migration to Indoor Air	$C_{building}$	Chemical Concentration in Indoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = $C_{building}$ x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	1.2	m^3/hr	EPA 1997	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	3.4E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	9.4E-02		Intake*Cbuilding=CDI	
	Industrial Worker RME Indoor	Adult	Soil Gas Migration to Indoor Air	$C_{building}$	Chemical Concentration in Indoor Air	See Tables B-3.3 and B-3.4	mg/m^3	See Tables B-3.3 and B-3.4	Chronic Daily Intake (CDI) (mg/kg-day) = $C_{building}$ x IR-A x ET x EF x ED x 1/BW x 1/AT
				IR-A	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997	
				ET	Exposure Time	8	hrs/day	professional judgment (5)	
				EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a	
				ED	Exposure Duration	25	years	EPA 1991b, 2002a	
				BW	Body Weight	70	kg	EPA 1991b, 2002a	
				AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989	
				AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989	
					Intake factor, cancer [m^3/(kg-bw*d)]	5.3E-02		Intake*Cbuilding=CDI	
					Intake factor, noncancer [m^3/(kg-bw*d)]	1.5E-01		Intake*Cbuilding=CDI	

(1) Outdoor worker exposure parameter was conservatively applied to this receptor.
(2) Residential exposure parameter was conservatively applied to this receptor.
(3) Assumes 3 days/week in the spring and fall and 5 days/week in the summer, with 13 weeks per season.
(4) Based on number of years in the age group for adolescents (ages 12 to 18 years).
(5) Assumes mowing lawn 1 day/week, May through October.
(6) Based on 50th percentile values for men and women (EPA 1997a) for the following body parts: head, hands, and forearms.
(7) Based on 50th percentile total body surface area for 12 to 18 year olds (EPA 1997a, p6-15) and mean percentage for the following body parts: head, hands, forearms, and lower legs (EPA 1997a, p. 6-16).
(8) AF was selected based on adolescent in dry soil for 95% percentile value.
* Utility worker assumptions were conservatively selected as equal to construction worker exposure assumptions unless noted as being based upon "professional judgment."

Sources:

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.
EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.
EPA 1997a: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.
EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.
EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.
EPA 2004b: Preliminary Remediation Goal
CalEPA/DTSC, 2005: Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Military Facilities. October 25.
CalEPA/DTSC, 2005b: DTSC/HERD Human Health Risk Assessment (HHRA) Note Number 1. October.

cm^2: square centimeter.
kg/mg: kilogram per milligram.
kg: kilogram.
L/day: liter per day.
L/m^3 : liters per cubic meters.
m^3/kg: cubic meter per kilogram.
mg/day: milligram per day.
mg/kg: milligram per kilogram.
mg/ug milligram per microgram.
ug/L : microgram per liter.
RME: reasonable maximum exposure
CTE: central tendency exposure

TABLE A3-4.2
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal Absorption Fraction[1,2] ABS_d	Gastrointestinal Absorption Fraction[1,3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
1,1,1-TRICHLOROETHANE	VOC	—	1	NA
1,1,2,2-TETRACHLOROETHANE	VOC	—	1	NA
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	VOC	—	1	NA
1,1,2-TRICHLOROETHANE	VOC	—	1	NA
1,1-DICHLOROETHANE	VOC	—	1	NA
1,1-DICHLOROETHENE	VOC	—	1	NA
1,2,4-TRIMETHYLBENZENE	VOC	—	1	NA
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	VOC	—	1	NA
1,2-DICHLOROBENZENE	VOC	—	1	NA
1,2-DICHLOROETHANE	VOC	—	1	NA
1,3,5-TRIMETHYLBENZENE	VOC	—	1	NA
1,3-BUTADIENE	VOC	—	1	NA
1,4-DICHLOROBENZENE	VOC	—	1	NA
1,4-DIOXANE	VOC	0.10	1	10.00
2,2,4-TRIMETHYLPENTANE	VOC	—	1	NA
2-BUTANONE	VOC	—	1	NA
2-METHYLNAPHTHALENE	SVOC	0.10	1	10.00
2-PROPANOL	VOC	—	1	NA
4,4'-DDD	Pesticide	0.03	1	33.33
4,4'-DDE	Pesticide	0.03	1	33.33
4,4'-DDT	Pesticide	0.03	1	33.33
4-ETHYLTOLUENE	VOC	—	1	NA
ACETALDEHYDE	VOC	—	1	NA
ACETONE	VOC	—	1	NA
ALUMINUM	Inorganic	—	1	NA
ANTIMONY	Inorganic	—	0.15	NA
BARIUM	Inorganic	—	0.07	NA
BENZENE	VOC	—	1	NA
BENZO(A)ANTHRACENE	PAH	0.13	1	7.69
BENZO(A)PYRENE	PAH	0.13	1	7.69
BENZO(B)FLUORANTHENE	PAH	0.13	1	7.69
BENZYL ALCOHOL (PHENYLMETHANOL)		0.10	1	10.00
BERYLLIUM	Inorganic	—	1	NA
BIS(2-ETHYLHEXYL)PHTHALATE	SVOC	0.10	1	10.00
BROMODICHLOROMETHANE	VOC	—	1	NA
BROMOFORM	VOC	0.10	1	10.00
BUTYLBENZYL PHTHALATE	SVOC	0.10	1	10.00
CADMIUM	Inorganic	0.001	0.025	25.00
CARBON DISULFIDE	VOC	—	1	NA
CARBON TETRACHLORIDE	VOC	—	1	NA
CHLOROFORM	VOC	—	1	NA

TABLE A3-4.2
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal Absorption Fraction[1,2] ABS_d	Gastrointestinal Absorption Fraction[3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
CHROMIUM	Inorganic	—	0.013	NA
CHROMIUM III	Inorganic	—	0.013	NA
CHROMIUM VI	Inorganic	—	0.025	NA
CHRYSENE	PAH	0.13	1	7.69
CIS-1,2-DICHLOROETHENE	VOC	—	1	NA
COBALT	Inorganic	—	1	NA
COPPER	Inorganic	—	1	NA
CYCLOHEXANE	VOC	—	1	NA
DIBROMOCHLOROMETHANE	VOC	—	1	NA
DICHLORODIFLUOROMETHANE	VOC	—	1	NA
DIELDRIN	Pesticide/PCB	0.10	1	10.00
ETHANOL	VOC	—	1	NA
ETHYLBENZENE	VOC	—	1	NA
FLUORANTHENE (IDRYL)	PAH	0.13	1	7.69
HEPTANE	VOC	—	1	NA
HEXANE (N-HEXANE)	VOC	—	1	NA
IRON	Inorganic	—	1	NA
ISOPHORONE		0.10	1	10.00
LEAD	Inorganic	—	1	NA
M,P-XYLENES	VOC	0.10	1	10.00
MANGANESE	Inorganic	—	0.04	NA
MERCURY	Inorganic	—	1	NA
METHYL TERT-BUTYL ETHER	VOC	—	1	NA
METHYLENE CHLORIDE	VOC	—	1	NA
MOLYBDENUM	Inorganic	—	1	NA
NAPHTHALENE	PAH	0.13	1	7.69
NICKEL	Inorganic	—	0.04	NA
O-XYLENE	VOC	0.10	1	10.00
PCB-1254 (AROCLOR 1254)	PCB	0.14	1	7.14
PENTANE	VOC	—	1	NA
PHENANTHRENE	PAH	0.13	1	7.69
POLYCHLORINATED BI PHENYLS, TOTAL	PCB	0.14	1	7.14
PYRENE	PAH	0.13	1	7.69
SILVER	Inorganic	—	0.04	NA
TETRACHLOROETHENE	VOC	—	1	NA
TETRAHYDROFURAN	VOC	—	1	NA
THALLIUM	Inorganic	—	1	NA
TOLUENE	VOC	—	1	NA
TRANS-1,2-DICHLOROETHENE	VOC	—	1	NA
TRICHLOROETHENE	VOC	—	1	NA

TABLE A3-4.2
CHEMICAL-SPECIFIC INFORMATION USED FOR DAILY INTAKE CALCULATIONS
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chemical Category	Dermal Absorption Fraction[1,2] ABS_d	Gastrointestinal Absorption Fraction[3] ABS_{GI}	Absorption Efficiency ABS_{GI}/ABS_d
TRICHLOROFLUOROMETHANE (FREON 11)	VOC	—	1	NA
VANADIUM	Inorganic	—	0.026	NA
VINYL CHLORIDE	VOC	—	1	NA
ZINC	Inorganic	—	1	NA

(1) EPA 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Ju Exhibit 3-4 "—" signifies that no dermal absorption fraction from soil was provided. VOCs are assumed to volatilize and are accounted for in the inhalation pathway and inc highly dependent on the speciation of the compound and there is too little data to detemine a reasonable default value.

(2) ABSd values for 1,4-dioxane, bromoform, benzyl alcohol, dieldrin, DDE, DDD, isophorone, and xylenes were obtained from EPA 2004 Region 9 PRG Table.

(3) EPA 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Ju Exhibit 4-1. Default value of 1 signifies that compound was not recommended for adjustment for gastrointestinal absorption efficiencies.

TABLE A3-5.1
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Dermal Absorption Adjustment (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	chronic	2.8E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2,2-TETRACHLOROETHANE	chronic	6.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day	CNS	10	IRIS	11/30/2006
1,1,2-TRICHLOROETHANE	chronic	4.0E-03	mg/kg/day	NA	NA	mg/kg/day	Clinical serum chemistry	1,000	IRIS	11/30/2006
1,1-DICHLOROETHANE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHENE	chronic	5.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver toxicity	100	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	chronic	5.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
1,2-DICHLOROBENZENE	chronic	9.0E-02	mg/kg/day	NA	NA	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
1,2-DICHLOROETHANE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,3,5-TRIMETHYLBENZENE	chronic	5 0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,3-BUTADIENE	chronic	5.7E-03	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	chronic	3.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DIOXANE	chronic	NA	mg/kg/day	10.00	NA	mg/kg/day				11/30/2006
2,2,4-TRIMETHYLPENTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
2-BUTANONE	chronic	6.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. offspring weight	1,000	IRIS	11/30/2006
2-METHYLNAPHTHALENE	chronic	4.0E-03	mg/kg/day	10 00	4.0E-02	mg/kg/day	Pulmonary alveolar proteinosis	1,000	IRIS	11/30/2006
2-PROPANOL	chronic	NA		NA	NA	mg/kg/day				11/30/2006
4,4'-DDD	chronic	NA	mg/kg/day	33.33	NA	mg/kg/day				07/24/2007
4,4'-DDE	chronic	NA	mg/kg/day	33.33	NA	mg/kg/day				07/24/2007
4,4'-DDT	chronic	5 0E-04	mg/kg/day	33.33	1.7E-02	mg/kg/day	Liver lesions	100	IRIS	07/24/2007
4-ETHYLTOLUENE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
ACETALDEHYDE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
ACETONE	chronic	9.0E-01	mg/kg/day	NA	NA	mg/kg/day	Kidney	1,000	IRIS	11/30/2006
ALUMINUM	chronic	1 0E+00	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
ANTIMONY	chronic	4.0E-04	mg/kg/day	NA	NA	mg/kg/day	longevity, blood glucose and chloesterol	1,000	IRIS	07/24/2007
BARIUM	chronic	2.0E-01	mg/kg/day	NA	NA	mg/kg/day	Nephropathy (kidney)	300	IRIS	07/24/2007
BENZENE	chronic	4.0E-03	mg/kg/day	NA	NA	mg/kg/day	Dec. lymphocyte count	300	IRIS	11/30/2006
BENZO(A)ANTHRACENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZO(A)PYRENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZO(B)FLUORANTHENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	chronic	3.0E-01	mg/kg/day	10.00	3.0E+00	mg/kg/day			EPA-Region 9	10/01/2004
BERYLLIUM	chronic	2.0E-03	mg/kg/day	NA	NA	mg/kg/day	small intestinal lesions	300	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	chronic	2.0E-02	mg/kg/day	10 00	2.0E-01	mg/kg/day	Inc. liver weight	1,000	IRIS	11/30/2006
BROMODICHLOROMETHANE	chronic	2 0E-02	mg/kg/day	NA	NA	mg/kg/day	Kidney	1,000	IRIS	11/30/2006
BROMOFORM	chronic	2 0E-02	mg/kg/day	10.00	2.0E-01	mg/kg/day	Liver lesions	1,000	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	inc body wt. and liver to brain ratio	1,000	IRIS	07/24/2007
CADMIUM	chronic	1.0E-03	mg/kg/day	25.00	2.5E-02	mg/kg/day	significant proteinuria	10	IRIS	07/24/2007
CARBON DISULFIDE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day	Fetal toxicity	100	IRIS	11/30/2006
CARBON TETRACHLORIDE	chronic	7.0E-04	mg/kg/day	NA	NA	mg/kg/day	Liver lesions	1,000	IRIS	11/30/2006
CHLOROFORM	chronic	1.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver	100	IRIS	11/30/2006
CHROMIUM	chronic	1.5E+00	mg/kg/day	NA	NA	mg/kg/day	None	100	IRIS	11/30/2006
CHROMIUM III	chronic	1.5E+00	mg/kg/day	NA	NA	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
CHROMIUM VI	chronic	3.0E-03	mg/kg/day	NA	NA	mg/kg/day	None	300	IRIS	11/30/2006
CHRYSENE	chronic	NA	mg/kg/day	7.69	NA	mg/kg/day				07/24/2007
CIS-1,2-DICHLOROETHENE	chronic	1 0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
COBALT	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
COPPER	chronic	4 0E-02	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
CYCLOHEXANE	chronic	1 7E+00	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004

TABLE A3-5.1
NON-CANCER TOXICITY DATA - ORAL/DERMAL
Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Dermal Absorption Adjustment (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
DIBROMOCHLOROMETHANE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver lesions	1,000	IRIS	04/12/2007
DICHLORODIFLUOROMETHANE	chronic	2.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. body weight	100	IRIS	11/30/2006
DIELDRIN	chronic	5.0E-05	mg/kg/day	10.00	5.0E-04	mg/kg/day	Liver	100	IRIS	11/30/2006
ETHANOL	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				04/12/2007
ETHYLBENZENE	chronic	1.0E-01	mg/kg/day	NA	NA	mg/kg/day	Liver and kidney toxicity	1,000	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	chronic	4.0E-02	mg/kg/day	7.69	3.1E-01	mg/kg/day	Nephropathy (kidney), inc. liver wt.	3,000	IRIS	07/24/2007
HEPTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
HEXANE (N-HEXANE)	chronic	1 1E+01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
IRON	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
ISOPHORONE	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	No observed effects	1,000	IRIS	07/24/2007
LEAD	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
M,P-XYLENES	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	Dec. body weight, inc. mortality	1,000	IRIS	02/27/2007
MANGANESE	chronic	1.4E-01	mg/kg/day	NA	NA	mg/kg/day	CNS	1	IRIS	07/24/2007
MERCURY	chronic	3.0E-04	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
METHYL TERT-BUTYL ETHER	chronic	8.6E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
METHYLENE CHLORIDE	chronic	6.0E-02	mg/kg/day	NA	NA	mg/kg/day			IRIS	11/30/2006
MOLYBDENUM	chronic	5.0E-03	mg/kg/day	NA	NA	mg/kg/day	Inc. uric acid levels	30	IRIS	07/24/2007
NAPHTHALENE	chronic	2.0E-02	mg/kg/day	7.69	1.5E-01	mg/kg/day	Dec. body weight in males	3,000	IRIS	11/30/2006
NICKEL	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day	dec. body and organ wts.	300	IRIS	07/24/2007
O-XYLENE	chronic	2.0E-01	mg/kg/day	10.00	2.0E+00	mg/kg/day	Dec. body weight, inc. mortality	1,000	IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	chronic	2.0E-05	mg/kg/day	7.14	1.4E-04	mg/kg/day	Ocular exudate	300	IRIS	11/30/2006
PENTANE	chronic	NA	mg/kg/day	NA	NA	mg/kg/day				11/30/2006
PHENANTHRENE	chronic	NA	mg/kg/day	7 69	NA	mg/kg/day				11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	chronic	7.0E-05	mg/kg/day	7.14	5.0E-04	mg/kg/day			EPA-Region 9	10/01/2004
PYRENE	chronic	3.0E-02	mg/kg/day	7 69	2.3E-01	mg/kg/day	Kidney	3,000	IRIS	07/24/2007
SILVER	chronic	5.0E-03	mg/kg/day	NA	NA	mg/kg/day	Argyria	3	IRIS	07/24/2007
TETRACHLOROETHENE	chronic	1.0E-02	mg/kg/day	NA	NA	mg/kg/day	Liver toxicity in mice	1,000	IRIS	11/30/2006
TETRAHYDROFURAN	chronic	2.1E-01	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
THALLIUM	chronic	6.6E-05	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
TOLUENE	chronic	8 0E-02	mg/kg/day	NA	NA	mg/kg/day	Inc. kidney weight	3,000	IRIS	11/30/2006
TRANS-1,2-DICHLOROETHENE	chronic	2.0E-02	mg/kg/day	NA	NA	mg/kg/day	Inc. serum alkaline phosphatase in male mice	1,000	IRIS	11/30/2006
TRICHLOROETHENE	chronic	3.0E-04	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
TRICHLOROFLUOROMETHANE (FREON 11)	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day	Survival and histopathology	1,000	IRIS	11/30/2006
VANADIUM	chronic	1 0E-03	mg/kg/day	NA	NA	mg/kg/day			EPA-Region 9	10/01/2004
VINYL CHLORIDE	chronic	3.0E-03	mg/kg/day	NA	NA	mg/kg/day	Liver	30	IRIS	11/30/2006
ZINC	chronic	3.0E-01	mg/kg/day	NA	NA	mg/kg/day	Dec. euythrocyte Cu	3	IRIS	07/24/2007

Footnotes:

(1) Dermal absorption adjustment is a combination of the dermal absorption fraction (ABSd) and the gastrointestinal absorption (ABSGI) as presented in Table A3-4.2. = ABSGI/ABSd so the absorbed reference dose = RfDo *ABSGI/ABSd

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

HEAST: Healht Effects Assessments Summary Tables (EPA 1997b).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ni: No information available.

nl: Chemical is not listed.

CNS: Central Nervous System

mg/kg/day: milligram per kilogram per day.

TABLE A3-5.2

NON-CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Inhalation RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	chronic	2.2E+00	mg/m^3	6.3E-01	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2,2-TETRACHLOROETHANE	chronic	2.1E-01	mg/m^3	6.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
1,1,2-TRICHLOROETHANE	chronic	1.4E-02	mg/m^3	4.0E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHANE	chronic	5.0E-01	mg/m^3	1.4E-01	mg/kg/day			EPA-Region 9	10/01/2004
1,1-DICHLOROETHENE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day	Liver toxicity	30	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	chronic	6.0E-03	mg/m^3	1.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
1,2-DICHLOROBENZENE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day			EPA-Region 9	07/24/2007
1,2-DICHLOROETHANE	chronic	4.9E-03	mg/m^3	1.4E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,3,5-TRIMETHYLBENZENE	chronic	6.0E-03	mg/m^3	1.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,3-BUTADIENE	chronic	2.0E-02	mg/m^3	5.7E-03	mg/kg/day			EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	chronic	8.0E-01	mg/m^3	2.3E-01	mg/kg/day	CNS, RESP, liver, kidney	100	OEHHA	11/30/2006
1,4-DIOXANE	chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	ALIM, Kidney, CVS		OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
2-BUTANONE	chronic	5.0E+00	mg/m^3	1.4E+00	mg/kg/day	DEV	300	IRIS	11/30/2006
2-METHYLNAPHTHALENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
2-PROPANOL	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
4,4'-DDD	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
4,4'-DDE	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
4,4'-DDT	chronic	1.8E-03	mg/m^3	5.0E-04	mg/kg/day			EPA-Region 9	10/01/2004
4-ETHYLTOLUENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
ACETALDEHYDE	chronic	9.0E-03	mg/m^3	2.6E-03	mg/kg/day	RESP	1E+03	OEHHA	11/30/2006
ACETONE	chronic	3.2E+00	mg/m^3	9.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
ALUMINUM	chronic	4.9E-03	mg/m^3	1.4E-03	mg/kg/day			EPA-Region 9	10/01/2004
ANTIMONY	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
BARIUM	chronic	5.0E-04	mg/m^3	1.4E-04	mg/kg/day			EPA-Region 9	10/01/2004
BENZENE	chronic	3.0E-02	mg/m^3	8.6E-03	mg/kg/day	Hematopoetic system, DEV, CNS, immune, Dec. lymphocyte	300	IRIS	11/30/2006
BENZO(A)ANTHRACENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZO(A)PYRENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZO(B)FLUORANTHENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	chronic	1.1E+00	mg/m^3	3.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
BERYLLIUM	chronic	2.0E-05	mg/m^3	5.7E-06	mg/kg/day	Beryllium sensitization to CBD	10	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BROMODICHLOROMETHANE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BROMOFORM	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
BUTYLBENZYL PHTHALATE	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
CADMIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CARBON DISULFIDE	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day	Peripheral nervous system	30	IRIS	11/30/2006
CARBON TETRACHLORIDE	chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg/day	ALIM, DEV, CNS		OEHHA	11/30/2006
CHLOROFORM	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day	ALIM, Kidney, DEV		OEHHA	11/30/2006
CHROMIUM	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006

TABLE A3-5.2

NON-CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Inhalation RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
CHROMIUM III	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CHROMIUM VI	chronic	8 0E-06	mg/m^3	2.3E-06	mg/kg/day	RESP	90	IRIS	11/30/2006
CHRYSENE	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CIS-1,2-DICHLOROETHENE	chronic	3 5E-02	mg/m^3	1.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
COBALT	chronic	2.0E-05	mg/m^3	5.7E-06	mg/kg/day			EPA-Region 9	10/01/2004
COPPER	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
CYCLOHEXANE	chronic	6.0E+00	mg/m^3	1.7E+00	mg/kg/day	Dec. offspring weight	3E+02	IRIS	11/30/2006
DIBROMOCHLOROMETHANE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
DICHLORODIFLUOROMETHANE	chronic	2.0E-01	mg/m^3	5.7E-02	mg/kg/day			EPA-Region 9	10/01/2004
DIELDRIN	chronic	1.8E-04	mg/m^3	5.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
ETHANOL	chronic	NA	mg/m^3	NA	mg/kg/day				04/13/2007
ETHYLBENZENE	chronic	1.0E+00	mg/m^3	2.9E-01	mg/kg/day	DEV, ALIM, liver, kidney, endocrine system	300	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	chronic	1.4E-01	mg/m^3	4.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
HEPTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
HEXANE (N-HEXANE)	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day	Peripheral neuropathy	300	IRIS	11/30/2006
IRON	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
ISOPHORONE	chronic	2.0E+00	mg/m^3	5.7E-01	mg/kg/day	development, liver		OEHHA	07/24/2007
LEAD	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
M,P-XYLENES	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	nervous system, RESP		IRIS	06/20/2007
MANGANESE	chronic	5.0E-05	mg/m^3	1.4E-05	mg/kg/day	impair neorobehavioral function	1000	IRIS	07/24/2007
MERCURY	chronic	9.0E-06	mg/m^3	2.6E-06	mg/kg/day	nervous system		OEHHA	07/24/2007
METHYL TERT-BUTYL ETHER	chronic	3.0E+00	mg/m^3	8.6E-01	mg/kg/day	inc. liver and kidney wt., renal lesions	100	IRIS	07/24/2007
METHYLENE CHLORIDE	chronic	4.0E-01	mg/m^3	1.1E-01	mg/kg/day	CVS, CNS		OEHHA	11/30/2006
MOLYBDENUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
NAPHTHALENE	chronic	3.0E-03	mg/m^3	8.5E-04	mg/kg/day	RESP	3000	IRIS	11/30/2006
NICKEL	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
O-XYLENE	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	nervous system, RESP		IRIS	06/20/2007
PCB-1254 (AROCLOR 1254)	chronic	7.0E-05	mg/m^3	2.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
PENTANE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
PHENANTHRENE	chronic	NA	mg/m^3	NA	mg/kg/day				11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	chronic	2.5E-04	mg/m^3	7.0E-05	mg/kg/day			EPA-Region 9	10/01/2004
PYRENE	chronic	1.1E-01	mg/m^3	3.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
SILVER	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
TETRACHLOROETHENE	chronic	3.5E-02	mg/m^3	1.0E-02	mg/kg/day			EPA-Region 9	10/01/2004
TETRAHYDROFURAN	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day			EPA-Region 9	10/01/2004
THALLIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
TOLUENE	chronic	3.0E-01	mg/m^3	8.6E-02	mg/kg/day	CNS, RESP, DEV	10	OEHHA	11/30/2006
TRANS-1,2-DICHLOROETHENE	chronic	7.0E-02	mg/m^3	2.0E-02	mg/kg/day			EPA-Region 9	10/01/2004

TABLE A3-5.2

NON-CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Inhalation RfD		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
TRICHLOROETHENE	chronic	6.0E-01	mg/m^3	1.7E-01	mg/kg/day	CNS, eyes		OEHHA	11/30/2006
TRICHLOROFLUOROMETHANE (FREON 11)	chronic	7.0E-01	mg/m^3	2.0E-01	mg/kg/day			EPA-Region 9	10/01/2004
VANADIUM	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007
VINYL CHLORIDE	chronic	1.0E-01	mg/m^3	2.9E-02	mg/kg/day	Liver	30	IRIS	11/30/2006
ZINC	chronic	NA	mg/m^3	NA	mg/kg/day				07/24/2007

Footnotes:

Cal-EPA: Technical Support Document for Describing Available Cancer Potency Factors (OEHHA 2003).

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

EPA-Region 9: USEPA Region IX PRG Table (EPA 2004c).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ni: No information available.

mg/m^3: milligram per cubic meter.

mg/kg/day: milligram per kilogram per day.

CNS: Central Nervous system

CVS: Cadiovascular system

RESP: Respiratory system

ALIM: Alimentary system

DEV: Developmental

TABLE A3-6.1

CANCER TOXICITY DATA - ORAL/DERMAL

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Oral Cancer Slope Factor		Dermal Absorption Adjustment	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units	(1)	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	OEHHA	11/30/2006
1,1,2,2-TETRACHLOROETHANE	2.7E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,1,2-TRICHLOROETHANE	7 2E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1-DICHLOROETHANE	5 7E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	OEHHA	11/30/2006
1,1-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,2-DICHLOROBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
1,2-DICHLOROETHANE	9.1E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	IRIS	11/30/2006
1,3,5-TRIMETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
1,3-BUTADIENE	6.0E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	5.4E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2B	OEHHA	11/30/2006
1,4-DIOXANE	2.7E-02	mg/kg/day^{-1}	10.00	2.7E-03	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
2-BUTANONE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
2-METHYLNAPHTHALENE	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}			11/30/2006
2-PROPANOL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
4,4'-DDD	2.4E-01	mg/kg/day^{-1}	33.33	7.2E-03	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4,4'-DDE	3.4E-01	mg/kg/day^{-1}	33.33	1.0E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4,4'-DDT	3.4E-01	mg/kg/day^{-1}	33.33	1.0E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
4-ETHYLTOLUENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ACETALDEHYDE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ACETONE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ALUMINUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
ANTIMONY	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
BARIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
BENZENE	1.0E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	OEHHA	11/30/2006
BENZO(A)ANTHRACENE	1 2E+00	mg/kg/day^{-1}	7.69	1.6E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZO(A)PYRENE	1.2E+01	mg/kg/day^{-1}	7.69	1.6E+00	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZO(B)FLUORANTHENE	1 2E+00	mg/kg/day^{-1}	7.69	1.6E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}			07/24/2007
BERYLLIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B1	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	1.4E-02	mg/kg/day^{-1}	10.00	1.4E-03	mg/kg/day^{-1}	B2	IRIS	11/30/2006
BROMODICHLOROMETHANE	1 3E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
BROMOFORM	7.9E-03	mg/kg/day^{-1}	10 00	7.9E-04	mg/kg/day^{-1}	B2	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	NA	mg/kg/day^{-1}	10 00	NA	mg/kg/day^{-1}	C	IRIS	07/24/2007
CADMIUM	NA	mg/kg/day^{-1}	25.00	NA	mg/kg/day^{-1}			07/24/2007
CARBON DISULFIDE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
CARBON TETRACHLORIDE	1.5E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
CHLOROFORM	3.1E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
CHROMIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
CHROMIUM III	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
CHROMIUM VI	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	IRIS	11/30/2006
CHRYSENE	1.2E-01	mg/kg/day^{-1}	7.69	1.6E-02	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
CIS-1,2-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
COBALT	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
COPPER	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007

TABLE A3-6.1

CANCER TOXICITY DATA - ORAL/DERMAL

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Oral Cancer Slope Factor		Dermal Absorption Adjustment	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units	(1)	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
CYCLOHEXANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
DIBROMOCHLOROMETHANE	8.4E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	C	IRIS	04/12/2007
DICHLORODIFLUOROMETHANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
DIELDRIN	1.6E+01	mg/kg/day^{-1}	10.00	1.6E+00	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
ETHANOL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			04/12/2007
ETHYLBENZENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
HEPTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
HEXANE (N-HEXANE)	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
IRON	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
ISOPHORONE	9.5E-04	mg/kg/day^{-1}	10.00	9.5E-05	mg/kg/day^{-1}	C	IRIS	07/24/2007
LEAD	8.5E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
M,P-XYLENES	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}		IRIS	02/27/2007
MANGANESE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
MERCURY	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
METHYL TERT-BUTYL ETHER	1.8E-04	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		OEHHA	07/24/2007
METHYLENE CHLORIDE	1.4E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
MOLYBDENUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
NAPHTHALENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	C	OEHHA (2)	10/01/2004
NICKEL	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
O-XYLENE	NA	mg/kg/day^{-1}	10.00	NA	mg/kg/day^{-1}		IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	5.0E+00	mg/kg/day^{-1}	7.14	7.0E-01	mg/kg/day^{-1}	B2	OEHHA	11/30/2006
PENTANE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
PHENANTHRENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	5.0E+00	mg/kg/day^{-1}	7.14	7.0E-01	mg/kg/day^{-1}	B2	OEHHA	07/24/2007
PYRENE	NA	mg/kg/day^{-1}	7.69	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
SILVER	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007
TETRACHLOROETHENE	5.4E-01	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2B	OEHHA	11/30/2006
TETRAHYDROFURAN	7.6E-03	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}		EPA-Region 9	10/01/2004
THALLIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
TOLUENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
TRANS-1,2-DICHLOROETHENE	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
TRICHLOROETHENE	1.3E-02	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	2A	OEHHA	11/30/2006
TRICHLOROFLUOROMETHANE (FREON 11)	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			11/30/2006
VANADIUM	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}			07/24/2007
VINYL CHLORIDE	1.5	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	A	IRIS	11/30/2006
ZINC	NA	mg/kg/day^{-1}	NA	NA	mg/kg/day^{-1}	D	IRIS	07/24/2007

Footnotes:

(1) Dermal absorption adjustment is a combination of the dermal absorption fraction (ABSd) and the gastrointestinal absorption (ABSGI) as presented in Table A3-4.2. = ABSGI/ABSd so the absorbed cancer slope factor = SFo *ABSd/ABSGI

(2) OEHHA considers naphthalene to be a carcinogen by inhalation only, therefore, the oral cancer slope factor is not used in this risk assessment.

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ne: Chemical has not been evaluated by EPA for evidence of human carcinogenicity.

ni: No information available.

mg/kg/day^{-1}: milligram per kilogram-day

TABLE A3-6.2

CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
1,1,1-TRICHLOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
1,1,2,2-TETRACHLOROETHANE	5.8E-05	$(ug/m^3)^{-1}$	2.0E-01	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,1,2-TRICHLOROETHANE	1.6E-05	$(ug/m^3)^{-1}$	5.70E-02	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1-DICHLOROETHANE	1.6E-06	$(ug/m^3)^{-1}$	5.70E-03	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
1,1-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	C	IRIS	11/30/2006
1,2,4-TRIMETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,2-DICHLOROBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
1,2-DICHLOROETHANE	2.6E-05	$(ug/m^3)^{-1}$	9.1E-02	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
1,3,5-TRIMETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
1,3-BUTADIENE	1.7E-04	$(ug/m^3)^{-1}$	6.0E-01	$mg/kg/day^{-1}$		EPA-Region 9	10/01/2004
1,4-DICHLOROBENZENE	1.1E-05	$(ug/m^3)^{-1}$	4.0E-02	$mg/kg/day^{-1}$	2B	OEHHA	11/30/2006
1,4-DIOXANE	7.7E-06	$(ug/m^3)^{-1}$	2.7E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
2,2,4-TRIMETHYLPENTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-BUTANONE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-METHYLNAPHTHALENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
2-PROPANOL	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
4,4'-DDD	6.9E-05	$(ug/m^3)^{-1}$	2.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4,4'-DDE	9.7E-05	$(ug/m^3)^{-1}$	3.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4,4'-DDT	9.7E-05	$(ug/m^3)^{-1}$	3.4E-01	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
4-ETHYLTOLUENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ACETALDEHYDE	2.7E-06	$(ug/m^3)^{-1}$	1.00E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
ACETONE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ALUMINUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
ANTIMONY	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
BARIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
BENZENE	2.9E-05	$(ug/m^3)^{-1}$	1.0E-01	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
BENZO(A)ANTHRACENE	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZO(A)PYRENE	1.1E-03	$(ug/m^3)^{-1}$	3.9E+00	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZO(B)FLUORANTHENE	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BENZYL ALCOHOL (PHENYLMETHANOL)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
BERYLLIUM	2.4E-03	$(ug/m^3)^{-1}$	8.4E+00	$mg/kg/day^{-1}$	B1	IRIS	07/24/2007
BIS(2-ETHYLHEXYL)PHTHALATE	2.4E-06	$(ug/m^3)^{-1}$	8.4E-03	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BROMODICHLOROMETHANE	3.7E-05	$(ug/m^3)^{-1}$	1.3E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
BROMOFORM	1.1E-06	$(ug/m^3)^{-1}$	3.9E-03	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
BUTYLBENZYL PHTHALATE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	C	IRIS	07/24/2007
CADMIUM	4.2E-03	$(ug/m^3)^{-1}$	1.5E+01	$mg/kg/day^{-1}$	B1	OEHHA	07/24/2007
CARBON DISULFIDE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
CARBON TETRACHLORIDE	4.3E-05	$(ug/m^3)^{-1}$	1.5E-01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
CHLOROFORM	2.3E-05	$(ug/m^3)^{-1}$	8.1E-02	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
CHROMIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
CHROMIUM III	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
CHROMIUM VI	1.5E-01	$(ug/m^3)^{-1}$	5.1E+02	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
CHRYSENE	1.1E-05	$(ug/m^3)^{-1}$	3.9E-02	$mg/kg/day^{-1}$	B2	OEHHA	07/24/2007
CIS-1,2-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
COBALT	2.8E-03	$(ug/m^3)^{-1}$	9.8E+00	$mg/kg/day^{-1}$		EPA-Region 9	07/24/2007
COPPER	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007

TABLE A3-6.2

CANCER TOXICITY DATA - INHALATION

Omega Chemical Site - Whittier, California

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
CYCLOHEXANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
DIBROMOCHLOROMETHANE	2.7E-05	$(ug/m^3)^{-1}$	9.4E-02	$mg/kg/day^{-1}$	C	OEHHA	04/12/2007
DICHLORODIFLUOROMETHANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
DIELDRIN	4.6E-03	$(ug/m^3)^{-1}$	1.6E+01	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
ETHANOL	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			04/12/2007
ETHYLBENZENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
FLUORANTHENE (IDRYL)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
HEPTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
HEXANE (N-HEXANE)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
IRON	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
ISOPHORONE	2.7E-07	$(ug/m^3)^{-1}$	9.5E-04	$mg/kg/day^{-1}$	C	EPA-Region 9	07/24/2007
LEAD	1.2E-05	$(ug/m^3)^{-1}$	4.2E-02	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
M,P-XYLENES	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$		IRIS	02/27/2007
MANGANESE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
MERCURY	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
METHYL TERT-BUTYL ETHER	2.6E-07	$(ug/m^3)^{-1}$	9.1E-04	$mg/kg/day^{-1}$		OEHHA	07/24/2007
METHYLENE CHLORIDE	1.0E-06	$(ug/m^3)^{-1}$	3.5E-03	$mg/kg/day^{-1}$	B2	OEHHA	11/30/2006
MOLYBDENUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
NAPHTHALENE	3.4E-05	$(ug/m^3)^{-1}$	1.2E-01	$mg/kg/day^{-1}$	C	OEHHA	11/30/2006
NICKEL	2.6E-04	$(ug/m^3)^{-1}$	9.1E-01	$mg/kg/day^{-1}$	A	OEHHA	07/24/2007
O-XYLENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$		IRIS	02/27/2007
PCB-1254 (AROCLOR 1254)	5.7E-04	$(ug/m^3)^{-1}$	2.0E+00	$mg/kg/day^{-1}$	B2	IRIS	11/30/2006
PENTANE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
PHENANTHRENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	11/30/2006
POLYCHLORINATED BI PHENYLS, TOTAL	5.7E-04	$(ug/m^3)^{-1}$	2.0E+00	$mg/kg/day^{-1}$	B2	IRIS	07/24/2007
PYRENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
SILVER	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007
TETRACHLOROETHENE	5.9E-06	$(ug/m^3)^{-1}$	2.1E-02	$mg/kg/day^{-1}$	2B	OEHHA	11/30/2006
TETRAHYDROFURAN	1.9E-06	$(ug/m^3)^{-1}$	6.8E-03	$mg/kg/day^{-1}$		EPA-Region 9	10/01/2004
THALLIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
TOLUENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
TRANS-1,2-DICHLOROETHENE	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
TRICHLOROETHENE	2.0E-06	$(ug/m^3)^{-1}$	7.0E-03	$mg/kg/day^{-1}$	2A	OEHHA	11/30/2006
TRICHLOROFLUOROMETHANE (FREON 11)	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			11/30/2006
VANADIUM	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$			07/24/2007
VINYL CHLORIDE	7.8E-05	$(ug/m^3)^{-1}$	2.7E-01	$mg/kg/day^{-1}$	A	OEHHA	11/30/2006
ZINC	NA	$(ug/m^3)^{-1}$	NA	$mg/kg/day^{-1}$	D	IRIS	07/24/2007

Footnotes:

Cal-EPA: Technical Support Document for Describing Available Cancer Potency Factors (OEHHA 2003).

EPA-NCEA: USEPA Region III Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) (EPA 2005b).

IRIS: Integrated Risk Information System (EPA 2005a).

na: Chemical is listed, no value is available.

ne: Chemical has not been evaluated by EPA for evidence of human carcinogenicity.

ni: No information available.

$(ug/m^3)^{-1}$: cubic meter per microgram

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,4-DIOXANE	9.6E+00	mg/kg	1.7E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.5E-08	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	6.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	4.0E-03	mg/kg/day	4.8E-05
				4,4'-DDD	2.4E-02	mg/kg	4.1E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	9.9E-10	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	3.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-08	8.5E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	1.9E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	6.3E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.0E-04
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.4E+01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-06	mg/kg/day	4.0E-04	mg/kg/day	1.7E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-01	mg/kg/day	4.0E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	3.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4 0E-07	9.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.6E-06	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	8.5E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.0E-07	2.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	4.7E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	6.6E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.6E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	1 6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	2.0E-01	mg/kg/day	2.2E-06
				CADMIUM	1.3E+00	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-07	mg/kg/day	1.0E-03	mg/kg/day	6.6E-04
				CHROMIUM III	7.6E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	1 5E+00	mg/kg/day	2.5E-05
				CHROMIUM VI	1.3E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-06	mg/kg/day	3.0E-03	mg/kg/day	2.1E-03
				CHRYSENE	4.7E+00	mg/kg	8.3E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	9.9E-08	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	4.0E-02	mg/kg	7.0E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.1E-07	1.9E-08	mg/kg/day	5.0E-05	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1 8E-07	mg/kg/day	4.0E-02	mg/kg/day	4 6E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1 1E-02	mg/kg/day	3.0E-01	mg/kg/day	3 8E-02
				ISOPHORONE	9.1E+00	mg/kg	1.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.5E-09	4.4E-06	mg/kg/day	2.0E-01	mg/kg/day	2.2E-05
				LEAD	6.5E+01	mg/kg	1.1E-05	mg/kg/day	8 5E-03	mg/kg/day^{-1}	9.7E-08	3.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	3.0E-01	mg/kg	5.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	3.0E-04	mg/kg/day	5.0E-04
				MOLYBDENUM	3.4E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	5.0E-03	mg/kg/day	3.3E-04
				NAPHTHALENE	6.0E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.5E-05
				NICKEL	2.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6 1E-04
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	7.4E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.7E-07	2.1E-07	mg/kg/day	2.0E-05	mg/kg/day	1.0E-02
				PHENANTHRENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.7E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	4.4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3.5E-03
				PYRENE	2.3E+00	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.8E-05
				SILVER	6 5E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	5.0E-03	mg/kg/day	6.3E-05
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				VANADIUM	4 7E+01	mg/kg	8 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	1 0E-03	mg/kg/day	2.3E-02

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				ZINC	9.7E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-05	mg/kg/day	3.0E-01	mg/kg/day	1.6E-04
			Exp Route Total								3.3E-06					1.2E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4.5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									8.9E-06					1.5E-01
Surface Soil Total											8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E-01	ug/m3	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	6.3E-01	mg/kg/day	3.3E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.8E+00	ug/m3	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	9.2E+00	ug/m3	3.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-04	mg/kg/day	5.7E-02	mg/kg/day	1.5E-02
				ACETONE	5.0E+01	ug/m3	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-03	mg/kg/day	9.0E-01	mg/kg/day	5.2E-03
				BENZENE	1.1E+01	ug/m3	3.7E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.7E-05	1.0E-03	mg/kg/day	8.6E-03	mg/kg/day	1.2E-01
				CARBON TETRACHLORIDE	6.5E-01	ug/m3	2.2E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.3E-06	6.1E-05	mg/kg/day	1.1E-02	mg/kg/day	5.4E-03
				CHLOROFORM	2.5E-01	ug/m3	8.4E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.8E-07	2.3E-05	mg/kg/day	8.6E-02	mg/kg/day	2.7E-04
				DICHLORODIFLUOROMETHANE	3.1E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	5.7E-02	mg/kg/day	5.1E-03
				ETHYLBENZENE	1.6E+01	ug/m3	5.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	2.9E-01	mg/kg/day	5.3E-03
				M,P-XYLENES	8.2E+01	ug/m3	2.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-03	mg/kg/day	2.9E-02	mg/kg/day	2.7E-01
				METHYLENE CHLORIDE	2.6E+02	ug/m3	8.7E-03	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.1E-05	2.4E-02	mg/kg/day	1.1E-01	mg/kg/day	2.1E-01
				O-XYLENE	1.7E+01	ug/m3	5.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	2.9E-02	mg/kg/day	5.6E-02
				TETRACHLOROETHENE	1.3E+01	ug/m3	4.4E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	9.0E-06	1.2E-03	mg/kg/day	1.0E-02	mg/kg/day	1.2E-01
				TOLUENE	1.7E+02	ug/m3	5.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-02	mg/kg/day	8.6E-02	mg/kg/day	1.9E-01
				TRICHLOROETHENE	3.3E+00	ug/m3	1.1E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	7.7E-07	3.1E-04	mg/kg/day	1.7E-01	mg/kg/day	1.8E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	5.9E+00	ug/m7	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	2.0E-01	mg/kg/day	2.8E-03
			Exp. Route Total								Maximum	8.1E-05				Maximum	1.0E+00
		Exposure Point Total									Maximum	8.1E-05				Maximum	1.0E+00
Indoor Air Total											Maximum	8.1E-05				Maximum	1.0E+00
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	6.3E-01	mg/kg/day	2.1E-05
			Maximum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	3.3E-07	4.6E-06	mg/kg/day	6.0E-02	mg/kg/day	7.7E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.3E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-06	mg/kg/day	5.7E-02	mg/kg/day	6.1E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	6.6E-08	4.6E-06	mg/kg/day	2.3E-01	mg/kg/day	2.0E-05
				ACETONE	3.8E+03	ug/m3	1.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-02	mg/kg/day	9.0E-01	mg/kg/day	4.9E-02
				BENZENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.5E-07	1.3E-05	mg/kg/day	8.6E-03	mg/kg/day	1.5E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	2.6E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.0E-07	7.4E-06	mg/kg/day	1.1E-02	mg/kg/day	6.5E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	5.7E-02	mg/kg/day	6.8E-04

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.9E-01	mg/kg/day	3.9E-05
				M,P-XYLENES	3.1E+00	ug/m3	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.9E-02	mg/kg/day	1.3E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	8.7E-06	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.1E-08	2.4E-05	mg/kg/day	1.1E-01	mg/kg/day	2.1E-04
				O-XYLENE	1.2E+00	ug/m3	5.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	2.9E-02	mg/kg/day	4.9E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.5E-07	2.1E-05	mg/kg/day	1.0E-02	mg/kg/day	2.1E-03
				TOLUENE	8.1E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	8.6E-02	mg/kg/day	1.1E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.2E-08	1.3E-05	mg/kg/day	1.7E-01	mg/kg/day	7.4E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	5.9E+00	ug/m7	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	2.0E-01	mg/kg/day	3.5E-04
			Exp. Route Total								Maximum	1.5E-06				Maximum	5.8E-02
		Exposure Point Total									Maximum	1.5E-06				Maximum	5.8E-02
Outdoor Air Total											Maximum	1.5E-06				Maximum	5.8E-02
											Range of Receptor Risks Across All Media	9.2E-05	Range of Receptor Hazards Across All Media				1.2E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7 1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,4-DIOXANE	9.6E+00	mg/kg	1.7E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.5E-08	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	6.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	4.0E-03	mg/kg/day	4.8E-05
				4,4'-DDD	2.4E-02	mg/kg	4.1E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	9.9E-10	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	3.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-08	8.5E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	1.9E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	6.3E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.0E-04
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.4E+01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-06	mg/kg/day	4.0E-04	mg/kg/day	1.7E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-01	mg/kg/day	4.0E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	3.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.0E-07	9.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.6E-06	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	8.5E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.0E-07	2.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	4.7E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	6.6E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.6E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	2.0E-01	mg/kg/day	2.2E-06
				CADMIUM	1.3E+00	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-07	mg/kg/day	1.0E-03	mg/kg/day	6.6E-04
				CHROMIUM III	7.6E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.5E-05
				CHROMIUM VI	1.3E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-06	mg/kg/day	3.0E-03	mg/kg/day	2.1E-03
				CHRYSENE	4.7E+00	mg/kg	8.3E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	9.9E-08	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	4.0E-02	mg/kg	7.0E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.1E-07	1.9E-08	mg/kg/day	5.0E-05	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-02	mg/kg/day	4.6E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	3.8E-02
				ISOPHORONE	9.1E+00	mg/kg	1.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.5E-09	4.4E-06	mg/kg/day	2.0E-01	mg/kg/day	2.2E-05
				LEAD	6.5E+01	mg/kg	1.1E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	9.7E-08	3.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	3.0E-01	mg/kg	5.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	3.0E-04	mg/kg/day	5.0E-04
				MOLYBDENUM	3.4E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	5.0E-03	mg/kg/day	3.3E-04
				NAPHTHALENE	6.0E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.5E-05
				NICKEL	2.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.1E-04
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	7.4E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.7E-07	2.1E-07	mg/kg/day	2.0E-05	mg/kg/day	1.0E-02
				PHENANTHRENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.7E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	4.4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3.5E-03
				PYRENE	2.3E+00	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.8E-05
				SILVER	6.5E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	5.0E-03	mg/kg/day	6.3E-05
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				VANADIUM	4.7E+01	mg/kg	8.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.3E-02

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ZINC	9.7E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-05	mg/kg/day	3.0E-01	mg/kg/day	1.6E-04
			Exp. Route Total								3.3E-06					1.2E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4.5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
	Surface Soil
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake	
	Surface Soil
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									8.9E-06					1.5E-01
Surface Soil Total											8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	6.3E-01	mg/kg/day	3.1E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	7.0E-01	ug/m3	2.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-05	mg/kg/day	5.7E-02	mg/kg/day	1.2E-03
				ACETONE	2.4E+01	ug/m3	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	9.0E-01	mg/kg/day	2.5E-03
				BENZENE	2.8E+00	ug/m3	9.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	9.4E-06	2.6E-04	mg/kg/day	8.6E-03	mg/kg/day	3.1E-02
				CARBON TETRACHLORIDE	5.7E-01	ug/m3	1.9E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.9E-06	5.4E-05	mg/kg/day	1.1E-02	mg/kg/day	4.7E-03
				CHLOROFORM	2.5E-01	ug/m3	8.4E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.8E-07	2.3E-05	mg/kg/day	8.6E-02	mg/kg/day	2.7E-04
				DICHLORODIFLUOROMETHANE	1.4E+00	ug/m3	4.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	5.7E-02	mg/kg/day	2.3E-03
				ETHYLBENZENE	3.2E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.9E-01	mg/kg/day	1.1E-03
				M,P-XYLENES	1.4E+01	ug/m3	4.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	2.9E-02	mg/kg/day	4.6E-02
				METHYLENE CHLORIDE	1.8E+00	ug/m3	6.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.1E-07	1.7E-04	mg/kg/day	1.1E-01	mg/kg/day	1.5E-03
				O-XYLENE	2.9E+00	ug/m3	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	2.9E-02	mg/kg/day	9.5E-03
				TETRACHLOROETHENE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	6.9E-07	9.4E-05	mg/kg/day	1.0E-02	mg/kg/day	9.4E-03
				TOLUENE	3.4E+01	ug/m3	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-03	mg/kg/day	8.6E-02	mg/kg/day	3.7E-02
				TRICHLOROETHENE	2.5E-01	ug/m3	8.4E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.9E-08	2.3E-05	mg/kg/day	1.7E-01	mg/kg/day	1.4E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	6.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	2.0E-01	mg/kg/day	9.4E-04
			Exp. Route Total								Minimum	1.4E-05				Minimum	1.5E-01
		Exposure Point Total									Minimum	1.4E-05				Minimum	1.5E-01
Indoor Air Total											Minimum	1.4E-05				Minimum	1.5E-01
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	6.3E-01	mg/kg/day	2.1E-05
			Minimum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	3.3E-07	4.6E-06	mg/kg/day	6.0E-02	mg/kg/day	7.7E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.3E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-06	mg/kg/day	5.7E-02	mg/kg/day	6.1E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	6.6E-08	4.6E-06	mg/kg/day	2.3E-01	mg/kg/day	2.0E-05
				ACETONE	3.8E+03	ug/m3	1.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-02	mg/kg/day	9.0E-01	mg/kg/day	4.9E-02
				BENZENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.5E-07	1.3E-05	mg/kg/day	8.6E-03	mg/kg/day	1.5E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	2.6E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.0E-07	7.4E-06	mg/kg/day	1.1E-02	mg/kg/day	6.5E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	5.7E-02	mg/kg/day	6.8E-04

TABLE A3-7.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	Surface Soil	Noncancer Intake	Surface Soil
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.9E-01	mg/kg/day	3.9E-05
				M,P-XYLENES	3.1E+00	ug/m3	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.9E-02	mg/kg/day	1.3E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	8.7E-06	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.1E-08	2.4E-05	mg/kg/day	1.1E-01	mg/kg/day	2.1E-04
				O-XYLENE	1.2E+00	ug/m3	5.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	2.9E-02	mg/kg/day	4.9E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.5E-07	2.1E-05	mg/kg/day	1.0E-02	mg/kg/day	2.1E-03
				TOLUENE	8.1E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	8.6E-02	mg/kg/day	1.1E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.2E-08	1.3E-05	mg/kg/day	1.7E-01	mg/kg/day	7.4E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	2.0E-01	mg/kg/day	1.2E-04
			Exp. Route Total								Minimum	1.5E-06				Minimum	5.8E-02
		Exposure Point Total									Minimum	1.5E-06				Minimum	5.8E-02
Outdoor Air Total											Minimum	1.5E-06				Minimum	5.8E-02
											Range of Receptor Risks Across All Media	2.4E-05	Range of Receptor Hazards Across All Media				3.5E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,4-DIOXANE	9.6E+00	mg/kg	1.7E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.5E-08	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	6.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	4.0E-03	mg/kg/day	4.8E-05
				4,4'-DDD	2.4E-02	mg/kg	4.1E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	9.9E-10	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	3.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-08	8.5E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	1.9E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	6.3E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.0E-04
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.4E+01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-06	mg/kg/day	4.0E-04	mg/kg/day	1.7E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-01	mg/kg/day	4.0E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	3.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.0E-07	9.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.6E-06	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	8.5E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.0E-07	2.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	4.7E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	6.6E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.6E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	2.0E-01	mg/kg/day	2.2E-06
				CADMIUM	1.3E+00	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-07	mg/kg/day	1.0E-03	mg/kg/day	6.6E-04
				CHROMIUM III	7.6E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.5E-05
				CHROMIUM VI	1.3E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-06	mg/kg/day	3.0E-03	mg/kg/day	2.1E-03
				CHRYSENE	4.7E+00	mg/kg	8.3E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	9.9E-08	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7 0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	4.0E-02	mg/kg	7.0E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.1E-07	1.9E-08	mg/kg/day	5.0E-05	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-02	mg/kg/day	4.6E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	3.8E-02
				ISOPHORONE	9.1E+00	mg/kg	1.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.5E-09	4.4E-06	mg/kg/day	2.0E-01	mg/kg/day	2.2E-05
				LEAD	6.5E+01	mg/kg	1.1E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	9.7E-08	3.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	3.0E-01	mg/kg	5.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	3.0E-04	mg/kg/day	5.0E-04
				MOLYBDENUM	3 4E+00	mg/kg	5 9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	5.0E-03	mg/kg/day	3.3E-04
				NAPHTHALENE	6.0E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.5E-05
				NICKEL	2.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.1E-04
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	7.4E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.7E-07	2.1E-07	mg/kg/day	2.0E-05	mg/kg/day	1.0E-02
				PHENANTHRENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.7E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	4.4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3.5E-03
				PYRENE	2.3E+00	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.8E-05
				SILVER	6.5E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	5.0E-03	mg/kg/day	6.3E-05
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				VANADIUM	4.7E+01	mg/kg	8 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.3E-02

TABLE A3-7 1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				ZINC	9.7E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-05	mg/kg/day	3.0E-01	mg/kg/day	1.6E-04
			Exp. Route Total								3.3E-06					1.2E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4 5E-06	mg/kg/day	1 6E-01	mg/kg/day^{-1}	6 9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2 7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1 4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7 6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1 6E-02	mg/kg/day^{-1}	1.7E-07	3 1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9 5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									8.9E-06					1.5E-01
Surface Soil Total											8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	3.3E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-05	mg/kg/day	6.3E-01	mg/kg/day	4.9E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.1E+01	ug/m3	1.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.8E+01	ug/m3	6.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	5.7E-02	mg/kg/day	3.0E-02
				ACETONE	6.0E+03	ug/m3	2.0E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-01	mg/kg/day	9.0E-01	mg/kg/day	6.3E-01
				BENZENE	5.3E+00	ug/m3	1.8E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1 8E-05	5.0E-04	mg/kg/day	8.6E-03	mg/kg/day	5.8E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	2.2E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.4E-06	6.3E-05	mg/kg/day	1.1E-02	mg/kg/day	5.5E-03
				CHLOROFORM	1.9E-01	ug/m3	6.4E-06	mg/kg/day	8 1E-02	mg/kg/day^{-1}	5.1E-07	1.8E-05	mg/kg/day	8.6E-02	mg/kg/day	2.1E-04
				DICHLORODIFLUOROMETHANE	2.7E+00	ug/m3	9.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	5.7E-02	mg/kg/day	4.4E-03
				ETHYLBENZENE	4.8E+01	ug/m3	1.6E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-03	mg/kg/day	2.9E-01	mg/kg/day	1.6E-02
				M,P-XYLENES	2.7E+02	ug/m3	9.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-02	mg/kg/day	2.9E-02	mg/kg/day	8.9E-01
				METHYLENE CHLORIDE	4.8E+00	ug/m3	1.6E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	5.6E-07	4.5E-04	mg/kg/day	1.1E-01	mg/kg/day	4.0E-03
				O-XYLENE	7.8E+01	ug/m3	2.6E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-03	mg/kg/day	2 9E-02	mg/kg/day	2.6E-01
				TETRACHLOROETHENE	3.4E+01	ug/m3	1.1E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.4E-05	3.2E-03	mg/kg/day	1.0E-02	mg/kg/day	3.2E-01
				TOLUENE	2.4E+03	ug/m3	8.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-01	mg/kg/day	8 6E-02	mg/kg/day	2.6E+00
				TRICHLOROETHENE	6.5E+00	ug/m3	2.2E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.5E-06	6.1E-04	mg/kg/day	1.7E-01	mg/kg/day	3.6E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.4E+01	ug/m3	4.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	2.0E-01	mg/kg/day	6.6E-03
			Exp. Route Total								Maximum 4.7E-05					Maximum 4.8E+00
		Exposure Point Total									Maximum 4.7E-05					Maximum 4.8E+00
Indoor Air Total											4.7E-05					4.8E+00
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	6.3E-01	mg/kg/day	2.1E-05
			Maximum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	3.3E-07	4.6E-06	mg/kg/day	6.0E-02	mg/kg/day	7.7E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.3E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-06	mg/kg/day	5.7E-02	mg/kg/day	6.1E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	6.6E-08	4.6E-06	mg/kg/day	2.3E-01	mg/kg/day	2.0E-05
				ACETONE	3.8E+03	ug/m3	1.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-02	mg/kg/day	9.0E-01	mg/kg/day	4.9E-02
				BENZENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.5E-07	1.3E-05	mg/kg/day	8.6E-03	mg/kg/day	1.5E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	2.6E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.0E-07	7.4E-06	mg/kg/day	1.1E-02	mg/kg/day	6.5E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	5.7E-02	mg/kg/day	6.8E-04

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air:	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake	
Surface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air:	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.9E-01	mg/kg/day	3.9E-05
				M,P-XYLENES	3.1E+00	ug/m3	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.9E-02	mg/kg/day	1.3E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	8.7E-06	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.1E-08	2.4E-05	mg/kg/day	1.1E-01	mg/kg/day	2.1E-04
				O-XYLENE	1.2E+00	ug/m3	5.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	2.9E-02	mg/kg/day	4.9E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.5E-07	2.1E-05	mg/kg/day	1.0E-02	mg/kg/day	2.1E-03
				TOLUENE	8.1E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	8 6E-02	mg/kg/day	1.1E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.2E-08	1.3E-05	mg/kg/day	1.7E-01	mg/kg/day	7.4E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	1.4E+01	ug/m3	5.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	8.2E-04
			Exp. Route Total							Maximum	1.5E-06				Maximum	5.9E-02
		Exposure Point Total								Maximum	1.5E-06				Maximum	5.9E-02
Outdoor Air Total										Maximum	1.5E-06				Maximum	5.9E-02
										Total of Receptor Risks Across All Media	5.8E-05	Total of Receptor Hazards Across All Media				5.1E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,4-DIOXANE	9.6E+00	mg/kg	1.7E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.5E-08	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	6.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	4.0E-03	mg/kg/day	4.8E-05
				4,4'-DDD	2.4E-02	mg/kg	4.1E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	9.9E-10	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	3.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-08	8.5E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	1.9E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	6.3E-09	5.2E-08	mg/kg/day	5.0E-04	mg/kg/day	1.0E-04
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.4E+01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-06	mg/kg/day	4.0E-04	mg/kg/day	1.7E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-01	mg/kg/day	4.0E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	3.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.0E-07	9.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.6E-06	3.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	8.5E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.0E-07	2.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	4.7E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	6.6E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.6E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	2.0E-01	mg/kg/day	2.2E-06
				CADMIUM	1.3E+00	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-07	mg/kg/day	1.0E-03	mg/kg/day	6.6E-04
				CHROMIUM III	7.6E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.5E-05
				CHROMIUM VI	1 3E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-06	mg/kg/day	3.0E-03	mg/kg/day	2.1E-03
				CHRYSENE	4 7E+00	mg/kg	8.3E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	9.9E-08	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	4.0E-02	mg/kg	7.0E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.1E-07	1.9E-08	mg/kg/day	5.0E-05	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-02	mg/kg/day	4.6E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	3.8E-02
				ISOPHORONE	9.1E+00	mg/kg	1.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.5E-09	4.4E-06	mg/kg/day	2.0E-01	mg/kg/day	2.2E-05
				LEAD	6.5E+01	mg/kg	1.1E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	9.7E-08	3.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	3.0E-01	mg/kg	5.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	3.0E-04	mg/kg/day	5.0E-04
				MOLYBDENUM	3.4E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	5.0E-03	mg/kg/day	3.3E-04
				NAPHTHALENE	6.0E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.5E-05
				NICKEL	2.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.1E-04
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	7.4E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.7E-07	2.1E-07	mg/kg/day	2.0E-05	mg/kg/day	1.0E-02
				PHENANTHRENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5 0E-01	mg/kg	8.7E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	4.4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3.5E-03
				PYRENE	2.3E+00	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	3.0E-02	mg/kg/day	3.8E-05
				SILVER	6.5E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	5.0E-03	mg/kg/day	6.3E-05
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				VANADIUM	4.7E+01	mg/kg	8.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.3E-02

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake	
Surface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ZINC	9.7E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-05	mg/kg/day	3.0E-01	mg/kg/day	1.6E-04
			Exp. Route Total								3.3E-06					1.2E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3 9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4 5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6 9E-07	1 2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2 7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1 7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1 7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5 0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3 9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1 6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		**Noncancer Intake**	
Surface Soil		**Surface Soil**	
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									8.9E-06					1.5E-01
Surface Soil Total											8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	3.2E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	6.3E-01	mg/kg/day	4.8E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.6E+00	ug/m3	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	5.7E-02	mg/kg/day	2.6E-03
				ACETONE	3.3E+02	ug/m3	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-02	mg/kg/day	9.0E-01	mg/kg/day	3.4E-02
				BENZENE	2.6E+00	ug/m3	8.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	8.7E-06	2.4E-04	mg/kg/day	8.6E-03	mg/kg/day	2.8E-02
				CARBON TETRACHLORIDE	6.6E-01	ug/m3	2.2E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.3E-06	6.2E-05	mg/kg/day	1.1E-02	mg/kg/day	5.4E-03
				CHLOROFORM	1.9E-01	ug/m3	6.4E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	5.1E-07	1.8E-05	mg/kg/day	8.6E-02	mg/kg/day	2.1E-04
				DICHLORODIFLUOROMETHANE	1.9E+00	ug/m3	6.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	5.7E-02	mg/kg/day	3.1E-03
				ETHYLBENZENE	4.6E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	2.9E-01	mg/kg/day	1.5E-03
				M,P-XYLENES	2.1E+01	ug/m3	7.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	2.9E-02	mg/kg/day	6.9E-02
				METHYLENE CHLORIDE	1.5E+00	ug/m3	5.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	1.1E-01	mg/kg/day	1.2E-03
				O-XYLENE	5.1E+00	ug/m3	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	2.9E-02	mg/kg/day	1.7E-02
				TETRACHLOROETHENE	6.0E+00	ug/m3	2.0E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.2E-06	5.6E-04	mg/kg/day	1.0E-02	mg/kg/day	5.6E-02
				TOLUENE	3.6E+01	ug/m3	1.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-03	mg/kg/day	8.6E-02	mg/kg/day	3.9E-02
				TRICHLOROETHENE	3.5E+00	ug/m3	1.2E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	8.2E-07	3.3E-04	mg/kg/day	1.7E-01	mg/kg/day	1.9E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.1E+01	ug/m3	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	2.0E-01	mg/kg/day	5.2E-03
			Exp. Route Total							Minimum	1.8E-05				Minimum	2.7E-01
		Exposure Point Total								Minimum	1.8E-05				Minimum	2.7E-01
Indoor Air Total											1.8E-05					2.7E-01
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	6.3E-01	mg/kg/day	2.1E-05
			Minimum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	3.3E-07	4.6E-06	mg/kg/day	6.0E-02	mg/kg/day	7.7E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.3E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-06	mg/kg/day	5.7E-02	mg/kg/day	6.1E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	6.6E-08	4.6E-06	mg/kg/day	2.3E-01	mg/kg/day	2.0E-05
				ACETONE	3.8E+03	ug/m3	1.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-02	mg/kg/day	9.0E-01	mg/kg/day	4.9E-02
				BENZENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.5E-07	1.3E-05	mg/kg/day	8.6E-03	mg/kg/day	1.5E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	2.6E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.0E-07	7.4E-06	mg/kg/day	1.1E-02	mg/kg/day	6.5E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	5.7E-02	mg/kg/day	6.8E-04

TABLE A3-7.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	4.0E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.1E-05	mg/kg/day	2.9E-01	mg/kg/day	3.9E-05
				M,P-XYLENES	3.1E+00	ug/m3	1.3E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.7E-05	mg/kg/day	2.9E-02	mg/kg/day	1.3E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	8.7E-06	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	3.1E-08	2.4E-05	mg/kg/day	1.1E-01	mg/kg/day	2.1E-04
				O-XYLENE	1.2E+00	ug/m3	5.0E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.4E-05	mg/kg/day	2.9E-02	mg/kg/day	4.9E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	7.4E-06	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	1.5E-07	2.1E-05	mg/kg/day	1.0E-02	mg/kg/day	2.1E-03
				TOLUENE	8.1E+00	ug/m3	3.4E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	9.5E-05	mg/kg/day	8.6E-02	mg/kg/day	1.1E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	4.5E-06	mg/kg/day	7.0E-03	$mg/kg/day^{-1}$	3.2E-08	1.3E-05	mg/kg/day	1.7E-01	mg/kg/day	7.4E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	1.1E+01	ug/m3	4.6E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.5E-04
			Exp. Route Total								Minimum	1.5E-06				Minimum	5.9E-02
		Exposure Point Total									Minimum	1.5E-06				Minimum	5.9E-02
Outdoor Air Total											Minimum	1.5E-06				Minimum	5.9E-02
											Total of Receptor Risks Across All Media	2.8E-05	Total of Receptor Hazards Across All Media				4.7E-01

ND: Not Detected.

NS: Not selected as an exposure pathway

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---. Risk was not calculated for chemical.

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE A3-7.1C - Parcel North - Medlin & Sons 12484, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	6.3E-01	mg/kg/day	3.1E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.0E+01	ug/m3	1.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.0E+01	ug/m3	3.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-04	mg/kg/day	5.7E-02	mg/kg/day	1.6E-02
				1,4-DICHLOROBENZENE	9.5E-01	ug/m3	3.2E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	1.3E-06	8.9E-05	mg/kg/day	2.3E-01	mg/kg/day	3.9E-04
				ACETONE	3.4E+03	ug/m3	1.1E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-01	mg/kg/day	9.0E-01	mg/kg/day	3.5E-01
				BENZENE	1.1E+00	ug/m3	3.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.7E-06	1.0E-04	mg/kg/day	8.6E-03	mg/kg/day	1.2E-02
				CARBON TETRACHLORIDE	1.3E+00	ug/m3	4.4E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.5E-06	1.2E-04	mg/kg/day	1.1E-02	mg/kg/day	1.1E-02
				CHLOROFORM	3.2E-01	ug/m3	1.1E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	8.6E-07	3.0E-05	mg/kg/day	8.6E-02	mg/kg/day	3.5E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	5.7E-02	mg/kg/day	5.4E-03
				ETHYLBENZENE	8.5E-01	ug/m3	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-05	mg/kg/day	2.9E-01	mg/kg/day	2.8E-04
				M,P-XYLENES	2.7E+00	ug/m3	9.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	2.9E-02	mg/kg/day	8.9E-03
				METHYLENE CHLORIDE	5.1E+00	ug/m3	1.7E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	6.0E-07	4.8E-04	mg/kg/day	1.1E-01	mg/kg/day	4.2E-03
				O-XYLENE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-05	mg/kg/day	2.9E-02	mg/kg/day	3.3E-03
				TETRACHLOROETHENE	2.2E+01	ug/m3	7.4E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.5E-05	2.1E-03	mg/kg/day	1.0E-02	mg/kg/day	2.1E-01
				TOLUENE	7.4E+00	ug/m3	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-04	mg/kg/day	8.6E-02	mg/kg/day	8.1E-03
				TRICHLOROETHENE	1.4E+01	ug/m3	4.7E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.3E-06	1.3E-03	mg/kg/day	1.7E-01	mg/kg/day	7.7E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.2E+01	ug/m3	4.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	5.6E-03
			Exp. Route Total							Maximum	3.1E-05				Maximum	6.5E-01
		Exposure Point Total								Maximum	3.1E-05				Maximum	6.5E-01
Indoor Air Total										Maximum	3.1E-05				Maximum	6.5E-01
										Total of Receptor Risks Across All Media	3.1E-05	Total of Receptor Hazards Across All Media				6.5E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

(1) The total only includes the maximum calculated risks and hazards of the inhalation pathways through soil gas, groundwater, and indoor air since receptors are exposed to these media all through the indoor air pathway.

TABLE A3-7.1C - Parcel North - Medlin & Sons 12484, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	7.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	6.3E-01	mg/kg/day	3.1E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.7E+01	ug/m3	5.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.9E+00	ug/m3	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	5.7E-02	mg/kg/day	4.8E-03
				1,4-DICHLOROBENZENE	2.0E-01	ug/m3	6.7E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	2.7E-07	1.9E-05	mg/kg/day	2.3E-01	mg/kg/day	8.2E-05
				ACETONE	2.2E+01	ug/m3	7.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	9.0E-01	mg/kg/day	2.3E-03
				BENZENE	9.1E-01	ug/m3	3.1E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.1E-06	8.5E-05	mg/kg/day	8.6E-03	mg/kg/day	1.0E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	2.2E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.4E-06	6.3E-05	mg/kg/day	1.1E-02	mg/kg/day	5.5E-03
				CHLOROFORM	2.0E-01	ug/m3	6.7E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	5.4E-07	1.9E-05	mg/kg/day	8.6E-02	mg/kg/day	2.2E-04
				DICHLORODIFLUOROMETHANE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	5.7E-02	mg/kg/day	2.0E-03
				ETHYLBENZENE	7.2E-01	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-05	mg/kg/day	2.9E-01	mg/kg/day	2.4E-04
				M,P-XYLENES	2.2E+00	ug/m3	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-04	mg/kg/day	2.9E-02	mg/kg/day	7.2E-03
				METHYLENE CHLORIDE	1.7E+00	ug/m3	5.7E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.0E-07	1.6E-04	mg/kg/day	1.1E-01	mg/kg/day	1.4E-03
				O-XYLENE	8.7E-01	ug/m3	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	2.9E-02	mg/kg/day	2.9E-03
				TETRACHLOROETHENE	4.3E+00	ug/m3	1.4E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.0E-06	4.0E-04	mg/kg/day	1.0E-02	mg/kg/day	4.0E-02
				TOLUENE	4.8E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-04	mg/kg/day	8.6E-02	mg/kg/day	5.3E-03
				TRICHLOROETHENE	2.3E+00	ug/m3	7.7E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.4E-07	2.2E-04	mg/kg/day	1.7E-01	mg/kg/day	1.3E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	5.4E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
			Exp. Route Total							Minimum	1.1E-05				Minimum	8.6E-02
		Exposure Point Total								Minimum	1.1E-05				Minimum	8.6E-02
Indoor Air Total										Minimum	1.1E-05				Minimum	8.6E-02
										Total of Receptor Risks Across All Media	1.1E-05	Total of Receptor Hazards Across All Media				8.6E-02

ND. Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

(1) The total only includes the maximum calculated risks and hazards of the inhalation pathways through soil gas, groundwater, and indoor air since receptors are exposed to these media all through the indoor air pathway.

TABLE A3-7.1D - Parcel North - Medlin & Sons North 12476, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9E+00	ug/m3	6.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	4.3E+02	ug/m3	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-02	mg/kg/day	9.0E-01	mg/kg/day	4.5E-02
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	8.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	5.7E-02	mg/kg/day	4.3E-03
				TOLUENE	2.8E+00	ug/m3	9.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	8.6E-02	mg/kg/day	3.1E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.5E-04
			Exp. Route Total							Maximum	0.0E+00				Maximum	5.3E-02
		Exposure Point Total								Maximum	0.0E+00				Maximum	5.3E-02
Indoor Air Total										Maximum	0.0E+00				Maximum	5.3E-02
										Total of Receptor Risks Across All Media	0.0E+00	Total of Receptor Hazards Across All Media				5.3E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day. milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

(1) The total only includes the maximum calculated risks and hazards of the inhalation pathways through soil gas, groundwater, and indoor air since receptors are exposed to these media all through the indoor air pathway.

TABLE A3-7.1D - Parcel North - Medlin & Sons North 12476, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age.	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9E+00	ug/m3	6.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
			Minimum	ACETONE	4.3E+02	ug/m3	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-02	mg/kg/day	9.0E-01	mg/kg/day	4.5E-02
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	8.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	5.7E-02	mg/kg/day	4.3E-03
				TOLUENE	2.8E+00	ug/m3	9.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	8.6E-02	mg/kg/day	3.1E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.5E-04
			Exp. Route Total							Minimum	0.0E+00				Minimum	5.3E-02
		Exposure Point Total								Minimum	0 0E+00				Minimum	5.3E-02
Indoor Air Total										Minimum	0 0E+00				Minimum	5.3E-02
										Total of Receptor Risks Across All Media	0.0E+00	Total of Receptor Hazards Across All Media				5.3E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day

(1) The total only includes the maximum calculated risks and hazards of the inhalation pathways through soil gas, groundwater, and indoor air since receptors are exposed to these media all through the indoor air pathway.

TABLE A3-7.1E - Parcel West - Terrapave, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.9E-01	ug/m3	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	6 3E-01	mg/kg/day	7.3E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.6E+01	ug/m3	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.3E+01	ug/m3	7.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	5.7E-02	mg/kg/day	3.8E-02
				1,4-DICHLOROBENZENE	2.7E-01	ug/m3	9.1E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	3.6E-07	2.5E-05	mg/kg/day	2.3E-01	mg/kg/day	1.1E-04
				ACETONE	4.3E+01	ug/m3	1.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-03	mg/kg/day	9.0E-01	mg/kg/day	4.5E-03
				BENZENE	1.4E+00	ug/m3	4.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.7E-06	1.3E-04	mg/kg/day	8.6E-03	mg/kg/day	1.5E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	2.2E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.4E-06	6.3E-05	mg/kg/day	1.1E-02	mg/kg/day	5.5E-03
				CHLOROFORM	2.4E-01	ug/m3	8.1E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.5E-07	2.3E-05	mg/kg/day	8.6E-02	mg/kg/day	2.6E-04
				DICHLORODIFLUOROMETHANE	2.9E+00	ug/m3	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	5.7E-02	mg/kg/day	4.8E-03
				ETHYLBENZENE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.9E-01	mg/kg/day	5.3E-04
				M,P-XYLENES	5.5E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	2.9E-02	mg/kg/day	1.8E-02
				METHYLENE CHLORIDE	1.5E+00	ug/m3	5.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	1.1E-01	mg/kg/day	1.2E-03
				O-XYLENE	2.1E+00	ug/m3	7.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	2.9E-02	mg/kg/day	6.9E-03
				TETRACHLOROETHENE	1.1E+02	ug/m3	3.7E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	7.6E-05	1.0E-02	mg/kg/day	1.0E-02	mg/kg/day	1.0E+00
				TOLUENE	1.0E+01	ug/m3	3.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-04	mg/kg/day	8.6E-02	mg/kg/day	1.1E-02
				TRICHLOROETHENE	4.4E+00	ug/m3	1.5E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.0E-06	4.1E-04	mg/kg/day	1.7E-01	mg/kg/day	2.4E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	7.0E+00	ug/m3	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-04	mg/kg/day	2.0E-01	mg/kg/day	3.3E-03
			Exp. Route Total							Maximum	8.6E-05				Maximum	1.1E+00
		Exposure Point Total								Maximum	8.6E-05				Maximum	1.1E+00
Indoor Air Total										Maximum	8.6E-05				Maximum	1.1E+00
										Total of Receptor Risks Across All Media	8.6E-05				Total of Receptor Hazards Across All Media	1.1E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.1E - Parcel West - Terrapave, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	4.5E-01	ug/m3	1.5E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.2E-05	mg/kg/day	6.3E-01	mg/kg/day	6.7E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.3E+00	ug/m3	2.1E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	5.5E+00	ug/m3	1.8E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.2E-04	mg/kg/day	5.7E-02	mg/kg/day	9.1E-03
				1,4-DICHLOROBENZENE	2.3E-01	ug/m3	7.7E-06	mg/kg/day	4.0E-02	$mg/kg/day^{-1}$	3.1E-07	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.5E-05
				ACETONE	2.2E+01	ug/m3	7.4E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.1E-03	mg/kg/day	9.0E-01	mg/kg/day	2.3E-03
				BENZENE	1.1E+00	ug/m3	3.7E-05	mg/kg/day	1.0E-01	$mg/kg/day^{-1}$	3.7E-06	1.0E-04	mg/kg/day	8.6E-03	mg/kg/day	1.2E-02
				CARBON TETRACHLORIDE	5.6E-01	ug/m3	1.9E-05	mg/kg/day	1.5E-01	$mg/kg/day^{-1}$	2.8E-06	5.3E-05	mg/kg/day	1.1E-02	mg/kg/day	4.6E-03
				CHLOROFORM	2.1E-01	ug/m3	7.0E-06	mg/kg/day	8.1E-02	$mg/kg/day^{-1}$	5.7E-07	2.0E-05	mg/kg/day	8.6E-02	mg/kg/day	2.3E-04
				DICHLORODIFLUOROMETHANE	1.5E+00	ug/m3	5.0E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.4E-04	mg/kg/day	5.7E-02	mg/kg/day	2.5E-03
				ETHYLBENZENE	9.3E-01	ug/m3	3.1E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	8.7E-05	mg/kg/day	2.9E-01	mg/kg/day	3.1E-04
				M,P-XYLENES	3.3E+00	ug/m3	1.1E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.1E-04	mg/kg/day	2.9E-02	mg/kg/day	1.1E-02
				METHYLENE CHLORIDE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	1.4E-07	1.1E-04	mg/kg/day	1.1E-01	mg/kg/day	9.9E-04
				O-XYLENE	9.6E-01	ug/m3	3.2E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	9.0E-05	mg/kg/day	2.9E-02	mg/kg/day	3.2E-03
				TETRACHLOROETHENE	3.9E+01	ug/m3	1.3E-03	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	2.7E-05	3.7E-03	mg/kg/day	1.0E-02	mg/kg/day	3.7E-01
				TOLUENE	6.5E+00	ug/m3	2.2E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	6.1E-04	mg/kg/day	8.6E-02	mg/kg/day	7.1E-03
				TRICHLOROETHENE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	7.0E-03	$mg/kg/day^{-1}$	3.8E-07	1.5E-04	mg/kg/day	1.7E-01	mg/kg/day	8.8E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+00	ug/m3	1.1E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.6E-03
			Exp. Route Total							Minimum	3.5E-05				Minimum	4.2E-01
		Exposure Point Total								Minimum	3.5E-05				Minimum	4.2E-01
Indoor Air Total										Minimum	3.5E-05				Minimum	4.2E-01
										Total of Receptor Risks Across All Media	3.5E-05	Total of Receptor Hazards Across All Media				4.2E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE A3-7.1F - Parcel South - Bishop, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.9E-01	ug/m3	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	6.3E-01	mg/kg/day	2.8E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.0E+01	ug/m3	3.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.4E+01	ug/m3	4.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	5.7E-02	mg/kg/day	2.3E-02
				1,4-DICHLOROBENZENE	3.2E-01	ug/m3	1.1E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	4.3E-07	3.0E-05	mg/kg/day	2.3E-01	mg/kg/day	1.3E-04
				ACETONE	4.1E+01	ug/m3	1.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-03	mg/kg/day	9.0E-01	mg/kg/day	4.3E-03
				BENZENE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.0E-06	1.1E-04	mg/kg/day	8.6E-03	mg/kg/day	1.3E-02
				CARBON TETRACHLORIDE	5.8E-01	ug/m3	1.9E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.9E-06	5.4E-05	mg/kg/day	1.1E-02	mg/kg/day	4.7E-03
				CHLOROFORM	1.8E-01	ug/m3	6.0E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	4.9E-07	1.7E-05	mg/kg/day	8.6E-02	mg/kg/day	2.0E-04
				DICHLORODIFLUOROMETHANE	3.0E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	5.7E-02	mg/kg/day	4.9E-03
				ETHYLBENZENE	1.7E+00	ug/m3	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.9E-01	mg/kg/day	5.6E-04
				M,P-XYLENES	4.9E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	2.9E-02	mg/kg/day	1.6E-02
				METHYL TERT-BUTYL ETHER	6.7E-01	ug/m3	2.2E-05	mg/kg/day	9.1E-04	mg/kg/day^{-1}	2.0E-08	6.3E-05	mg/kg/day	8.6E-01	mg/kg/day	7.3E-05
				METHYLENE CHLORIDE	1.7E+00	ug/m3	5.7E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.0E-07	1.6E-04	mg/kg/day	1.1E-01	mg/kg/day	1.4E-03
				O-XYLENE	1.7E+00	ug/m3	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.9E-02	mg/kg/day	5.6E-03
				TETRACHLOROETHENE	2.9E+01	ug/m3	9.7E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.0E-05	2.7E-03	mg/kg/day	1.0E-02	mg/kg/day	2.7E-01
				TOLUENE	8.4E+00	ug/m3	2.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-04	mg/kg/day	8.6E-02	mg/kg/day	9.2E-03
				TRICHLOROETHENE	1.5E+00	ug/m3	5.0E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.5E-07	1.4E-04	mg/kg/day	1.7E-01	mg/kg/day	8.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.7E+00	ug/m3	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	2.0E-01	mg/kg/day	1.7E-03
			Exp. Route Total							Maximum	2.8E-05				Maximum	3.6E-01
		Exposure Point Total								Maximum	2.8E-05				Maximum	3.6E-01
Indoor Air Total										Maximum	2.8E-05				Maximum	3.6E-01
										Total of Receptor Risks Across All Media	2.8E-05	Total of Receptor Hazards Across All Media				3.6E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na. The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.1F - Parcel South - Bishop, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.9E-01	ug/m3	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	6.3E-01	mg/kg/day	2.8E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.6E+00	ug/m3	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3 4E-04	mg/kg/day	5.7E-02	mg/kg/day	5.9E-03
				1,4-DICHLOROBENZENE	2.1E-01	ug/m3	7.0E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	2 8E-07	2 0E-05	mg/kg/day	2.3E-01	mg/kg/day	8.6E-05
				ACETONE	2.8E+01	ug/m3	9.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-03	mg/kg/day	9.0E-01	mg/kg/day	2.9E-03
				BENZENE	1 2E+00	ug/m3	3.9E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.9E-06	1.1E-04	mg/kg/day	8.6E-03	mg/kg/day	1.3E-02
				CARBON TETRACHLORIDE	5.1E-01	ug/m3	1.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.6E-06	4.8E-05	mg/kg/day	1.1E-02	mg/kg/day	4.2E-03
				CHLOROFORM	1.5E-01	ug/m3	5.0E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	4.1E-07	1.4E-05	mg/kg/day	8.6E-02	mg/kg/day	1.6E-04
				DICHLORODIFLUOROMETHANE	2.7E+00	ug/m3	9.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	5.7E-02	mg/kg/day	4.4E-03
				ETHYLBENZENE	8.1E-01	ug/m3	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	2.9E-01	mg/kg/day	2.7E-04
				M,P-XYLENES	2.7E+00	ug/m3	9.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	2.9E-02	mg/kg/day	8.9E-03
				METHYL TERT-BUTYL ETHER	6.7E-01	ug/m3	2.2E-05	mg/kg/day	9.1E-04	mg/kg/day^{-1}	2.0E-08	6.3E-05	mg/kg/day	8.6E-01	mg/kg/day	7.3E-05
				METHYLENE CHLORIDE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.2E-07	9 4E-05	mg/kg/day	1.1E-01	mg/kg/day	8.2E-04
				O-XYLENE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9 5E-05	mg/kg/day	2.9E-02	mg/kg/day	3.3E-03
				TETRACHLOROETHENE	7.1E+00	ug/m3	2.4E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.9E-06	6 7E-04	mg/kg/day	1.0E-02	mg/kg/day	6.7E-02
				TOLUENE	6.9E+00	ug/m3	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6 5E-04	mg/kg/day	8.6E-02	mg/kg/day	7 6E-03
				TRICHLOROETHENE	4.4E-01	ug/m3	1.5E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.0E-07	4.1E-05	mg/kg/day	1.7E-01	mg/kg/day	2.4E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.2E+00	ug/m3	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2 1E-04	mg/kg/day	2.0E-01	mg/kg/day	1.0E-03
			Exp. Route Total							Minimum	1.2E-05				Minimum	1.2E-01
		Exposure Point Total								Minimum	1.2E-05				Minimum	1.2E-01
Indoor Air Total										Minimum	1.2E-05				Minimum	1.2E-01
										Total of Receptor Risks Across All Media	1.2E-05	Total of Receptor Hazards Across All Media				1.2E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

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TABLE A3-7.1G - Parcel South - LA Carts, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4E+01	ug/m3	4.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	NA	mg/kg/day	NA
			Maximum	1,1-DICHLOROETHENE	3.6E+00	ug/m3	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-04	mg/kg/day	5.7E-02	mg/kg/day	5.9E-03
				1,4-DICHLOROBENZENE	1.6E-01	ug/m3	5.4E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	2.1E-07	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.6E-05
				ACETONE	1.2E+03	ug/m3	4.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-01	mg/kg/day	9.0E-01	mg/kg/day	1.3E-01
				BENZENE	2.2E+00	ug/m3	7.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.4E-06	2.1E-04	mg/kg/day	8.6E-03	mg/kg/day	2.4E-02
				CARBON TETRACHLORIDE	5.2E-01	ug/m3	1.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.6E-06	4.9E-05	mg/kg/day	1.1E-02	mg/kg/day	4.3E-03
				CHLOROFORM	3.7E-01	ug/m3	1.2E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.0E-06	3.5E-05	mg/kg/day	8.6E-02	mg/kg/day	4.1E-04
				DICHLORODIFLUOROMETHANE	3.2E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	5.7E-02	mg/kg/day	5.3E-03
				ETHYLBENZENE	2.0E+00	ug/m3	6.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	2.9E-01	mg/kg/day	6.6E-04
				M,P-XYLENES	7.3E+00	ug/m3	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-04	mg/kg/day	2.9E-02	mg/kg/day	2.4E-02
				METHYLENE CHLORIDE	5.9E+00	ug/m3	2.0E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	6.9E-07	5.5E-04	mg/kg/day	1.1E-01	mg/kg/day	4.9E-03
				O-XYLENE	2.6E+00	ug/m3	8.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	2.9E-02	mg/kg/day	8.5E-03
				TETRACHLOROETHENE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.1E-06	1.5E-04	mg/kg/day	1.0E-02	mg/kg/day	1.5E-02
				TOLUENE	5.7E+02	ug/m3	1.9E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-02	mg/kg/day	8.6E-02	mg/kg/day	6.2E-01
				TRICHLOROETHENE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.8E-07	1.1E-04	mg/kg/day	1.7E-01	mg/kg/day	6.6E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.2E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.0E-01	mg/kg/day	1.5E-03
			Exp. Route Total							Maximum	1.3E-05				Maximum	8.5E-01
		Exposure Point Total								Maximum	1.3E-05				Maximum	8.5E-01
Indoor Air Total										Maximum	1.3E-05				Maximum	8.5E-01
										Total of Receptor Risks Across All Media	1.3E-05	Total of Receptor Hazards Across All Media				8.5E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

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TABLE A3-7.1G - Parcel South - LA Carts, CTE, Minimum Indoor Air Concentrations

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Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	7.0E-01	ug/m3	2.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-05	mg/kg/day	NA	mg/kg/day	NA
			Minimum	1,1-DICHLOROETHENE	6.0E-02	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-06	mg/kg/day	5.7E-02	mg/kg/day	9.9E-05
				1,4-DICHLOROBENZENE	1.6E-01	ug/m3	5.4E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	2.1E-07	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.6E-05
				ACETONE	7.4E+01	ug/m3	2.5E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-03	mg/kg/day	9.0E-01	mg/kg/day	7.7E-03
				BENZENE	1.3E+00	ug/m3	4.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.4E-06	1.2E-04	mg/kg/day	8.6E-03	mg/kg/day	1.4E-02
				CARBON TETRACHLORIDE	5.0E-01	ug/m3	1.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.5E-06	4.7E-05	mg/kg/day	1.1E-02	mg/kg/day	4.1E-03
				CHLOROFORM	1.4E-01	ug/m3	4.7E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	3.8E-07	1.3E-05	mg/kg/day	8.6E-02	mg/kg/day	1.5E-04
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	8.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	5.7E-02	mg/kg/day	4.3E-03
				ETHYLBENZENE	9.5E-01	ug/m3	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	2.9E-01	mg/kg/day	3.1E-04
				M,P-XYLENES	2.9E+00	ug/m3	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	2.9E-02	mg/kg/day	9.5E-03
				METHYLENE CHLORIDE	5.2E+00	ug/m3	1.7E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	6.1E-07	4.9E-04	mg/kg/day	1.1E-01	mg/kg/day	4.3E-03
				O-XYLENE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-05	mg/kg/day	2.9E-02	mg/kg/day	3.3E-03
				TETRACHLOROETHENE	2.4E-01	ug/m3	8.1E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.7E-07	2.3E-05	mg/kg/day	1.0E-02	mg/kg/day	2.3E-03
				TOLUENE	1.0E+01	ug/m3	3.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-04	mg/kg/day	8.6E-02	mg/kg/day	1.1E-02
				TRICHLOROETHENE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.8E-07	1.1E-04	mg/kg/day	1.7E-01	mg/kg/day	6.6E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	1.5E+00	ug/m3	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.0E-04
			Exp. Route Total							Minimum	8.5E-06				Minimum	6.3E-02
		Exposure Point Total								Minimum	8.5E-06				Minimum	6.3E-02
Indoor Air Total										Minimum	8.5E-06				Minimum	6.3E-02
										Total of Receptor Risks Across All Media	8.5E-06	Total of Receptor Hazards Across All Media				6.3E-02

ND: Not Detected.

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TABLE A3-7.1H - Parcel South - Oncology Care, CTE, Maximum Indoor Air Concentrations

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Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 3.4E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
			Maximum	1,1-DICHLOROETHENE	2.3E-01	ug/m3	7.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	5.7E-02	mg/kg/day	3.8E-04
				1,2-DICHLOROETHANE	3.2E-01	ug/m3	1.1E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	9.8E-07	3.0E-05	mg/kg/day	1.4E-03	mg/kg/day	2.1E-02
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.3E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	5.2E-07	3.7E-05	mg/kg/day	2.3E-01	mg/kg/day	1.6E-04
				ACETONE	9.9E+01	ug/m3	3.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-03	mg/kg/day	9.0E-01	mg/kg/day	1.0E-02
				BENZENE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.0E-06	1.1E-04	mg/kg/day	8.6E-03	mg/kg/day	1.3E-02
				CARBON TETRACHLORIDE	5.2E-01	ug/m3	1.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.6E-06	4.9E-05	mg/kg/day	1.1E-02	mg/kg/day	4.3E-03
				CHLOROFORM	6.6E-01	ug/m3	2.2E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.8E-06	6.2E-05	mg/kg/day	8.6E-02	mg/kg/day	7.2E-04
				DICHLORODIFLUOROMETHANE	3.4E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	—	3.2E-04	mg/kg/day	5.7E-02	mg/kg/day	5.6E-03
				ETHYLBENZENE	1.0E+00	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	—	9.4E-05	mg/kg/day	2.9E-01	mg/kg/day	3.3E-04
				M,P-XYLENES	3.1E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	2.9E-02	mg/kg/day	1.0E-02
				O-XYLENE	1.3E+00	ug/m3	4.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.9E-02	mg/kg/day	4.3E-03
				TETRACHLOROETHENE	4.4E-01	ug/m3	1.5E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.0E-07	4.1E-05	mg/kg/day	1.0E-02	mg/kg/day	4.1E-03
				TOLUENE	1.7E+01	ug/m3	5.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	8.6E-02	mg/kg/day	1.9E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.8E+00	ug/m3	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	8.5E-04
			Exp. Route Total							Maximum	1.0E-05				Maximum	9.4E-02
		Exposure Point Total								Maximum	1.0E-05				Maximum	9.4E-02
Indoor Air Total										Maximum	1.0E-05				Maximum	9.4E-02
										Total of Receptor Risks Across All Media	1.0E-05	Total of Receptor Hazards Across All Media				9.4E-02

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Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.0E-01	ug/m3	6.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	5.7E-02	mg/kg/day	3.3E-04
				1,2-DICHLOROETHANE	3.2E-01	ug/m3	1.1E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	9.8E-07	3.0E-05	mg/kg/day	1.4E-03	mg/kg/day	2.1E-02
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	1.3E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	5.2E-07	3.7E-05	mg/kg/day	2.3E-01	mg/kg/day	1.6E-04
				ACETONE	9.5E+01	ug/m3	3.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-03	mg/kg/day	9.0E-01	mg/kg/day	9.9E-03
				BENZENE	1.1E+00	ug/m3	3.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.7E-06	1.0E-04	mg/kg/day	8.6E-03	mg/kg/day	1.2E-02
				CARBON TETRACHLORIDE	5.0E-01	ug/m3	1.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.5E-06	4.7E-05	mg/kg/day	1.1E-02	mg/kg/day	4.1E-03
				CHLOROFORM	5.7E-01	ug/m3	1.9E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.5E-06	5.4E-05	mg/kg/day	8.6E-02	mg/kg/day	6.2E-04
				DICHLORODIFLUOROMETHANE	2.9E+00	ug/m3	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	5.7E-02	mg/kg/day	4.8E-03
				ETHYLBENZENE	9.4E-01	ug/m3	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-05	mg/kg/day	2.9E-01	mg/kg/day	3.1E-04
				M,P-XYLENES	3.0E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	2.9E-02	mg/kg/day	9.9E-03
				O-XYLENE	1.2E+00	ug/m3	4.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	2.9E-02	mg/kg/day	3.9E-03
				TETRACHLOROETHENE	4.4E-01	ug/m3	1.5E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.0E-07	4.1E-05	mg/kg/day	1.0E-02	mg/kg/day	4.1E-03
				TOLUENE	1.6E+01	ug/m3	5.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	8.6E-02	mg/kg/day	1.8E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.7E+00	ug/m3	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	8.0E-04
			Exp. Route Total							Minimum	9.6E-06				Minimum	9.0E-02
		Exposure Point Total								Minimum	9.6E-06				Minimum	9.0E-02
Indoor Air Total										Minimum	9.6E-06				Minimum	9.0E-02
									Total of Receptor Risks Across All Media		9.6E-06	Total of Receptor Hazards Across All Media				9.0E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,4-DIOXANE	9.6E+00	mg/kg	3.4E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	9.1E-08	9.4E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	4.0E-03	mg/kg/day	9.5E-05
				4,4'-DDD	2.4E-02	mg/kg	8.2E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	2.0E-09	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	6.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2 1E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	3.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.3E-08	1.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.1E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9 6E-03
				ANTIMONY	1.4E+01	mg/kg	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	4.0E-04	mg/kg/day	3.4E-02
				BARIUM	1.6E+02	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	7.9E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	6.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.1E-07	1.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.2E-06	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.0E-07	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	9.5E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.3E-07	2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.3E-03
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	3.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	2.0E-01	mg/kg/day	4.4E-06
				CADMIUM	1.3E+00	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.3E-03
				CHROMIUM III	7.6E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	1.5E+00	mg/kg/day	5.0E-05
				CHROMIUM VI	1.3E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	4.1E-03
				CHRYSENE	4.7E+00	mg/kg	1.7E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.0E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9 3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.7E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	4.0E-02	mg/kg/day	9.8E-04
				DIELDRIN	4.0E-02	mg/kg	1.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.2E-07	3.9E-08	mg/kg/day	5.0E-05	mg/kg/day	7.8E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3 7E-07	mg/kg/day	4.0E-02	mg/kg/day	9.1E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7 6E-02
				ISOPHORONE	9.1E+00	mg/kg	3.2E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.0E-09	8.9E-06	mg/kg/day	2.0E-01	mg/kg/day	4.4E-05
				LEAD	6.5E+01	mg/kg	2.3E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.9E-07	6.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	3.0E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	9.9E-04
				MOLYBDENUM	3.4E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	5.0E-03	mg/kg/day	6.6E-04
				NAPHTHALENE	6.0E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.9E-05
				NICKEL	2.5E+01	mg/kg	8.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	1.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.4E-07	4.2E-07	mg/kg/day	2.0E-05	mg/kg/day	2.1E-02
				PHENANTHRENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7.0E-03
				PYRENE	2.3E+00	mg/kg	8.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	7.5E-05
				SILVER	6.5E-01	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-07	mg/kg/day	5.0E-03	mg/kg/day	1.3E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				VANADIUM	4.7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1.0E-03	mg/kg/day	4.6E-02

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	3.5E-07	Ingestion:	9.8E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	6.6E-03	Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	5.3E-02	Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ZINC	9.7E+01	mg/kg	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	3.0E-01	mg/kg/day	3.2E-04
			Exp. Route Total								6.7E-06					2.4E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1 7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9 8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1 4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1 6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1 9E+00	mg/kg	4 5E-06	mg/kg/day	1 6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7 6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1 3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8 2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4 7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3 1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9 5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4 3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									1.2E-05					2.7E-01
Surface Soil Total											1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E-01	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-05	mg/kg/day	6.3E-01	mg/kg/day	5.2E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.8E+00	ug/m3	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	9.2E+00	ug/m3	4.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-03	mg/kg/day	5.7E-02	mg/kg/day	2.4E-02
				ACETONE	5.0E+01	ug/m3	2.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-03	mg/kg/day	9.0E-01	mg/kg/day	8.3E-03
				BENZENE	1.1E+01	ug/m3	5.8E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	5.8E-05	1.6E-03	mg/kg/day	8.6E-03	mg/kg/day	1.9E-01
				CARBON TETRACHLORIDE	6 5E-01	ug/m3	3.5E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	5.2E-06	9.7E-05	mg/kg/day	1.1E-02	mg/kg/day	8.5E-03
				CHLOROFORM	2.5E-01	ug/m3	1.3E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.1E-06	3.7E-05	mg/kg/day	8.6E-02	mg/kg/day	4.3E-04
				DICHLORODIFLUOROMETHANE	3.1E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	5.7E-02	mg/kg/day	8.1E-03
				ETHYLBENZENE	1.6E+01	ug/m3	8 5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-03	mg/kg/day	2.9E-01	mg/kg/day	8.3E-03
				M,P-XYLENES	8.2E+01	ug/m3	4.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-02	mg/kg/day	2.9E-02	mg/kg/day	4.3E-01
				METHYLENE CHLORIDE	2.6E+02	ug/m3	1.4E-02	mg/kg/day	3.5E-03	mg/kg/day^{-1}	4.8E-05	3.9E-02	mg/kg/day	1.1E-01	mg/kg/day	3.4E-01
				O-XYLENE	1.7E+01	ug/m3	9.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-03	mg/kg/day	2.9E-02	mg/kg/day	8.8E-02
				TETRACHLOROETHENE	1.3E+01	ug/m3	6.9E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.4E-05	1.9E-03	mg/kg/day	1.0E-02	mg/kg/day	1.9E-01
				TOLUENE	1.7E+02	ug/m3	9.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-02	mg/kg/day	8.6E-02	mg/kg/day	3.0E-01
				TRICHLOROETHENE	3.3E+00	ug/m3	1.8E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.2E-06	4.9E-04	mg/kg/day	1.7E-01	mg/kg/day	2.9E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	5.9E+00	ug/m7	3.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-04	mg/kg/day	2.0E-01	mg/kg/day	4.4E-03
			Exp Route Total							Maximum	1.3E-04				Maximum	1.6E+00
		Exposure Point Total								Maximum	1.3E-04				Maximum	1.6E+00
Indoor Air Total										Maximum	1.3E-04				Maximum	1.6E+00
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	7.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	6.3E-01	mg/kg/day	3.4E-05
			Maximum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	5.2E-07	7.3E-06	mg/kg/day	6.0E-02	mg/kg/day	1.2E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	5.7E-02	mg/kg/day	2.1E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-06	mg/kg/day	5.7E-02	mg/kg/day	9.6E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	1.0E-07	7.3E-06	mg/kg/day	2.3E-01	mg/kg/day	3.2E-05
				ACETONE	3.8E+03	ug/m3	2.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-02	mg/kg/day	9.0E-01	mg/kg/day	7.8E-02
				BENZENE	1.1E+00	ug/m3	7.2E-06	mg/kg/day	1 0E-01	mg/kg/day^{-1}	7.2E-07	2.0E-05	mg/kg/day	8.6E-03	mg/kg/day	2.4E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	4.2E-06	mg/kg/day	1 5E-01	mg/kg/day^{-1}	6.3E-07	1.2E-05	mg/kg/day	1.1E-02	mg/kg/day	1.0E-03
				DICHLORODIFLUOROMETHANE	3 3E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	5.7E-02	mg/kg/day	1.1E-03

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	
Surface Soil	
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	2.9E-01	mg/kg/day	6.2E-05
				M,P-XYLENES	3.1E+00	ug/m3	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	2.9E-02	mg/kg/day	2.0E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	1.4E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	4.8E-08	3.9E-05	mg/kg/day	1.1E-01	mg/kg/day	3.4E-04
				O-XYLENE	1.2E+00	ug/m3	7.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.9E-02	mg/kg/day	7.8E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.4E-07	3.3E-05	mg/kg/day	1.0E-02	mg/kg/day	3.3E-03
				TOLUENE	8.1E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	8.6E-02	mg/kg/day	1.8E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	7.1E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.0E-08	2.0E-05	mg/kg/day	1.7E-01	mg/kg/day	1.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
			Exp. Route Total								Maximum	2.3E-06				Maximum	9.2E-02
		Exposure Point Total									Maximum	2.3E-06				Maximum	9.2E-02
Outdoor Air Total											Maximum	2.3E-06				Maximum	9.2E-02
											Total of Receptor Risks Across All Media	1.4E-04				Total of Receptor Hazards Across All Media	2.0E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8 4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,4-DIOXANE	9.6E+00	mg/kg	3.4E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	9.1E-08	9.4E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	4.0E-03	mg/kg/day	9.5E-05
				4,4'-DDD	2.4E-02	mg/kg	8.2E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	2 0E-09	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	6.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.1E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	3.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.3E-08	1.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.1E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9.6E-03
				ANTIMONY	1.4E+01	mg/kg	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	4.0E-04	mg/kg/day	3.4E-02
				BARIUM	1.6E+02	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	7.9E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	6.7E-07	mg/kg/day	1 2E+00	mg/kg/day^{-1}	8.1E-07	1.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.2E-06	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.0E-07	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	9.5E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.3E-07	2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.3E-03
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	3.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	2.0E-01	mg/kg/day	4.4E-06
				CADMIUM	1.3E+00	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.3E-03
				CHROMIUM III	7.6E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	1.5E+00	mg/kg/day	5.0E-05
				CHROMIUM VI	1.3E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	4.1E-03
				CHRYSENE	4.7E+00	mg/kg	1.7E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.0E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.7E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	4.0E-02	mg/kg/day	9.8E-04
				DIELDRIN	4.0E-02	mg/kg	1.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.2E-07	3.9E-08	mg/kg/day	5.0E-05	mg/kg/day	7 8E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	4.0E-02	mg/kg/day	9.1E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7.6E-02
				ISOPHORONE	9.1E+00	mg/kg	3.2E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.0E-09	8.9E-06	mg/kg/day	2.0E-01	mg/kg/day	4.4E-05
				LEAD	6.5E+01	mg/kg	2.3E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.9E-07	6.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	3.0E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3 0E-07	mg/kg/day	3.0E-04	mg/kg/day	9.9E-04
				MOLYBDENUM	3 4E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	5.0E-03	mg/kg/day	6.6E-04
				NAPHTHALENE	6.0E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.9E-05
				NICKEL	2.5E+01	mg/kg	8 7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	1.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.4E-07	4.2E-07	mg/kg/day	2.0E-05	mg/kg/day	2.1E-02
				PHENANTHRENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7.0E-03
				PYRENE	2.3E+00	mg/kg	8.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	7.5E-05
				SILVER	6.5E-01	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-07	mg/kg/day	5.0E-03	mg/kg/day	1.3E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				VANADIUM	4.7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1.0E-03	mg/kg/day	4.6E-02

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	3.5E-07	Ingestion:	9.8E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	6.6E-03	Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	5.3E-02	Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ZINC	9.7E+01	mg/kg	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	3.0E-01	mg/kg/day	3.2E-04
			Exp. Route Total								6.7E-06					2.4E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4.5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7 2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									1.2E-05					2.7E-01
Surface Soil Total											1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-05	mg/kg/day	6.3E-01	mg/kg/day	5.0E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	7.0E-01	ug/m3	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	5.7E-02	mg/kg/day	1.8E-03
				ACETONE	2.4E+01	ug/m3	1.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-03	mg/kg/day	9.0E-01	mg/kg/day	4.0E-03
				BENZENE	2.8E+00	ug/m3	1.5E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.5E-05	4.2E-04	mg/kg/day	8.6E-03	mg/kg/day	4.9E-02
				CARBON TETRACHLORIDE	5.7E-01	ug/m3	3.0E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.5E-06	8.5E-05	mg/kg/day	1.1E-02	mg/kg/day	7.4E-03
				CHLOROFORM	2.5E-01	ug/m3	1.3E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.1E-06	3.7E-05	mg/kg/day	8.6E-02	mg/kg/day	4.3E-04
				DICHLORODIFLUOROMETHANE	1.4E+00	ug/m3	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-04	mg/kg/day	5.7E-02	mg/kg/day	3.6E-03
				ETHYLBENZENE	3.2E+00	ug/m3	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	2.9E-01	mg/kg/day	1.7E-03
				M,P-XYLENES	1.4E+01	ug/m3	7.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	2.9E-02	mg/kg/day	7.3E-02
				METHYLENE CHLORIDE	1.8E+00	ug/m3	9.6E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.3E-07	2.7E-04	mg/kg/day	1.1E-01	mg/kg/day	2.3E-03
				O-XYLENE	2 9E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	2.9E-02	mg/kg/day	1.5E-02
				TETRACHLOROETHENE	1.0E+00	ug/m3	5.3E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.1E-06	1.5E-04	mg/kg/day	1.0E-02	mg/kg/day	1.5E-02
				TOLUENE	3.4E+01	ug/m3	1.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-03	mg/kg/day	8.6E-02	mg/kg/day	5.9E-02
				TRICHLOROETHENE	2.5E-01	ug/m3	1.3E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	9.3E-08	3.7E-05	mg/kg/day	1.7E-01	mg/kg/day	2.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.0E-01	mg/kg/day	1.5E-03
			Exp. Route Total							Minimum	2.2E-05				Minimum	2.3E-01
		Exposure Point Total								Minimum	2.2E-05				Minimum	2.3E-01
Indoor Air Total										Minimum	2.2E-05				Minimum	2.3E-01
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1 1E+00	ug/m3	7.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	6.3E-01	mg/kg/day	3.4E-05
			Minimum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	2 6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	5.2E-07	7.3E-06	mg/kg/day	6.0E-02	mg/kg/day	1.2E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	5.7E-02	mg/kg/day	2.1E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-06	mg/kg/day	5.7E-02	mg/kg/day	9.6E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	1.0E-07	7.3E-06	mg/kg/day	2.3E-01	mg/kg/day	3.2E-05
				ACETONE	3.8E+03	ug/m3	2.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-02	mg/kg/day	9.0E-01	mg/kg/day	7.8E-02
				BENZENE	1.1E+00	ug/m3	7.2E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.2E-07	2.0E-05	mg/kg/day	8.6E-03	mg/kg/day	2.4E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	4.2E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.3E-07	1.2E-05	mg/kg/day	1.1E-02	mg/kg/day	1.0E-03
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	5.7E-02	mg/kg/day	1.1E-03

TABLE A3-7.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

	Surface Soil
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

	Surface Soil
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	6.3E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.8E-05	mg/kg/day	2.9E-01	mg/kg/day	6.2E-05
				M,P-XYLENES	3.1E+00	ug/m3	2.1E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.8E-05	mg/kg/day	2.9E-02	mg/kg/day	2.0E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	1.4E-05	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	4.8E-08	3.9E-05	mg/kg/day	1.1E-01	mg/kg/day	3.4E-04
				O-XYLENE	1.2E+00	ug/m3	7.9E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.2E-05	mg/kg/day	2.9E-02	mg/kg/day	7.8E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	2.4E-07	3.3E-05	mg/kg/day	1.0E-02	mg/kg/day	3.3E-03
				TOLUENE	8.1E+00	ug/m3	5.4E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.5E-04	mg/kg/day	8.6E-02	mg/kg/day	1.8E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	7.1E-06	mg/kg/day	7.0E-03	$mg/kg/day^{-1}$	5.0E-08	2.0E-05	mg/kg/day	1.7E-01	mg/kg/day	1.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	1.3E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
			Exp. Route Total							Minimum	2.3E-06				Minimum	9.2E-02
		Exposure Point Total								Minimum	2.3E-06				Minimum	9.2E-02
Outdoor Air Total										Minimum	2.3E-06				Minimum	9.2E-02
										Total of Receptor Risks Across All Media	3.7E-05	Total of Receptor Hazards Across All Media				5.9E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	*Exposure* Medium	*Exposure* Point	*Exposure* Route	*Chemical* of Potential Concern	EPC		*Cancer Risk Calculations*					*Non-Cancer Hazard Calculations*				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,4-DIOXANE	9.6E+00	mg/kg	3.4E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	9.1E-08	9.4E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	4.0E-03	mg/kg/day	9.5E-05
				4,4'-DDD	2.4E-02	mg/kg	8 2E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	2.0E-09	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	6.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.1E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	3.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.3E-08	1.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.1E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9.6E-03
				ANTIMONY	1.4E+01	mg/kg	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	4 0E-04	mg/kg/day	3.4E-02
				BARIUM	1.6E+02	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	7.9E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	6.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.1E-07	1.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.2E-06	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.0E-07	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	9.5E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.3E-07	2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.3E-03
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	3.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	2.0E-01	mg/kg/day	4.4E-06
				CADMIUM	1.3E+00	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.3E-03
				CHROMIUM III	7.6E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	1.5E+00	mg/kg/day	5.0E-05
				CHROMIUM VI	1.3E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	4.1E-03
				CHRYSENE	4.7E+00	mg/kg	1.7E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.0E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.7E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	4.0E-02	mg/kg/day	9.8E-04
				DIELDRIN	4.0E-02	mg/kg	1.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.2E-07	3.9E-08	mg/kg/day	5.0E-05	mg/kg/day	7.8E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	4 0E-02	mg/kg/day	9.1E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7.6E-02
				ISOPHORONE	9.1E+00	mg/kg	3.2E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.0E-09	8.9E-06	mg/kg/day	2.0E-01	mg/kg/day	4.4E-05
				LEAD	6.5E+01	mg/kg	2.3E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.9E-07	6.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	3.0E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	9.9E-04
				MOLYBDENUM	3.4E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	5.0E-03	mg/kg/day	6.6E-04
				NAPHTHALENE	6.0E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.9E-05
				NICKEL	2.5E+01	mg/kg	8.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	1.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.4E-07	4.2E-07	mg/kg/day	2.0E-05	mg/kg/day	2.1E-02
				PHENANTHRENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3 6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7 0E-03
				PYRENE	2.3E+00	mg/kg	8.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	7.5E-05
				SILVER	6 5E-01	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-07	mg/kg/day	5.0E-03	mg/kg/day	1.3E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				VANADIUM	4.7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1.0E-03	mg/kg/day	4.6E-02

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	
Surface Soil	
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				ZINC	9.7E+01	mg/kg	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	3.0E-01	mg/kg/day	3.2E-04
			Exp. Route Total								6.7E-06					2.4E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2 2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6 0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4.5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7 6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3 3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2 0E-01	mg/kg/day	8 8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2 0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4 9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9 2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3 1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6 0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1 5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8 5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5 0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									1.2E-05					2.7E-01
Surface Soil Total											1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	3.3E-01	ug/m3	1.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-05	mg/kg/day	6.3E-01	mg/kg/day	7.8E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.1E+01	ug/m3	1.6E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.8E+01	ug/m3	9.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-03	mg/kg/day	5.7E-02	mg/kg/day	4.7E-02
				ACETONE	6.0E+03	ug/m3	3.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-01	mg/kg/day	9.0E-01	mg/kg/day	9.9E-01
				BENZENE	5.3E+00	ug/m3	2.8E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.8E-05	7.9E-04	mg/kg/day	8.6E-03	mg/kg/day	9.2E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	3.6E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	5.3E-06	1.0E-04	mg/kg/day	1.1E-02	mg/kg/day	8.7E-03
				CHLOROFORM	1.9E-01	ug/m3	1.0E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	8.1E-07	2.8E-05	mg/kg/day	8.6E-02	mg/kg/day	3.3E-04
				DICHLORODIFLUOROMETHANE	2.7E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-04	mg/kg/day	5.7E-02	mg/kg/day	7.0E-03
				ETHYLBENZENE	4.8E+01	ug/m3	2.5E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-03	mg/kg/day	2.9E-01	mg/kg/day	2.5E-02
				M,P-XYLENES	2.7E+02	ug/m3	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-02	mg/kg/day	2.9E-02	mg/kg/day	1.4E+00
				METHYLENE CHLORIDE	4.8E+00	ug/m3	2.5E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	8.9E-07	7.1E-04	mg/kg/day	1.1E-01	mg/kg/day	6.3E-03
				O-XYLENE	7.8E+01	ug/m3	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-02	mg/kg/day	2.9E-02	mg/kg/day	4.1E-01
				TETRACHLOROETHENE	3.4E+01	ug/m3	1.8E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.7E-05	5.1E-03	mg/kg/day	1.0E-02	mg/kg/day	5.1E-01
				TOLUENE	2.4E+03	ug/m3	1.3E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-01	mg/kg/day	8.6E-02	mg/kg/day	4.2E+00
				TRICHLOROETHENE	6.5E+00	ug/m3	3.5E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.4E-06	9.7E-04	mg/kg/day	1.7E-01	mg/kg/day	5.7E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.4E+01	ug/m3	7.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	2.0E-01	mg/kg/day	1.0E-02
			Exp. Route Total							Maximum	7.5E-05				Maximum	7.7E+00
		Exposure Point Total								Maximum	7.5E-05				Maximum	7.7E+00
Indoor Air Total										Maximum	7.5E-05				Maximum	7.7E+00
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	7.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	6.3E-01	mg/kg/day	3.4E-05
			Maximum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	5.2E-07	7.3E-06	mg/kg/day	6.0E-02	mg/kg/day	1.2E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	5.7E-02	mg/kg/day	2.1E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-06	mg/kg/day	5.7E-02	mg/kg/day	9.6E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	1.0E-07	7.3E-06	mg/kg/day	2.3E-01	mg/kg/day	3.2E-05
				ACETONE	3.8E+03	ug/m3	2.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-02	mg/kg/day	9.0E-01	mg/kg/day	7.8E-02
				BENZENE	1.1E+00	ug/m3	7.2E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.2E-07	2.0E-05	mg/kg/day	8.6E-03	mg/kg/day	2.4E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	4.2E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.3E-07	1.2E-05	mg/kg/day	1.1E-02	mg/kg/day	1.0E-03
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	5.7E-02	mg/kg/day	1.1E-03

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	
Surface Soil	
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	9.5E-01	ug/m3	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	2.9E-01	mg/kg/day	6.2E-05
				M,P-XYLENES	3.1E+00	ug/m3	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	2.9E-02	mg/kg/day	2.0E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	1.4E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	4.8E-08	3.9E-05	mg/kg/day	1.1E-01	mg/kg/day	3.4E-04
				O-XYLENE	1.2E+00	ug/m3	7.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.9E-02	mg/kg/day	7.8E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.4E-07	3.3E-05	mg/kg/day	1.0E-02	mg/kg/day	3.3E-03
				TOLUENE	8.1E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	8.6E-02	mg/kg/day	1.8E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	7.1E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.0E-08	2.0E-05	mg/kg/day	1.7E-01	mg/kg/day	1.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
			Exp. Route Total								Maximum	2.3E-06				Maximum 9.2E-02
		Exposure Point Total									Maximum	2.3E-06				Maximum 9.2E-02
Outdoor Air Total											Maximum	2.3E-06				Maximum 9.2E-02
											Total of Receptor Risks Across All Media	8.9E-05	Total of Receptor Hazards Across All Media			8.0E+00

ND. Not Detected.

NS Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7 2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface Soil	Surface Soil at Site	Ingestion	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,4-DIOXANE	9.6E+00	mg/kg	3.4E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	9.1E-08	9.4E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	4.0E-03	mg/kg/day	9.5E-05
				4,4'-DDD	2.4E-02	mg/kg	8.2E-09	mg/kg/day	2.4E-01	mg/kg/day^{-1}	2.0E-09	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	6.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.1E-08	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	3.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.3E-08	1 0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.1E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9.6E-03
				ANTIMONY	1.4E+01	mg/kg	4.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 3E-05	mg/kg/day	4.0E-04	mg/kg/day	3.4E-02
				BARIUM	1.6E+02	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	2.0E-01	mg/kg/day	7.9E-04
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	6.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.1E-07	1.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.2E-06	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.7E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.0E-07	4.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	9.5E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.3E-07	2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.3E-03
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	3.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	2.0E-01	mg/kg/day	4.4E-06
				CADMIUM	1.3E+00	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	1.0E-03	mg/kg/day	1.3E-03
				CHROMIUM III	7.6E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	1.5E+00	mg/kg/day	5.0E-05
				CHROMIUM VI	1.3E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	4.1E-03
				CHRYSENE	4.7E+00	mg/kg	1.7E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.0E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.7E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	4.0E-02	mg/kg/day	9.8E-04
				DIELDRIN	4.0E-02	mg/kg	1.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.2E-07	3.9E-08	mg/kg/day	5.0E-05	mg/kg/day	7.8E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	4.0E-02	mg/kg/day	9.1E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7.6E-02
				ISOPHORONE	9.1E+00	mg/kg	3.2E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.0E-09	8.9E-06	mg/kg/day	2.0E-01	mg/kg/day	4 4E-05
				LEAD	6.5E+01	mg/kg	2.3E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.9E-07	6.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	3.0E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	3.0E-04	mg/kg/day	9.9E-04
				MOLYBDENUM	3.4E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	5.0E-03	mg/kg/day	6.6E-04
				NAPHTHALENE	6.0E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.9E-05
				NICKEL	2.5E+01	mg/kg	8.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	1.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.4E-07	4.2E-07	mg/kg/day	2.0E-05	mg/kg/day	2.1E-02
				PHENANTHRENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7.0E-03
				PYRENE	2.3E+00	mg/kg	8.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	7.5E-05
				SILVER	6.5E-01	mg/kg	2.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-07	mg/kg/day	5.0E-03	mg/kg/day	1.3E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				VANADIUM	4.7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1.0E-03	mg/kg/day	4.6E-02

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age	Adult

Cancer Intake		**Noncancer Intake**	
Surface Soil		**Surface Soil**	
Ingestion:	3.5E-07	Ingestion:	9.6E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	6.6E-03	Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	5.3E-02	Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ZINC	9.7E+01	mg/kg	3.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-05	mg/kg/day	3.0E-01	mg/kg/day	3.2E-04
			Exp. Route Total								6.7E-06					2.4E-01
			Dermal	1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	9.6E+00	mg/kg	2.2E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.0E-08	6.2E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.9E-01	mg/kg	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	4.0E-02	mg/kg/day	6.3E-05
				4,4'-DDD	2.4E-02	mg/kg	5.4E-08	mg/kg/day	7.2E-03	mg/kg/day^{-1}	3.9E-10	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDE	1.7E-01	mg/kg	4.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.1E-09	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	1.1E-01	mg/kg	2.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-09	6.9E-07	mg/kg/day	1.7E-02	mg/kg/day	4.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.4E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	1.9E+00	mg/kg	4.5E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.9E-07	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.7E-06	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.9E-01	mg/kg	1.1E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-07	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.7E+01	mg/kg	6.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.8E-08	1.8E-04	mg/kg/day	2.0E-01	mg/kg/day	8.8E-04
				BUTYLBENZYL PHTHALATE	9.0E-01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E+00	mg/kg/day	2.9E-06
				CADMIUM	1.3E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.5E-04
				CHROMIUM III	7.6E+01	mg/kg	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.3E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	4.7E+00	mg/kg	1.1E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.7E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.5E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	4.0E-02	mg/kg	9.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.5E-07	2.6E-07	mg/kg/day	5.0E-04	mg/kg/day	5.1E-04
				FLUORANTHENE (IDRYL)	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	3.1E-01	mg/kg/day	7.8E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	9.1E+00	mg/kg	2.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.0E-09	5.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.9E-05
				LEAD	6.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	3.0E-01	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.4E+00	mg/kg	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	6.0E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	1.5E-01	mg/kg/day	2.5E-05
				NICKEL	2.5E+01	mg/kg	5.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	4.3E-01	mg/kg	9.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.9E-07	2.7E-06	mg/kg/day	1.4E-04	mg/kg/day	1.9E-02
				PHENANTHRENE	3.7E+00	mg/kg	8.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	2.3E+00	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.3E-01	mg/kg/day	6.5E-05

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	
Surface Soil	
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				SILVER	6.5E-01	mg/kg	1.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4 7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.7E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								5.6E-06					2.8E-02
		Exposure Point Total									1.2E-05					2.7E-01
Surface Soil Total											1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	3.2E-01	ug/m3	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-05	mg/kg/day	6.3E-01	mg/kg/day	7.6E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.6E+00	ug/m3	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	5.7E-02	mg/kg/day	4.2E-03
				ACETONE	3.3E+02	ug/m3	1.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-02	mg/kg/day	9.0E-01	mg/kg/day	5.5E-02
				BENZENE	2.6E+00	ug/m3	1.4E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.4E-05	3.9E-04	mg/kg/day	8.6E-03	mg/kg/day	4.5E-02
				CARBON TETRACHLORIDE	6.6E-01	ug/m3	3.5E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	5.3E-06	9.8E-05	mg/kg/day	1.1E-02	mg/kg/day	8.6E-03
				CHLOROFORM	1.9E-01	ug/m3	1.0E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	8.1E-07	2.8E-05	mg/kg/day	8.6E-02	mg/kg/day	3.3E-04
				DICHLORODIFLUOROMETHANE	1.9E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	5.7E-02	mg/kg/day	4.9E-03
				ETHYLBENZENE	4.6E+00	ug/m3	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-04	mg/kg/day	2.9E-01	mg/kg/day	2.4E-03
				M,P-XYLENES	2.1E+01	ug/m3	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-03	mg/kg/day	2.9E-02	mg/kg/day	1.1E-01
				METHYLENE CHLORIDE	1.5E+00	ug/m3	8.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.8E-07	2.2E-04	mg/kg/day	1.1E-01	mg/kg/day	2.0E-03
				O-XYLENE	5.1E+00	ug/m3	2.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-04	mg/kg/day	2.9E-02	mg/kg/day	2.7E-02
				TETRACHLOROETHENE	6.0E+00	ug/m3	3.2E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	6.6E-06	8.9E-04	mg/kg/day	1.0E-02	mg/kg/day	8.9E-02
				TOLUENE	3.6E+01	ug/m3	1.9E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-03	mg/kg/day	8.6E-02	mg/kg/day	6.2E-02
				TRICHLOROETHENE	3.5E+00	ug/m3	1.9E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.3E-06	5.2E-04	mg/kg/day	1.7E-01	mg/kg/day	3 0E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.1E+01	ug/m3	5.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	2.0E-01	mg/kg/day	8.2E-03
			Exp. Route Total							Minimum	2.8E-05				Minimum	4.2E-01
		Exposure Point Total								Minimum	2.8E-05				Minimum	4.2E-01
Indoor Air Total										Minimum	2 8E-05				Minimum	4.2E-01
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	7.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	6.3E-01	mg/kg/day	3.4E-05
			Minimum	1,1,2,2-TETRACHLOROETHANE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	2.0E-01	mg/kg/day^{-1}	5.2E-07	7.3E-06	mg/kg/day	6.0E-02	mg/kg/day	1.2E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.4E-01	ug/m3	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	5.7E-02	mg/kg/day	2.1E-04
				1,2-DICHLOROBENZENE	2.9E-01	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5 5E-06	mg/kg/day	5.7E-02	mg/kg/day	9.6E-05
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.6E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	1.0E-07	7.3E-06	mg/kg/day	2.3E-01	mg/kg/day	3.2E-05
				ACETONE	3.8E+03	ug/m3	2.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-02	mg/kg/day	9.0E-01	mg/kg/day	7.8E-02
				BENZENE	1.1E+00	ug/m3	7 2E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.2E-07	2.0E-05	mg/kg/day	8.6E-03	mg/kg/day	2.4E-03
				CARBON TETRACHLORIDE	6.3E-01	ug/m3	4 2E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.3E-07	1.2E-05	mg/kg/day	1.1E-02	mg/kg/day	1.0E-03
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	5.7E-02	mg/kg/day	1.1E-03

TABLE A3-7.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	3.5E-07	Ingestion:	9.8E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of outdoor air	6.6E-03	Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	5.3E-02	Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				ETHYLBENZENE	9.5E-01	ug/m3	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	2.9E-01	mg/kg/day	6.2E-05
				M,P-XYLENES	3.1E+00	ug/m3	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	2.9E-02	mg/kg/day	2.0E-03
				METHYLENE CHLORIDE	2.1E+00	ug/m3	1.4E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	4.8E-08	3.9E-05	mg/kg/day	1.1E-01	mg/kg/day	3.4E-04
				O-XYLENE	1.2E+00	ug/m3	7.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.9E-02	mg/kg/day	7.8E-04
				TETRACHLOROETHENE	1.8E+00	ug/m3	1.2E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.4E-07	3.3E-05	mg/kg/day	1.0E-02	mg/kg/day	3.3E-03
				TOLUENE	8.1E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	8.6E-02	mg/kg/day	1.8E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	7.1E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.0E-08	2.0E-05	mg/kg/day	1.7E-01	mg/kg/day	1.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.0E+00	ug/m7	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
			Exp. Route Total							Minimum	2.3E-06				Minimum	9.2E-02
		Exposure Point Total								Minimum	2.3E-06				Minimum	9.2E-02
Outdoor Air Total										Minimum	2.3E-06				Minimum	9.2E-02
										Total of Receptor Risks Across All Media	4.3E-05	Total of Receptor Hazards Across All Media				7.8E-01

ND: Not Detected.

NS Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2C - Parcel North - Medlin & Sons 12484, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-05	mg/kg/day	6.3E-01	mg/kg/day	5 0E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.0E+01	ug/m3	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.0E+01	ug/m3	5.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	5.7E-02	mg/kg/day	2 6E-02
				1,4-DICHLOROBENZENE	9.5E-01	ug/m3	5.0E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	2.0E-06	1.4E-04	mg/kg/day	2.3E-01	mg/kg/day	6 2E-04
				ACETONE	3.4E+03	ug/m3	1.8E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-01	mg/kg/day	9.0E-01	mg/kg/day	5.6E-01
				BENZENE	1.1E+00	ug/m3	5.8E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	5.8E-06	1.6E-04	mg/kg/day	8.6E-03	mg/kg/day	1.9E-02
				CARBON TETRACHLORIDE	1.3E+00	ug/m3	6.9E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.0E-05	1.9E-04	mg/kg/day	1.1E-02	mg/kg/day	1.7E-02
				CHLOROFORM	3.2E-01	ug/m3	1.7E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.4E-06	4.8E-05	mg/kg/day	8.6E-02	mg/kg/day	5.6E-04
				DICHLORODIFLUOROMETHANE	3.3E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	5.7E-02	mg/kg/day	8.6E-03
				ETHYLBENZENE	8.5E-01	ug/m3	4.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	2.9E-01	mg/kg/day	4.4E-04
				M,P-XYLENES	2.7E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-04	mg/kg/day	2.9E-02	mg/kg/day	1.4E-02
				METHYLENE CHLORIDE	5.1E+00	ug/m3	2.7E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	9.5E-07	7.6E-04	mg/kg/day	1.1E-01	mg/kg/day	6.7E-03
				O-XYLENE	1.0E+00	ug/m3	5.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.9E-02	mg/kg/day	5.2E-03
				TETRACHLOROETHENE	2.2E+01	ug/m3	1.2E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.4E-05	3.3E-03	mg/kg/day	1.0E-02	mg/kg/day	3.3E-01
				TOLUENE	7.4E+00	ug/m3	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	8.6E-02	mg/kg/day	1.3E-02
				TRICHLOROETHENE	1.4E+01	ug/m3	7.4E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.2E-06	2.1E-03	mg/kg/day	1.7E-01	mg/kg/day	1.2E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.2E+01	ug/m3	6.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-03	mg/kg/day	2.0E-01	mg/kg/day	8.9E-03
			Exp. Route Total													
										Maximum	5.0E-05				Maximum	1.0E+00
		Exposure Point Total								Maximum	5.0E-05				Maximum	1.0E+00
Indoor Air Total										Maximum	5.0E-05				Maximum	1.0E+00
										Total of Receptor Risks Across All Media	5.0E-05			Total of Receptor Hazards Across All Media		1.0E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2C - Parcel North - Medlin & Sons 12484, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	2.1E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-05	mg/kg/day	6.3E-01	mg/kg/day	5.0E-05
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.7E+01	ug/m3	9.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.9E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	5.7E-02	mg/kg/day	7.6E-03
				1,4-DICHLOROBENZENE	2.0E-01	ug/m3	1.1E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	4.2E-07	3.0E-05	mg/kg/day	2.3E-01	mg/kg/day	1.3E-04
				ACETONE	2.2E+01	ug/m3	1.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-03	mg/kg/day	9.0E-01	mg/kg/day	3.6E-03
				BENZENE	9.1E-01	ug/m3	4.8E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.8E-06	1.4E-04	mg/kg/day	8.6E-03	mg/kg/day	1.6E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	3.6E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	5.3E-06	1.0E-04	mg/kg/day	1.1E-02	mg/kg/day	8.7E-03
				CHLOROFORM	2.0E-01	ug/m3	1.1E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	8.6E-07	3.0E-05	mg/kg/day	8.6E-02	mg/kg/day	3.5E-04
				DICHLORODIFLUOROMETHANE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	5.7E-02	mg/kg/day	3.1E-03
				ETHYLBENZENE	7.2E-01	ug/m3	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	2.9E-01	mg/kg/day	3.7E-04
				M,P-XYLENES	2.2E+00	ug/m3	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	2.9E-02	mg/kg/day	1.1E-02
				METHYLENE CHLORIDE	1.7E+00	ug/m3	9.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.2E-07	2.5E-04	mg/kg/day	1.1E-01	mg/kg/day	2.2E-03
				O-XYLENE	8.7E-01	ug/m3	4.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	2.9E-02	mg/kg/day	4.5E-03
				TETRACHLOROETHENE	4.3E+00	ug/m3	2.3E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.7E-06	6.4E-04	mg/kg/day	1.0E-02	mg/kg/day	6.4E-02
				TOLUENE	4.8E+00	ug/m3	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-04	mg/kg/day	8.6E-02	mg/kg/day	8.3E-03
				TRICHLOROETHENE	2.3E+00	ug/m3	1.2E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	8.6E-07	3.4E-04	mg/kg/day	1.7E-01	mg/kg/day	2.0E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	5.4E+00	ug/m3	2.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-04	mg/kg/day	2.0E-01	mg/kg/day	4.0E-03
			Exp. Route Total							Minimum	1.7E-05				Minimum	1.4E-01
		Exposure Point Total								Minimum	1.7E-05				Minimum	1.4E-01
Indoor Air Total										Minimum	1.7E-05				Minimum	1.4E-01
										Total of Receptor Risks Across All Media	1.7E-05	Total of Receptor Hazards Across All Media				1.4E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2D - Parcel North - Medlin & Sons North 12476, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake
Indoor Air
Inhalation of soil vapor: 5.3E-02

Noncancer Intake
Indoor Air
Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	NA	mg/kg/day	NA
			Maximum	ACETONE	4.3E+02	ug/m3	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-02	mg/kg/day	9.0E-01	mg/kg/day	7.1E-02
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	5.7E-02	mg/kg/day	6.8E-03
				TOLUENE	2.8E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	8.6E-02	mg/kg/day	4.9E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	2.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								Maximum 0.0E+00					Maximum 8.4E-02
		Exposure Point Total									Maximum 0.0E+00					Maximum 8.4E-02
Indoor Air Total											Maximum 0.0E+00					Maximum 8.4E-02
											Total of Receptor Risks Across All Media 0.0E+00					Total of Receptor Hazards Across All Media 8.4E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2D - Parcel North - Medlin & Sons North 12476, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.9E+00	ug/m3	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	NA	mg/kg/day	NA
			Minimum	ACETONE	4.3E+02	ug/m3	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-02	mg/kg/day	9.0E-01	mg/kg/day	7.1E-02
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	5.7E-02	mg/kg/day	6.8E-03
				TOLUENE	2.8E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-04	mg/kg/day	8.6E-02	mg/kg/day	4.9E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	2.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total							Minimum	0.0E+00				Minimum	8.4E-02
		Exposure Point Total								Minimum	0.0E+00				Minimum	8.4E-02
Indoor Air Total										Minimum	0.0E+00				Minimum	8.4E-02
										Total of Receptor Risks Across All Media	0.0E+00	Total of Receptor Hazards Across All Media				8.4E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2E - Parcel West - Terrapave, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.9E-01	ug/m3	2.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	6.3E-01	mg/kg/day	1.2E-04
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.6E+01	ug/m3	1.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.3E+01	ug/m3	1.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-03	mg/kg/day	5.7E-02	mg/kg/day	6.0E-02
				1,4-DICHLOROBENZENE	2.7E-01	ug/m3	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	5.7E-07	4.0E-05	mg/kg/day	2.3E-01	mg/kg/day	1.8E-04
				ACETONE	4.3E+01	ug/m3	2.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-03	mg/kg/day	9.0E-01	mg/kg/day	7.1E-03
				BENZENE	1.4E+00	ug/m3	7.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.4E-06	2.1E-04	mg/kg/day	8.6E-03	mg/kg/day	2.4E-02
				CARBON TETRACHLORIDE	6.7E-01	ug/m3	3.6E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	5.3E-06	1.0E-04	mg/kg/day	1.1E-02	mg/kg/day	8.7E-03
				CHLOROFORM	2.4E-01	ug/m3	1.3E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.0E-06	3.6E-05	mg/kg/day	8.6E-02	mg/kg/day	4.2E-04
				DICHLORODIFLUOROMETHANE	2.9E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	5.7E-02	mg/kg/day	7.5E-03
				ETHYLBENZENE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	2.9E-01	mg/kg/day	8.3E-04
				M,P-XYLENES	5.5E+00	ug/m3	2.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-04	mg/kg/day	2.9E-02	mg/kg/day	2.9E-02
				METHYLENE CHLORIDE	1.5E+00	ug/m3	8.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.8E-07	2.2E-04	mg/kg/day	1.1E-01	mg/kg/day	2.0E-03
				O-XYLENE	2.1E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	2.9E-02	mg/kg/day	1.1E-02
				TETRACHLOROETHENE	1.1E+02	ug/m3	5.8E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.2E-04	1.6E-02	mg/kg/day	1.0E-02	mg/kg/day	1.6E+00
				TOLUENE	1.0E+01	ug/m3	5.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	8.6E-02	mg/kg/day	1.7E-02
				TRICHLOROETHENE	4.4E+00	ug/m3	2.3E-04	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.6E-06	6.5E-04	mg/kg/day	1.7E-01	mg/kg/day	3.8E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	7.0E+00	ug/m3	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	2.0E-01	mg/kg/day	5.2E-03
			Exp. Route Total								Maximum	1.4E-04				Maximum	1.8E+00
		Exposure Point Total									Maximum	1.4E-04				Maximum	1.8E+00
Indoor Air Total											Maximum	1.4E-04				Maximum	1.8E+00
											Total of Receptor Risks Across All Media	1.4E-04	Total of Receptor Hazards Across All Media				1.8E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2E - Parcel West - Terrapave, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Current
Receptor Population:	Industrial Worker
Receptor Age.	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	4.5E-01	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6 7E-05	mg/kg/day	6.3E-01	mg/kg/day	1.1E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.3E+00	ug/m3	3.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9 4E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	5.5E+00	ug/m3	2.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8 2E-04	mg/kg/day	5.7E-02	mg/kg/day	1.4E-02
				1,4-DICHLOROBENZENE	2.3E-01	ug/m3	1.2E-05	mg/kg/day	4 0E-02	mg/kg/day^{-1}	4 9E-07	3 4E-05	mg/kg/day	2.3E-01	mg/kg/day	1.5E-04
				ACETONE	2.2E+01	ug/m3	1.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-03	mg/kg/day	9.0E-01	mg/kg/day	3.6E-03
				BENZENE	1.1E+00	ug/m3	5.8E-05	mg/kg/day	1 0E-01	mg/kg/day^{-1}	5.8E-06	1 6E-04	mg/kg/day	8.6E-03	mg/kg/day	1.9E-02
				CARBON TETRACHLORIDE	5.6E-01	ug/m3	3.0E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.5E-06	8 3E-05	mg/kg/day	1.1E-02	mg/kg/day	7 3E-03
				CHLOROFORM	2.1E-01	ug/m3	1.1E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	9.0E-07	3.1E-05	mg/kg/day	8.6E-02	mg/kg/day	3.6E-04
				DICHLORODIFLUOROMETHANE	1.5E+00	ug/m3	8.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	5.7E-02	mg/kg/day	3.9E-03
				ETHYLBENZENE	9.3E-01	ug/m3	4.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.9E-01	mg/kg/day	4.8E-04
				M,P-XYLENES	3 3E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-04	mg/kg/day	2.9E-02	mg/kg/day	1.7E-02
				METHYLENE CHLORIDE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.2E-07	1.8E-04	mg/kg/day	1.1E-01	mg/kg/day	1.6E-03
				O-XYLENE	9.6E-01	ug/m3	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1 4E-04	mg/kg/day	2.9E-02	mg/kg/day	5.0E-03
				TETRACHLOROETHENE	3.9E+01	ug/m3	2.1E-03	mg/kg/day	2 1E-02	mg/kg/day^{-1}	4.3E-05	5.8E-03	mg/kg/day	1.0E-02	mg/kg/day	5.8E-01
				TOLUENE	6 5E+00	ug/m3	3.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-04	mg/kg/day	8.6E-02	mg/kg/day	1.1E-02
				TRICHLOROETHENE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.9E-07	2.4E-04	mg/kg/day	1.7E-01	mg/kg/day	1.4E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
			Exp. Route Total							Minimum	5.5E-05				Minimum	6.7E-01
		Exposure Point Total								Minimum	5.5E-05				Minimum	6.7E-01
Indoor Air Total										Minimum	5.5E-05				Minimum	6.7E-01
										Total of Receptor Risks Across All Media	5.5E-05	Total of Receptor Hazards Across All Media				6.7E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2F - Parcel South - Bishop, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.9E-01	ug/m3	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	6.3E-01	mg/kg/day	4 5E-05
			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.0E+01	ug/m3	5.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	1.4E+01	ug/m3	7.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	5.7E-02	mg/kg/day	3.7E-02
				1,4-DICHLOROBENZENE	3.2E-01	ug/m3	1.7E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	6.8E-07	4.8E-05	mg/kg/day	2.3E-01	mg/kg/day	2.1E-04
				ACETONE	4.1E+01	ug/m3	2.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-03	mg/kg/day	9.0E-01	mg/kg/day	6.8E-03
				BENZENE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6.4E-06	1 8E-04	mg/kg/day	8.6E-03	mg/kg/day	2.1E-02
				CARBON TETRACHLORIDE	5.8E-01	ug/m3	3.1E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.6E-06	8.6E-05	mg/kg/day	1.1E-02	mg/kg/day	7.5E-03
				CHLOROFORM	1.8E-01	ug/m3	9 6E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	7.7E-07	2.7E-05	mg/kg/day	8.6E-02	mg/kg/day	3.1E-04
				DICHLORODIFLUOROMETHANE	3 0E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-04	mg/kg/day	5.7E-02	mg/kg/day	7.8E-03
				ETHYLBENZENE	1.7E+00	ug/m3	9.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	2.9E-01	mg/kg/day	8.8E-04
				M,P-XYLENES	4.9E+00	ug/m3	2.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7 3E-04	mg/kg/day	2.9E-02	mg/kg/day	2.6E-02
				METHYL TERT-BUTYL ETHER	6.7E-01	ug/m3	3.6E-05	mg/kg/day	9.1E-04	mg/kg/day^{-1}	3.2E-08	1.0E-04	mg/kg/day	8.6E-01	mg/kg/day	1.2E-04
				METHYLENE CHLORIDE	1.7E+00	ug/m3	9.0E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.2E-07	2.5E-04	mg/kg/day	1.1E-01	mg/kg/day	2.2E-03
				O-XYLENE	1.7E+00	ug/m3	9.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	2.9E-02	mg/kg/day	8.8E-03
				TETRACHLOROETHENE	2.9E+01	ug/m3	1.5E-03	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.2E-05	4.3E-03	mg/kg/day	1.0E-02	mg/kg/day	4.3E-01
				TOLUENE	8.4E+00	ug/m3	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-03	mg/kg/day	8.6E-02	mg/kg/day	1.5E-02
				TRICHLOROETHENE	1.5E+00	ug/m3	8.0E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.6E-07	2.2E-04	mg/kg/day	1.7E-01	mg/kg/day	1.3E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.7E+00	ug/m3	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	2.0E-01	mg/kg/day	2.8E-03
			Exp. Route Total							Maximum	4.5E-05				Maximum	5.7E-01
		Exposure Point Total								Maximum	4 5E-05				Maximum	5.7E-01
Indoor Air Total										Maximum	4.5E-05				Maximum	5.7E-01
									Total of Receptor Risks Across All Media		4.5E-05	Total of Receptor Hazards Across All Media				5.7E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2F - Parcel South - Bishop, RME, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake
Indoor Air
Inhalation of soil vapor: 5.3E-02

Noncancer Intake
Indoor Air
Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.9E-01	ug/m3	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	6.3E-01	mg/kg/day	4.5E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.6E+00	ug/m3	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-04	mg/kg/day	5.7E-02	mg/kg/day	9.4E-03
				1,4-DICHLOROBENZENE	2.1E-01	ug/m3	1.1E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	4.5E-07	3.1E-05	mg/kg/day	2.3E-01	mg/kg/day	1.4E-04
				ACETONE	2.8E+01	ug/m3	1.5E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	9.0E-01	mg/kg/day	4.6E-03
				BENZENE	1.2E+00	ug/m3	6.1E-05	mg/kg/day	1 0E-01	mg/kg/day^{-1}	6.1E-06	1.7E-04	mg/kg/day	8.6E-03	mg/kg/day	2.0E-02
				CARBON TETRACHLORIDE	5.1E-01	ug/m3	2.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4 1E-06	7.6E-05	mg/kg/day	1.1E-02	mg/kg/day	6.7E-03
				CHLOROFORM	1.5E-01	ug/m3	8.0E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.4E-07	2 2E-05	mg/kg/day	8.6E-02	mg/kg/day	2.6E-04
				DICHLORODIFLUOROMETHANE	2.7E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-04	mg/kg/day	5.7E-02	mg/kg/day	7 0E-03
				ETHYLBENZENE	8.1E-01	ug/m3	4.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.9E-01	mg/kg/day	4 2E-04
				M,P-XYLENES	2.7E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4 0E-04	mg/kg/day	2.9E-02	mg/kg/day	1.4E-02
				METHYL TERT-BUTYL ETHER	6.7E-01	ug/m3	3.6E-05	mg/kg/day	9.1E-04	mg/kg/day^{-1}	3.2E-08	1.0E-04	mg/kg/day	8.6E-01	mg/kg/day	1.2E-04
				METHYLENE CHLORIDE	1.0E+00	ug/m3	5 3E-05	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.9E-07	1.5E-04	mg/kg/day	1.1E-01	mg/kg/day	1.3E-03
				O-XYLENE	1.0E+00	ug/m3	5.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.9E-02	mg/kg/day	5.3E-03
				TETRACHLOROETHENE	7.1E+00	ug/m3	3 8E-04	mg/kg/day	2 1E-02	mg/kg/day^{-1}	7.8E-06	1.1E-03	mg/kg/day	1.0E-02	mg/kg/day	1.1E-01
				TOLUENE	6.9E+00	ug/m3	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	8.6E-02	mg/kg/day	1.2E-02
				TRICHLOROETHENE	4.4E-01	ug/m3	2.3E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.6E-07	6.5E-05	mg/kg/day	1.7E-01	mg/kg/day	3.8E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.2E+00	ug/m3	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	2.0E-01	mg/kg/day	1.6E-03
			Exp. Route Total							Minimum	1.9E-05				Minimum	1.9E-01
		Exposure Point Total								Minimum	1.9E-05				Minimum	1.9E-01
Indoor Air Total										Minimum	1.9E-05				Minimum	1.9E-01
									Total of Receptor Risks Across All Media		1.9E-05	Total of Receptor Hazards Across All Media				1.9E-01

ND: Not Detected.
NS: Not selected as an exposure pathway
na: The chemical is listed, value is not available
ne The compound has not been evaluated by EPA for evidence of human carcinogenicity.

—: Risk was not calculated for chemical.
mg/kg: milligram per kilogram.
mg/kg/day: milligram per kilogram per day.
mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2G - Parcel South - LA Carts, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4E+01	ug/m3	7.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Maximum	1,1-DICHLOROETHENE	3.6E+00	ug/m3	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-04	mg/kg/day	5.7E-02	mg/kg/day	9.4E-03
				1,4-DICHLOROBENZENE	1.6E-01	ug/m3	8.5E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	3.4E-07	2.4E-05	mg/kg/day	2.3E-01	mg/kg/day	1.0E-04
				ACETONE	1.2E+03	ug/m3	6.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-01	mg/kg/day	9.0E-01	mg/kg/day	2.0E-01
				BENZENE	2.2E+00	ug/m3	1.2E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.2E-05	3.3E-04	mg/kg/day	8.6E-03	mg/kg/day	3.8E-02
				CARBON TETRACHLORIDE	5.2E-01	ug/m3	2.8E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.1E-06	7.7E-05	mg/kg/day	1.1E-02	mg/kg/day	6.8E-03
				CHLOROFORM	3.7E-01	ug/m3	2.0E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.6E-06	5.5E-05	mg/kg/day	8.6E-02	mg/kg/day	6.4E-04
				DICHLORODIFLUOROMETHANE	3.2E+00	ug/m3	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	5.7E-02	mg/kg/day	8.3E-03
				ETHYLBENZENE	2.0E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.9E-01	mg/kg/day	1.0E-03
				M,P-XYLENES	7.3E+00	ug/m3	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	2.9E-02	mg/kg/day	3.8E-02
				METHYLENE CHLORIDE	5.9E+00	ug/m3	3.1E-04	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.1E-06	8.8E-04	mg/kg/day	1.1E-01	mg/kg/day	7.7E-03
				O-XYLENE	2.6E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	2.9E-02	mg/kg/day	1.4E-02
				TETRACHLOROETHENE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.8E-06	2.4E-04	mg/kg/day	1.0E-02	mg/kg/day	2.4E-02
				TOLUENE	5.7E+02	ug/m3	3.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-02	mg/kg/day	8.6E-02	mg/kg/day	9.9E-01
				TRICHLOROETHENE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	4.5E-07	1.8E-04	mg/kg/day	1.7E-01	mg/kg/day	1.0E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.2E+00	ug/m3	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.4E-03
			Exp. Route Total							Maximum	2.1E-05				Maximum	1.3E+00
		Exposure Point Total								Maximum	2.1E-05				Maximum	1.3E+00
Indoor Air Total										Maximum	2.1E-05				Maximum	1.3E+00
										Total of Receptor Risks Across All Media	2.1E-05	Total of Receptor Hazards Across All Media				1.3E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7 2G - Parcel South - LA Carts, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	7.0E-01	ug/m3	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	6.0E-02	ug/m3	3.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8 9E-06	mg/kg/day	5.7E-02	mg/kg/day	1.6E-04
				1,4-DICHLOROBENZENE	1.6E-01	ug/m3	8.5E-06	mg/kg/day	4.0E-02	mg/kg/day^{-1}	3.4E-07	2.4E-05	mg/kg/day	2.3E-01	mg/kg/day	1.0E-04
				ACETONE	7.4E+01	ug/m3	3.9E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	9.0E-01	mg/kg/day	1.2E-02
				BENZENE	1.3E+00	ug/m3	6.9E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6 9E-06	1.9E-04	mg/kg/day	8.6E-03	mg/kg/day	2 3E-02
				CARBON TETRACHLORIDE	5.0E-01	ug/m3	2.7E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.0E-06	7.4E-05	mg/kg/day	1.1E-02	mg/kg/day	6.5E-03
				CHLOROFORM	1.4E-01	ug/m3	7.4E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.0E-07	2.1E-05	mg/kg/day	8 6E-02	mg/kg/day	2 4E-04
				DICHLORODIFLUOROMETHANE	2.6E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	5.7E-02	mg/kg/day	6 8E-03
				ETHYLBENZENE	9.5E-01	ug/m3	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.9E-01	mg/kg/day	4 9E-04
				M,P-XYLENES	2.9E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	2.9E-02	mg/kg/day	1.5E-02
				METHYLENE CHLORIDE	5.2E+00	ug/m3	2.8E-04	mg/kg/day	3 5E-03	mg/kg/day^{-1}	9.7E-07	7.7E-04	mg/kg/day	1.1E-01	mg/kg/day	6 8E-03
				O-XYLENE	1.0E+00	ug/m3	5.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.9E-02	mg/kg/day	5 2E-03
				TETRACHLOROETHENE	2.4E-01	ug/m3	1.3E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.6E-07	3.6E-05	mg/kg/day	1.0E-02	mg/kg/day	3 6E-03
				TOLUENE	1.0E+01	ug/m3	5.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	8 6E-02	mg/kg/day	1 7E-02
				TRICHLOROETHENE	1 2E+00	ug/m3	6.4E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	4.5E-07	1.8E-04	mg/kg/day	1.7E-01	mg/kg/day	1.0E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	1 5E+00	ug/m3	8.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1 1E-03
			Exp. Route Total							Minimum	1.4E-05				Minimum	9 9E-02
		Exposure Point Total								Minimum	1.4E-05				Minimum	9.9E-02
Indoor Air Total										Minimum	1.4E-05				Minimum	9.9E-02
										Total of Receptor Risks Across All Media	1.4E-05	Total of Receptor Hazards Across All Media				9 9E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2H - Parcel South - Oncology Care, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6E+00	ug/m3	8.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
			Maximum	1,1-DICHLOROETHENE	2.3E-01	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	5.7E-02	mg/kg/day	6.0E-04
				1,2-DICHLOROETHANE	3.2E-01	ug/m3	1.7E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.5E-06	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day	3.4E-02
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.1E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	8.3E-07	5.8E-05	mg/kg/day	2.3E-01	mg/kg/day	2.5E-04
				ACETONE	9.9E+01	ug/m3	5.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-02	mg/kg/day	9.0E-01	mg/kg/day	1.6E-02
				BENZENE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6.4E-06	1.8E-04	mg/kg/day	8.6E-03	mg/kg/day	2.1E-02
				CARBON TETRACHLORIDE	5.2E-01	ug/m3	2.8E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	4.1E-06	7.7E-05	mg/kg/day	1.1E-02	mg/kg/day	6.8E-03
				CHLOROFORM	6.6E-01	ug/m3	3.5E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.8E-06	9.8E-05	mg/kg/day	8.6E-02	mg/kg/day	1.1E-03
				DICHLORODIFLUOROMETHANE	3.4E+00	ug/m3	1.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	5.7E-02	mg/kg/day	8.8E-03
				ETHYLBENZENE	1.0E+00	ug/m3	5.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.9E-01	mg/kg/day	5.2E-04
				M,P-XYLENES	3.1E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	2.9E-02	mg/kg/day	1.6E-02
				O-XYLENE	1.3E+00	ug/m3	6.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	2.9E-02	mg/kg/day	6.8E-03
				TETRACHLOROETHENE	4.4E-01	ug/m3	2.3E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.8E-07	6.5E-05	mg/kg/day	1.0E-02	mg/kg/day	6.5E-03
				TOLUENE	1.7E+01	ug/m3	9.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-03	mg/kg/day	8.6E-02	mg/kg/day	3.0E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.8E+00	ug/m3	9.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	2.0E-01	mg/kg/day	1.3E-03
			Exp. Route Total								Maximum	1.6E-05				Maximum	1.5E-01
		Exposure Point Total									Maximum	1.6E-05				Maximum	1.5E-01
Indoor Air Total											Maximum	1.6E-05				Maximum	1.5E-01
											Total of Receptor Risks Across All Media	1.6E-05		Total of Receptor Hazards Across All Media			1.5E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.2H - Parcel South - Oncology Care, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor Age:	Adult

Cancer Intake

Indoor Air

Inhalation of soil vapor: 5.3E-02

Noncancer Intake

Indoor Air

Inhalation of soil vapor: 1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Indoor Air	Indoor Air	Indoor Air	Inhalation Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.2E+00	ug/m3	6.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	2.0E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	5.7E-02	mg/kg/day	5 2E-04
				1,2-DICHLOROETHANE	3.2E-01	ug/m3	1.7E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.5E-06	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day	3.4E-02
				1,4-DICHLOROBENZENE	3.9E-01	ug/m3	2.1E-05	mg/kg/day	4.0E-02	mg/kg/day^{-1}	8.3E-07	5.8E-05	mg/kg/day	2.3E-01	mg/kg/day	2.5E-04
				ACETONE	9.5E+01	ug/m3	5.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-02	mg/kg/day	9.0E-01	mg/kg/day	1.6E-02
				BENZENE	1.1E+00	ug/m3	5.8E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	5.8E-06	1.6E-04	mg/kg/day	8.6E-03	mg/kg/day	1.9E-02
				CARBON TETRACHLORIDE	5.0E-01	ug/m3	2.7E-05	mg/kg/day	1 5E-01	mg/kg/day^{-1}	4.0E-06	7.4E-05	mg/kg/day	1.1E-02	mg/kg/day	6.5E-03
				CHLOROFORM	5.7E-01	ug/m3	3.0E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.4E-06	8.5E-05	mg/kg/day	8.6E-02	mg/kg/day	9.9E-04
				DICHLORODIFLUOROMETHANE	2.9E+00	ug/m3	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-04	mg/kg/day	5.7E-02	mg/kg/day	7.5E-03
				ETHYLBENZENE	9.4E-01	ug/m3	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.9E-01	mg/kg/day	4.9E-04
				M,P-XYLENES	3.0E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-04	mg/kg/day	2.9E-02	mg/kg/day	1.6E-02
				O-XYLENE	1.2E+00	ug/m3	6 4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	2.9E-02	mg/kg/day	6.2E-03
				TETRACHLOROETHENE	4.4E-01	ug/m3	2.3E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.8E-07	6.5E-05	mg/kg/day	1.0E-02	mg/kg/day	6.5E-03
				TOLUENE	1.6E+01	ug/m3	8.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-03	mg/kg/day	8.6E-02	mg/kg/day	2.8E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.7E+00	ug/m3	9.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	2.0E-01	mg/kg/day	1.3E-03
			Exp Route Total							Minimum	1.5E-05				Minimum	1.4E-01
		Exposure Point Total								Minimum	1.5E-05				Minimum	1.4E-01
Indoor Air Total										Minimum	1.5E-05				Minimum	1.4E-01
										Total of Receptor Risks Across All Media	1.5E-05	Total of Receptor Hazards Across All Media				1.4E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.3A - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3 4E-09
Dermal	8 9E-08
Inhalation of fugitive dust:	6 2E-13
Inhalation of out air in exc .	8 4E-04

Noncancer Intake

Surface Soil

Ingestion	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust	4 3E-11
Inhalation of out. air in exc.:	5 9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4 7E-02	mg/kg	1 6E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	1 1E-08	mg/kg/day	2 8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3 4E-03	mg/kg	1 1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8 2E-13	8 0E-10	mg/kg/day	4 0E-03	mg/kg/day	2 0E-07
				1,1-DICHLOROETHANE	8 4E-03	mg/kg	2 8E-11	mg/kg/day	5 7E-03	mg/kg/day^{-1}	1.6E-13	2 0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1 3E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	9 2E-10	mg/kg/day	5 0E-02	mg/kg/day	1 8E-08
				1,2-DICHLOROBENZENE	2 4E-01	mg/kg	8 1E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	5 6E-08	mg/kg/day	9 0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6 3E-03	mg/kg	2.1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.9E-12	1 5E-09	mg/kg/day	2 0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.5E-09	6 6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3 7E-01	mg/kg	1 2E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	8 7E-08	mg/kg/day	4.0E-03	mg/kg/day	2 2E-05
				4,4'-DDE	1 4E-01	mg/kg	4 8E-10	mg/kg/day	3 4E-01	mg/kg/day^{-1}	1.6E-10	3 4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	3 0E-10	mg/kg/day	3 4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5 0E-04	mg/kg/day	4 2E-05
				ALUMINUM	9.8E+03	mg/kg	3 3E-05	mg/kg/day	NA	mg/kg/day^{-1}	—	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4 1E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	2.9E-06	mg/kg/day	4 0E-04	mg/kg/day	7.2E-03
				BARIUM	1 6E+02	mg/kg	5 3E-07	mg/kg/day	NA	mg/kg/day^{-1}	—	3 7E-05	mg/kg/day	2.0E-01	mg/kg/day	1 9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2 8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3 4E-09	2 0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1 5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1 0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	3 7E-06	mg/kg/day	3 0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5 1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	1 2E-07	mg/kg/day	2.0E-03	mg/kg/day	5 9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2 3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5 4E-06	mg/kg/day	2.0E-02	mg/kg/day	2 7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2 5E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8 9E-07
				CADMIUM	1.2E+00	mg/kg	4 2E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	2.9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4 7E-03	mg/kg	1 6E-11	mg/kg/day	3 1E-02	mg/kg/day^{-1}	4 9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2 4E-07	mg/kg/day	NA	mg/kg/day^{-1}	—	1 7E-05	mg/kg/day	1 5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4 0E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	2 8E-06	mg/kg/day	3 0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1 2E-08	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9 3E+00	mg/kg	3 1E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	2.2E-06	mg/kg/day	2 0E-02	mg/kg/day	1 1E-04
				COPPER	4.0E+01	mg/kg	1 4E-07	mg/kg/day	NA	mg/kg/day^{-1}	—	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1 0E-10	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1 7E-09	7.3E-09	mg/kg/day	5 0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3 6E-01	mg/kg	1 2E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	8 5E-08	mg/kg/day	4 0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	—	5 5E-03	mg/kg/day	3 0E-01	mg/kg/day	1 8E-02
				ISOPHORONE	8 2E+00	mg/kg	2.7E-08	mg/kg/day	9 5E-04	mg/kg/day^{-1}	2 6E-11	1 9E-06	mg/kg/day	2 0E-01	mg/kg/day	9 6E-06
				LEAD	6 0E+01	mg/kg	2.0E-07	mg/kg/day	8 5E-03	mg/kg/day^{-1}	1 7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	—	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2 8E-01	mg/kg	9 3E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1 3E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1 8E-04
				NAPHTHALENE	7 9E-01	mg/kg	2 7E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	1.9E-07	mg/kg/day	2 0E-02	mg/kg/day	9 3E-06
				NICKEL	2.5E+01	mg/kg	8 2E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	5.8E-06	mg/kg/day	2 0E-02	mg/kg/day	2 9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1 1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5 7E-09	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03
				PHENANTHRENE	3.0E+00	mg/kg	9 9E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5 0E-01	mg/kg	1 7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8 4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1 9E+00	mg/kg	6 3E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1 5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	1 4E-07	mg/kg/day	5.0E-03	mg/kg/day	2 9E-05
				TETRACHLOROETHENE	4 3E+00	mg/kg	1 4E-08	mg/kg/day	5 4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1 0E-02	mg/kg/day	1 0E-04
				THALLIUM	2 0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	4.7E-07	mg/kg/day	6 6E-05	mg/kg/day	7 1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9 4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6 6E-09	mg/kg/day	3 0E-04	mg/kg/day	2.2E-05

TABLE A3-7 3A - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake

Surface Soil	
Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil	
Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9.5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2.3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7 3A - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.	8.4E-04

Noncancer Intake

Surface Soil

Ingestion	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	—	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	—	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	—	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	—	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.77E-07					2.2E-02
		Exposure Point Total									2.38E-07					7.8E-02
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	—	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.1E-15	mg/kg/day	NA	mg/kg/day^{-1}	—	1.5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5.2E-15	mg/kg/day	NA	mg/kg/day^{-1}	—	3.6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.4E-15	mg/kg/day	NA	mg/kg/day^{-1}	—	1.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	1.0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	—	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.7E-11	mg/kg/day	2.7E-03	mg/kg/day^{-1}	4.7E-14	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	1.6E-11	mg/kg/day	4.0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1.4E-01	mg/kg	8.9E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.0E-16	6.2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.6E-16	3.8E-12	mg/kg/day	1.7E-02	mg/kg/day	2.3E-10
				ALUMINUM	9.8E+03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	—	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	5.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	5.2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8.0E-14	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.9E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	6.1E-13	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.7E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	6.7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-11	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.0E-14	1.0E-09	mg/kg/day	2.0E-01	mg/kg/day	5.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	3.3E-11	mg/kg/day	2.0E+00	mg/kg/day	1.6E-11
				CADMIUM	1.2E+00	mg/kg	7.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	5.4E-11	mg/kg/day	2.5E-02	mg/kg/day	2.2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	—	2.0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.9E-14	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.1E-14	1.3E-12	mg/kg/day	5.0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	1.6E-11	mg/kg/day	3.1E-01	mg/kg/day	5.1E-11
				IRON	2.3E+04	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	—	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	*8.2E+00*	*mg/kg*	5.0E-12	*mg/kg/day*	9.5E-05	*mg/kg/day^{-1}*	*4.8E-16*	*3.5E-10*	*mg/kg/day*	*2.0E+00*	*mg/kg/day*	1.8E-10
				LEAD	6.0E+01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	—	3.4E-11	mg/kg/day	1.5E-01	mg/kg/day	2.2E-10
				NICKEL	2.5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	1.1E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.5E-13	1.5E-11	mg/kg/day	1.4E-04	mg/kg/day	1.0E-07

TABLE A3-7.3A - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake

Surface Soil	
Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil	
Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
				PHENANTHRENE	3.0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	3.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.2E-13	2.2E-11	mg/kg/day	5.0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-11	mg/kg/day	2.3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.2E-12					1.6E-07
		Exposure Point Total									1.2E-12					1.6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas 5-12 ft bgs	Outdoor Air	Outdoor Air in Excavation	Inhalation Maximum	1,1,1-TRICHLOROETHANE	4.1E+00	ug/m3	3.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	6.3E-01	mg/kg/day	3.8E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.2E+00	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	1.3E-02	ug/m3	1.1E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	6.2E-10	7.6E-07	mg/kg/day	4.0E-03	mg/kg/day	1.9E-04
				1,1-DICHLOROETHANE	1.7E-01	ug/m3	1.5E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.3E-10	1.0E-05	mg/kg/day	1.4E-01	mg/kg/day	7.2E-05
				1,1-DICHLOROETHENE	4.9E+00	ug/m3	4.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	5.7E-02	mg/kg/day	5.1E-03
				1,2,4-TRIMETHYLBENZENE	*3.1E-04*	*ug/m3*	*2.6E-10*	*mg/kg/day*	*NA*	*mg/kg/day^{-1}*	---	*1.8E-08*	*mg/kg/day*	*1.7E-03*	*mg/kg/day*	*1.1E-05*
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	2.3E-02	ug/m3	2.0E-08	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.8E-09	1.4E-06	mg/kg/day	1.4E-03	mg/kg/day	9.8E-04
				1,3-BUTADIENE	1.7E-03	ug/m3	1.4E-09	mg/kg/day	6.0E-01	mg/kg/day^{-1}	8.6E-10	1.0E-07	mg/kg/day	5.7E-03	mg/kg/day	1.8E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	1.4E+00	mg/kg/day	8.0E-08
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETALDEHYDE	1.7E-03	ug/m3	1.4E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.4E-11	1.0E-07	mg/kg/day	2.6E-03	mg/kg/day	3.9E-05
				ACETONE	7.4E-02	ug/m3	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	9.0E-01	mg/kg/day	4.8E-06
				BENZENE	1.4E-02	ug/m3	1.1E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.1E-09	7.9E-07	mg/kg/day	8.6E-03	mg/kg/day	9.3E-05
				BROMODICHLOROMETHANE	9.0E-05	ug/m3	7.5E-11	mg/kg/day	1.3E-01	mg/kg/day^{-1}	9.8E-12	5.3E-09	mg/kg/day	2.0E-02	mg/kg/day	2.6E-07
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	3.7E-02	ug/m3	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-01	mg/kg/day	1.1E-05
				CARBON TETRACHLORIDE	2.3E-03	ug/m3	1.9E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.8E-10	1.3E-07	mg/kg/day	1.1E-02	mg/kg/day	1.2E-05
				CHLOROFORM	7.8E-02	ug/m3	6.5E-08	mg/kg/day	8.1E-02	mg/kg/day^{-1}	5.2E-09	4.6E-06	mg/kg/day	8.6E-02	mg/kg/day	5.3E-05
				CIS-1,2-DICHLOROETHENE	8.1E-02	ug/m3	6.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	1.0E-02	mg/kg/day	4.7E-04
				CYCLOHEXANE	9.6E-03	ug/m3	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	1.7E+00	mg/kg/day	3.3E-07
				DIBROMOCHLOROMETHANE	1.6E-04	ug/m3	1.4E-10	mg/kg/day	9.4E-02	mg/kg/day^{-1}	1.3E-11	9.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.8E-07
				DICHLORODIFLUOROMETHANE	1.4E-02	ug/m3	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-07	mg/kg/day	5.7E-02	mg/kg/day	1.4E-05
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	2.8E-04	ug/m3	2.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-08	mg/kg/day	2.9E-01	mg/kg/day	5.8E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	2.8E-02	ug/m3	2.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	2.0E-01	mg/kg/day	8.4E-06
				M,P-XYLENES	5.3E-03	ug/m3	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	2.9E-02	mg/kg/day	1.1E-05
				METHYL TERT-BUTYL ETHER	2.1E-04	ug/m3	1.8E-10	mg/kg/day	9.1E-04	mg/kg/day^{-2}	1.6E-13	1.2E-08	mg/kg/day	8.6E-01	mg/kg/day	1.4E-08
				METHYLENE CHLORIDE	1.8E-02	ug/m3	1.5E-08	mg/kg/day	3.5E-03	mg/kg/day^{-3}	5.4E-11	1.1E-06	mg/kg/day	1.1E-01	mg/kg/day	9.4E-06
				O-XYLENE	1.3E-02	ug/m3	1.1E-08	mg/kg/day	NA	mg/kg/day^{-4}	---	7.8E-07	mg/kg/day	2.9E-02	mg/kg/day	2.7E-05
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7 3A - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
				TETRACHLOROETHENE	5.2E+00	ug/m3	4.3E-06	mg/kg/day	2.1E-02	mg/kg/day^{-6}	8.9E-08	3.0E-04	mg/kg/day	1.0E-02	mg/kg/day	3.0E-02
				TETRAHYDROFURAN	1.3E-02	ug/m3	1.1E-08	mg/kg/day	6.8E-03	mg/kg/day^{-7}	7.2E-11	7.4E-07	mg/kg/day	8.6E-02	mg/kg/day	8.7E-06
				TOLUENE	1.5E-02	ug/m3	1.2E-08	mg/kg/day	NA	mg/kg/day^{-8}	---	8.7E-07	mg/kg/day	8.6E-02	mg/kg/day	1.0E-05
				TRANS-1,2-DICHLOROETHENE	3.9E-02	ug/m3	3.3E-08	mg/kg/day	NA	mg/kg/day^{-9}	---	2.3E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				TRICHLOROETHENE	8.6E-01	ug/m3	7.2E-07	mg/kg/day	7.0E-03	mg/kg/day^{-10}	5.0E-09	5.0E-05	mg/kg/day	1.7E-01	mg/kg/day	2.9E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.9E+00	ug/m3	2.4E-06	mg/kg/day	NA	mg/kg/day^{-11}	---	1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	8.6E-04
				VINYL CHLORIDE	1.0E-03	ug/m3	8.8E-10	mg/kg/day	2.7E-01	mg/kg/day^{-1}	2.4E-10	6.2E-08	mg/kg/day	2.9E-02	mg/kg/day	2.2E-06
			Exp. Route Total							Maximum	1.1E-07				Maximum	3.9E-02
		Exposure Point Total								Maximum	1.1E-07				Maximum	3.9E-02
Soil gas - Outdoor Air Total										Maximum	1.1E-07				Maximum	3.9E-02
										Total of Receptor Risks Across All Media	3.4E-07			Total of Receptor Hazards Across All Media		1.2E-01

ND: Not Detected

NS: Not selected as an exposure pathway.

na The chemical is listed, value is not available.

ne The compound has not been evaluated by EPA for evidence of human carcinogenicity.

--- Risk was not calculated for chemical

mg/kg milligram per kilogram

mg/kg/day, milligram per kilogram per day.

mg/kg/day^{-1} milligram per kilogram-day

CTE central tendency exposure

Note The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7 3A - All Parcels, CTE, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion	3.4E-09	Ingestion	2.3E-07
Dermal	8.9E-08	Dermal	6.2E-06
Inhalation of fugitive dust	6.2E-13	Inhalation of fugitive dust	4.3E-11
Inhalation of out. air in exc.	8.4E-04	Inhalation of out. air in exc.	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.2E-13	8.0E-10	mg/kg/day	4.0E-03	mg/kg/day	2.0E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.8E-11	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.6E-13	2.0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	5.0E-02	mg/kg/day	1.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	9.0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.9E-12	1.5E-09	mg/kg/day	2.0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.5E-09	6.6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-08	mg/kg/day	4.0E-03	mg/kg/day	2.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.8E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.6E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.0E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.2E-05
				ALUMINUM	9.8E+03	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	4.0E-04	mg/kg/day	7.2E-03
				BARIUM	1.6E+02	mg/kg	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.4E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	3.0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5.1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2.0E-03	mg/kg/day	5.9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8.9E-07
				CADMIUM	1.2E+00	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	1.6E-11	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	1.5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	3.0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1.2E-08	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				COPPER	4.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1.0E-10	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-09	7.3E-09	mg/kg/day	5.0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-08	mg/kg/day	4.0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-03	mg/kg/day	3.0E-01	mg/kg/day	1.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.7E-08	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.6E-11	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.6E-06
				LEAD	6.0E+01	mg/kg	2.0E-07	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2.8E-01	mg/kg	9.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.3E-06
				NICKEL	2.5E+01	mg/kg	8.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E-02	mg/kg/day	2.9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.7E-09	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03
				PHENANTHRENE	3.0E+00	mg/kg	9.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1.9E+00	mg/kg	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2.9E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-08	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1.0E-02	mg/kg/day	1.0E-04
				THALLIUM	2.0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-07	mg/kg/day	6.6E-05	mg/kg/day	7.1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9.4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6.6E-09	mg/kg/day	3.0E-04	mg/kg/day	2.2E-05

TABLE A3-7 3A - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake	
	Surface Soil
Ingestion:	3.4E-09
Dermal	8.9E-08
Inhalation of fugitive dust.	6.2E-13
Inhalation of out. air in exc :	8.4E-04

Noncancer Intake	
	Surface Soil
Ingestion	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust.	4.3E-11
Inhalation of out. air in exc :	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9.5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2.3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3A - All Parcels, CTE, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake

Surface Soil	
Ingestion:	3 4E-09
Dermal	8 9E-08
Inhalation of fugitive dust	6.2E-13
Inhalation of out. air in exc.	8 4E-04

Noncancer Intake

Surface Soil	
Ingestion:	2 3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust	4.3E-11
Inhalation of out. air in exc:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				TETRACHLOROETHENE	4 3E+00	mg/kg	3 8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2 0E+00	mg/kg	1 8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1 2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2 5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1 7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4 7E+01	mg/kg	4 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9 5E+01	mg/kg	8 4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1 77E-07					2.2E-02
		Exposure Point Total									2 38E-07					7.8E-02
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2 9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2 1E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1 5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5 2E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	3 6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3 9E-03	mg/kg	2 4E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1 7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2 4E-01	mg/kg	1 5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1 0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3 9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2 7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2 8E+01	mg/kg	1 7E-11	mg/kg/day	2 7E-03	mg/kg/day^{-1}	4 7E-14	1 2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3 7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	4 0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1 4E-01	mg/kg	8 9E-14	mg/kg/day	1 0E-02	mg/kg/day^{-1}	9 0E-16	6 2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	5 5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5 6E-16	3 8E-12	mg/kg/day	1 7E-02	mg/kg/day	2 3E-10
				ALUMINUM	9 8E+03	mg/kg	6 1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4 2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7 6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5 3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9 7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6 8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	5 2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8 0E-14	3 6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6 4E-01	mg/kg	3 9E-13	mg/kg/day	1 6E+00	mg/kg/day^{-1}	6.1E-13	2 7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4 4E-01	mg/kg	2 7E-13	mg/kg/day	1 6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1 6E+01	mg/kg	9 6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6 7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3 1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2 3E+01	mg/kg	1 4E-11	mg/kg/day	1 4E-03	mg/kg/day^{-1}	2 0E-14	1 0E-09	mg/kg/day	2.0E-01	mg/kg/day	5 0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4 7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3 3E-11	mg/kg/day	2 0E+00	mg/kg/day	1 6E-11
				CADMIUM	1 2E+00	mg/kg	7 7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5 4E-11	mg/kg/day	2 5E-02	mg/kg/day	2 2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7 1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3 1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1 2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5 1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3 7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1 6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9 3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4 0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3 1E-02	mg/kg	1.9E-14	mg/kg/day	1 6E+00	mg/kg/day^{-1}	3 1E-14	1 3E-12	mg/kg/day	5 0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3 6E-01	mg/kg	2 2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1 6E-11	mg/kg/day	3 1E-01	mg/kg/day	5 1E-11
				IRON	2.3E+04	mg/kg	1 4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1 0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8 2E+00	mg/kg	5 0E-12	mg/kg/day	9 5E-05	mg/kg/day^{-1}	4 8E-16	3 5E-10	mg/kg/day	2 0E+00	mg/kg/day	1 8E-10
				LEAD	6 0E+01	mg/kg	3 7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3 5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1 5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2 8E-01	mg/kg	1 7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3 9E+00	mg/kg	2 4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3 4E-11	mg/kg/day	1 5E-01	mg/kg/day	2 2E-10
				NICKEL	2 5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 1E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2 1E-13	mg/kg/day	7 0E-01	mg/kg/day^{-1}	1 5E-13	1 5E-11	mg/kg/day	1 4E-04	mg/kg/day	1 0E-07

TABLE A3-7 3A - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3 4E-09
Dermal	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc :	8 4E-04

Noncancer Intake	
Surface Soil	
Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PHENANTHRENE	3 0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	1 3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5 0E-01	mg/kg	3 1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2 2E-13	2 2E-11	mg/kg/day	5 0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8 1E-11	mg/kg/day	2 3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3 8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2 7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4 3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	—	1 9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8 6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1 2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2 9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5 8E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	4 1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1 2E-12					1 6E-07
		Exposure Point Total									1 2E-12					1 6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1 4E-03	ug/m3	1 2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8 1E-08	mg/kg/day	6 3E-01	mg/kg/day	1 3E-07
5-12 ft bgs		in Excavation	Minimum	1,1,2-TRICHLORO-1 2,2-TRIFLUOROETHANE	4 7E-05	ug/m3	3 9E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	2 7E-09	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3 2E-03	ug/m3	2 7E-09	mg/kg/day	5 7E-02	mg/kg/day^{-1}	1.5E-10	1 9E-07	mg/kg/day	4.0E-03	mg/kg/day	4 7E-05
				1,1-DICHLOROETHANE	2.2E-04	ug/m3	1.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.1E-12	1.3E-08	mg/kg/day	1.4E-01	mg/kg/day	9.2E-08
				1,1-DICHLOROETHENE	9 3E-04	ug/m3	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	5 5E-08	mg/kg/day	5.7E-02	mg/kg/day	9.6E-07
				1,2,4-TRIMETHYLBENZENE	8 3E-05	ug/m3	6 9E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	4 9E-09	mg/kg/day	1.7E-03	mg/kg/day	2.9E-06
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	4.1E-04	ug/m3	3 4E-10	mg/kg/day	9 1E-02	mg/kg/day^{-1}	3.1E-11	2 4E-08	mg/kg/day	1 4E-03	mg/kg/day	1.7E-05
				1,3-BUTADIENE	3.5E-05	ug/m3	2.9E-11	mg/kg/day	6 0E-01	mg/kg/day^{-1}	1 8E-11	2 1E-09	mg/kg/day	5 7E-03	mg/kg/day	3.6E-07
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	—	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	4.9E-05	ug/m3	4 1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 9E-09	mg/kg/day	1 4E+00	mg/kg/day	2.0E-09
				2-PROPANOL	ND	ug/m3	—	mg/kg/day	NA	mg/kg/day^{-1}	—	—	mg/kg/day	NA	mg/kg/day	---
				ACETALDEHYDE	1.5E-03	ug/m3	1 3E-09	mg/kg/day	1 0E-02	mg/kg/day^{-1}	1 3E-11	8 8E-08	mg/kg/day	2.6E-03	mg/kg/day	3 4E-05
				ACETONE	2 4E-04	ug/m3	2 0E-10	mg/kg/day	NA	mg/kg/day^{-1}	—	1 4E-08	mg/kg/day	9 0E-01	mg/kg/day	1.6E-08
				BENZENE	3 1E-05	ug/m3	2 6E-11	mg/kg/day	1 0E-01	mg/kg/day^{-1}	2 6E-12	1 8E-09	mg/kg/day	8 6E-03	mg/kg/day	2 2E-07
				BROMODICHLOROMETHANE	3 5E-05	ug/m3	2 9E-11	mg/kg/day	1.3E-01	mg/kg/day^{-1}	3 8E-12	2 0E-09	mg/kg/day	2.0E-02	mg/kg/day	1.0E-07
				BROMOFORM	ND	ug/m3	—	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	4 0E-05	ug/m3	3 4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 4E-09	mg/kg/day	2.0E-01	mg/kg/day	1 2E-08
				CARBON TETRACHLORIDE	1 2E-03	ug/m3	1 0E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1 5E-10	7 2E-08	mg/kg/day	1.1E-02	mg/kg/day	6 3E-06
				CHLOROFORM	9 5E-05	ug/m3	8 0E-11	mg/kg/day	8 1E-02	mg/kg/day^{-1}	6 4E-12	5 6E-09	mg/kg/day	8 6E-02	mg/kg/day	6 5E-08
				CIS-1,2-DICHLOROETHENE	4.7E-04	ug/m3	4 0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2 8E-08	mg/kg/day	1.0E-02	mg/kg/day	2 8E-06
				CYCLOHEXANE	4 1E-05	ug/m3	3 5E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	2.4E-09	mg/kg/day	1 7E+00	mg/kg/day	1.4E-09
				DIBROMOCHLOROMETHANE	1.1E-04	ug/m3	9 4E-11	mg/kg/day	9 4E-02	mg/kg/day^{-1}	8 8E-12	6.6E-09	mg/kg/day	2 0E-02	mg/kg/day	3.3E-07
				DICHLORODIFLUOROMETHANE	1.1E-04	ug/m3	9 5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6 7E-09	mg/kg/day	5 7E-02	mg/kg/day	1.2E-07
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	5.3E-05	ug/m3	4 4E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	3.1E-09	mg/kg/day	2 9E-01	mg/kg/day	1.1E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	—	—	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	9 6E-05	ug/m3	8 1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-09	mg/kg/day	2 0E-01	mg/kg/day	2.8E-08
				M,P-XYLENES	8.7E-05	ug/m3	7 3E-11	mg/kg/day	NA	mg/kg/day^{-1}	—	5.1E-09	mg/kg/day	2 9E-02	mg/kg/day	1.8E-07
				METHYL TERT-BUTYL ETHER	1.9E-04	ug/m3	1.6E-10	mg/kg/day	9.1E-04	mg/kg/day^{-2}	1.5E-13	1.1E-08	mg/kg/day	8 6E-01	mg/kg/day	1.3E-08
				METHYLENE CHLORIDE	1.0E-04	ug/m3	8 8E-11	mg/kg/day	3 5E-03	mg/kg/day^{-3}	3.1E-13	6.2E-09	mg/kg/day	1 1E-01	mg/kg/day	5 4E-08
				O-XYLENE	4 2E-05	ug/m3	3.5E-11	mg/kg/day	NA	mg/kg/day^{-4}	—	2.4E-09	mg/kg/day	2 9E-02	mg/kg/day	8 6E-08
				PENTANE	ND	ug/m3	—	mg/kg/day	NA	mg/kg/day^{-5}	—	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7 3A - All Parcels, CTE, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Construction Worker - CTE
Receptor Age.	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake	
Surface Soil	
Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				TETRACHLOROETHENE	1.1E-04	ug/m3	9.2E-11	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	1.9E-12	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				TETRAHYDROFURAN	3.6E-05	ug/m3	3.0E-11	mg/kg/day	6.8E-03	$mg/kg/day^{-1}$	2.1E-13	2.1E-09	mg/kg/day	8.6E-02	mg/kg/day	2.5E-08
				TOLUENE	8.2E-05	ug/m3	6.9E-11	mg/kg/day	NA	$mg/kg/day^{-1}$	—	4.8E-09	mg/kg/day	8.6E-02	mg/kg/day	5.6E-08
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.6E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	—	1.8E-08	mg/kg/day	2.0E-02	mg/kg/day	9.1E-07
				TRICHLOROETHENE	5.3E-04	ug/m3	4.4E-10	mg/kg/day	7.0E-03	$mg/kg/day^{-1}$	3.1E-12	3.1E-08	mg/kg/day	1.7E-01	mg/kg/day	1.8E-07
				TRICHLOROFLUOROMETHANE (FREON 11)	6.1E-05	ug/m3	5.1E-11	mg/kg/day	NA	$mg/kg/day^{-1}$	—	3.6E-09	mg/kg/day	2.0E-01	mg/kg/day	1.8E-08
				VINYL CHLORIDE	4.4E-04	ug/m3	3.7E-10	mg/kg/day	2.7E-01	$mg/kg/day^{-1}$	1.0E-10	2.6E-08	mg/kg/day	2.9E-02	mg/kg/day	9.0E-07
			Exp. Route Total							Minimum	5.0E-10				Minimum	1.2E-04
		Exposure Point Total								Minimum	5.0E-10				Minimum	1.2E-04
Soil gas - Outdoor Air Total										Minimum	5.0E-10				Minimum	1.2E-04
										Total of Receptor Risks Across All Media	2.4E-07	Total of Receptor Hazards Across All Media				7.8E-02

ND Not Detected.
NS Not selected as an exposure pathway
na The chemical is listed, value is not available
ne The compound has not been evaluated by EPA for evidence of human carcinogenicity.
—: Risk was not calculated for chemical
mg/kg milligram per kilogram.
mg/kg/day. milligram per kilogram per day
$mg/kg/day^{-1}$. milligram per kilogram-day
CTE: central tendency exposure
Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.2E-13	8.0E-10	mg/kg/day	4.0E-03	mg/kg/day	2.0E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.8E-11	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.6E-13	2.0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	5.0E-02	mg/kg/day	1.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	9.0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.9E-12	1.5E-09	mg/kg/day	2.0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.5E-09	6.6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-08	mg/kg/day	4.0E-03	mg/kg/day	2.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.8E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.6E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.0E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.2E-05
				ALUMINUM	9.8E+03	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	4.0E-04	mg/kg/day	7.2E-03
				BARIUM	1.6E+02	mg/kg	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.4E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	3.0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5.1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2.0E-03	mg/kg/day	5.9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8.9E-07
				CADMIUM	1.2E+00	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	1.6E-11	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	1.5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	3.0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1.2E-08	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				COPPER	4.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1.0E-10	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-09	7.3E-09	mg/kg/day	5.0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-08	mg/kg/day	4.0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-03	mg/kg/day	3.0E-01	mg/kg/day	1.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.7E-08	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.6E-11	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.6E-06
				LEAD	6.0E+01	mg/kg	2.0E-07	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2.8E-01	mg/kg	9.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.3E-06
				NICKEL	2.5E+01	mg/kg	8.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E-02	mg/kg/day	2.9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.7E-09	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03

TABLE A3-7.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PHENANTHRENE	3.0E+00	mg/kg	9.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1.9E+00	mg/kg	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2.9E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-08	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1.0E-02	mg/kg/day	1.0E-04
				THALLIUM	2.0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-07	mg/kg/day	6.6E-05	mg/kg/day	7.1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9.4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6.6E-09	mg/kg/day	3.0E-04	mg/kg/day	2.2E-05
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1 1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9 5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4 7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3 4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8 4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6 3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1 6E+00	mg/kg/day^{-1}	8.8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2.3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.77E-07					2.2E-02
		Exposure Point Total									2.38E-07					7.8E-02

TABLE A3-7.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.1E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5.2E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.4E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.7E-11	mg/kg/day	2 7E-03	mg/kg/day^{-1}	4.7E-14	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	4.0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1.4E-01	mg/kg	8.9E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.0E-16	6.2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	5.5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.6E-16	3.8E-12	mg/kg/day	1.7E-02	mg/kg/day	2.3E-10
				ALUMINUM	9.8E+03	mg/kg	6 1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9 7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	5 2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8.0E-14	3 6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.9E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	6.1E-13	2 7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2 7E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6 7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-11	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.0E-14	1.0E-09	mg/kg/day	2.0E-01	mg/kg/day	5.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-11	mg/kg/day	2.0E+00	mg/kg/day	1.6E-11
				CADMIUM	1.2E+00	mg/kg	7.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-11	mg/kg/day	2.5E-02	mg/kg/day	2.2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.9E-14	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.1E-14	1.3E-12	mg/kg/day	5.0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	3.1E-01	mg/kg/day	5.1E-11
				IRON	2.3E+04	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	5.0E-12	mg/kg/day	9.5E-05	mg/kg/day^{-1}	4.8E-16	3.5E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				LEAD	6.0E+01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-11	mg/kg/day	1.5E-01	mg/kg/day	2.2E-10
				NICKEL	2.5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7 3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.5E-13	1.5E-11	mg/kg/day	1.4E-04	mg/kg/day	1.0E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	3.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.2E-13	2.2E-11	mg/kg/day	5.0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-11	mg/kg/day	2.3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.2E-12					1.6E-07
		Exposure Point Total									1.2E-12					1.6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas 5-12 ft bgs	Outdoor Air	Outdoor Air in Excavation	Inhalation Maximum	1,1,1-TRICHLOROETHANE	2.8E+00	ug/m3	2.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	6.3E-01	mg/kg/day	2.6E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.6E+00	ug/m3	3.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	1.3E-02	ug/m3	1.1E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	6.4E-10	7.9E-07	mg/kg/day	4.0E-03	mg/kg/day	2.0E-04
				1,1-DICHLOROETHANE	2.2E-01	ug/m3	1.9E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.1E-09	1.3E-05	mg/kg/day	1.4E-01	mg/kg/day	9.2E-05
				1,1-DICHLOROETHENE	6.0E+00	ug/m3	5.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	5.7E-02	mg/kg/day	6.2E-03
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	6.6E-02	ug/m3	5.5E-08	mg/kg/day	9.1E-02	mg/kg/day^{-1}	5.0E-09	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day	2.8E-03
				1,3-BUTADIENE	1.4E-04	ug/m3	1.2E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	6.9E-11	8.1E-09	mg/kg/day	5.7E-03	mg/kg/day	1.4E-06
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	1.4E+00	mg/kg/day	7.8E-08
				ACETALDEHYDE	1.7E-03	ug/m3	1.4E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.4E-11	1.0E-07	mg/kg/day	2.6E-03	mg/kg/day	3.9E-05
				ACETONE	1.0E-01	ug/m3	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-06	mg/kg/day	9.0E-01	mg/kg/day	6.5E-06
				BENZENE	1.4E-02	ug/m3	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.2E-09	8.3E-07	mg/kg/day	8.6E-03	mg/kg/day	9.7E-05
				CARBON DISULFIDE	5.7E-02	ug/m3	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.7E-05
				CARBON TETRACHLORIDE	2.3E-03	ug/m3	1.9E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.8E-10	1.3E-07	mg/kg/day	1.1E-02	mg/kg/day	1.2E-05
				CHLOROFORM	9.0E-02	ug/m3	7.6E-08	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.1E-09	5.3E-06	mg/kg/day	8.6E-02	mg/kg/day	6.2E-05
				CIS-1,2-DICHLOROETHENE	9.0E-02	ug/m3	7.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-06	mg/kg/day	1.0E-02	mg/kg/day	5.3E-04
				CYCLOHEXANE	2.4E-04	ug/m3	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	1.7E+00	mg/kg/day	8.2E-09
				DICHLORODIFLUOROMETHANE	1.2E-02	ug/m3	1.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-07	mg/kg/day	5.7E-02	mg/kg/day	1.3E-05
				ETHYLBENZENE	2.8E-04	ug/m3	2.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-08	mg/kg/day	2.9E-01	mg/kg/day	5.8E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	4.6E-02	ug/m3	3.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-06	mg/kg/day	2.0E-01	mg/kg/day	1.4E-05
				M,P-XYLENES	5.3E-03	ug/m3	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	2.9E-02	mg/kg/day	1.1E-05
				METHYLENE CHLORIDE	3.1E-02	ug/m3	2.6E-08	mg/kg/day	3.5E-03	mg/kg/day^{-1}	9.2E-11	1.8E-06	mg/kg/day	1.1E-01	mg/kg/day	1.6E-05

TABLE A3-7.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				O-XYLENE	1.6E-02	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-07	mg/kg/day	2.9E-02	mg/kg/day	3.3E-05
				TETRACHLOROETHENE	6.5E+00	ug/m3	5.4E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.1E-07	3.8E-04	mg/kg/day	1.0E-02	mg/kg/day	3.8E-02
				TETRAHYDROFURAN	2.1E-02	ug/m3	1.7E-08	mg/kg/day	6.8E-03	mg/kg/day^{-1}	1.2E-10	1.2E-06	mg/kg/day	8.6E-02	mg/kg/day	1.4E-05
				TOLUENE	1.3E-02	ug/m3	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-07	mg/kg/day	8.6E-02	mg/kg/day	8.8E-06
				TRANS-1,2-DICHLOROETHENE	5.7E-02	ug/m3	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	2.0E-02	mg/kg/day	1.7E-04
				TRICHLOROETHENE	1.1E+00	ug/m3	9.0E-07	mg/kg/day	7.0E-03	mg/kg/day^{-2}	6.3E-09	6.3E-05	mg/kg/day	1.7E-01	mg/kg/day	3.7E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.5E+00	ug/m3	3.0E-06	mg/kg/day	NA	mg/kg/day^{-3}	---	2.1E-04	mg/kg/day	2.0E-01	mg/kg/day	1.0E-03
				VINYL CHLORIDE	1.0E-03	ug/m3	8.8E-10	mg/kg/day	2.7E-01	mg/kg/day^{-1}	2.4E-10	6.2E-08	mg/kg/day	2.9E-02	mg/kg/day	2.2E-06
			Exp. Route Total								Maximum	1.3E-07				Maximum	5.0E-02
		Exposure Point Total									Maximum	1.3E-07				Maximum	5.0E-02
Soil gas - Outdoor Air Total											Maximum	1.3E-07				Maximum	5.0E-02
										Total of Receptor Risks Across All Media		3.7E-07	Total of Receptor Hazards Across All Media				1.3E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.2E-13	8.0E-10	mg/kg/day	4.0E-03	mg/kg/day	2.0E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.8E-11	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.6E-13	2.0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	5.0E-02	mg/kg/day	1.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	9.0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.9E-12	1.5E-09	mg/kg/day	2.0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.5E-09	6.6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-08	mg/kg/day	4.0E-03	mg/kg/day	2.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.8E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.6E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.0E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.2E-05
				ALUMINUM	9.8E+03	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	4.0E-04	mg/kg/day	7.2E-03
				BARIUM	1.6E+02	mg/kg	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.4E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	3.0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5.1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2.0E-03	mg/kg/day	5.9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8.9E-07
				CADMIUM	1.2E+00	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	1.6E-11	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	1.5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	3.0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1.2E-08	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				COPPER	4.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1.0E-10	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-09	7.3E-09	mg/kg/day	5.0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-08	mg/kg/day	4.0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-03	mg/kg/day	3.0E-01	mg/kg/day	1.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.7E-08	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.6E-11	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.6E-06
				LEAD	6.0E+01	mg/kg	2.0E-07	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2.8E-01	mg/kg	9.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.3E-06
				NICKEL	2.5E+01	mg/kg	8.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E-02	mg/kg/day	2.9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.7E-09	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake	
Surface Soil	
Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PHENANTHRENE	3.0E+00	mg/kg	9.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1.9E+00	mg/kg	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	3 0E-02	mg/kg/day	1.5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2 9E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-08	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1.0E-02	mg/kg/day	1.0E-04
				THALLIUM	2.0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-07	mg/kg/day	6.6E-05	mg/kg/day	7.1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9.4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6.6E-09	mg/kg/day	3.0E-04	mg/kg/day	2.2E-05
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9.5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4 7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3 4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8 9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2.3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2 9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.77E-07					2.2E-02
		Exposure Point Total									2.38E-07					7.8E-02

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.1E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5.2E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.4E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.7E-11	mg/kg/day	2.7E-03	mg/kg/day^{-1}	4.7E-14	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	4.0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1.4E-01	mg/kg	8.9E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.0E-16	6.2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.6E-16	3.8E-12	mg/kg/day	1.7E-02	mg/kg/day	2.3E-10
				ALUMINUM	9.8E+03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	5.2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8.0E-14	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.9E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	6.1E-13	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.7E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-11	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.0E-14	1.0E-09	mg/kg/day	2.0E-01	mg/kg/day	5.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-11	mg/kg/day	2.0E+00	mg/kg/day	1.6E-11
				CADMIUM	1.2E+00	mg/kg	7.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-11	mg/kg/day	2.5E-02	mg/kg/day	2.2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.9E-14	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.1E-14	1.3E-12	mg/kg/day	5.0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	3.1E-01	mg/kg/day	5.1E-11
				IRON	2.3E+04	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	5.0E-12	mg/kg/day	9.5E-05	mg/kg/day^{-1}	4.8E-16	3.5E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				LEAD	6.0E+01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-11	mg/kg/day	1.5E-01	mg/kg/day	2.2E-10
				NICKEL	2.5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.5E-13	1.5E-11	mg/kg/day	1.4E-04	mg/kg/day	1.0E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	3.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.2E-13	2.2E-11	mg/kg/day	5.0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-11	mg/kg/day	2.3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.2E-12					1.6E-07
		Exposure Point Total									1.2E-12					1.6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas 5-12 ft bgs	Outdoor Air	Outdoor Air in Excavation	Inhalation Minimum	1,1,1-TRICHLOROETHANE	1.9E-03	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	6.3E-01	mg/kg/day	1.8E-07
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.3E-03	ug/m3	7.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.2E-03	ug/m3	2.7E-09	mg/kg/day	5.7E-02	mg/kg/day^{-1}	1.5E-10	1.9E-07	mg/kg/day	4.0E-03	mg/kg/day	4.7E-05
				1,1-DICHLOROETHANE	2.2E-04	ug/m3	1.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.1E-12	1.3E-08	mg/kg/day	1.4E-01	mg/kg/day	9.2E-08
				1,1-DICHLOROETHENE	1.7E-02	ug/m3	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	5.7E-02	mg/kg/day	1.8E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	4.1E-04	ug/m3	3.4E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	3.1E-11	2.4E-08	mg/kg/day	1.4E-03	mg/kg/day	1.7E-05
				1,3-BUTADIENE	1.4E-04	ug/m3	1.2E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	6.9E-11	8.1E-09	mg/kg/day	5.7E-03	mg/kg/day	1.4E-06
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.2E-03	ug/m3	9.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-08	mg/kg/day	1.4E+00	mg/kg/day	4.7E-08
				ACETALDEHYDE	1.5E-03	ug/m3	1.3E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-11	8.8E-08	mg/kg/day	2.6E-03	mg/kg/day	3.4E-05
				ACETONE	1.6E-03	ug/m3	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-08	mg/kg/day	9.0E-01	mg/kg/day	1.1E-07
				BENZENE	3.4E-04	ug/m3	2.9E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.9E-11	2.0E-08	mg/kg/day	8.6E-03	mg/kg/day	2.3E-06
				CARBON DISULFIDE	3.2E-03	ug/m3	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-01	mg/kg/day	9.5E-07
				CARBON TETRACHLORIDE	1.2E-03	ug/m3	1.0E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.5E-10	7.2E-08	mg/kg/day	1.1E-02	mg/kg/day	6.3E-06
				CHLOROFORM	6.3E-04	ug/m3	5.3E-10	mg/kg/day	8.1E-02	mg/kg/day^{-1}	4.3E-11	3.7E-08	mg/kg/day	8.6E-02	mg/kg/day	4.3E-07
				CIS-1,2-DICHLOROETHENE	4.7E-04	ug/m3	4.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-08	mg/kg/day	1.0E-02	mg/kg/day	2.8E-06
				CYCLOHEXANE	1.7E-04	ug/m3	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-08	mg/kg/day	1.7E+00	mg/kg/day	5.9E-09
				DICHLORODIFLUOROMETHANE	5.9E-04	ug/m3	5.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-08	mg/kg/day	5.7E-02	mg/kg/day	6.1E-07
				ETHYLBENZENE	1.6E-04	ug/m3	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-09	mg/kg/day	2.9E-01	mg/kg/day	3.3E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	4.9E-03	ug/m3	4.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	2.0E-01	mg/kg/day	1.4E-06
				M,P-XYLENES	5.3E-04	ug/m3	4.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-08	mg/kg/day	2.9E-02	mg/kg/day	1.1E-06
				METHYLENE CHLORIDE	7.0E-03	ug/m3	5.9E-09	mg/kg/day	3.5E-03	mg/kg/day^{-1}	2.1E-11	4.1E-07	mg/kg/day	1.1E-01	mg/kg/day	3.6E-06

TABLE A3-7.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				O-XYLENE	2.5E-04	ug/m3	2.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	2.9E-02	mg/kg/day	5.1E-07
				TETRACHLOROETHENE	4.4E-03	ug/m3	3.7E-09	mg/kg/day	2.1E-02	mg/kg/day^{-1}	7.6E-11	2.6E-07	mg/kg/day	1.0E-02	mg/kg/day	2.6E-05
				TETRAHYDROFURAN	4.7E-02	ug/m3	3.9E-08	mg/kg/day	6.8E-03	mg/kg/day^{-1}	2.7E-10	2.7E-06	mg/kg/day	8.6E-02	mg/kg/day	3.2E-05
				TOLUENE	6.5E-04	ug/m3	5.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-08	mg/kg/day	8.6E-02	mg/kg/day	4.5E-07
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-08	mg/kg/day	2.0E-02	mg/kg/day	9.1E-07
				TRICHLOROETHENE	2.0E-03	ug/m3	1.6E-09	mg/kg/day	7.0E-03	mg/kg/day^{-2}	1.1E-11	1.1E-07	mg/kg/day	1.7E-01	mg/kg/day	6.7E-07
				TRICHLOROFLUOROMETHANE (FREON 11)	1.2E-02	ug/m3	9.7E-09	mg/kg/day	NA	mg/kg/day^{-3}	---	6.8E-07	mg/kg/day	2.0E-01	mg/kg/day	3.4E-06
				VINYL CHLORIDE	4.4E-04	ug/m3	3.7E-10	mg/kg/day	2.7E-01	mg/kg/day^{-1}	1.0E-10	2.6E-08	mg/kg/day	2.9E-02	mg/kg/day	9.0E-07
			Exp. Route Total							Minimum	9.7E-10				Minimum	2.0E-04
		Exposure Point Total								Minimum	9.7E-10				Minimum	2.0E-04
Soil gas - Outdoor Air Total										Minimum	9.7E-10				Minimum	2.0E-04
										Total of Receptor Risks Across All Media	2.4E-07	Total of Receptor Hazards Across All Media				7.8E-02

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.2E-13	8.0E-10	mg/kg/day	4.0E-03	mg/kg/day	2.0E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.8E-11	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.6E-13	2.0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3 9E-03	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	5.0E-02	mg/kg/day	1.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	9.0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.9E-12	1.5E-09	mg/kg/day	2.0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.5E-09	6.6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-08	mg/kg/day	4.0E-03	mg/kg/day	2.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.8E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.6E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.0E-10	mg/kg/day	3 4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.2E-05
				ALUMINUM	9.8E+03	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	4.0E-04	mg/kg/day	7.2E-03
				BARIUM	1.6E+02	mg/kg	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.4E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6 4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	3.0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5.1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2 0E-03	mg/kg/day	5.9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8.9E-07
				CADMIUM	1.2E+00	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	1.6E-11	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	1 5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	3.0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1.2E-08	mg/kg/day	1 2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				COPPER	4.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1.0E-10	mg/kg/day	1 6E+01	mg/kg/day^{-1}	1.7E-09	7.3E-09	mg/kg/day	5.0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-08	mg/kg/day	4.0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-03	mg/kg/day	3.0E-01	mg/kg/day	1.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.7E-08	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2 6E-11	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.6E-06
				LEAD	6.0E+01	mg/kg	2.0E-07	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2.8E-01	mg/kg	9.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.3E-06
				NICKEL	2.5E+01	mg/kg	8.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E-02	mg/kg/day	2.9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.7E-09	7 9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake		**Noncancer Intake**	
Surface Soil		**Surface Soil**	
Ingestion:	3.4E-09	Ingestion:	2.3E-07
Dermal:	8.9E-08	Dermal:	6.2E-06
Inhalation of fugitive dust:	6.2E-13	Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	8.4E-04	Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				PHENANTHRENE	3.0E+00	mg/kg	9.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1.9E+00	mg/kg	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2.9E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-08	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1.0E-02	mg/kg/day	1.0E-04
				THALLIUM	2.0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-07	mg/kg/day	6.6E-05	mg/kg/day	7.1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9.4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6.6E-09	mg/kg/day	3.0E-04	mg/kg/day	2.2E-05
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9.5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2.3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1 2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2 8E-02	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.77E-07					2.2E-02
		Exposure Point Total									2.38E-07					7.8E-02

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	3.4E-09	Ingestion:	2.3E-07
Dermal:	8.9E-08	Dermal:	6.2E-06
Inhalation of fugitive dust:	6.2E-13	Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	8.4E-04	Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.1E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5.2E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.4E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.7E-11	mg/kg/day	2.7E-03	mg/kg/day^{-1}	4.7E-14	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	4.0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1.4E-01	mg/kg	8.9E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.0E-16	6.2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.6E-16	3.8E-12	mg/kg/day	1.7E-02	mg/kg/day	2.3E-10
				ALUMINUM	9.8E+03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	5.2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8.0E-14	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.9E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	6.1E-13	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.7E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-11	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.0E-14	1.0E-09	mg/kg/day	2.0E-01	mg/kg/day	5.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-11	mg/kg/day	2.0E+00	mg/kg/day	1.6E-11
				CADMIUM	1.2E+00	mg/kg	7.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-11	mg/kg/day	2.5E-02	mg/kg/day	2.2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.9E-14	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.1E-14	1.3E-12	mg/kg/day	5.0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	3.1E-01	mg/kg/day	5.1E-11
				IRON	2.3E+04	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	5.0E-12	mg/kg/day	9.5E-05	mg/kg/day^{-1}	4.8E-16	3.5E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				LEAD	6.0E+01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-11	mg/kg/day	1.5E-01	mg/kg/day	2.2E-10
				NICKEL	2.5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.5E-13	1.5E-11	mg/kg/day	1.4E-04	mg/kg/day	1.0E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	3.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.2E-13	2.2E-11	mg/kg/day	5.0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-11	mg/kg/day	2.3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.2E-12					1.6E-07
		Exposure Point Total									1.2E-12					1.6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	6.3E-01	ug/m3	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	6.3E-01	mg/kg/day	5.8E-05
5-12 ft bgs		in Excavation	Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4E+00	ug/m3	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.7E-02	ug/m3	1.5E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.3E-11	1.0E-06	mg/kg/day	1.4E-01	mg/kg/day	7.1E-06
				1,1-DICHLOROETHENE	4.3E+00	ug/m3	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	5.7E-02	mg/kg/day	4.4E-03
				1,2,4-TRIMETHYLBENZENE	1.5E-04	ug/m3	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-09	mg/kg/day	1.7E-03	mg/kg/day	5.1E-06
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,3-BUTADIENE	1.7E-03	ug/m3	1.4E-09	mg/kg/day	6.0E-01	mg/kg/day^{-1}	8.6E-10	1.0E-07	mg/kg/day	5.7E-03	mg/kg/day	1.8E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	1.4E+00	mg/kg/day	8.0E-08
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				4-ETHYLTOLUENE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETONE	7.7E-03	ug/m3	6.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-07	mg/kg/day	9.0E-01	mg/kg/day	5.0E-07
				BENZENE	9.8E-04	ug/m3	8.2E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	8.2E-11	5.7E-08	mg/kg/day	8.6E-03	mg/kg/day	6.7E-06
				BROMODICHLOROMETHANE	9.0E-05	ug/m3	7.5E-11	mg/kg/day	1.3E-01	mg/kg/day^{-1}	9.8E-12	5.3E-09	mg/kg/day	2.0E-02	mg/kg/day	2.6E-07
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	3.4E-04	ug/m3	2.9E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	2.0E-01	mg/kg/day	1.0E-07
				CHLOROFORM	1.6E-01	ug/m3	1.4E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.1E-08	9.5E-06	mg/kg/day	8.6E-02	mg/kg/day	1.1E-04
				CIS-1,2-DICHLOROETHENE	1.5E-02	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-07	mg/kg/day	1.0E-02	mg/kg/day	8.9E-05
				CYCLOHEXANE	9.6E-03	ug/m3	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	1.7E+00	mg/kg/day	3.3E-07
				DIBROMOCHLOROMETHANE	1.6E-04	ug/m3	1.4E-10	mg/kg/day	9.4E-02	mg/kg/day^{-1}	1.3E-11	9.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.8E-07
				DICHLORODIFLUOROMETHANE	2.0E-02	ug/m3	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	5.7E-02	mg/kg/day	2.1E-05
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	1.9E-04	ug/m3	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.9E-01	mg/kg/day	3.9E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	3.4E-09	Ingestion:	2.3E-07
Dermal:	8.9E-08	Dermal:	6.2E-06
Inhalation of fugitive dust:	6.2E-13	Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	8.4E-04	Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				HEXANE (N-HEXANE)	2 5E-02	ug/m3	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	2.0E-01	mg/kg/day	7.3E-06
				M,P-XYLENES	1.1E-03	ug/m3	9.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-08	mg/kg/day	2.9E-02	mg/kg/day	2.3E-06
				METHYL TERT-BUTYL ETHER	2.1E-04	ug/m3	1.8E-10	mg/kg/day	9.1E-04	mg/kg/day^{-1}	1.6E-13	1.2E-08	mg/kg/day	8.6E-01	mg/kg/day	1.4E-08
				METHYLENE CHLORIDE	3.8E-03	ug/m3	3.1E-09	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.1E-11	2.2E-07	mg/kg/day	1.1E-01	mg/kg/day	1.9E-06
				O-XYLENE	2.1E-04	ug/m3	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	2.9E-02	mg/kg/day	4.3E-07
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-2}	---	---	mg/kg/day	NA	mg/kg/day	---
				TETRACHLOROETHENE	6 3E+00	ug/m3	5.3E-06	mg/kg/day	2.1E-02	mg/kg/day^{-3}	1.1E-07	3.7E-04	mg/kg/day	1.0E-02	mg/kg/day	3.7E-02
				TETRAHYDROFURAN	5.0E-05	ug/m3	4.2E-11	mg/kg/day	6.8E-03	mg/kg/day^{-4}	2.9E-13	3.0E-09	mg/kg/day	8.6E-02	mg/kg/day	3.5E-08
				TOLUENE	2.7E-02	ug/m3	2.2E-08	mg/kg/day	NA	mg/kg/day^{-5}	---	1.6E-06	mg/kg/day	8.6E-02	mg/kg/day	1.8E-05
				TRANS-1,2-DICHLOROETHENE	1.4E-02	ug/m3	1.2E-08	mg/kg/day	NA	mg/kg/day^{-6}	---	8.3E-07	mg/kg/day	2.0E-02	mg/kg/day	4.1E-05
				TRICHLOROETHENE	1.2E+00	ug/m3	1.0E-06	mg/kg/day	7.0E-03	mg/kg/day^{-7}	7.1E-09	7.1E-05	mg/kg/day	1.7E-01	mg/kg/day	4.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	2.6E+00	ug/m3	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.6E-04
			Exp. Route Total							Maximum	1.3E-07				Maximum	4.3E-02
		Exposure Point Total								Maximum	1.3E-07				Maximum	4.3E-02
Soil gas - Outdoor Air Total										Maximum	1.3E-07				Maximum	4.3E-02
										Total of Receptor Risks Across All Media	3.7E-07	Total of Receptor Hazards Across All Media				1.2E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day

mg/kg/day^{-1}: milligram per kilogram-day.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	2.8E-01	mg/kg/day	3.9E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-11	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.2E-13	8.0E-10	mg/kg/day	4.0E-03	mg/kg/day	2.0E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.8E-11	mg/kg/day	5 7E-03	mg/kg/day^{-1}	1.6E-13	2.0E-09	mg/kg/day	1.0E-01	mg/kg/day	2.0E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	5.0E-02	mg/kg/day	1.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8 1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	9.0E-02	mg/kg/day	6.3E-07
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2 1E-11	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1 9E-12	1.5E-09	mg/kg/day	2.0E-02	mg/kg/day	7.4E-08
				1,4-DIOXANE	2.8E+01	mg/kg	9.4E-08	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2 5E-09	6.6E-06	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-08	mg/kg/day	4.0E-03	mg/kg/day	2.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.8E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.6E-10	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.0E-10	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.0E-10	2.1E-08	mg/kg/day	5.0E-04	mg/kg/day	4.2E-05
				ALUMINUM	9.8E+03	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	1.0E+00	mg/kg/day	2.3E-03
				ANTIMONY	1.2E+01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	4.0E-04	mg/kg/day	7.2E-03
				BARIUM	1.6E+02	mg/kg	5.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.8E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.4E-09	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.1E-09	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.6E-08	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-09	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-09	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	3.0E-01	mg/kg/day	1.2E-05
				BERYLLIUM	5.1E-01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2.0E-03	mg/kg/day	5.9E-05
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.8E-08	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-09	5.4E-06	mg/kg/day	2.0E-02	mg/kg/day	2.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	2.0E-01	mg/kg/day	8.9E-07
				CADMIUM	1.2E+00	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2 9E-07	mg/kg/day	1.0E-03	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	1.6E-11	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.9E-13	1.1E-09	mg/kg/day	1.0E-02	mg/kg/day	1.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	1.5E+00	mg/kg/day	1.1E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	3.0E-03	mg/kg/day	9.2E-04
				CHRYSENE	3.7E+00	mg/kg	1.2E-08	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.5E-09	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	2.0E-02	mg/kg/day	1.1E-04
				COPPER	4.0E+01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	4.0E-02	mg/kg/day	2.4E-04
				DIELDRIN	3.1E-02	mg/kg	1.0E-10	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-09	7.3E-09	mg/kg/day	5.0E-05	mg/kg/day	1.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-08	mg/kg/day	4.0E-02	mg/kg/day	2.1E-06
				IRON	2.3E+04	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-03	mg/kg/day	3.0E-01	mg/kg/day	1.8E-02
				ISOPHORONE	8 2E+00	mg/kg	2.7E-08	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.6E-11	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	9.6E-06
				LEAD	6.0E+01	mg/kg	2.0E-07	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.7E-09	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	1.4E-01	mg/kg/day	5.9E-04
				MERCURY	2.8E-01	mg/kg	9.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-08	mg/kg/day	3.0E-04	mg/kg/day	2.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	5.0E-03	mg/kg/day	1.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.3E-06
				NICKEL	2.5E+01	mg/kg	8.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	2.0E-02	mg/kg/day	2.9E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.7E-09	7.9E-08	mg/kg/day	2.0E-05	mg/kg/day	4.0E-03

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake	Surface Soil	Noncancer Intake	Surface Soil
Ingestion:	3.4E-09	Ingestion:	2.3E-07
Dermal:	8.9E-08	Dermal:	6.2E-06
Inhalation of fugitive dust:	6.2E-13	Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	8.4E-04	Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PHENANTHRENE	3.0E+00	mg/kg	9.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-09	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.4E-09	1.2E-07	mg/kg/day	7.0E-05	mg/kg/day	1.7E-03
				PYRENE	1.9E+00	mg/kg	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	3.0E-02	mg/kg/day	1.5E-05
				SILVER	6.1E-01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	5.0E-03	mg/kg/day	2.9E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-08	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.8E-09	1.0E-06	mg/kg/day	1.0E-02	mg/kg/day	1.0E-04
				THALLIUM	2.0E+00	mg/kg	6.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-07	mg/kg/day	6.6E-05	mg/kg/day	7.1E-03
				TRICHLOROETHENE	2.8E-02	mg/kg	9.4E-11	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.2E-12	6.6E-09	mg/kg/day	3.0E-04	mg/kg/day	2.2E-05
				VANADIUM	4.7E+01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	1.0E-03	mg/kg/day	1.1E-02
				ZINC	9.5E+01	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	3.0E-01	mg/kg/day	7.4E-05
			Exp. Route Total								6.14E-08					5.5E-02
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.5E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.7E-09	1.7E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	4.0E-02	mg/kg/day	5.8E-05
				4,4'-DDE	1.4E-01	mg/kg	1.3E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-10	8.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.8E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	8.0E-11	5.5E-07	mg/kg/day	1.7E-02	mg/kg/day	3.3E-05
				ALUMINUM	9.8E+03	mg/kg	8.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.4E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1 2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.6E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8 8E-08	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.9E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.1E-09	2 7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9 7E-05	mg/kg/day	3.0E+00	mg/kg/day	3.2E-05
				BERYLLIUM	5.1E-01	mg/kg	4.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.9E-09	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7 2E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E+00	mg/kg/day	2 3E-06
				CADMIUM	1.2E+00	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-06	mg/kg/day	2.5E-02	mg/kg/day	3.1E-04
				CHLOROFORM	4.7E-03	mg/kg	4.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-05	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.3E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5 1E-09	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4 0E+01	mg/kg	3.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				DIELDRIN	3.1E-02	mg/kg	2.8E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.4E-09	1.9E-07	mg/kg/day	5.0E-04	mg/kg/day	3.9E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	3.1E-01	mg/kg/day	7.3E-06
				IRON	2.3E+04	mg/kg	2.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.2E-07	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.9E-11	5.1E-05	mg/kg/day	2.0E+00	mg/kg/day	2.5E-05
				LEAD	6.0E+01	mg/kg	5.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	7.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	1.5E-01	mg/kg/day	3.2E-05
				NICKEL	2.5E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.0E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.1E-08	2.1E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.4E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.1E-08	3.1E-06	mg/kg/day	5.0E-04	mg/kg/day	6.2E-03
				PYRENE	1.9E+00	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.0E-05
				SILVER	6.1E-01	mg/kg	5.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.77E-07					2.2E-02
		Exposure Point Total									2.38E-07					7.8E-02

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.1E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	5.2E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.4E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.7E-11	mg/kg/day	2.7E-03	mg/kg/day^{-1}	4.7E-14	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	4.0E-02	mg/kg/day	4.0E-10
				4,4'-DDE	1.4E-01	mg/kg	8.9E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.0E-16	6.2E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.5E-14	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.6E-16	3.8E-12	mg/kg/day	1.7E-02	mg/kg/day	2.3E-10
				ALUMINUM	9.8E+03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	7.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	9.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	5.2E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	8.0E-14	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.9E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	6.1E-13	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.7E-13	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.2E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.6E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-10	mg/kg/day	3.0E+00	mg/kg/day	2.2E-10
				BERYLLIUM	5.1E-01	mg/kg	3.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-11	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.0E-14	1.0E-09	mg/kg/day	2.0E-01	mg/kg/day	5.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-11	mg/kg/day	2.0E+00	mg/kg/day	1.6E-11
				CADMIUM	1.2E+00	mg/kg	7.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-11	mg/kg/day	2.5E-02	mg/kg/day	2.2E-09
				CHLOROFORM	4.7E-03	mg/kg	2.9E-15	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	7.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	2.3E-12	mg/kg/day	1.6E-02	mg/kg/day^{-1}	3.6E-14	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.9E-14	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.1E-14	1.3E-12	mg/kg/day	5.0E-04	mg/kg/day	2.7E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	3.1E-01	mg/kg/day	5.1E-11
				IRON	2.3E+04	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	5.0E-12	mg/kg/day	9.5E-05	mg/kg/day^{-1}	4.8E-16	3.5E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				LEAD	6.0E+01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-11	mg/kg/day	1.5E-01	mg/kg/day	2.2E-10
				NICKEL	2.5E+01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	3.4E-09
Dermal:	8.9E-08
Inhalation of fugitive dust:	6.2E-13
Inhalation of out. air in exc.:	8.4E-04

Noncancer Intake

Surface Soil

Ingestion:	2.3E-07
Dermal:	6.2E-06
Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.5E-13	1.5E-11	mg/kg/day	1.4E-04	mg/kg/day	1.0E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	3.1E-13	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.2E-13	2.2E-11	mg/kg/day	5.0E-04	mg/kg/day	4.3E-08
				PYRENE	1.9E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-11	mg/kg/day	2.3E-01	mg/kg/day	3.5E-10
				SILVER	6.1E-01	mg/kg	3.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.2E-12					1.6E-07
		Exposure Point Total									1.2E-12					1.6E-07
Soil Total											2.4E-07					7.8E-02
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.4E-03	ug/m3	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-08	mg/kg/day	6.3E-01	mg/kg/day	1.3E-07
5-12 ft bgs		in Excavation	Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.7E-05	ug/m3	3.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-09	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	4.5E-03	ug/m3	3.8E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.1E-11	2.6E-07	mg/kg/day	1.4E-01	mg/kg/day	1.8E-06
				1,1-DICHLOROETHENE	9.3E-04	ug/m3	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	5.7E-02	mg/kg/day	9.6E-07
				1,2,4-TRIMETHYLBENZENE	8.3E-05	ug/m3	6.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	1.7E-03	mg/kg/day	2.9E-06
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,3-BUTADIENE	3.5E-05	ug/m3	2.9E-11	mg/kg/day	6.0E-01	mg/kg/day^{-1}	1.8E-11	2.1E-09	mg/kg/day	5.7E-03	mg/kg/day	3.6E-07
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	4.9E-05	ug/m3	4.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-09	mg/kg/day	1.4E+00	mg/kg/day	2.0E-09
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				4-ETHYLTOLUENE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETONE	2.4E-04	ug/m3	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	9.0E-01	mg/kg/day	1.6E-08
				BENZENE	3 1E-05	ug/m3	2.6E-11	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.6E-12	1.8E-09	mg/kg/day	8.6E-03	mg/kg/day	2.2E-07
				BROMODICHLOROMETHANE	3.5E-05	ug/m3	2.9E-11	mg/kg/day	1.3E-01	mg/kg/day^{-1}	3.8E-12	2.0E-09	mg/kg/day	2.0E-02	mg/kg/day	1.0E-07
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3 9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	4.0E-05	ug/m3	3.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	2.0E-01	mg/kg/day	1.2E-08
				CHLOROFORM	9.5E-05	ug/m3	8.0E-11	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6 4E-12	5.6E-09	mg/kg/day	8.6E-02	mg/kg/day	6.5E-08
				CIS-1,2-DICHLOROETHENE	6.5E-03	ug/m3	5.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	1.0E-02	mg/kg/day	3.8E-05
				CYCLOHEXANE	4 1E-05	ug/m3	3.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	1.7E+00	mg/kg/day	1.4E-09
				DIBROMOCHLOROMETHANE	1.1E-04	ug/m3	9.4E-11	mg/kg/day	9.4E-02	mg/kg/day^{-1}	8.8E-12	6.6E-09	mg/kg/day	2.0E-02	mg/kg/day	3.3E-07
				DICHLORODIFLUOROMETHANE	1.1E-04	ug/m3	9.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-09	mg/kg/day	5.7E-02	mg/kg/day	1.2E-07
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	5.3E-05	ug/m3	4 4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	2.9E-01	mg/kg/day	1.1E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor Age:	Adult

Cancer Intake	Surface Soil	Noncancer Intake	Surface Soil
Ingestion:	3.4E-09	Ingestion:	2.3E-07
Dermal:	8.9E-08	Dermal:	6.2E-06
Inhalation of fugitive dust:	8.2E-13	Inhalation of fugitive dust:	4.3E-11
Inhalation of out. air in exc.:	8.4E-04	Inhalation of out. air in exc.:	5.9E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				HEXANE (N-HEXANE)	9.6E-05	ug/m3	8.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-09	mg/kg/day	2.0E-01	mg/kg/day	2.8E-08
				M,P-XYLENES	8.7E-05	ug/m3	7.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-09	mg/kg/day	2.9E-02	mg/kg/day	1.8E-07
				METHYL TERT-BUTYL ETHER	1.9E-04	ug/m3	1.6E-10	mg/kg/day	9.1E-04	mg/kg/day^{-1}	1.5E-13	1.1E-08	mg/kg/day	8.6E-01	mg/kg/day	1.3E-08
				METHYLENE CHLORIDE	1.0E-04	ug/m3	8.8E-11	mg/kg/day	3.5E-03	mg/kg/day^{-1}	3.1E-13	6.2E-09	mg/kg/day	1.1E-01	mg/kg/day	5.4E-08
				O-XYLENE	4.2E-05	ug/m3	3.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	2.9E-02	mg/kg/day	8.6E-08
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-2}	---	---	mg/kg/day	NA	mg/kg/day	---
				TETRACHLOROETHENE	1.1E-04	ug/m3	9.2E-11	mg/kg/day	2.1E-02	mg/kg/day^{-3}	1.9E-12	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				TETRAHYDROFURAN	3.6E-05	ug/m3	3.0E-11	mg/kg/day	6.8E-03	mg/kg/day^{-4}	2.1E-13	2.1E-09	mg/kg/day	8.6E-02	mg/kg/day	2.5E-08
				TOLUENE	8.2E-05	ug/m3	6.9E-11	mg/kg/day	NA	mg/kg/day^{-5}	---	4.8E-09	mg/kg/day	8.6E-02	mg/kg/day	5.6E-08
				TRANS-1,2-DICHLOROETHENE	5.9E-03	ug/m3	5.0E-09	mg/kg/day	NA	mg/kg/day^{-6}	---	3.5E-07	mg/kg/day	2.0E-02	mg/kg/day	1.7E-05
				TRICHLOROETHENE	5.3E-04	ug/m3	4.4E-10	mg/kg/day	7.0E-03	mg/kg/day^{-7}	3.1E-12	3.1E-08	mg/kg/day	1.7E-01	mg/kg/day	1.8E-07
				TRICHLOROFLUOROMETHANE (FREON 11)	6.1E-05	ug/m3	5.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-09	mg/kg/day	2.0E-01	mg/kg/day	1.8E-08
			Exp. Route Total							Minimum	6.6E-11				Minimum	6.4E-05
		Exposure Point Total								Minimum	6.6E-11				Minimum	6.4E-05
Soil gas - Outdoor Air Total										Minimum	6.6E-11				Minimum	6.4E-05
										Total of Receptor Risks Across All Media	2.4E-07	Total of Receptor Hazards Across All Media				7.8E-02

ND: Not Detected.

NS: Not selected as an exposure pathway

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day. milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2.8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3 0E-04
				4,4'-DDE	1.4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3.2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-08	mg/kg/day	1 2E+01	mg/kg/day^{-1}	3.5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.4E-08	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5.1E-01	mg/kg	2.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-08	7.5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.3E-02
				CHRYSENE	3.7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3.8E-07	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8 5E-03	mg/kg/day^{-1}	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3 0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1 3E-04

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake	
Surface Soil	
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.8E-08	1.1E-06	mg/kg/day	2.0E-05	mg/kg/day	5.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5.0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-07	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2.0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9.8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.0E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1.0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.0E-03
			Exp Route Total								8.4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3 1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3 4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3 2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1 6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.4E-07					4.3E-02
		Exposure Point Total									1 2E-06					8.1E-01

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake		**Noncancer Intake**	
Surface Soil		***Surface Soil***	
Ingestion:	4.6E-08	Ingestion:	3.2E-06
Dermal:	1.7E-07	Dermal:	1.2E-05
Inhalation of fugitive dust:	4.9E-12	Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	6.7E-03	Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	6.7E-03	Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Fugitve Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	4.0E-02	mg/kg/day	3.2E-09
				4,4'-DDE	1.4E-01	mg/kg	7.1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1.8E-09
				ALUMINUM	9.8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.1E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1.8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-13	8.0E-09	mg/kg/day	2.0E-01	mg/kg/day	4.0E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1.7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2.1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1.8E-09

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1.2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6.1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2 8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas 5-12 ft bgs	Ambient Air	Ambient Air in Excavation	Inhalation Maximum	1,1,1-TRICHLOROETHANE	4.1E+00	ug/m3	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	6.3E-01	mg/kg/day	3.1E-03
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.2E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	1.3E-02	ug/m3	8.7E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	5.0E-09	6.1E-06	mg/kg/day	4.0E-03	mg/kg/day	1.5E-03
				1,1-DICHLOROETHANE	1.7E-01	ug/m3	1.2E-06	mg/kg/day	5.7E-03	mg/kg/day^{-1}	6.7E-09	8.2E-05	mg/kg/day	1.4E-01	mg/kg/day	5.7E-04
				1,1-DICHLOROETHENE	4.9E+00	ug/m3	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	5.7E-02	mg/kg/day	4.1E-02
				1,2,4-TRIMETHYLBENZENE	3 1E-04	ug/m3	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	1.7E-03	mg/kg/day	8.6E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	2.3E-02	ug/m3	1.6E-07	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.4E-08	1.1E-05	mg/kg/day	1.4E-03	mg/kg/day	7.8E-03
				1,3-BUTADIENE	1.7E-03	ug/m3	1.1E-08	mg/kg/day	6.0E-01	mg/kg/day^{-1}	6.6E-09	8.0E-07	mg/kg/day	5.7E-03	mg/kg/day	1.4E-04
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-07	mg/kg/day	1.4E+00	mg/kg/day	6.4E-07
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETALDEHYDE	1.7E-03	ug/m3	1.2E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.2E-10	8.1E-07	mg/kg/day	2.6E-03	mg/kg/day	3.1E-04
				ACETONE	7.4E-02	ug/m3	5.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	9.0E-01	mg/kg/day	3.9E-05
				BENZENE	1.4E-02	ug/m3	9.1E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	9.1E-09	6.3E-06	mg/kg/day	8.6E-03	mg/kg/day	7.4E-04
				BROMODICHLOROMETHANE	9.0E-05	ug/m3	6.0E-10	mg/kg/day	1.3E-01	mg/kg/day^{-1}	7.8E-11	4.2E-08	mg/kg/day	2.0E-02	mg/kg/day	2.1E-06
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	3.7E-02	ug/m3	2.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	2.0E-01	mg/kg/day	8.8E-05
				CARBON TETRACHLORIDE	2.3E-03	ug/m3	1.5E-08	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2 3E-09	1.1E-06	mg/kg/day	1.1E-02	mg/kg/day	9.3E-05
				CHLOROFORM	7.8E-02	ug/m3	5.2E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	4.2E-08	3.6E-05	mg/kg/day	8.6E-02	mg/kg/day	4.3E-04
				CIS-1,2-DICHLOROETHENE	8.1E-02	ug/m3	5.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	1.0E-02	mg/kg/day	3.8E-03
				CYCLOHEXANE	9.6E-03	ug/m3	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4 5E-06	mg/kg/day	1.7E+00	mg/kg/day	2.6E-06

TABLE A3-7.4A - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				DIBROMOCHLOROMETHANE	1.6E-04	ug/m3	1.1E-09	mg/kg/day	9.4E-02	mg/kg/day^{-1}	1.0E-10	7.7E-08	mg/kg/day	2.0E-02	mg/kg/day	3.8E-06
				DICHLORODIFLUOROMETHANE	1.4E-02	ug/m3	9.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.1E-04
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	2.8E-04	ug/m3	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	2.9E-01	mg/kg/day	4.7E-07
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	2.8E-02	ug/m3	1.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.0E-01	mg/kg/day	6.7E-05
				M,P-XYLENES	5.3E-03	ug/m3	3.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	2.9E-02	mg/kg/day	8.7E-05
				METHYL TERT-BUTYL ETHER	2.1E-04	ug/m3	1.4E-09	mg/kg/day	9.1E-04	mg/kg/day^{-2}	1.3E-12	9.8E-08	mg/kg/day	8.6E-01	mg/kg/day	1.1E-07
				METHYLENE CHLORIDE	1.8E-02	ug/m3	1.2E-07	mg/kg/day	3.5E-03	mg/kg/day^{-3}	4.3E-10	8.6E-06	mg/kg/day	1.1E-01	mg/kg/day	7.5E-05
				O-XYLENE	1.3E-02	ug/m3	8.9E-08	mg/kg/day	NA	mg/kg/day^{-4}	---	6.2E-06	mg/kg/day	2.9E-02	mg/kg/day	2.2E-04
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	---
				TETRACHLOROETHENE	5.2E+00	ug/m3	3.5E-05	mg/kg/day	2.1E-02	mg/kg/day^{-6}	7.1E-07	2.4E-03	mg/kg/day	1.0E-02	mg/kg/day	2.4E-01
				TETRAHYDROFURAN	1.3E-02	ug/m3	8.5E-08	mg/kg/day	6.8E-03	mg/kg/day^{-7}	5.8E-10	6.0E-06	mg/kg/day	8.6E-02	mg/kg/day	6.9E-05
				TOLUENE	1.5E-02	ug/m3	9.9E-08	mg/kg/day	NA	mg/kg/day^{-8}	---	6.9E-06	mg/kg/day	8.6E-02	mg/kg/day	8.1E-05
				TRANS-1,2-DICHLOROETHENE	3.9E-02	ug/m3	2.6E-07	mg/kg/day	NA	mg/kg/day^{-9}	---	1.8E-05	mg/kg/day	2.0E-02	mg/kg/day	9.1E-04
				TRICHLOROETHENE	8.6E-01	ug/m3	5.8E-06	mg/kg/day	7.0E-03	mg/kg/day^{-10}	4.0E-08	4.0E-04	mg/kg/day	1.7E-01	mg/kg/day	2.4E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	2.9E+00	ug/m3	2.0E-05	mg/kg/day	NA	mg/kg/day^{-11}	---	1.4E-03	mg/kg/day	2.0E-01	mg/kg/day	6.8E-03
				VINYL CHLORIDE	1.0E-03	ug/m3	7.0E-09	mg/kg/day	2.7E-01	mg/kg/day^{-1}	1.9E-09	4.9E-07	mg/kg/day	2.9E-02	mg/kg/day	1.7E-05
			Exp. Route Total								Maximum	8.4E-07				Maximum	3.1E-01
		Exposure Point Total									Maximum	8.4E-07				Maximum	3.1E-01
Soil gas - Ambient Air Total											Maximum	8.4E-07				Maximum	3.1E-01
										Total of Receptor Risks Across All Media		2.0E-06	Total of Receptor Hazards Across All Media				1.1E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2.8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.0E-04
				4,4'-DDE	1.4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3.2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-08	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.4E-08	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5.1E-01	mg/kg	2.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-08	7.5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.3E-02
				CHRYSENE	3.7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3.8E-07	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04

TABLE A3-7.4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Construction Worker - RME
Receptor Age	Adult

Cancer Intake

Surface Soil	
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil	
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.8E-08	1.1E-06	mg/kg/day	2.0E-05	mg/kg/day	5.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5.0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4 3E+00	mg/kg	2.0E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-07	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2.0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9 8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3 0E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1.0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1 0E-03
			Exp. Route Total								8 4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1 7E-02	mg/kg/day	6 3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	1 4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1 1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4 4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
		Exp. Route Total									3.4E-07					4.3E-02
	Exposure Point Total										1.2E-06					8.1E-01
	Fugitive Dust	Inhalation		1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	4.0E-02	mg/kg/day	3.2E-09
				4,4'-DDE	1.4E-01	mg/kg	7.1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1.8E-09
				ALUMINUM	9.8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7 4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.1E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3 4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1 8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1 6E-13	8.0E-09	mg/kg/day	2.0E-01	mg/kg/day	4.0E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1 7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5 8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1 8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2.1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1.8E-09
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1 2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3 0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5 0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3 5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6 1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9 7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake	Surface Soil
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake	Surface Soil
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas 5-12 ft bgs	Ambient Air	Ambient Air in Excavation	Inhalation Minimum	1,1,1-TRICHLOROETHANE	1.4E-03	ug/m3	9.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-07	mg/kg/day	6.3E-01	mg/kg/day	1.0E-06
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.7E-05	ug/m3	3.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.2E-03	ug/m3	2.1E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	1.2E-09	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	3.7E-04
				1,1-DICHLOROETHANE	2.2E-04	ug/m3	1.5E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.6E-12	1.1E-07	mg/kg/day	1.4E-01	mg/kg/day	7.4E-07
				1,1-DICHLOROETHENE	9.3E-04	ug/m3	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	5.7E-02	mg/kg/day	7.7E-06
				1,2,4-TRIMETHYLBENZENE	8.3E-05	ug/m3	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	1.7E-03	mg/kg/day	2.3E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	4.1E-04	ug/m3	2.7E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.5E-10	1.9E-07	mg/kg/day	1.4E-03	mg/kg/day	1.4E-04
				1,3-BUTADIENE	3.5E-05	ug/m3	2.4E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	1.4E-10	1.6E-08	mg/kg/day	5.7E-03	mg/kg/day	2.9E-06
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	4.9E-05	ug/m3	3.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	1.4E+00	mg/kg/day	1.6E-08
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETALDEHYDE	1.5E-03	ug/m3	1.0E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.0E-10	7 1E-07	mg/kg/day	2.6E-03	mg/kg/day	2.7E-04
				ACETONE	2.4E-04	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	9.0E-01	mg/kg/day	1.2E-07
				BENZENE	3.1E-05	ug/m3	2.1E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.1E-11	1.5E-08	mg/kg/day	8.6E-03	mg/kg/day	1.7E-06
				BROMODICHLOROMETHANE	3.5E-05	ug/m3	2.3E-10	mg/kg/day	1.3E-01	mg/kg/day^{-1}	3.0E-11	1.6E-08	mg/kg/day	2.0E-02	mg/kg/day	8.2E-07
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	4.0E-05	ug/m3	2.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	2.0E-01	mg/kg/day	9.5E-08
				CARBON TETRACHLORIDE	1.2E-03	ug/m3	8.2E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.2E-09	5.7E-07	mg/kg/day	1.1E-02	mg/kg/day	5.0E-05
				CHLOROFORM	9.5E-05	ug/m3	6.4E-10	mg/kg/day	8.1E-02	mg/kg/day^{-1}	5.1E-11	4.5E-08	mg/kg/day	8.6E-02	mg/kg/day	5.2E-07
				CIS-1,2-DICHLOROETHENE	4.7E-04	ug/m3	3.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-07	mg/kg/day	1.0E-02	mg/kg/day	2.2E-05
				CYCLOHEXANE	4.1E-05	ug/m3	2.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	1.7E+00	mg/kg/day	1.1E-08
				DIBROMOCHLOROMETHANE	1.1E-04	ug/m3	7.5E-10	mg/kg/day	9.4E-02	mg/kg/day^{-1}	7.1E-11	5.3E-08	mg/kg/day	2.0E-02	mg/kg/day	2.6E-06
				DICHLORODIFLUOROMETHANE	1.1E-04	ug/m3	7.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-08	mg/kg/day	5.7E-02	mg/kg/day	9.3E-07
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ETHYLBENZENE	5 3E-05	ug/m3	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-08	mg/kg/day	2.9E-01	mg/kg/day	8.7E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	9.6E-05	ug/m3	6.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-08	mg/kg/day	2.0E-01	mg/kg/day	2.3E-07
				M,P-XYLENES	8.7E-05	ug/m3	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	2.9E-02	mg/kg/day	1.4E-06
				METHYL TERT-BUTYL ETHER	1.9E-04	ug/m3	1.3E-09	mg/kg/day	9.1E-04	mg/kg/day^{-2}	1.2E-12	9.0E-08	mg/kg/day	8.6E-01	mg/kg/day	1.0E-07
				METHYLENE CHLORIDE	1.0E-04	ug/m3	7.0E-10	mg/kg/day	3.5E-03	mg/kg/day^{-3}	2.5E-12	4.9E-08	mg/kg/day	1.1E-01	mg/kg/day	4.3E-07
				O-XYLENE	4.2E-05	ug/m3	2.8E-10	mg/kg/day	NA	mg/kg/day^{-4}	---	2.0E-08	mg/kg/day	2.9E-02	mg/kg/day	6.8E-07
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7.4A - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				TETRACHLOROETHENE	1.1E-04	ug/m3	7.3E-10	mg/kg/day	2.1E-02	$mg/kg/day^{-8}$	1.5E-11	5.1E-08	mg/kg/day	1.0E-02	mg/kg/day	5.1E-06
				TETRAHYDROFURAN	3.6E-05	ug/m3	2.4E-10	mg/kg/day	6.8E-03	$mg/kg/day^{-7}$	1.6E-12	1.7E-08	mg/kg/day	8.6E-02	mg/kg/day	2.0E-07
				TOLUENE	8.2E-05	ug/m3	5.5E-10	mg/kg/day	NA	$mg/kg/day^{-8}$	---	3.8E-08	mg/kg/day	8.6E-02	mg/kg/day	4.5E-07
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.1E-09	mg/kg/day	NA	$mg/kg/day^{-9}$	---	1.5E-07	mg/kg/day	2.0E-02	mg/kg/day	7.3E-06
				TRICHLOROETHENE	5.3E-04	ug/m3	3.5E-09	mg/kg/day	7.0E-03	$mg/kg/day^{-10}$	2.5E-11	2.5E-07	mg/kg/day	1.7E-01	mg/kg/day	1.5E-06
				TRICHLOROFLUOROMETHANE (FREON 11)	6.1E-05	ug/m3	4.1E-10	mg/kg/day	NA	$mg/kg/day^{-11}$	---	2.9E-08	mg/kg/day	2.0E-01	mg/kg/day	1.4E-07
				VINYL CHLORIDE	4.4E-04	ug/m3	2.9E-09	mg/kg/day	2.7E-01	$mg/kg/day^{-1}$	8.0E-10	2.1E-07	mg/kg/day	2.9E-02	mg/kg/day	7.2E-06
			Exp. Route Total							Minimum	4.0E-09				Minimum	9.2E-04
		Exposure Point Total								Minimum	4.0E-09				Minimum	9.2E-04
Soil gas - Ambient Air Total										Minimum	4.0E-09				Minimum	9.2E-04
										Total of Receptor Risks Across All Media	1.2E-06	Total of Receptor Hazards Across All Media				8.1E-01

ND Not Detected

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4B - *Site Parcel, RME, Maximum Indoor Air Concentrations*

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2.8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.0E-04
				4,4'-DDE	1.4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3.2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-08	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.4E-08	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5.1E-01	mg/kg	2.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-08	7 5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5 4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1 3E-02
				CHRYSENE	3.7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3 0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3.8E-07	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04

TABLE A3-7.4B - Site Parcel, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	4.6E-08	Ingestion:	3.2E-06
Dermal:	1.7E-07	Dermal:	1.2E-05
Inhalation of fugitive dust:	4.9E-12	Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	6.7E-03	Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	6.7E-03	Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.8E-08	1.1E-06	mg/kg/day	2.0E-05	mg/kg/day	5.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5.0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-07	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2.0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9.8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.0E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1.0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.0E-03
			Exp. Route Total								8.4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4B - Site Parcel, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.4E-07					4.3E-02
		Exposure Point Total									1.2E-06					8.1E-01

TABLE A3-7.4B - Site Parcel, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	*mg/kg*	1.8E-12	*mg/kg/day*	NA	*mg/kg/day*$^{-1}$	---	1.3E-10	*mg/kg/day*	*4.0E-02*	*mg/kg/day*	*3.2E-09*
				4,4'-DDE	1.4E-01	mg/kg	7.1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1.8E-09
				ALUMINUM	9.8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.1E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1.8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	*mg/kg*	1.1E-10	*mg/kg/day*	1.4E-03	*mg/kg/day*$^{-1}$	*1.6E-13*	*8.0E-09*	*mg/kg/day*	*2.0E-01*	*mg/kg/day*	*4.0E-08*
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1.7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2.1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	*mg/kg*	1.1E-07	*mg/kg/day*	*NA*	*mg/kg/day*$^{-1}$	---	*8.0E-06*	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1.8E-09

TABLE A3-7.4B - Site Parcel, RME, Maximum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1.2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6.1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas 5-12 ft bgs	Ambient Air	Ambient Air in Excavation	Inhalation Maximum	1,1,1-TRICHLOROETHANE	2.8E+00	ug/m3	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	6.3E-01	mg/kg/day	2.1E-03
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.6E+00	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	1.3E-02	ug/m3	9.0E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	5.1E-09	6.3E-06	mg/kg/day	4.0E-03	mg/kg/day	1.6E-03
				1,1-DICHLOROETHANE	2.2E-01	ug/m3	1.5E-06	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.5E-09	1.0E-04	mg/kg/day	1.4E-01	mg/kg/day	7.3E-04
				1,1-DICHLOROETHENE	6.0E+00	ug/m3	4.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-03	mg/kg/day	5.7E-02	mg/kg/day	5.0E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	6.6E-02	ug/m3	4.4E-07	mg/kg/day	9.1E-02	mg/kg/day^{-1}	4.0E-08	3.1E-05	mg/kg/day	1.4E-03	mg/kg/day	2.2E-02
				1,3-BUTADIENE	1.4E-04	ug/m3	9.2E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	5.5E-10	6.5E-08	mg/kg/day	5.7E-03	mg/kg/day	1.1E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	1.4E+00	mg/kg/day	6.3E-07
				ACETALDEHYDE	1.7E-03	ug/m3	1.2E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.2E-10	8.1E-07	mg/kg/day	2.6E-03	mg/kg/day	3.1E-04
				ACETONE	1.0E-01	ug/m3	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	9.0E-01	mg/kg/day	5.2E-05
				BENZENE	1.4E-02	ug/m3	9.5E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	9.5E-09	6.7E-06	mg/kg/day	8.6E-03	mg/kg/day	7.8E-04
				CARBON DISULFIDE	5.7E-02	ug/m3	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				CARBON TETRACHLORIDE	2.3E-03	ug/m3	1.5E-08	mg/kg/day	1.5E-01	mg/kg/day^{-1}	2.3E-09	1.1E-06	mg/kg/day	1.1E-02	mg/kg/day	9.3E-05
				CHLOROFORM	9.0E-02	ug/m3	6.1E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	4.9E-08	4.2E-05	mg/kg/day	8.6E-02	mg/kg/day	5.0E-04
				CIS-1,2-DICHLOROETHENE	9.0E-02	ug/m3	6.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-05	mg/kg/day	1.0E-02	mg/kg/day	4.2E-03
				CYCLOHEXANE	2.4E-04	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	1.7E+00	mg/kg/day	6.6E-08
				DICHLORODIFLUOROMETHANE	1.2E-02	ug/m3	8.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	5.7E-02	mg/kg/day	1.0E-04
				ETHYLBENZENE	2.8E-04	ug/m3	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	2.9E-01	mg/kg/day	4.7E-07
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	4.6E-02	ug/m3	3.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.0E-01	mg/kg/day	1.1E-04

TABLE A3-7 4B - Site Parcel, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age	Adult

Cancer Intake	Surface Soil
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake	Surface Soil
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				M,P-XYLENES	5.3E-03	ug/m3	3.6E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.5E-06	mg/kg/day	2.9E-02	mg/kg/day	8.7E-05
				METHYLENE CHLORIDE	3.1E-02	ug/m3	2.1E-07	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	7.4E-10	1.5E-05	mg/kg/day	1.1E-01	mg/kg/day	1.3E-04
				O-XYLENE	1.6E-02	ug/m3	1.1E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	7.5E-06	mg/kg/day	2.9E-02	mg/kg/day	2.6E-04
				TETRACHLOROETHENE	6.5E+00	ug/m3	4.3E-05	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	9.0E-07	3.0E-03	mg/kg/day	1.0E-02	mg/kg/day	3.0E-01
				TETRAHYDROFURAN	2.1E-02	ug/m3	1.4E-07	mg/kg/day	6.8E-03	$mg/kg/day^{-1}$	9.4E-10	9.7E-06	mg/kg/day	8.6E-02	mg/kg/day	1.1E-04
				TOLUENE	1.3E-02	ug/m3	8.7E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	6.1E-06	mg/kg/day	8.6E-02	mg/kg/day	7.1E-05
				TRANS-1,2-DICHLOROETHENE	5.7E-02	ug/m3	3.8E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.7E-05	mg/kg/day	2.0E-02	mg/kg/day	1.3E-03
				TRICHLOROETHENE	1.1E+00	ug/m3	7.2E-06	mg/kg/day	7.0E-03	$mg/kg/day^{-2}$	5.0E-08	5.0E-04	mg/kg/day	1.7E-01	mg/kg/day	2.9E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.5E+00	ug/m3	2.4E-05	mg/kg/day	NA	$mg/kg/day^{-3}$	---	1.7E-03	mg/kg/day	2.0E-01	mg/kg/day	8.3E-03
				VINYL CHLORIDE	1.0E-03	ug/m3	7.0E-09	mg/kg/day	2.7E-01	$mg/kg/day^{-1}$	1.9E-09	4.9E-07	mg/kg/day	2.9E-02	mg/kg/day	1.7E-05
			Exp. Route Total							Maximum	1.1E-06				Maximum	4.0E-01
		Exposure Point Total								Maximum	1.1E-06				Maximum	4.0E-01
Soil gas - Ambient Air Total										Maximum	1.1E-06				Maximum	4.0E-01
										Total of Receptor Risks Across All Media	2.2E-06	Total of Receptor Hazards Across All Media				1.2E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4B - Site Parcel, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2 8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1 1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.0E-04
				4,4'-DDE	1.4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3 2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-08	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	*mg/kg*	2.0E-08	*mg/kg/day*	1.2E+00	*mg/kg/day*$^{-1}$	2.4E-08	1.4E-06	*mg/kg/day*	NA	*mg/kg/day*	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5.1E-01	mg/kg	2.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-08	7.5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.3E-02
				CHRYSENE	3.7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1 5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3.8E-07	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04

TABLE A3-7.4B - Site Parcel, RME, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.8E-08	1.1E-06	mg/kg/day	2.0E-05	mg/kg/day	5.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5.0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-07	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2.0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9.8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.0E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1.0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.0E-03
			Exp. Route Total								8.4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4B - Site Parcel, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		*Cancer Risk Calculations*					*Non-Cancer Hazard Calculations*				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.4E-07					4.3E-02
		Exposure Point Total									1.2E-06					8.1E-01

TABLE A3-7.4B - Site Parcel, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4 1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1 9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9 7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	4.0E-02	mg/kg/day	3.2E-09
				4,4'-DDE	1.4E-01	mg/kg	7 1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4 4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1 8E-09
				ALUMINUM	9 8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.1E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3 4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1.8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-13	8.0E-09	mg/kg/day	2 0E-01	mg/kg/day	4.0E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1.7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3 7E+00	mg/kg	1.8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9 3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5 0E-04	mg/kg/day	2.1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1.8E-09

TABLE A3-7.4B - Site Parcel, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1.2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6.1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas 5-12 ft bgs	Ambient Air	Ambient Air in Excavation	Inhalation Minimum	1,1,1-TRICHLOROETHANE	1.9E-03	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	6.3E-01	mg/kg/day	1.4E-06
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.3E-03	ug/m3	6.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.2E-03	ug/m3	2.1E-08	mg/kg/day	5.7E-02	mg/kg/day^{-1}	1.2E-09	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	3.7E-04
				1,1-DICHLOROETHANE	2.2E-04	ug/m3	1.5E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.6E-12	1.1E-07	mg/kg/day	1.4E-01	mg/kg/day	7.4E-07
				1,1-DICHLOROETHENE	1.7E-02	ug/m3	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	5 7E-02	mg/kg/day	1.4E-04
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,2-DICHLOROETHANE	4.1E-04	ug/m3	2.7E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.5E-10	1.9E-07	mg/kg/day	1.4E-03	mg/kg/day	1.4E-04
				1,3-BUTADIENE	1.4E-04	ug/m3	9.2E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	5.5E-10	6.5E-08	mg/kg/day	5.7E-03	mg/kg/day	1.1E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.2E-03	ug/m3	7.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-07	mg/kg/day	1.4E+00	mg/kg/day	3.8E-07
				ACETALDEHYDE	1.5E-03	ug/m3	1.0E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.0E-10	7.1E-07	mg/kg/day	2.6E-03	mg/kg/day	2.7E-04
				ACETONE	1.6E-03	ug/m3	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-07	mg/kg/day	9.0E-01	mg/kg/day	8.4E-07
				BENZENE	3.4E-04	ug/m3	2.3E-09	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.3E-10	1.6E-07	mg/kg/day	8.6E-03	mg/kg/day	1.9E-05
				CARBON DISULFIDE	3.2E-03	ug/m3	2.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	2.0E-01	mg/kg/day	7.6E-06
				CARBON TETRACHLORIDE	1.2E-03	ug/m3	8.2E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.2E-09	5.7E-07	mg/kg/day	1.1E-02	mg/kg/day	5.0E-05
				CHLOROFORM	6 3E-04	ug/m3	4.2E-09	mg/kg/day	8.1E-02	mg/kg/day^{-1}	3.4E-10	3.0E-07	mg/kg/day	8.6E-02	mg/kg/day	3.5E-06
				CIS-1,2-DICHLOROETHENE	4.7E-04	ug/m3	3.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-07	mg/kg/day	1.0E-02	mg/kg/day	2.2E-05
				CYCLOHEXANE	1.7E-04	ug/m3	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-08	mg/kg/day	1.7E+00	mg/kg/day	4.7E-08
				DICHLORODIFLUOROMETHANE	5.9E-04	ug/m3	4.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-07	mg/kg/day	5.7E-02	mg/kg/day	4.9E-06
				ETHYLBENZENE	1.6E-04	ug/m3	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-08	mg/kg/day	2.9E-01	mg/kg/day	2.7E-07
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	4.9E-03	ug/m3	3.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	2 0E-01	mg/kg/day	1.2E-05

TABLE A3-7 4B - Site Parcel, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake	
Surface Soil	
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				M,P-XYLENES	5.3E-04	ug/m3	3.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.9E-02	mg/kg/day	8.7E-06
				METHYLENE CHLORIDE	7.0E-03	ug/m3	4.7E-08	mg/kg/day	3.5E-03	mg/kg/day^{-1}	1.6E-10	3.3E-06	mg/kg/day	1.1E-01	mg/kg/day	2.9E-05
				O-XYLENE	2.5E-04	ug/m3	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	2.9E-02	mg/kg/day	4.1E-06
				TETRACHLOROETHENE	4.4E-03	ug/m3	2.9E-08	mg/kg/day	2.1E-02	mg/kg/day^{-1}	6.1E-10	2.1E-06	mg/kg/day	1.0E-02	mg/kg/day	2.1E-04
				TETRAHYDROFURAN	4.7E-02	ug/m3	3.1E-07	mg/kg/day	6.8E-03	mg/kg/day^{-1}	2.1E-09	2.2E-05	mg/kg/day	8.6E-02	mg/kg/day	2.6E-04
				TOLUENE	6.5E-04	ug/m3	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	8.6E-02	mg/kg/day	3.6E-06
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2.0E-02	mg/kg/day	7.3E-06
				TRICHLOROETHENE	2.0E-03	ug/m3	1.3E-08	mg/kg/day	7.0E-03	mg/kg/day^{-2}	9.2E-11	9.2E-07	mg/kg/day	1.7E-01	mg/kg/day	5.4E-06
				TRICHLOROFLUOROMETHANE (FREON 11)	1.2E-02	ug/m3	7.8E-08	mg/kg/day	NA	mg/kg/day^{-3}	---	5.4E-06	mg/kg/day	2.0E-01	mg/kg/day	2.7E-05
				VINYL CHLORIDE	4.4E-04	ug/m3	2.9E-09	mg/kg/day	2.7E-01	mg/kg/day^{-1}	8.0E-10	2.1E-07	mg/kg/day	2.9E-02	mg/kg/day	7.2E-06
			Exp. Route Total							Minimum	7.7E-09				Minimum	1.6E-03
		Exposure Point Total								Minimum	7.7E-09				Minimum	1.6E-03
Soil gas - Ambient Air Total										Minimum	7.7E-09				Minimum	1.6E-03
										Total of Receptor Risks Across All Media	1.2E-06	Total of Receptor Hazards Across All Media				8.1E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface *Soil* to 12' bgs	Surface and Subsurface *Soil*	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.5E-07	mg/kg/day	2.8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	$mg/kg/day^{-1}$	1.1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	$mg/kg/day^{-1}$	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	$mg/kg/day^{-1}$	2.6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	$mg/kg/day^{-1}$	3.5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.0E-04
				4,4'-DDE	1.4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	$mg/kg/day^{-1}$	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	$mg/kg/day^{-1}$	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3.2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	$mg/kg/day^{-1}$	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2 9E-08	mg/kg/day	1.2E+01	$mg/kg/day^{-1}$	3.5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-08	mg/kg/day	1.2E+00	$mg/kg/day^{-1}$	2.4E-08	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5 1E-01	mg/kg	2.3E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1 6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1.4E-02	$mg/kg/day^{-1}$	1.5E-08	7 5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	$mg/kg/day^{-1}$	6.7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5.4E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.3E-02
				CHRYSENE	3.7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	$mg/kg/day^{-1}$	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4 3E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	3.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.4E-09	mg/kg/day	1.6E+01	$mg/kg/day^{-1}$	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	$mg/kg/day^{-1}$	---	7.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3 8E-07	mg/kg/day	9.5E-04	$mg/kg/day^{-1}$	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8.5E-03	$mg/kg/day^{-1}$	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.8E-08	1.1E-06	mg/kg/day	2.0E-05	mg/kg/day	5.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5.0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-07	mg/kg/day	5 4E-01	mg/kg/day^{-1}	1 1E-07	1 4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2.0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9 8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.0E-04
				VANADIUM	4.7E+01	mg/kg	2 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1 0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.0E-03
			Exp. Route Total								8.4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.4E-07					4.3E-02
		Exposure Point Total									1.2E-06					8.1E-01

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2 9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2 4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8 3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6 3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	4.0E-02	mg/kg/day	3.2E-09
				4,4'-DDE	1.4E-01	mg/kg	7.1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1.8E-09
				ALUMINUM	9.8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.1E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3 4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1.8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-13	8.0E-09	mg/kg/day	2.0E-01	mg/kg/day	4.0E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1.7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5.0E-04	mg/kg/day	2 1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1.8E-09

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1.2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6.1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas 5-12 ft bgs	Ambient Air	Ambient Air in Excavation	Inhalation Maximum	1,1,1-TRICHLOROETHANE	6.3E-01	ug/m3	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	6.3E-01	mg/kg/day	4.7E-04
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.4E+00	ug/m3	2.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.7E-02	ug/m3	1.2E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	6 6E-10	8.1E-06	mg/kg/day	1.4E-01	mg/kg/day	5.7E-05
				1,1-DICHLOROETHENE	4.3E+00	ug/m3	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	5.7E-02	mg/kg/day	3.5E-02
				1,2,4-TRIMETHYLBENZENE	1.5E-04	ug/m3	9.9E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-08	mg/kg/day	1 7E-03	mg/kg/day	4.1E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,3-BUTADIENE	1.7E-03	ug/m3	1.1E-08	mg/kg/day	6.0E-01	mg/kg/day^{-1}	6.8E-09	8.0E-07	mg/kg/day	5.7E-03	mg/kg/day	1.4E-04
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	1.9E-03	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-07	mg/kg/day	1.4E+00	mg/kg/day	6.4E-07
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				4-ETHYLTOLUENE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETONE	7.7E-03	ug/m3	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	9.0E-01	mg/kg/day	4.0E-06
				BENZENE	9.8E-04	ug/m3	6.6E-09	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6.6E-10	4.6E-07	mg/kg/day	8.6E-03	mg/kg/day	5.4E-05
				BROMODICHLOROMETHANE	9.0E-05	ug/m3	6.0E-10	mg/kg/day	1.3E-01	mg/kg/day^{-1}	7.8E-11	4.2E-08	mg/kg/day	2.0E-02	mg/kg/day	2.1E-06
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	3.4E-04	ug/m3	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-07	mg/kg/day	2 0E-01	mg/kg/day	8.0E-07
				CHLOROFORM	1.6E-01	ug/m3	1.1E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	8.8E-08	7 6E-05	mg/kg/day	8.6E-02	mg/kg/day	8.9E-04
				CIS-1,2-DICHLOROETHENE	1.5E-02	ug/m3	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-06	mg/kg/day	1.0E-02	mg/kg/day	7.1E-04
				CYCLOHEXANE	9.6E-03	ug/m3	6 4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-06	mg/kg/day	1.7E+00	mg/kg/day	2.6E-06
				DIBROMOCHLOROMETHANE	1.6E-04	ug/m3	1.1E-09	mg/kg/day	9.4E-02	mg/kg/day^{-1}	1.0E-10	7.7E-08	mg/kg/day	2.0E-02	mg/kg/day	3.8E-06
				DICHLORODIFLUOROMETHANE	2.0E-02	ug/m3	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	5.7E-02	mg/kg/day	1.7E-04
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7.4C - Other Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age.	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				ETHYLBENZENE	1 9E-04	ug/m3	1.3E-09	mg/kg/day	NA	$mg/kg/day^{-1}$	---	9.0E-08	mg/kg/day	2.9E-01	mg/kg/day	3.1E-07
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-1}$	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	2.5E-02	ug/m3	1.7E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.2E-05	mg/kg/day	2.0E-01	mg/kg/day	5.9E-05
				M,P-XYLENES	1.1E-03	ug/m3	7.4E-09	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.2E-07	mg/kg/day	2.9E-02	mg/kg/day	1 8E-05
				METHYL TERT-BUTYL ETHER	2.1E-04	ug/m3	1.4E-09	mg/kg/day	9.1E-04	$mg/kg/day^{-1}$	1.3E-12	9.8E-08	mg/kg/day	8.6E-01	mg/kg/day	1.1E-07
				METHYLENE CHLORIDE	3.8E-03	ug/m3	2.5E-08	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	8.8E-11	1.8E-06	mg/kg/day	1.1E-01	mg/kg/day	1.5E-05
				O-XYLENE	2.1E-04	ug/m3	1.4E-09	mg/kg/day	NA	$mg/kg/day^{-1}$	---	9 8E-08	mg/kg/day	2.9E-02	mg/kg/day	3.4E-06
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-2}$	---	---	mg/kg/day	NA	mg/kg/day	---
				TETRACHLOROETHENE	6.3E+00	ug/m3	4.3E-05	mg/kg/day	2.1E-02	$mg/kg/day^{-3}$	8.8E-07	3.0E-03	mg/kg/day	1.0E-02	mg/kg/day	3.0E-01
				TETRAHYDROFURAN	5 0E-05	ug/m3	3 4E-10	mg/kg/day	6.8E-03	$mg/kg/day^{-4}$	2.3E-12	2 4E-08	mg/kg/day	8.6E-02	mg/kg/day	2 8E-07
				TOLUENE	2.7E-02	ug/m3	1.8E-07	mg/kg/day	NA	$mg/kg/day^{-5}$	---	1.3E-05	mg/kg/day	8.6E-02	mg/kg/day	1.5E-04
				TRANS-1,2-DICHLOROETHENE	1.4E-02	ug/m3	9.4E-08	mg/kg/day	NA	$mg/kg/day^{-6}$	---	6.6E-06	mg/kg/day	2.0E-02	mg/kg/day	3.3E-04
				TRICHLOROETHENE	1.2E+00	ug/m3	8.1E-06	mg/kg/day	7.0E-03	$mg/kg/day^{-7}$	5.7E-08	5.7E-04	mg/kg/day	1.7E-01	mg/kg/day	3 3E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	2.6E+00	ug/m3	1.7E-05	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.2E-03	mg/kg/day	2.0E-01	mg/kg/day	6.0E-03
			Exp. Route Total								Maximum	1.0E-06				Maximum	3.5E-01
		Exposure Point Total									Maximum	1.0E-06				Maximum	3.5E-01
Soil gas - Ambient Air Total											Maximum	1.0E-06				Maximum	3.5E-01
										Total of Receptor Risks Across All Media		2.2E-06	Total of Receptor Hazards Across All Media				1.2E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.4C - Other Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface and Subsurface Soil to 12' bgs	Surface and Subsurface Soil	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	2.8E-01	mg/kg/day	5.4E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.1E-11	1.1E-08	mg/kg/day	4.0E-03	mg/kg/day	2.7E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-12	2.7E-08	mg/kg/day	1.0E-01	mg/kg/day	2.7E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	5.0E-02	mg/kg/day	2.5E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-07	mg/kg/day	9.0E-02	mg/kg/day	8.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-10	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2 6E-11	2.0E-08	mg/kg/day	2.0E-02	mg/kg/day	1.0E-06
				1,4-DIOXANE	2 8E+01	mg/kg	1.3E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3 5E-08	9.0E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.0E-04
				4,4'-DDE	1 4E-01	mg/kg	6.6E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-09	4.6E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-09	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-09	2.9E-07	mg/kg/day	5.0E-04	mg/kg/day	5.7E-04
				ALUMINUM	9.8E+03	mg/kg	4.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	1.0E+00	mg/kg/day	3.2E-02
				ANTIMONY	1.2E+01	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-04	mg/kg/day	9.9E-02
				BARIUM	1.6E+02	mg/kg	7.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-04	mg/kg/day	2.0E-01	mg/kg/day	2.5E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.6E-08	2.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2 9E-08	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3 5E-07	2.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2 0E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.4E-08	1 4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	3.0E-01	mg/kg/day	1.7E-04
				BERYLLIUM	5.1E-01	mg/kg	2.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-06	mg/kg/day	1 4E-02	mg/kg/day^{-1}	1.5E-08	7.5E-05	mg/kg/day	2.0E-02	mg/kg/day	3.7E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	2.0E-01	mg/kg/day	1.2E-05
				CADMIUM	1.2E+00	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	1.0E-03	mg/kg/day	4.0E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6 7E-12	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day	1.5E-06
				CHROMIUM III	7.1E+01	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-04	mg/kg/day	1.5E+00	mg/kg/day	1.5E-04
				CHROMIUM VI	1.2E+01	mg/kg	5.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	3.0E-03	mg/kg/day	1.3E-02
				CHRYSENE	3 7E+00	mg/kg	1.7E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-08	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				COPPER	4.0E+01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.3E-03
				DIELDRIN	3.1E-02	mg/kg	1 4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-08	1.0E-07	mg/kg/day	5.0E-05	mg/kg/day	2.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	4.0E-02	mg/kg/day	2.9E-05
				IRON	2.3E+04	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	7 5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.5E-01
				ISOPHORONE	8.2E+00	mg/kg	3.8E-07	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.6E-10	2.6E-05	mg/kg/day	2.0E-01	mg/kg/day	1.3E-04
				LEAD	6.0E+01	mg/kg	2.8E-06	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.3E-08	1.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.1E-03
				MERCURY	2.8E-01	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.0E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	2.5E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.0E-02	mg/kg/day	1 3E-04

TABLE A3-7.4C - Other Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1 1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	2.0E-02	mg/kg/day	4.0E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1 6E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7 8E-08	1 1E-06	mg/kg/day	2.0E-05	mg/kg/day	5 4E-02
				PHENANTHRENE	3.0E+00	mg/kg	1 4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-07	1.6E-06	mg/kg/day	7.0E-05	mg/kg/day	2.3E-02
				PYRENE	1.9E+00	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	3.0E-02	mg/kg/day	2.0E-04
				SILVER	6.1E-01	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	5 0E-03	mg/kg/day	4.0E-04
				TETRACHLOROETHENE	4 3E+00	mg/kg	2 0E-07	mg/kg/day	5 4E-01	mg/kg/day^{-1}	1.1E-07	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				THALLIUM	2 0E+00	mg/kg	9.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	6.6E-05	mg/kg/day	9.8E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-11	9.0E-08	mg/kg/day	3.0E-04	mg/kg/day	3.0E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	1.0E-03	mg/kg/day	1.5E-01
				ZINC	9.5E+01	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	3.0E-01	mg/kg/day	1.0E-03
			Exp. Route Total								8.4E-07					7.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	4.8E-06	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.3E-08	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3 7E-01	mg/kg	6.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	2.4E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.5E-10	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.5E-10	1.1E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	1.4E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-08	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-07	7.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.5E-08	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.2E-08	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	3.0E+00	mg/kg/day	6.2E-05
				BERYLLIUM	5.1E-01	mg/kg	8.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.9E-06	mg/kg/day	1.4E-03	mg/kg/day^{-1}	5.5E-09	2 8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	6.0E-04
				CHLOROFORM	4.7E-03	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.4C - Other Parcels, RME, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	6.4E-07	mg/kg/day	1.6E-02	mg/kg/day^{-1}	9.9E-09	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	5.3E-09	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-09	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	4.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.3E-10	9.8E-05	mg/kg/day	2.0E+00	mg/kg/day	4.9E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	4.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day	6.2E-05
				NICKEL	2.5E+01	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.8E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.0E-08	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	5.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.5E-08	mg/kg/day	7.0E-01	mg/kg/day^{-1}	6.0E-08	6.0E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	3.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.7E-05
				SILVER	6.1E-01	mg/kg	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	3.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	8.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								3.4E-07					4.3E-02
		Exposure Point Total									1.2E-06					8.1E-01

TABLE A3-7.4C - Other Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
		Fugitive Dust	Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.9E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.1E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2 2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.7E-13	9.7E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3 7E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	4.0E-02	mg/kg/day	3.2E-09
				4,4'-DDE	1.4E-01	mg/kg	7.1E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.2E-15	5 0E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.4E-13	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4 5E-15	3.1E-11	mg/kg/day	1.7E-02	mg/kg/day	1.8E-09
				ALUMINUM	9.8E+03	mg/kg	4.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	7.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5 4E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	4.1E-12	mg/kg/day	1 6E-01	mg/kg/day^{-1}	6 4E-13	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.9E-12	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-12	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.4E-13	1.5E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-09	mg/kg/day	3.0E+00	mg/kg/day	1.8E-09
				BERYLLIUM	5.1E-01	mg/kg	2.5E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-13	8.0E-09	mg/kg/day	2.0E-01	mg/kg/day	4.0E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.3E-10
				CADMIUM	1.2E+00	mg/kg	6.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	2.5E-02	mg/kg/day	1.7E-08
				CHLOROFORM	4.7E-03	mg/kg	2.3E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.8E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-13	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.5E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-13	1.1E-11	mg/kg/day	5 0E-04	mg/kg/day	2.1E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	4.0E-10
				IRON	2.3E+04	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.0E-11	mg/kg/day	9 5E-05	mg/kg/day^{-1}	3.8E-15	2.8E-09	mg/kg/day	2.0E+00	mg/kg/day	1.4E-09
				LEAD	6.0E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 4E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	1.5E-01	mg/kg/day	1 8E-09

TABLE A3-7.4C - Other Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake

Surface Soil

Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-12	1.2E-10	mg/kg/day	1.4E-04	mg/kg/day	8.2E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.7E-12	1.7E-10	mg/kg/day	5.0E-04	mg/kg/day	3.5E-07
				PYRENE	1.9E+00	mg/kg	9.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-10	mg/kg/day	2.3E-01	mg/kg/day	2.8E-09
				SILVER	6.1E-01	mg/kg	3.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.9E-12					1.3E-06
		Exposure Point Total									9.9E-12					1.3E-06
Soil Total											1.2E-06					8.1E-01
Soil Gas	Ambient Air	Ambient Air	Inhalation	1,1,1-TRICHLOROETHANE	1.4E-03	ug/m3	9.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-07	mg/kg/day	6.3E-01	mg/kg/day	1.0E-06
5-12 ft bgs		*in Excavation*	*Minimum*	*1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE*	4.7E-05	ug/m3	3.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	4.5E-03	ug/m3	3.0E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.7E-10	2.1E-06	mg/kg/day	1.4E-01	mg/kg/day	1.5E-05
				1,1-DICHLOROETHENE	9.3E-04	ug/m3	6.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	5.7E-02	mg/kg/day	7.7E-06
				1,2,4-TRIMETHYLBENZENE	8.3E-05	ug/m3	5.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	1.7E-03	mg/kg/day	2.3E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				1,3-BUTADIENE	3.5E-05	ug/m3	2.4E-10	mg/kg/day	6.0E-01	mg/kg/day^{-1}	1.4E-10	1.6E-08	mg/kg/day	5.7E-03	mg/kg/day	2.9E-06
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				2-BUTANONE	4.9E-05	ug/m3	3.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	1.4E+00	mg/kg/day	1.6E-08
				2-PROPANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				4-ETHYLTOLUENE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---
				ACETONE	2.4E-04	ug/m3	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	9.0E-01	mg/kg/day	1.2E-07
				BENZENE	3.1E-05	ug/m3	2.1E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.1E-11	1.5E-08	mg/kg/day	8.6E-03	mg/kg/day	1.7E-06
				BROMODICHLOROMETHANE	3.5E-05	ug/m3	2.3E-10	mg/kg/day	1.3E-01	mg/kg/day^{-1}	3.0E-11	1.6E-08	mg/kg/day	2.0E-02	mg/kg/day	8.2E-07
				BROMOFORM	ND	ug/m3	---	mg/kg/day	3.9E-03	mg/kg/day^{-1}	---	---	mg/kg/day	2.0E-02	mg/kg/day	---
				CARBON DISULFIDE	4.0E-05	ug/m3	2.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	2.0E-01	mg/kg/day	9.5E-08
				CHLOROFORM	9.5E-05	ug/m3	6.4E-10	mg/kg/day	8.1E-02	mg/kg/day^{-1}	5.1E-11	4.5E-08	mg/kg/day	8.6E-02	mg/kg/day	5.2E-07
				CIS-1,2-DICHLOROETHENE	6.5E-03	ug/m3	4.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	1.0E-02	mg/kg/day	3.1E-04
				CYCLOHEXANE	4.1E-05	ug/m3	2.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	1.7E+00	mg/kg/day	1.1E-08
				DIBROMOCHLOROMETHANE	1.1E-04	ug/m3	7.5E-10	mg/kg/day	9.4E-02	mg/kg/day^{-1}	7.1E-11	5.3E-08	mg/kg/day	2.0E-02	mg/kg/day	2.6E-06
				DICHLORODIFLUOROMETHANE	1.1E-04	ug/m3	7.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-08	mg/kg/day	5.7E-02	mg/kg/day	9.3E-07
				ETHANOL	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	---

TABLE A3-7.4C - Other Parcels. RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	4.6E-08
Dermal:	1.7E-07
Inhalation of fugitive dust:	4.9E-12
Inhalation of out. air in exc.:	6.7E-03
Inhalation of outdoor air:	6.7E-03

Noncancer Intake	
Surface Soil	
Ingestion:	3.2E-06
Dermal:	1.2E-05
Inhalation of fugitive dust:	3.5E-10
Inhalation of out. air in exc.:	4.7E-01
Inhalation of outdoor air:	4.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				ETHYLBENZENE	5.3E-05	ug/m3	3.5E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.5E-08	mg/kg/day	2.9E-01	mg/kg/day	8.7E-08
				HEPTANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-1}$	---	---	mg/kg/day	NA	mg/kg/day	---
				HEXANE (N-HEXANE)	9.6E-05	ug/m3	6.5E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.5E-08	mg/kg/day	2.0E-01	mg/kg/day	2.3E-07
				M,P-XYLENES	8.7E-05	ug/m3	5.8E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.1E-08	mg/kg/day	2.9E-02	mg/kg/day	1.4E-06
				METHYL TERT-BUTYL ETHER	1.9E-04	ug/m3	1.3E-09	mg/kg/day	9.1E-04	$mg/kg/day^{-1}$	1.2E-12	9.0E-08	mg/kg/day	8.6E-01	mg/kg/day	1.0E-07
				METHYLENE CHLORIDE	1.0E-04	ug/m3	7.0E-10	mg/kg/day	3.5E-03	$mg/kg/day^{-1}$	2.5E-12	4.9E-08	mg/kg/day	1.1E-01	mg/kg/day	4.3E-07
				O-XYLENE	4.2E-05	ug/m3	2.8E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.0E-08	mg/kg/day	2.9E-02	mg/kg/day	6.8E-07
				PENTANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-2}$	---	---	mg/kg/day	NA	mg/kg/day	---
				TETRACHLOROETHENE	1.1E-04	ug/m3	7.3E-10	mg/kg/day	2.1E-02	$mg/kg/day^{-3}$	1.5E-11	5.1E-08	mg/kg/day	1.0E-02	mg/kg/day	5.1E-06
				TETRAHYDROFURAN	3.6E-05	ug/m3	2.4E-10	mg/kg/day	6.8E-03	$mg/kg/day^{-4}$	1.6E-12	1.7E-08	mg/kg/day	8.6E-02	mg/kg/day	2.0E-07
				TOLUENE	8.2E-05	ug/m3	5.5E-10	mg/kg/day	NA	$mg/kg/day^{-5}$	---	3.8E-08	mg/kg/day	8.6E-02	mg/kg/day	4.5E-07
				TRANS-1,2-DICHLOROETHENE	5.9E-03	ug/m3	4.0E-08	mg/kg/day	NA	$mg/kg/day^{-6}$	---	2.8E-06	mg/kg/day	2.0E-02	mg/kg/day	1.4E-04
				TRICHLOROETHENE	5.3E-04	ug/m3	3.5E-09	mg/kg/day	7.0E-03	$mg/kg/day^{-7}$	2.5E-11	2.5E-07	mg/kg/day	1.7E-01	mg/kg/day	1.5E-06
				TRICHLOROFLUOROMETHANE (FREON 11)	6.1E-05	ug/m3	4.1E-10	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.9E-08	mg/kg/day	2.0E-01	mg/kg/day	1.4E-07
			Exp. Route Total							Minimum	5.3E-10				Minimum	5.1E-04
		Exposure Point Total								Minimum	5.3E-10				Minimum	5.1E-04
Soil gas - Ambient Air Total										Minimum	5.3E-10				Minimum	5.1E-04
										Total of Receptor Risks Across All Media	1.2E-06	Total of Receptor Hazards Across All Media				8.1E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

TABLE A3-7.5A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-08	mg/kg/day	2.8E-01	mg/kg/day	2.3E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.0E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.4E-10	4.7E-09	mg/kg/day	4.0E-03	mg/kg/day	1.2E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.8E-11	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.2E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-09	mg/kg/day	5.0E-02	mg/kg/day	1.1E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	9.0E-02	mg/kg/day	3.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.7E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	3.4E-10	8.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.3E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.6E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.4E-07	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-07	mg/kg/day	4.0E-03	mg/kg/day	1.3E-04
				4,4'-DDE	1.4E-01	mg/kg	8.4E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.9E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.8E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.4E-04
				ALUMINUM	9.8E+03	mg/kg	5.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	7.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	4.0E-04	mg/kg/day	4.2E-02
				BARIUM	1.6E+02	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.9E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.7E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	4.5E-06	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.1E-07	6.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	7.1E-05
				BERYLLIUM	5.1E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	2.0E-03	mg/kg/day	3.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.9E-07	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.2E-06
				CADMIUM	1.2E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	1.7E-03
				CHLOROFORM	4.7E-03	mg/kg	2.8E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	8.6E-11	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				CHROMIUM III	7.1E+01	mg/kg	4.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	1.5E+00	mg/kg/day	6.5E-05
				CHROMIUM VI	1.2E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.4E-03
				CHRYSENE	3.7E+00	mg/kg	2.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.6E-07	5.1E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.4E-04
				COPPER	4.0E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-05	mg/kg/day	4.0E-02	mg/kg/day	1.4E-03
				DIELDRIN	3.1E-02	mg/kg	1.8E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.9E-07	4.3E-08	mg/kg/day	5.0E-05	mg/kg/day	8.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	3.0E-01	mg/kg/day	1.1E-01
				ISOPHORONE	8.2E+00	mg/kg	4.8E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	4.6E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.6E-05
				LEAD	6.0E+01	mg/kg	3.5E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	3.0E-07	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	1.4E-01	mg/kg/day	3.5E-03
				MERCURY	2.8E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.3E-03
				MOLYBDENUM	3.9E+00	mg/kg	2.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.1E-03
				NAPHTHALENE	7.9E-01	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.4E-05

TABLE A3-7.5A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	5.9E-07	Ingestion:	1.4E-06
Dermal:	2.3E-06	Dermal:	5.5E-06
Inhalation of fugitive dust	8.6E-11	Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	1.2E-01	Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.0E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	9.9E-07	4.6E-07	mg/kg/day	2.0E-05	mg/kg/day	2.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.9E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.5E-06	6.8E-07	mg/kg/day	7.0E-05	mg/kg/day	9.8E-03
				PYRENE	1.9E+00	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	8.6E-05
				SILVER	6.1E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.7E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.4E-06	5.9E-06	mg/kg/day	1.0E-02	mg/kg/day	5.9E-04
				THALLIUM	2.0E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-06	mg/kg/day	6.6E-05	mg/kg/day	4.2E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.6E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	2.1E-10	3.8E-08	mg/kg/day	3.0E-04	mg/kg/day	1.3E-04
				VANADIUM	4.7E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-05	mg/kg/day	1.0E-03	mg/kg/day	6.4E-02
				ZINC	9.5E+01	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	3.0E-01	mg/kg/day	4.3E-04
			Exp. Route Total								1.1E-05					3.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.6E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.8E-07	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	4.0E-02	mg/kg/day	5.1E-05
				4,4'-DDE	1.4E-01	mg/kg	3.4E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	7.8E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.1E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	4.8E-07	mg/kg/day	1.7E-02	mg/kg/day	2.9E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.1E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	3.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-05	mg/kg/day	3.0E+00	mg/kg/day	2.8E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.6E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.3E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	2.0E+00	mg/kg/day	2.1E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-06	mg/kg/day	2.5E-02	mg/kg/day	2.7E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7 5A - Parcel Site - RME, Maximum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-07	2.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4 0E+01	mg/kg	9.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.3E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.2E-07	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	3.1E-01	mg/kg/day	6.4E-06
				IRON	2.3E+04	mg/kg	5.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	4.5E-05	mg/kg/day	2.0E+00	mg/kg/day	2.2E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	1.5E-01	mg/kg/day	2.8E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1 3E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.9E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.5E-07	1.8E-06	mg/kg/day	1.4E-04	mg/kg/day	1.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.2E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.5E-03
				PYRENE	1.9E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.3E-01	mg/kg/day	4.4E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.7E-06					2.0E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9 4E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.4E-09	mg/kg/day	2 7E-03	mg/kg/day^{-1}	6 5E-12	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7 5E-11	mg/kg/day	4.0E-02	mg/kg/day	1.9E-09
				4,4'-DDE	1.4E-01	mg/kg	1.2E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-13	2.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.8E-14	1.8E-11	mg/kg/day	1 7E-02	mg/kg/day	1.1E-09
				ALUMINUM	9.8E+03	mg/kg	8.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	5.9E-07	Ingestion:	1.4E-06
Dermal:	2.3E-06	Dermal:	5.5E-06
Inhalation of fugitive dust	8.8E-11	Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	1.2E-01	Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.2E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.1E-11	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-11	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.9E-12	8.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	3.0E+00	mg/kg/day	1.0E-09
				BERYLLIUM	5.1E-01	mg/kg	4.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.8E-12	4.6E-09	mg/kg/day	2.0E-01	mg/kg/day	2.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-10	mg/kg/day	2.0E+00	mg/kg/day	7.6E-11
				CADMIUM	1.2E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	2.5E-02	mg/kg/day	1.0E-08
				CHLOROFORM	4.7E-03	mg/kg	4.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.2E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.0E-12	7.5E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.7E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.3E-12	6.2E-12	mg/kg/day	5.0E-04	mg/kg/day	1.2E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-11	mg/kg/day	3.1E-01	mg/kg/day	2.4E-10
				IRON	2.3E+04	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.0E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.7E-14	1.6E-09	mg/kg/day	2.0E+00	mg/kg/day	8.2E-10
				LEAD	6.0E+01	mg/kg	5.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	6.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	1.5E-01	mg/kg/day	1.0E-09
				NICKEL	2.5E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.9E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.0E-11	6.8E-11	mg/kg/day	1.4E-04	mg/kg/day	4.7E-07
				PHENANTHRENE	3.0E+00	mg/kg	2.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.0E-11	1.0E-10	mg/kg/day	5.0E-04	mg/kg/day	2.0E-07
				PYRENE	1.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	2.3E-01	mg/kg/day	1.6E-09
				SILVER	6.1E-01	mg/kg	5.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.7E-10					7.3E-07
		Exposure Point Total									1.5E-05					3.4E-01

TABLE A3-7.5A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											1.5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.1E+02	ug/m3	4.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-01	mg/kg/day	6.3E-01	mg/kg/day	1.8E-01
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8.1E+02	ug/m3	9.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-01	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.4E+01	ug/m3	1.6E-03	mg/kg/day	5.7E-03	mg/kg/day^{-1}	9.3E-06	3.8E-03	mg/kg/day	1.4E-01	mg/kg/day	2.7E-02
				1,1-DICHLOROETHENE	5.1E+02	ug/m3	6.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	5.7E-02	mg/kg/day	2.4E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	2.2E+00	ug/m3	2.6E-04	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.4E-05	6.1E-04	mg/kg/day	1.4E-03	mg/kg/day	4.4E-01
				ACETALDEHYDE	9.7E-02	ug/m3	1.1E-05	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.1E-07	2.7E-05	mg/kg/day	2.6E-03	mg/kg/day	1.0E-02
				ACETONE	7.0E+00	ug/m3	8.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	9.0E-01	mg/kg/day	2.1E-03
				BENZENE	1.1E+00	ug/m3	1.3E-04	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.3E-05	3.0E-04	mg/kg/day	8.6E-03	mg/kg/day	3.5E-02
				CARBON DISULFIDE	6.3E+00	ug/m3	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	2.0E-01	mg/kg/day	8.6E-03
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	2.0E-05	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.0E-06	4.7E-05	mg/kg/day	1.1E-02	mg/kg/day	4.1E-03
				CHLOROFORM	6.7E+00	ug/m3	7.8E-04	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.3E-05	1.8E-03	mg/kg/day	8.6E-02	mg/kg/day	2.1E-02
				CIS-1,2-DICHLOROETHENE	1.0E+01	ug/m3	1.2E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-03	mg/kg/day	1.0E-02	mg/kg/day	2.8E-01
				DICHLORODIFLUOROMETHANE	6.2E-01	ug/m3	7.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	5.7E-02	mg/kg/day	3.0E-03
				TETRACHLOROETHENE	9.5E+02	ug/m3	1.1E-01	mg/kg/day	2.1E-02	mg/kg/day^{-2}	2.3E-03	2.6E-01	mg/kg/day	1.0E-02	mg/kg/day	2.6E+01
				TOLUENE	9.3E-01	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-3}	---	2.5E-04	mg/kg/day	8.6E-02	mg/kg/day	3.0E-03
				TRANS-1,2-DICHLOROETHENE	5.6E+00	ug/m3	6.5E-04	mg/kg/day	NA	mg/kg/day^{-4}	---	1.5E-03	mg/kg/day	2.0E-02	mg/kg/day	7.6E-02
				TRICHLOROETHENE	1.4E+02	ug/m3	1.7E-02	mg/kg/day	7.0E-03	mg/kg/day^{-5}	1.2E-04	3.9E-02	mg/kg/day	1.7E-01	mg/kg/day	2.3E-01
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+02	ug/m3	4.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-02	mg/kg/day	2.0E-01	mg/kg/day	4.7E-01
			Exp. Route Total							Maximum	2.5E-03				Maximum	3.0E+01
		Exposure Point Total								Maximum	2.5E-03				Maximum	3.0E+01
Soil Gas - Indoor Air Total										Maximum	2.5E-03				Maximum	3.0E+01
										Total of Receptor Risks Across All Media	2.5E-03	Total of Receptor Hazards Across All Media				3.0E+01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day

TABLE A3-7 5A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	5.9E-07	Ingestion:	1.4E-06
Dermal:	2.3E-06	Dermal:	5.5E-06
Inhalation of fugitive dust	8.6E-11	Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	1.2E-01	Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-08	mg/kg/day	2 8E-01	mg/kg/day	2.3E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.0E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.4E-10	4 7E-09	mg/kg/day	4.0E-03	mg/kg/day	1.2E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.8E-11	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.2E-07
				1,1-DICHLOROETHENE	3 9E-03	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-09	mg/kg/day	5 0E-02	mg/kg/day	1.1E-07
				1,2-DICHLOROBENZENE	2 4E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	9.0E-02	mg/kg/day	3.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.7E-09	mg/kg/day	9 1E-02	mg/kg/day^{-1}	3.4E-10	8.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.3E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.6E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.4E-07	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2 2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-07	mg/kg/day	4.0E-03	mg/kg/day	1.3E-04
				4,4'-DDE	1.4E-01	mg/kg	8.4E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.9E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	5.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.8E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.4E-04
				ALUMINUM	9.8E+03	mg/kg	5.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	7.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	4.0E-04	mg/kg/day	4.2E-02
				BARIUM	1.6E+02	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.9E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.7E-07	mg/kg/day	1 2E+01	mg/kg/day^{-1}	4.5E-06	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4 4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.1E-07	6.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	7.1E-05
				BERYLLIUM	5.1E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	2.0E-03	mg/kg/day	3.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.9E-07	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.2E-06
				CADMIUM	1.2E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	1.7E-03
				CHLOROFORM	4.7E-03	mg/kg	2.8E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	8.6E-11	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				CHROMIUM III	7.1E+01	mg/kg	4.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	1.5E+00	mg/kg/day	6.5E-05
				CHROMIUM VI	1.2E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.4E-03
				CHRYSENE	3.7E+00	mg/kg	2.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.6E-07	5.1E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.4E-04
				COPPER	4.0E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-05	mg/kg/day	4.0E-02	mg/kg/day	1.4E-03
				DIELDRIN	3.1E-02	mg/kg	1.8E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.9E-07	4.3E-08	mg/kg/day	5.0E-05	mg/kg/day	8.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	3.0E-01	mg/kg/day	1.1E-01
				ISOPHORONE	8.2E+00	mg/kg	4.8E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	4.6E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.6E-05
				LEAD	6.0E+01	mg/kg	3 5E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	3.0E-07	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	1 4E-01	mg/kg/day	3.5E-03
				MERCURY	2.8E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.3E-03
				MOLYBDENUM	3.9E+00	mg/kg	2.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.1E-03
				NAPHTHALENE	7.9E-01	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.4E-05

TABLE A3-7.5A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.0E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	9.9E-07	4.6E-07	mg/kg/day	2.0E-05	mg/kg/day	2.3E-02
				PHENANTHRENE	3 0E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.9E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.5E-06	6.8E-07	mg/kg/day	7.0E-05	mg/kg/day	9.8E-03
				PYRENE	1.9E+00	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	8.6E-05
				SILVER	6 1E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.7E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.4E-06	5.9E-06	mg/kg/day	1.0E-02	mg/kg/day	5.9E-04
				THALLIUM	2.0E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-06	mg/kg/day	6.6E-05	mg/kg/day	4.2E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.6E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	2.1E-10	3.8E-08	mg/kg/day	3.0E-04	mg/kg/day	1.3E-04
				VANADIUM	4.7E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-05	mg/kg/day	1.0E-03	mg/kg/day	6.4E-02
				ZINC	9.5E+01	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	3.0E-01	mg/kg/day	4.3E-04
			Exp. Route Total								1.1E-05					3.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.6E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1 8E-07	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	4.0E-02	mg/kg/day	5.1E-05
				4,4'-DDE	1.4E-01	mg/kg	3.4E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	7.8E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.1E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	4.8E-07	mg/kg/day	1.7E-02	mg/kg/day	2.9E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3 7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.1E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	3.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-05	mg/kg/day	3.0E+00	mg/kg/day	2.8E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.6E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.3E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	2.0E+00	mg/kg/day	2.1E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-06	mg/kg/day	2.5E-02	mg/kg/day	2.7E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake	
Surface Soil	
Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake	
Surface Soil	
Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-07	2.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.3E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1 2E-07	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	3 1E-01	mg/kg/day	6 4E-06
				IRON	2.3E+04	mg/kg	5.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	4.5E-05	mg/kg/day	2.0E+00	mg/kg/day	2.2E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	1 5E-01	mg/kg/day	2.8E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.9E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.5E-07	1.8E-06	mg/kg/day	1.4E-04	mg/kg/day	1 3E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.2E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.5E-03
				PYRENE	1.9E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.3E-01	mg/kg/day	4.4E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1 1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9 5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.7E-06					2.0E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8 4E-03	mg/kg	7.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.4E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.5E-12	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-11	mg/kg/day	4.0E-02	mg/kg/day	1.9E-09
				4,4'-DDE	1.4E-01	mg/kg	1.2E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1 3E-13	2.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.8E-14	1.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.1E-09
				ALUMINUM	9.8E+03	mg/kg	8.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.2E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.1E-11	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-11	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.9E-12	8.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	3.0E+00	mg/kg/day	1.0E-09
				BERYLLIUM	5.1E-01	mg/kg	4.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.8E-12	4.6E-09	mg/kg/day	2.0E-01	mg/kg/day	2.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-10	mg/kg/day	2.0E+00	mg/kg/day	7.6E-11
				CADMIUM	1.2E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	2.5E-02	mg/kg/day	1.0E-08
				CHLOROFORM	4.7E-03	mg/kg	4.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.2E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.0E-12	7.5E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.7E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.3E-12	6.2E-12	mg/kg/day	5.0E-04	mg/kg/day	1.2E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-11	mg/kg/day	3.1E-01	mg/kg/day	2.4E-10
				IRON	2.3E+04	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.0E-10	mg/kg/day	9 5E-05	mg/kg/day^{-1}	6 7E-14	1.6E-09	mg/kg/day	2.0E+00	mg/kg/day	8.2E-10
				LEAD	6.0E+01	mg/kg	5.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	6.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	1.5E-01	mg/kg/day	1.0E-09
				NICKEL	2.5E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.9E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.0E-11	6 8E-11	mg/kg/day	1.4E-04	mg/kg/day	4.7E-07
				PHENANTHRENE	3.0E+00	mg/kg	2.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.0E-11	1.0E-10	mg/kg/day	5.0E-04	mg/kg/day	2.0E-07
				PYRENE	1.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	2.3E-01	mg/kg/day	1.6E-09
				SILVER	6.1E-01	mg/kg	5.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.7E-10					7.3E-07
		Exposure Point Total									1.5E-05					3.4E-01

TABLE A3-7.5A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											1.5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	1.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	6.3E-01	mg/kg/day	4.9E-04
5-6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	4.3E-04	mg/kg/day	NA	mg/kg/day^{-2}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.6E-02	ug/m3	3.0E-06	mg/kg/day	5.7E-03	mg/kg/day^{-3}	1.7E-08	7.1E-06	mg/kg/day	1.4E-01	mg/kg/day	5.0E-05
				1,1-DICHLOROETHENE	5.5E+00	ug/m3	6.4E-04	mg/kg/day	NA	mg/kg/day^{-4}	---	1.5E-03	mg/kg/day	5.7E-02	mg/kg/day	2.6E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	8.3E-02	ug/m3	9.7E-06	mg/kg/day	9.1E-02	mg/kg/day^{-6}	8.9E-07	2.3E-05	mg/kg/day	1.4E-03	mg/kg/day	1.6E-02
				ACETALDEHYDE	9.7E-02	ug/m3	1.1E-05	mg/kg/day	1.0E-02	mg/kg/day^{-7}	1.1E-07	2.7E-05	mg/kg/day	2.6E-03	mg/kg/day	1.0E-02
				ACETONE	1.1E-01	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-8}	---	2.9E-05	mg/kg/day	9.0E-01	mg/kg/day	3.2E-05
				BENZENE	3.6E-02	ug/m3	4.2E-06	mg/kg/day	1.0E-01	mg/kg/day^{-9}	4.2E-07	9.8E-06	mg/kg/day	8.6E-03	mg/kg/day	1.1E-03
				CARBON DISULFIDE	3.3E-01	ug/m3	3.9E-05	mg/kg/day	NA	mg/kg/day^{-10}	---	9.1E-05	mg/kg/day	2.0E-01	mg/kg/day	4.6E-04
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	2.0E-05	mg/kg/day	1.5E-01	mg/kg/day^{-11}	3.0E-06	4.7E-05	mg/kg/day	1.1E-02	mg/kg/day	4.1E-03
				CHLOROFORM	8.3E-02	ug/m3	9.7E-06	mg/kg/day	8.1E-02	mg/kg/day^{-12}	7.8E-07	2.3E-05	mg/kg/day	8.6E-02	mg/kg/day	2.6E-04
				CIS-1,2-DICHLOROETHENE	2.0E-01	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-13}	---	5.5E-05	mg/kg/day	1.0E-02	mg/kg/day	5.5E-03
				DICHLORODIFLUOROMETHANE	4.2E-02	ug/m3	5.0E-06	mg/kg/day	NA	mg/kg/day^{-14}	---	1.2E-05	mg/kg/day	5.7E-02	mg/kg/day	2.0E-04
				TETRACHLOROETHENE	1.1E+01	ug/m3	1.3E-03	mg/kg/day	2.1E-02	mg/kg/day^{-15}	2.7E-05	3.1E-03	mg/kg/day	1.0E-02	mg/kg/day	3.1E-01
				TOLUENE	6.0E-02	ug/m3	7.0E-06	mg/kg/day	NA	mg/kg/day^{-16}	---	1.6E-05	mg/kg/day	8.6E-02	mg/kg/day	1.9E-04
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	4.5E-06	mg/kg/day	NA	mg/kg/day^{-17}	---	1.0E-05	mg/kg/day	2.0E-02	mg/kg/day	5.2E-04
				TRICHLOROETHENE	2.3E+00	ug/m3	2.7E-04	mg/kg/day	7.0E-03	mg/kg/day^{-18}	1.9E-06	6.2E-04	mg/kg/day	1.7E-01	mg/kg/day	3.6E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+00	ug/m3	4.0E-04	mg/kg/day	NA	mg/kg/day^{-19}	---	9.3E-04	mg/kg/day	2.0E-01	mg/kg/day	4.6E-03
			Exp Route Total							Minimum	3.4E-05				Minimum	3.8E-01
		Exposure Point Total								Minimum	3.4E-05				Minimum	3.8E-01
Soil Gas - Indoor Air Total										Minimum	3.4E-05				Minimum	3.8E-01
										Total of Receptor Risks Across All Media	5.0E-05	Total of Receptor Hazards Across All Media				7.3E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-08	mg/kg/day	2.8E-01	mg/kg/day	2.3E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.0E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.4E-10	4.7E-09	mg/kg/day	4.0E-03	mg/kg/day	1.2E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.8E-11	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.2E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-09	mg/kg/day	5.0E-02	mg/kg/day	1.1E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	9.0E-02	mg/kg/day	3.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.7E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	3.4E-10	8.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.3E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.6E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.4E-07	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-07	mg/kg/day	4.0E-03	mg/kg/day	1.3E-04
				4,4'-DDE	1.4E-01	mg/kg	8.4E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.9E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.8E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.4E-04
				ALUMINUM	9.8E+03	mg/kg	5.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	7.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	4.0E-04	mg/kg/day	4.2E-02
				BARIUM	1.6E+02	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.9E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.7E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	4.5E-06	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.1E-07	6.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	7.1E-05
				BERYLLIUM	5.1E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	2.0E-03	mg/kg/day	3.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.9E-07	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.2E-06
				CADMIUM	1.2E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	1.7E-03
				CHLOROFORM	4.7E-03	mg/kg	2.8E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	8.6E-11	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				CHROMIUM III	7.1E+01	mg/kg	4.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	1.5E+00	mg/kg/day	6.5E-05
				CHROMIUM VI	1.2E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.4E-03
				CHRYSENE	3.7E+00	mg/kg	2.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.6E-07	5.1E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.4E-04
				COPPER	4.0E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-05	mg/kg/day	4.0E-02	mg/kg/day	1.4E-03
				DIELDRIN	3.1E-02	mg/kg	1.8E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.9E-07	4.3E-08	mg/kg/day	5.0E-05	mg/kg/day	8.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	3.0E-01	mg/kg/day	1.1E-01
				ISOPHORONE	8.2E+00	mg/kg	4.8E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	4.6E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.6E-05
				LEAD	*6.0E+01*	mg/kg	*3.5E-05*	mg/kg/day	*8.5E-03*	mg/kg/day^{-1}	*3.0E-07*	*8.2E-05*	mg/kg/day	*NA*	mg/kg/day	*NA*
				MANGANESE	3.5E+02	mg/kg	2.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	1.4E-01	mg/kg/day	3.5E-03
				MERCURY	2.8E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.3E-03
				MOLYBDENUM	3.9E+00	mg/kg	2.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.1E-03
				NAPHTHALENE	7.9E-01	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.4E-05

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust:	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.0E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	9.9E-07	4.6E-07	mg/kg/day	2.0E-05	mg/kg/day	2.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.9E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.5E-06	6.8E-07	mg/kg/day	7.0E-05	mg/kg/day	9.8E-03
				PYRENE	1.9E+00	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	8.6E-05
				SILVER	6.1E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.7E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.4E-06	5.9E-06	mg/kg/day	1.0E-02	mg/kg/day	5.9E-04
				THALLIUM	2.0E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-06	mg/kg/day	6.6E-05	mg/kg/day	4.2E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.6E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	2.1E-10	3.8E-08	mg/kg/day	3.0E-04	mg/kg/day	1.3E-04
				VANADIUM	4.7E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-05	mg/kg/day	1.0E-03	mg/kg/day	6.4E-02
				ZINC	9.5E+01	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	3.0E-01	mg/kg/day	4.3E-04
			Exp. Route Total								1.1E-05					3.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.6E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.8E-07	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	4.0E-02	mg/kg/day	5.1E-05
				4,4'-DDE	1.4E-01	mg/kg	3.4E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	7.8E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.1E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	4.8E-07	mg/kg/day	1.7E-02	mg/kg/day	2.9E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.1E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	3.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-05	mg/kg/day	3.0E+00	mg/kg/day	2.8E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.6E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.3E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	2.0E+00	mg/kg/day	2.1E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-06	mg/kg/day	2.5E-02	mg/kg/day	2.7E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-07	2.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.3E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.2E-07	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	3.1E-01	mg/kg/day	6.4E-06
				IRON	2.3E+04	mg/kg	5.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	4.5E-05	mg/kg/day	2.0E+00	mg/kg/day	2.2E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	1.5E-01	mg/kg/day	2.8E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.9E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.5E-07	1.8E-06	mg/kg/day	1.4E-04	mg/kg/day	1.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.2E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.5E-03
				PYRENE	1.9E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.3E-01	mg/kg/day	4.4E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.7E-06					2.0E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.4E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.5E-12	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-11	mg/kg/day	4.0E-02	mg/kg/day	1.9E-09
				4,4'-DDE	1.4E-01	mg/kg	1.2E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-13	2.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.8E-14	1.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.1E-09
				ALUMINUM	9.8E+03	mg/kg	8.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population:	Resident
Receptor Age	Adult

Cancer Intake	
Surface Soil	
Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake	
Surface Soil	
Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.2E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.1E-11	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-11	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.9E-12	8.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	3.0E+00	mg/kg/day	1.0E-09
				BERYLLIUM	5.1E-01	mg/kg	4.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.8E-12	4.6E-09	mg/kg/day	2.0E-01	mg/kg/day	2.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-10	mg/kg/day	2.0E+00	mg/kg/day	7.6E-11
				CADMIUM	1.2E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	2.5E-02	mg/kg/day	1.0E-08
				CHLOROFORM	4.7E-03	mg/kg	4.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.2E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.0E-12	7.5E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.7E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.3E-12	6.2E-12	mg/kg/day	5.0E-04	mg/kg/day	1.2E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-11	mg/kg/day	3.1E-01	mg/kg/day	2.4E-10
				IRON	2.3E+04	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.0E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.7E-14	1.6E-09	mg/kg/day	2.0E+00	mg/kg/day	8.2E-10
				LEAD	6.0E+01	mg/kg	5.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	6.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	1.5E-01	mg/kg/day	1.0E-09
				NICKEL	2.5E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.9E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.0E-11	6.8E-11	mg/kg/day	1.4E-04	mg/kg/day	4.7E-07
				PHENANTHRENE	3.0E+00	mg/kg	2.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.0E-11	1.0E-10	mg/kg/day	5.0E-04	mg/kg/day	2.0E-07
				PYRENE	1.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	2.3E-01	mg/kg/day	1.6E-09
				SILVER	6.1E-01	mg/kg	5.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.7E-10					7.3E-07
		Exposure Point Total									1.5E-05					3.4E-01

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Surface Soil Total											1.5E-05					3.4E-01
Soil Gas 5-6 ft bgs	Indoor Air	Indoor Air	Inhalation Maximum	1,1,1-TRICHLOROETHANE	5.7E+00	ug/m3	6.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	6.3E-01	mg/kg/day	2.5E-03
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.5E+03	ug/m3	3.0E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-01	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	8.8E-05	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.0E-07	2.0E-04	mg/kg/day	1.4E-01	mg/kg/day	1.4E-03
				1,1-DICHLOROETHENE	5.9E+02	ug/m3	6.9E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-01	mg/kg/day	5.7E-02	mg/kg/day	2.8E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	1.9E-01	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	9.0E-01	mg/kg/day	5.7E-05
				BENZENE	1.3E-02	ug/m3	1.5E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.5E-07	3.6E-06	mg/kg/day	8.6E-03	mg/kg/day	4.2E-04
				CHLOROFORM	1.6E+00	ug/m3	1.8E-04	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.5E-05	4.3E-04	mg/kg/day	8.6E-02	mg/kg/day	5.0E-03
				DICHLORODIFLUOROMETHANE	4.9E+00	ug/m3	5.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	5.7E-02	mg/kg/day	2.3E-02
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	2.0E-01	mg/kg/day	1.9E-05
				M,P-XYLENES	2.1E-02	ug/m3	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-06	mg/kg/day	2.9E-02	mg/kg/day	2.0E-04
				TETRACHLOROETHENE	1.5E+03	ug/m3	1.7E-01	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.5E-03	4.0E-01	mg/kg/day	1.0E-02	mg/kg/day	4.0E+01
				TOLUENE	2.1E+00	ug/m3	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-04	mg/kg/day	8.6E-02	mg/kg/day	6.6E-03
				TRANS-1,2-DICHLOROETHENE	6.8E+00	ug/m3	8.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	2.0E-02	mg/kg/day	9.3E-02
				TRICHLOROETHENE	2.9E+02	ug/m3	3.4E-02	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.4E-04	8.0E-02	mg/kg/day	1.7E-01	mg/kg/day	4.7E-01
				TRICHLOROFLUOROMETHANE (FREON 11)	8.0E+02	ug/m3	9.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-01	mg/kg/day	2.0E-01	mg/kg/day	1.1E+00
			Exp. Route Total							Maximum	3.8E-03				Maximum	4.5E+01
		Exposure Point Total								Maximum	3.8E-03				Maximum	4.5E+01
Soil Gas - Indoor Air Total										Maximum	3.8E-03				Maximum	4.5E+01
										Total of Receptor Risks Across All Media	3.8E-03	Total of Receptor Hazards Across All Media				4.5E+01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-08	mg/kg/day	2.8E-01	mg/kg/day	2.3E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.0E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.4E-10	4.7E-09	mg/kg/day	4.0E-03	mg/kg/day	1.2E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.8E-11	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.2E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-09	mg/kg/day	5.0E-02	mg/kg/day	1.1E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	9.0E-02	mg/kg/day	3.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.7E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	3.4E-10	8.6E-09	mg/kg/day	2.0E-02	mg/kg/day	4.3E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.6E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	4.4E-07	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-07	mg/kg/day	4.0E-03	mg/kg/day	1.3E-04
				4,4'-DDE	1.4E-01	mg/kg	8.4E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.9E-08	2.0E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	5.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.8E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.4E-04
				ALUMINUM	9.8E+03	mg/kg	5.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	7.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	4.0E-04	mg/kg/day	4.2E-02
				BARIUM	1.6E+02	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.9E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.7E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	4.5E-06	8.7E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.1E-07	6.0E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	9.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	7.1E-05
				BERYLLIUM	5.1E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	2.0E-03	mg/kg/day	3.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.4E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.9E-07	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.2E-06
				CADMIUM	1.2E+00	mg/kg	7.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	1.0E-03	mg/kg/day	1.7E-03
				CHLOROFORM	4.7E-03	mg/kg	2.8E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	8.6E-11	6.4E-09	mg/kg/day	1.0E-02	mg/kg/day	6.4E-07
				CHROMIUM III	7.1E+01	mg/kg	4.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-05	mg/kg/day	1.5E+00	mg/kg/day	6.5E-05
				CHROMIUM VI	1.2E+01	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.4E-03
				CHRYSENE	3.7E+00	mg/kg	2.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.6E-07	5.1E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	5.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	6.4E-04
				COPPER	4.0E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-05	mg/kg/day	4.0E-02	mg/kg/day	1.4E-03
				DIELDRIN	3.1E-02	mg/kg	1.8E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.9E-07	4.3E-08	mg/kg/day	5.0E-05	mg/kg/day	8.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-02	mg/kg/day	3.0E-01	mg/kg/day	1.1E-01
				ISOPHORONE	8.2E+00	mg/kg	4.8E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	4.6E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.6E-05
				LEAD	6.0E+01	mg/kg	3.5E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	3.0E-07	8.2E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	2.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	1.4E-01	mg/kg/day	3.5E-03
				MERCURY	2.8E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.3E-03
				MOLYBDENUM	3.9E+00	mg/kg	2.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.1E-03
				NAPHTHALENE	7.9E-01	mg/kg	4.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.4E-05

TABLE A3-7 5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.0E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	9.9E-07	4.6E-07	mg/kg/day	2.0E-05	mg/kg/day	2.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.9E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.5E-06	6.8E-07	mg/kg/day	7.0E-05	mg/kg/day	9 8E-03
				PYRENE	1.9E+00	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	3.0E-02	mg/kg/day	8.6E-05
				SILVER	6.1E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.7E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.4E-06	5.9E-06	mg/kg/day	1.0E-02	mg/kg/day	5.9E-04
				THALLIUM	2.0E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-06	mg/kg/day	6.6E-05	mg/kg/day	4 2E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.6E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	2.1E-10	3.8E-08	mg/kg/day	3.0E-04	mg/kg/day	1.3E-04
				VANADIUM	4.7E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6 4E-05	mg/kg/day	1.0E-03	mg/kg/day	6.4E-02
				ZINC	9.5E+01	mg/kg	5.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	3.0E-01	mg/kg/day	4.3E-04
			Exp. Route Total								1.1E-05					3.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.6E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.8E-07	1.5E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	4.0E-02	mg/kg/day	5.1E-05
				4,4'-DDE	1.4E-01	mg/kg	3.4E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	7.8E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.1E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	4.8E-07	mg/kg/day	1.7E-02	mg/kg/day	2.9E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.1E-07	4.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	3.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-05	mg/kg/day	3.0E+00	mg/kg/day	2.8E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7 6E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.3E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-06	mg/kg/day	2.0E+00	mg/kg/day	2.1E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-06	mg/kg/day	2.5E-02	mg/kg/day	2.7E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	5.9E-07	Ingestion:	1.4E-06
Dermal:	2.3E-06	Dermal:	5.5E-06
Inhalation of fugitive dust	8.6E-11	Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	1.2E-01	Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-07	2.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.3E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.2E-07	1.7E-07	mg/kg/day	5.0E-04	mg/kg/day	3.4E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	3.1E-01	mg/kg/day	6.4E-06
				IRON	2.3E+04	mg/kg	5.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	4.5E-05	mg/kg/day	2.0E+00	mg/kg/day	2.2E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	1.5E-01	mg/kg/day	2.8E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.9E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.5E-07	1.8E-06	mg/kg/day	1.4E-04	mg/kg/day	1.3E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.2E-07	2.7E-06	mg/kg/day	5.0E-04	mg/kg/day	5.5E-03
				PYRENE	1.9E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.3E-01	mg/kg/day	4.4E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.7E-06					2.0E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	4.0E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	7.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	5.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	2.4E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	6.5E-12	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-11	mg/kg/day	4.0E-02	mg/kg/day	1.9E-09
				4,4'-DDE	1.4E-01	mg/kg	1.2E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.3E-13	2.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	7.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.8E-14	1.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.1E-09
				ALUMINUM	9.8E+03	mg/kg	8.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil

Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil

Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	7.2E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.1E-11	1.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	5.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	8.5E-11	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	3.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.9E-12	8.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-09	mg/kg/day	3.0E+00	mg/kg/day	1.0E-09
				BERYLLIUM	5.1E-01	mg/kg	4.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.0E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	2.8E-12	4.6E-09	mg/kg/day	2.0E-01	mg/kg/day	2.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	6.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-10	mg/kg/day	2.0E+00	mg/kg/day	7.6E-11
				CADMIUM	1.2E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	2.5E-02	mg/kg/day	1.0E-08
				CHLOROFORM	4.7E-03	mg/kg	4.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	3.2E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	5.0E-12	7.5E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	8.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	3.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	2.7E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.3E-12	6.2E-12	mg/kg/day	5.0E-04	mg/kg/day	1.2E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-11	mg/kg/day	3 1E-01	mg/kg/day	2.4E-10
				IRON	2.3E+04	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	7.0E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	6.7E-14	1.6E-09	mg/kg/day	2.0E+00	mg/kg/day	8.2E-10
				LEAD	6.0E+01	mg/kg	5.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	2.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	3.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7 8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	6.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	1.5E-01	mg/kg/day	1.0E-09
				NICKEL	2.5E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	2.9E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.0E-11	6.8E-11	mg/kg/day	1.4E-04	mg/kg/day	4.7E-07
				PHENANTHRENE	3.0E+00	mg/kg	2.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	4.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.0E-11	1.0E-10	mg/kg/day	5.0E-04	mg/kg/day	2.0E-07
				PYRENE	1.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	2.3E-01	mg/kg/day	1.6E-09
				SILVER	6.1E-01	mg/kg	5.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	3.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	2.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	4.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp Route Total								1.7E-10					7.3E-07
		Exposure Point Total									1.5E-05					3.4E-01

TABLE A3-7.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Cancer Intake

Surface Soil	
Ingestion:	5.9E-07
Dermal:	2.3E-06
Inhalation of fugitive dust	8.6E-11
Inhalation of soil vapor:	1.2E-01

Noncancer Intake

Surface Soil	
Ingestion:	1.4E-06
Dermal:	5.5E-06
Inhalation of fugitive dust	2.0E-10
Inhalation of soil vapor:	2.7E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											1.5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.0E-01	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-05	mg/kg/day	6.3E-01	mg/kg/day	4.5E-05
5-6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4E+00	ug/m3	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	8.8E-05	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.0E-07	2.0E-04	mg/kg/day	1.4E-01	mg/kg/day	1.4E-03
				1,1-DICHLOROETHENE	6.8E-02	ug/m3	7.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	5.7E-02	mg/kg/day	3.2E-04
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	8.1E-02	ug/m3	9.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	9.0E-01	mg/kg/day	2.5E-05
				BENZENE	6.7E-03	ug/m3	7.8E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.8E-08	1.8E-06	mg/kg/day	8.6E-03	mg/kg/day	2.1E-04
				CHLOROFORM	6.5E-02	ug/m3	7.7E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.2E-07	1.8E-05	mg/kg/day	8.6E-02	mg/kg/day	2.1E-04
				DICHLORODIFLUOROMETHANE	1.2E-02	ug/m3	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	5.7E-02	mg/kg/day	5.8E-05
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-06	mg/kg/day	2.0E-01	mg/kg/day	1.9E-05
				M,P-XYLENES	9.5E-03	ug/m3	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	2.9E-02	mg/kg/day	9.1E-05
				TETRACHLOROETHENE	6.6E-01	ug/m3	7.7E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.6E-06	1.8E-04	mg/kg/day	1.0E-02	mg/kg/day	1.8E-02
				TOLUENE	2.3E-02	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-06	mg/kg/day	8.6E-02	mg/kg/day	7.4E-05
				TRANS-1,2-DICHLOROETHENE	4.6E+00	ug/m3	5.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	2.0E-02	mg/kg/day	6.3E-02
				TRICHLOROETHENE	2.4E-01	ug/m3	2.9E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.0E-07	6.7E-05	mg/kg/day	1.7E-01	mg/kg/day	3.9E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	4.4E-01	ug/m3	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.0E-01	mg/kg/day	6.0E-04
			Exp. Route Total							Minimum	3.0E-06				Minimum	8.5E-02
		Exposure Point Total								Minimum	3.0E-06				Minimum	8.5E-02
Soil Gas - Indoor Air Total										Minimum	3.0E-06				Minimum	8.5E-02
									Total of Receptor Risks Across All Media		1.8E-05	Total of Receptor Hazards Across All Media				4.3E-01

ND: Not Detected.

NS. Not selected as an exposure pathway.

na: The chemical is listed, value is not available

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.6A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	7.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	2.8E-01	mg/kg/day	6.1E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.3E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	3.8E-10	1.2E-08	mg/kg/day	4.0E-03	mg/kg/day	3 1E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.3E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	7.5E-11	3.1E-08	mg/kg/day	1.0E-01	mg/kg/day	3.1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	5.0E-02	mg/kg/day	2.8E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	9.0E-02	mg/kg/day	9.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	9.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	9.0E-10	2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.2E-06
				1,4-DIOXANE	2.8E+01	mg/kg	4.4E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.2E-06	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	4.0E-03	mg/kg/day	3.4E-04
				4,4'-DDE	1.4E-01	mg/kg	2.2E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	7.6E-08	5.2E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.4E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	4.7E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.5E-04
				ALUMINUM	9.8E+03	mg/kg	1.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-02	mg/kg/day	1.0E+00	mg/kg/day	3.6E-02
				ANTIMONY	1.2E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-05	mg/kg/day	4.0E-04	mg/kg/day	1.1E-01
				BARIUM	1.6E+02	mg/kg	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.9E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.3E-06	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.6E-06	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.0E-06	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.2E-05	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	6.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.2E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-05	mg/kg/day	3.0E-01	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	7.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	2.0E-03	mg/kg/day	9.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2 3E+01	mg/kg	3.6E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.1E-07	8.4E-05	mg/kg/day	2.0E-02	mg/kg/day	4.2E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2 8E-06	mg/kg/day	2.0E-01	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.0E-03	mg/kg/day	4.6E-03
				CHLOROFORM	4.7E-03	mg/kg	7.4E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.3E-10	1.7E-08	mg/kg/day	1.0E-02	mg/kg/day	1.7E-06
				CHROMIUM III	7.1E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	1.5E+00	mg/kg/day	1.7E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-05	mg/kg/day	3.0E-03	mg/kg/day	1.4E-02
				CHRYSENE	3.7E+00	mg/kg	5.8E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	7.0E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				COPPER	4.0E+01	mg/kg	6.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	4.0E-02	mg/kg/day	3.7E-03
				DIELDRIN	3.1E-02	mg/kg	4.9E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	7.8E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	4.0E-02	mg/kg/day	3.3E-05
				IRON	2.3E+04	mg/kg	3.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.8E-01
				ISOPHORONE	8.2E+00	mg/kg	1.3E-05	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.2E-08	3.0E-05	mg/kg/day	2.0E-01	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	9.4E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	8.0E-07	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3 5E+02	mg/kg	5.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	1.4E-01	mg/kg/day	9 2E-03
				MERCURY	2.8E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.4E-03
				MOLYBDENUM	3.9E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	5.0E-03	mg/kg/day	2.9E-03
				NAPHTHALENE	7.9E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.4E-04

TABLE A3-7.6A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-05	mg/kg/day	2.0E-02	mg/kg/day	4.5E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.3E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.6E-06	1.2E-06	mg/kg/day	2.0E-05	mg/kg/day	6.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 1E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	7.8E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.9E-06	1 8E-06	mg/kg/day	7.0E-05	mg/kg/day	2.6E-02
				PYRENE	1.9E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.3E-04
				SILVER	6.1E-01	mg/kg	9.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	5 0E-03	mg/kg/day	4.5E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	6.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	3.6E-06	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	1.6E-03
				THALLIUM	2.0E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	6.6E-05	mg/kg/day	1.1E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	4.4E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	5 7E-10	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.4E-04
				VANADIUM	4.7E+01	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.0E-03	mg/kg/day	1.7E-01
				ZINC	9 5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								2.9E-05					8.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4 0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-04	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.8E-07	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	7.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.4E-09	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	4.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.6E-09	1.0E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	5.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	8.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.6E-07	9.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.2E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.0E-06	7.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.5E-07	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	3.0E+00	mg/kg/day	6.1E-05
				BERYLLIUM	5.1E-01	mg/kg	2 6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.2E-04	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-07	2.7E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7 6E-01	mg/kg	3.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	5.9E-04
				CHLOROFORM	4.7E-03	mg/kg	2.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1 4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.9E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-07	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.6E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.3E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	1.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.9E-09	9.6E-05	mg/kg/day	2.0E+00	mg/kg/day	4.8E-05
				LEAD	6.0E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-06	mg/kg/day	1.5E-01	mg/kg/day	6.1E-05
				NICKEL	2.5E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-06	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.8E-06	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	9.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.6E-05
				SILVER	6.1E-01	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.0E-05					4.3E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	8.3E-12	8.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	4.0E-02	mg/kg/day	3.0E-09
				4,4'-DDE	1.4E-01	mg/kg	1.6E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.6E-13	4.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.9E-14	2.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.7E-09
				ALUMINUM	9.8E+03	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-11	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-10	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	7.5E-12	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-09	mg/kg/day	3.0E+00	mg/kg/day	1.7E-09
				BERYLLIUM	5.1E-01	mg/kg	5.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	3.5E-12	7.4E-09	mg/kg/day	2.0E-01	mg/kg/day	3.7E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.0E+00	mg/kg/day	1.2E-10
				CADMIUM	1.2E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	2.5E-02	mg/kg/day	1.6E-08
				CHLOROFORM	4.7E-03	mg/kg	5.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	7.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	4.1E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	6.4E-12	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	3.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.4E-12	9.9E-12	mg/kg/day	5.0E-04	mg/kg/day	2.0E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	3.7E-10
				IRON	2.3E+04	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	8.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	8.5E-14	2.6E-09	mg/kg/day	2.0E+00	mg/kg/day	1.3E-09
				LEAD	6.0E+01	mg/kg	6.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	1.5E-01	mg/kg/day	1.6E-09
				NICKEL	2.5E+01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.6E-11	1.1E-10	mg/kg/day	1.4E-04	mg/kg/day	7.5E-07
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.8E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.2E-07
				PYRENE	1.9E+00	mg/kg	2.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-10	mg/kg/day	2.3E-01	mg/kg/day	2.6E-09
				SILVER	6.1E-01	mg/kg	6.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	5.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.2E-10					1.2E-06
		Exposure Point Total									3.9E-05					9.0E-01

TABLE A3-7.6A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	*Future*
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											3.9E-05					9.0E-01
Soil Gas	*Indoor Air*	*Indoor Air*	*Inhalation*	*1,1,1-TRICHLOROETHANE*	*4.1E+02*	*ug/m3*	6.1E-02	*mg/kg/day*	NA	*mg/kg/day*$^{-1}$	---	1.4E-01	*mg/kg/day*	6.3E-01	*mg/kg/day*	2.3E-01
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8.1E+02	ug/m3	1.2E-01	mg/kg/day	NA	mg/kg/day^{-2}	---	2.8E-01	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.4E+01	ug/m3	2.1E-03	mg/kg/day	5.7E-03	mg/kg/day^{-3}	1.2E-05	4.9E-03	mg/kg/day	1.4E-01	mg/kg/day	3.4E-02
				1,1-DICHLOROETHENE	5.1E+02	ug/m3	7.6E-02	mg/kg/day	NA	mg/kg/day^{-4}	---	1.8E-01	mg/kg/day	5.7E-02	mg/kg/day	3.1E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	2.2E+00	ug/m3	3.3E-04	mg/kg/day	9.1E-02	mg/kg/day^{-6}	3.0E-05	7.8E-04	mg/kg/day	1.4E-03	mg/kg/day	5.5E-01
				ACETALDEHYDE	9.7E-02	ug/m3	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day^{-7}	1.4E-07	3.4E-05	mg/kg/day	2.6E-03	mg/kg/day	1.3E-02
				ACETONE	7.0E+00	ug/m3	1.0E-03	mg/kg/day	NA	mg/kg/day^{-8}	---	2.4E-03	mg/kg/day	9.0E-01	mg/kg/day	2.7E-03
				BENZENE	1.1E+00	ug/m3	1.6E-04	mg/kg/day	1.0E-01	mg/kg/day^{-9}	1.6E-05	3.8E-04	mg/kg/day	8.6E-03	mg/kg/day	4.4E-02
				CARBON DISULFIDE	6.3E+00	ug/m3	9.3E-04	mg/kg/day	NA	mg/kg/day^{-10}	---	2.2E-03	mg/kg/day	2.0E-01	mg/kg/day	1.1E-02
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	2.6E-05	mg/kg/day	1.5E-01	mg/kg/day^{-11}	3.8E-06	6.0E-05	mg/kg/day	1.1E-02	mg/kg/day	5.2E-03
				CHLOROFORM	6.7E+00	ug/m3	1.0E-03	mg/kg/day	8.1E-02	mg/kg/day^{-12}	8.0E-05	2.3E-03	mg/kg/day	8.6E-02	mg/kg/day	2.7E-02
				CIS-1,2-DICHLOROETHENE	1.0E+01	ug/m3	1.5E-03	mg/kg/day	NA	mg/kg/day^{-13}	---	3.5E-03	mg/kg/day	1.0E-02	mg/kg/day	3.5E-01
				DICHLORODIFLUOROMETHANE	6.2E-01	ug/m3	9.2E-05	mg/kg/day	NA	mg/kg/day^{-14}	---	2.1E-04	mg/kg/day	5.7E-02	mg/kg/day	3.8E-03
				TETRACHLOROETHENE	9.5E+02	ug/m3	1.4E-01	mg/kg/day	2.1E-02	mg/kg/day^{-15}	2.9E-03	3.3E-01	mg/kg/day	1.0E-02	mg/kg/day	3.3E+01
				TOLUENE	9.3E-01	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-16}	---	3.2E-04	mg/kg/day	8.6E-02	mg/kg/day	3.8E-03
				TRANS-1,2-DICHLOROETHENE	5.6E+00	ug/m3	8.3E-04	mg/kg/day	NA	mg/kg/day^{-17}	---	1.9E-03	mg/kg/day	2.0E-02	mg/kg/day	9.6E-02
				TRICHLOROETHENE	1.4E+02	ug/m3	2.1E-02	mg/kg/day	7.0E-03	mg/kg/day^{-18}	1.5E-04	4.9E-02	mg/kg/day	1.7E-01	mg/kg/day	2.9E-01
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+02	ug/m3	5.1E-02	mg/kg/day	NA	mg/kg/day^{-19}	---	1.2E-01	mg/kg/day	2.0E-01	mg/kg/day	5.9E-01
			Exp. Route Total								Maximum					Maximum
		Exposure Point Total									Maximum					Maximum
Soil Gas - Indoor Air Total											Maximum					Maximum
											Total of Receptor Risks Across All Media					
											3.2E-03	Total of Receptor Hazards Across All Media				3.9E+01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.6A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake		**Noncancer Intake**	
Surface Soil		**Surface Soil**	
Ingestion:	1.6E-06	Ingestion:	3.7E-06
Dermal:	5.1E-06	Dermal:	1.2E-05
Inhalation of fugitive dust	1.1E-10	Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	1.5E-01	Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	7.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	2.8E-01	mg/kg/day	6.1E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.3E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	3.8E-10	1.2E-08	mg/kg/day	4.0E-03	mg/kg/day	3.1E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.3E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	7.5E-11	3.1E-08	mg/kg/day	1 0E-01	mg/kg/day	3 1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1 4E-08	mg/kg/day	5.0E-02	mg/kg/day	2.8E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8 8E-07	mg/kg/day	9.0E-02	mg/kg/day	9.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	9.9E-09	mg/kg/day	9 1E-02	mg/kg/day^{-1}	9.0E-10	2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.2E-06
				1,4-DIOXANE	2.8E+01	mg/kg	4.4E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.2E-06	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	4.0E-03	mg/kg/day	3.4E-04
				4,4'-DDE	1.4E-01	mg/kg	2 2E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	7.6E-08	5 2E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	1.4E-07	mg/kg/day	3 4E-01	mg/kg/day^{-1}	4.7E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.5E-04
				ALUMINUM	9.8E+03	mg/kg	1.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-02	mg/kg/day	1.0E+00	mg/kg/day	3.6E-02
				ANTIMONY	1.2E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-05	mg/kg/day	4.0E-04	mg/kg/day	1.1E-01
				BARIUM	1.6E+02	mg/kg	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2 9E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.3E-06	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.6E-06	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.0E-06	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.2E-05	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	6.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.2E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-05	mg/kg/day	3.0E-01	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	7.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	2.0E-03	mg/kg/day	9.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.6E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.1E-07	8.4E-05	mg/kg/day	2.0E-02	mg/kg/day	4 2E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	2.0E-01	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1 0E-03	mg/kg/day	4.6E-03
				CHLOROFORM	4.7E-03	mg/kg	7.4E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.3E-10	1.7E-08	mg/kg/day	1.0E-02	mg/kg/day	1.7E-06
				CHROMIUM III	7.1E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	1.5E+00	mg/kg/day	1.7E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-05	mg/kg/day	3 0E-03	mg/kg/day	1.4E-02
				CHRYSENE	3.7E+00	mg/kg	5.8E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	7.0E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				COPPER	4.0E+01	mg/kg	6.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	4.0E-02	mg/kg/day	3.7E-03
				DIELDRIN	3.1E-02	mg/kg	4.9E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	7.8E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	4.0E-02	mg/kg/day	3.3E-05
				IRON	2.3E+04	mg/kg	3.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.8E-01
				ISOPHORONE	8.2E+00	mg/kg	1.3E-05	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.2E-08	3.0E-05	mg/kg/day	2.0E-01	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	9.4E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	8.0E-07	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	5.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	1.4E-01	mg/kg/day	9.2E-03
				MERCURY	2.8E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.4E-03
				MOLYBDENUM	3.9E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	5.0E-03	mg/kg/day	2.9E-03
				NAPHTHALENE	7 9E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	2 0E-02	mg/kg/day	1 4E-04

TABLE A3-7.6A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-05	mg/kg/day	2.0E-02	mg/kg/day	4.5E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.3E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.6E-06	1.2E-06	mg/kg/day	2.0E-05	mg/kg/day	6.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	7.8E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.9E-06	1.8E-06	mg/kg/day	7.0E-05	mg/kg/day	2.6E-02
				PYRENE	1.9E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.3E-04
				SILVER	6.1E-01	mg/kg	9.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	5.0E-03	mg/kg/day	4.5E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	6.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	3.6E-06	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	1.6E-03
				THALLIUM	2.0E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	6.6E-05	mg/kg/day	1.1E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	4.4E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	5.7E-10	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.4E-04
				VANADIUM	4.7E+01	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.0E-03	mg/kg/day	1.7E-01
				ZINC	9.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								2.9E-05					8.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-04	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.8E-07	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	7.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.4E-09	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.6E-09	1.0E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	5.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	8.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.6E-07	9.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.2E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.0E-06	7.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.5E-07	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	3.0E+00	mg/kg/day	6.1E-05
				BERYLLIUM	5.1E-01	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.2E-04	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-07	2.7E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	5.9E-04
				CHLOROFORM	4.7E-03	mg/kg	2.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				CHRYSENE	3.7E+00	mg/kg	1.9E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2 9E-07	4 4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3 1E-02	mg/kg	1.6E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.3E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	1.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.9E-09	9 6E-05	mg/kg/day	2.0E+00	mg/kg/day	4.8E-05
				LEAD	6.0E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2 8E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4 0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-06	mg/kg/day	1.5E-01	mg/kg/day	6.1E-05
				NICKEL	2.5E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1 2E-06	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	1 5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3 5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.8E-06	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	9.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.6E-05
				SILVER	6.1E-01	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.0E-05					4.3E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6 3E-03	mg/kg	6.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	8.3E-12	8.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	4.0E-02	mg/kg/day	3.0E-09
				4,4'-DDE	1.4E-01	mg/kg	1.6E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.6E-13	4.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9 9E-14	2.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.7E-09
				ALUMINUM	9.8E+03	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-11	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-10	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	7.5E-12	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-09	mg/kg/day	3.0E+00	mg/kg/day	1.7E-09
				BERYLLIUM	5.1E-01	mg/kg	5.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	3.5E-12	7.4E-09	mg/kg/day	2.0E-01	mg/kg/day	3.7E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.0E+00	mg/kg/day	1.2E-10
				CADMIUM	1.2E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	2.5E-02	mg/kg/day	1.6E-08
				CHLOROFORM	4.7E-03	mg/kg	5.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	7.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	4.1E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	6.4E-12	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	3.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.4E-12	9.9E-12	mg/kg/day	5.0E-04	mg/kg/day	2.0E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	3.7E-10
				IRON	2.3E+04	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	8.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	8.5E-14	2.6E-09	mg/kg/day	2.0E+00	mg/kg/day	1.3E-09
				LEAD	6.0E+01	mg/kg	6.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	1.5E-01	mg/kg/day	1.6E-09
				NICKEL	2.5E+01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.6E-11	1.1E-10	mg/kg/day	1.4E-04	mg/kg/day	7.5E-07
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.8E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.2E-07
				PYRENE	1.9E+00	mg/kg	2.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-10	mg/kg/day	2.3E-01	mg/kg/day	2.6E-09
				SILVER	6.1E-01	mg/kg	6.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	5.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.2E-10					1.2E-06
		Exposure Point Total									3.9E-05					9.0E-01

TABLE A3-7.6A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											3.9E-05					9.0E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	6.3E-01	mg/kg/day	6.2E-04
5-6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	5.5E-04	mg/kg/day	NA	mg/kg/day^{-2}	---	1.3E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2 6E-02	ug/m3	3.9E-06	mg/kg/day	5.7E-03	mg/kg/day^{-3}	2.2E-08	9 0E-06	mg/kg/day	1.4E-01	mg/kg/day	6.3E-05
				1,1-DICHLOROETHENE	5.5E+00	ug/m3	8.2E-04	mg/kg/day	NA	mg/kg/day^{-4}	---	1.9E-03	mg/kg/day	5.7E-02	mg/kg/day	3.3E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	8.3E-02	ug/m3	1.2E-05	mg/kg/day	9.1E-02	mg/kg/day^{-6}	1.1E-06	2.9E-05	mg/kg/day	1.4E-03	mg/kg/day	2.1E-02
				ACETALDEHYDE	9.7E-02	ug/m3	1 4E-05	mg/kg/day	1.0E-02	mg/kg/day^{-7}	1.4E-07	3.4E-05	mg/kg/day	2.6E-03	mg/kg/day	1.3E-02
				ACETONE	1.1E-01	ug/m3	1 6E-05	mg/kg/day	NA	mg/kg/day^{-8}	---	3.7E-05	mg/kg/day	9.0E-01	mg/kg/day	4.1E-05
				BENZENE	3.6E-02	ug/m3	5 3E-06	mg/kg/day	1.0E-01	mg/kg/day^{-9}	5.3E-07	1.2E-05	mg/kg/day	8.6E-03	mg/kg/day	1.5E-03
				CARBON DISULFIDE	3.3E-01	ug/m3	5.0E-05	mg/kg/day	NA	mg/kg/day^{-10}	---	1 2E-04	mg/kg/day	2.0E-01	mg/kg/day	5.8E-04
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	2.6E-05	mg/kg/day	1.5E-01	mg/kg/day^{-11}	3 8E-06	6.0E-05	mg/kg/day	1.1E-02	mg/kg/day	5.2E-03
				CHLOROFORM	8.3E-02	ug/m3	1.2E-05	mg/kg/day	8.1E-02	mg/kg/day^{-12}	9.9E-07	2.9E-05	mg/kg/day	8.6E-02	mg/kg/day	3 4E-04
				CIS-1,2-DICHLOROETHENE	2.0E-01	ug/m3	3.0E-05	mg/kg/day	NA	mg/kg/day^{-13}	---	7.0E-05	mg/kg/day	1.0E-02	mg/kg/day	7.0E-03
				DICHLORODIFLUOROMETHANE	4.2E-02	ug/m3	6.3E-06	mg/kg/day	NA	mg/kg/day^{-14}	---	1.5E-05	mg/kg/day	5.7E-02	mg/kg/day	2.6E-04
				TETRACHLOROETHENE	1.1E+01	ug/m3	1.7E-03	mg/kg/day	2.1E-02	mg/kg/day^{-15}	3.5E-05	3 9E-03	mg/kg/day	1.0E-02	mg/kg/day	3.9E-01
				TOLUENE	6.0E-02	ug/m3	8.9E-06	mg/kg/day	NA	mg/kg/day^{-16}	---	2.1E-05	mg/kg/day	8.6E-02	mg/kg/day	2.4E-04
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	5.7E-06	mg/kg/day	NA	mg/kg/day^{-17}	---	1.3E-05	mg/kg/day	2 0E-02	mg/kg/day	6.6E-04
				TRICHLOROETHENE	2.3E+00	ug/m3	3.4E-04	mg/kg/day	7.0E-03	mg/kg/day^{-18}	2.4E-06	7.9E-04	mg/kg/day	1 7E-01	mg/kg/day	4.6E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+00	ug/m3	5.1E-04	mg/kg/day	NA	mg/kg/day^{-19}	---	1.2E-03	mg/kg/day	2.0E-01	mg/kg/day	5.9E-03
			Exp. Route Total							Minimum	4.4E-05				Minimum	4.9E-01
		Exposure Point Total								Minimum	4.4E-05				Minimum	4.9E-01
Soil Gas - Indoor Air Total										Minimum	4.4E-05				Minimum	4.9E-01
									Total of Receptor Risks Across All Media		8 3E-05	Total of Receptor Hazards Across All Media				1.4E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na. The chemical is listed, value is not available.

ne. The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	7.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	2.8E-01	mg/kg/day	6.1E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.3E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	3.8E-10	1.2E-08	mg/kg/day	4.0E-03	mg/kg/day	3.1E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.3E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	7.5E-11	3.1E-08	mg/kg/day	1.0E-01	mg/kg/day	3.1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	5.0E-02	mg/kg/day	2.8E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	9.0E-02	mg/kg/day	9.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	9.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	9.0E-10	2.3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.2E-06
				1,4-DIOXANE	2.8E+01	mg/kg	4.4E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.2E-06	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	4.0E-03	mg/kg/day	3.4E-04
				4,4'-DDE	1.4E-01	mg/kg	2 2E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	7.6E-08	5.2E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1 4E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	4.7E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.5E-04
				ALUMINUM	9.8E+03	mg/kg	1.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-02	mg/kg/day	1.0E+00	mg/kg/day	3.6E-02
				ANTIMONY	1.2E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-05	mg/kg/day	4.0E-04	mg/kg/day	1.1E-01
				BARIUM	1.6E+02	mg/kg	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.9E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.3E-06	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1 6E-06	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.0E-06	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.2E-05	2 3E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	6.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8 2E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-05	mg/kg/day	3.0E-01	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	7.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	2.0E-03	mg/kg/day	9.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.6E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.1E-07	8.4E-05	mg/kg/day	2.0E-02	mg/kg/day	4.2E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	2.0E-01	mg/kg/day	1.4E-05
				CADMIUM	1 2E+00	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.0E-03	mg/kg/day	4.6E-03
				CHLOROFORM	4.7E-03	mg/kg	7.4E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.3E-10	1.7E-08	mg/kg/day	1.0E-02	mg/kg/day	1.7E-06
				CHROMIUM III	7.1E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	1.5E+00	mg/kg/day	1.7E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-05	mg/kg/day	3.0E-03	mg/kg/day	1.4E-02
				CHRYSENE	3.7E+00	mg/kg	5.8E-06	mg/kg/day	1 2E-01	mg/kg/day^{-1}	7.0E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1 5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				COPPER	4.0E+01	mg/kg	6.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	4.0E-02	mg/kg/day	3.7E-03
				DIELDRIN	3.1E-02	mg/kg	4.9E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	7.8E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	4.0E-02	mg/kg/day	3 3E-05
				IRON	2.3E+04	mg/kg	3.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.8E-01
				ISOPHORONE	8.2E+00	mg/kg	1.3E-05	mg/kg/day	9 5E-04	mg/kg/day^{-1}	1.2E-08	3.0E-05	mg/kg/day	2.0E-01	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	9.4E-05	mg/kg/day	8 5E-03	mg/kg/day^{-1}	8.0E-07	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	5.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	1.4E-01	mg/kg/day	9.2E-03
				MERCURY	2.8E-01	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.4E-03
				MOLYBDENUM	3.9E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	5.0E-03	mg/kg/day	2.9E-03
				NAPHTHALENE	7.9E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.4E-04

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Resident
Receptor Age:	Adult plus Child

Cancer Intake	
Surface Soil	
Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust:	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake	
Surface Soil	
Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-05	mg/kg/day	2.0E-02	mg/kg/day	4.5E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.3E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.6E-06	1.2E-06	mg/kg/day	2.0E-05	mg/kg/day	6.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	7.8E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.9E-06	1.8E-06	mg/kg/day	7.0E-05	mg/kg/day	2.6E-02
				PYRENE	1.9E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.3E-04
				SILVER	6.1E-01	mg/kg	9.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	5.0E-03	mg/kg/day	4.5E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	6.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	3.6E-06	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	1.6E-03
				THALLIUM	2.0E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	6.6E-05	mg/kg/day	1.1E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	4.4E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	5.7E-10	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.4E-04
				VANADIUM	4.7E+01	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.0E-03	mg/kg/day	1.7E-01
				ZINC	9.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	3.0E-01	mg/kg/day	1.2E-03
			Exp. Route Total								2.9E-05					8.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-04	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.8E-07	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	7.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.4E-09	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.6E-09	1.0E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	5.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	8.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.6E-07	9.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.2E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.0E-06	7.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.5E-07	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	3.0E+00	mg/kg/day	6.1E-05
				BERYLLIUM	5.1E-01	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.2E-04	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-07	2.7E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	5.9E-04
				CHLOROFORM	4.7E-03	mg/kg	2.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.9E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-07	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.6E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.3E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	1.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.9E-09	9.6E-05	mg/kg/day	2.0E+00	mg/kg/day	4.8E-05
				LEAD	6.0E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-06	mg/kg/day	1.5E-01	mg/kg/day	6.1E-05
				NICKEL	2.5E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-06	mg/kg/dey	7.0E-01	mg/kg/day^{-1}	1.2E-06	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.8E-06	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	9.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.6E-05
				SILVER	6.1E-01	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.0E-05					4.3E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	8.3E-12	8.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	4.0E-02	mg/kg/day	3.0E-09
				4,4'-DDE	1.4E-01	mg/kg	1.6E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.6E-13	4.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.9E-14	2.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.7E-09
				ALUMINUM	9.8E+03	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-11	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-10	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	7.5E-12	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-09	mg/kg/day	3.0E+00	mg/kg/day	1.7E-09
				BERYLLIUM	5.1E-01	mg/kg	5.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2 3E+01	mg/kg	2.5E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	3.5E-12	7.4E-09	mg/kg/day	2.0E-01	mg/kg/day	3.7E-08
				BUTYLBENZYL PHTHALATE	7 6E-01	mg/kg	8.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.0E+00	mg/kg/day	1.2E-10
				CADMIUM	1 2E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	2.5E-02	mg/kg/day	1 6E-08
				CHLOROFORM	4 7E-03	mg/kg	5.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	7.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	4.1E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	6 4E-12	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3 0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1 3E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	3.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.4E-12	9 9E-12	mg/kg/day	5.0E-04	mg/kg/day	2 0E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1 2E-10	mg/kg/day	3.1E-01	mg/kg/day	3.7E-10
				IRON	2.3E+04	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	8.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	8.5E-14	2.6E-09	mg/kg/day	2.0E+00	mg/kg/day	1.3E-09
				LEAD	6.0E+01	mg/kg	6.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	1.5E-01	mg/kg/day	1.6E-09
				NICKEL	2.5E+01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3 4E-01	mg/kg	3.7E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.6E-11	1.1E-10	mg/kg/day	1 4E-04	mg/kg/day	7.5E-07
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.8E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.2E-07
				PYRENE	1.9E+00	mg/kg	2.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-10	mg/kg/day	2.3E-01	mg/kg/day	2.6E-09
				SILVER	6.1E-01	mg/kg	6.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	3 1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	5.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.2E-10					1 2E-06
		Exposure Point Total									3.9E-05					9.0E-01

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
Surface Soil Total											3.9E-05					9.0E-01
Soil Gas 5-6 ft bgs	Indoor Air	Indoor Air	Inhalation Maximum	1,1,1-TRICHLOROETHANE	5.7E+00	ug/m3	8.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	6.3E-01	mg/kg/day	3.1E-03
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.5E+03	ug/m3	3.8E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-01	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	1 1E-04	mg/kg/day	5.7E-03	mg/kg/day^{-1}	6.4E-07	2.6E-04	mg/kg/day	1.4E-01	mg/kg/day	1.8E-03
				1,1-DICHLOROETHENE	5.9E+02	ug/m3	8.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-01	mg/kg/day	5.7E-02	mg/kg/day	3.6E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	1.9E-01	ug/m3	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-05	mg/kg/day	9.0E-01	mg/kg/day	7.2E-05
				BENZENE	1.3E-02	ug/m3	1.9E-06	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.9E-07	4.5E-06	mg/kg/day	8.6E-03	mg/kg/day	5.3E-04
				CHLOROFORM	1.6E+00	ug/m3	2.3E-04	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.9E-05	5.5E-04	mg/kg/day	8.6E-02	mg/kg/day	6.4E-03
				DICHLORODIFLUOROMETHANE	4.9E+00	ug/m3	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	5.7E-02	mg/kg/day	3.0E-02
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.4E-05
				M,P-XYLENES	2.1E-02	ug/m3	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-06	mg/kg/day	2.9E-02	mg/kg/day	2.5E-04
				TETRACHLOROETHENE	1.5E+03	ug/m3	2.2E-01	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.5E-03	5.1E-01	mg/kg/day	1.0E-02	mg/kg/day	5.1E+01
				TOLUENE	2.1E+00	ug/m3	3.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-04	mg/kg/day	8.6E-02	mg/kg/day	8.4E-03
				TRANS-1,2-DICHLOROETHENE	6.8E+00	ug/m3	1.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-03	mg/kg/day	2.0E-02	mg/kg/day	1.2E-01
				TRICHLOROETHENE	2.9E+02	ug/m3	4.4E-02	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.1E-04	1.0E-01	mg/kg/day	1.7E-01	mg/kg/day	5.9E-01
				TRICHLOROFLUOROMETHANE (FREON 11)	8.0E+02	ug/m3	1.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-01	mg/kg/day	2.0E-01	mg/kg/day	1.4E+00
			Exp. Route Total							Maximum	4.8E-03				Maximum	5.7E+01
		Exposure Point Total								Maximum	4.8E-03				Maximum	5.7E+01
Soil Gas - Indoor Air Total										Maximum	4.8E-03				Maximum	5.7E+01
										Total of Receptor Risks Across All Media	4.9E-03	Total of Receptor Hazards Across All Media				5.8E+01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	7.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	2.8E-01	mg/kg/day	6.1E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.3E-09	mg/kg/day	7 2E-02	mg/kg/day^{-1}	3.8E-10	1.2E-08	mg/kg/day	4.0E-03	mg/kg/day	3 1E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.3E-08	mg/kg/day	5 7E-03	mg/kg/day^{-1}	7.5E-11	3 1E-08	mg/kg/day	1.0E-01	mg/kg/day	3.1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	5.0E-02	mg/kg/day	2.8E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-07	mg/kg/day	9.0E-02	mg/kg/day	9.7E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	9.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	9.0E-10	2 3E-08	mg/kg/day	2.0E-02	mg/kg/day	1.2E-06
				1,4-DIOXANE	2.8E+01	mg/kg	4.4E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.2E-06	1.0E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	4.0E-03	mg/kg/day	3.4E-04
				4,4'-DDE	1.4E-01	mg/kg	2.2E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	7.6E-08	5.2E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.4E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	4.7E-08	3.2E-07	mg/kg/day	5.0E-04	mg/kg/day	6.5E-04
				ALUMINUM	9.8E+03	mg/kg	1.5E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-02	mg/kg/day	1.0E+00	mg/kg/day	3.6E-02
				ANTIMONY	1.2E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-05	mg/kg/day	4.0E-04	mg/kg/day	1.1E-01
				BARIUM	1.6E+02	mg/kg	2.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2 9E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.3E-06	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.6E-06	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.0E-06	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.2E-05	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	6.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	8.2E-07	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-05	mg/kg/day	3.0E-01	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	7 9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	2.0E-03	mg/kg/day	9.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	3.6E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.1E-07	8.4E-05	mg/kg/day	2.0E-02	mg/kg/day	4.2E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	2.0E-01	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.0E-03	mg/kg/day	4.6E-03
				CHLOROFORM	4.7E-03	mg/kg	7.4E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.3E-10	1.7E-08	mg/kg/day	1.0E-02	mg/kg/day	1.7E-06
				CHROMIUM III	7.1E+01	mg/kg	1 1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	1.5E+00	mg/kg/day	1.7E-04
				CHROMIUM VI	1.2E+01	mg/kg	1 8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-05	mg/kg/day	3.0E-03	mg/kg/day	1.4E-02
				CHRYSENE	3 7E+00	mg/kg	5 8E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	7.0E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3 4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.7E-03
				COPPER	4.0E+01	mg/kg	6.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	4.0E-02	mg/kg/day	3.7E-03
				DIELDRIN	3.1E-02	mg/kg	4.9E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	7.8E-07	1.1E-07	mg/kg/day	5.0E-05	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	5.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	4.0E-02	mg/kg/day	3.3E-05
				IRON	2.3E+04	mg/kg	3.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-02	mg/kg/day	3.0E-01	mg/kg/day	2.8E-01
				ISOPHORONE	8.2E+00	mg/kg	1.3E-05	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.2E-08	3.0E-05	mg/kg/day	2.0E-01	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	9.4E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	8.0E-07	2.2E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	5.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	1.4E-01	mg/kg/day	9.2E-03
				MERCURY	2.8E-01	mg/kg	4 4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.4E-03
				MOLYBDENUM	3.9E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	5.0E-03	mg/kg/day	2.9E-03
				NAPHTHALENE	7.9E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.4E-04

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	1.6E-06
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	3.7E-06
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-05	mg/kg/day	2.0E-02	mg/kg/day	4.5E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.3E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.6E-06	1.2E-06	mg/kg/day	2.0E-05	mg/kg/day	6.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	7.8E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	3.9E-06	1.8E-06	mg/kg/day	7.0E-05	mg/kg/day	2.6E-02
				PYRENE	1.9E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-06	mg/kg/day	3.0E-02	mg/kg/day	2.3E-04
				SILVER	6.1E-01	mg/kg	9.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	5.0E-03	mg/kg/day	4.5E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	6.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	3.6E-06	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	1.6E-03
				THALLIUM	2.0E+00	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	6.6E-05	mg/kg/day	1.1E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	4.4E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	5.7E-10	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.4E-04
				VANADIUM	4.7E+01	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.0E-03	mg/kg/day	1.7E-01
				ZINC	9.5E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	3.0E-01	mg/kg/day	1.2E-03
			Exp Route Total								2 9E-05					8.6E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	9.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.4E-04	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.8E-07	3.3E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	4.0E-02	mg/kg/day	1.1E-04
				4,4'-DDE	1.4E-01	mg/kg	7.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	7.4E-09	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.5E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.6E-09	1.0E-06	mg/kg/day	1.7E-02	mg/kg/day	6.3E-05
				ALUMINUM	9.8E+03	mg/kg	5.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	8.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	4.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.6E-07	9.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.2E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.0E-06	7.5E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.2E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.5E-07	5.2E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-04	mg/kg/day	3.0E+00	mg/kg/day	6.1E-05
				BERYLLIUM	5.1E-01	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.2E-04	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.6E-07	2.7E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	2.0E+00	mg/kg/day	4.5E-06
				CADMIUM	1.2E+00	mg/kg	6.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	2.5E-02	mg/kg/day	5.9E-04
				CHLOROFORM	4.7E-03	mg/kg	2.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	6.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake	Surface Soil	Noncancer Intake	Surface Soil
Ingestion:	1.6E-06	Ingestion:	3.7E-06
Dermal:	5.1E-06	Dermal:	1.2E-05
Inhalation of fugitive dust	1.1E-10	Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	1.5E-01	Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.9E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.9E-07	4.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.6E-07	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-07	3.7E-07	mg/kg/day	5.0E-04	mg/kg/day	7.3E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-06	mg/kg/day	3.1E-01	mg/kg/day	1.4E-05
				IRON	2.3E+04	mg/kg	1.2E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	4.1E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.9E-09	9.6E-05	mg/kg/day	2.0E+00	mg/kg/day	4.8E-05
				LEAD	6.0E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.8E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-06	mg/kg/day	1.5E-01	mg/kg/day	6.1E-05
				NICKEL	2.5E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.7E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-06	4.0E-06	mg/kg/day	1.4E-04	mg/kg/day	2.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.5E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.8E-06	5.9E-06	mg/kg/day	5.0E-04	mg/kg/day	1.2E-02
				PYRENE	1.9E+00	mg/kg	9.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.3E-01	mg/kg/day	9.6E-05
				SILVER	6.1E-01	mg/kg	3.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.2E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								1.0E-05					4.3E-02
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	8.3E-12	8.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	4.0E-02	mg/kg/day	3.0E-09
				4,4'-DDE	1.4E-01	mg/kg	1.6E-11	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.6E-13	4.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	9.9E-14	2.8E-11	mg/kg/day	1.7E-02	mg/kg/day	1.7E-09
				ALUMINUM	9.8E+03	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake

Surface Soil

Ingestion:	*1.6E-06*
Dermal:	5.1E-06
Inhalation of fugitive dust	1.1E-10
Inhalation of soil vapor:	1.5E-01

Noncancer Intake

Surface Soil

Ingestion:	*3.7E-06*
Dermal:	1.2E-05
Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-11	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-10	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	7.5E-12	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-09	mg/kg/day	3.0E+00	mg/kg/day	1.7E-09
				BERYLLIUM	5.1E-01	mg/kg	5.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	3.5E-12	7.4E-09	mg/kg/day	2.0E-01	mg/kg/day	3.7E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.0E+00	mg/kg/day	1 2E-10
				CADMIUM	1.2E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-10	mg/kg/day	2.5E-02	mg/kg/day	1.6E-08
				CHLOROFORM	4.7E-03	mg/kg	5.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	7.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	4.1E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	6.4E-12	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	3.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	5.4E-12	9.9E-12	mg/kg/day	5.0E-04	mg/kg/day	2.0E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	3.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	3.1E-01	mg/kg/day	3.7E-10
				IRON	2.3E+04	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	8.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	8.5E-14	2.6E-09	mg/kg/day	2.0E+00	mg/kg/day	1.3E-09
				LEAD	6.0E+01	mg/kg	6.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1 9E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-10	mg/kg/day	1.5E-01	mg/kg/day	1.6E-09
				NICKEL	2.5E+01	mg/kg	2.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	2.6E-11	1 1E-10	mg/kg/day	1.4E-04	mg/kg/day	7.5E-07
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5 5E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	3.8E-11	1.6E-10	mg/kg/day	5.0E-04	mg/kg/day	3.2E-07
				PYRENE	1.9E+00	mg/kg	2.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-10	mg/kg/day	2.3E-01	mg/kg/day	2.6E-09
				SILVER	6.1E-01	mg/kg	6.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	2.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	5.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	1.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								2.2E-10					1.2E-06
		Exposure Point Total									3.9E-05					9.0E-01

TABLE A3-7.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult plus Child

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.6E-06	Ingestion:	3.7E-06
Dermal:	5.1E-06	Dermal:	1.2E-05
Inhalation of fugitive dust	1.1E-10	Inhalation of fugitive dust	3.2E-10
Inhalation of soil vapor:	1.5E-01	Inhalation of soil vapor:	3.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											3.9E-05					9.0E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.0E-01	ug/m3	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-05	mg/kg/day	6 3E-01	mg/kg/day	5.8E-05
5-6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4E+00	ug/m3	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	1.1E-04	mg/kg/day	5.7E-03	mg/kg/day^{-1}	6.4E-07	2.6E-04	mg/kg/day	1.4E-01	mg/kg/day	1.8E-03
				1,1-DICHLOROETHENE	6 8E-02	ug/m3	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	5 7E-02	mg/kg/day	4.1E-04
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	8.1E-02	ug/m3	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	9.0E-01	mg/kg/day	3.1E-05
				BENZENE	6.7E-03	ug/m3	9.9E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	9.9E-08	2 3E-06	mg/kg/day	8.6E-03	mg/kg/day	2.7E-04
				CHLOROFORM	6.5E-02	ug/m3	9 7E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	7.8E-07	2.3E-05	mg/kg/day	8.6E-02	mg/kg/day	2.7E-04
				DICHLORODIFLUOROMETHANE	1 2E-02	ug/m3	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-06	mg/kg/day	5.7E-02	mg/kg/day	7.3E-05
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	2 0E-01	mg/kg/day	2.4E-05
				M,P-XYLENES	9.5E-03	ug/m3	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3 3E-06	mg/kg/day	2.9E-02	mg/kg/day	1 2E-04
				TETRACHLOROETHENE	6.6E-01	ug/m3	9.8E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2 0E-06	2.3E-04	mg/kg/day	1.0E-02	mg/kg/day	2.3E-02
				TOLUENE	2.3E-02	ug/m3	3.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-06	mg/kg/day	8.6E-02	mg/kg/day	9.5E-05
				TRANS-1,2-DICHLOROETHENE	4.6E+00	ug/m3	6.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-03	mg/kg/day	2.0E-02	mg/kg/day	8.0E-02
				TRICHLOROETHENE	2.4E-01	ug/m3	3.6E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.5E-07	8.5E-05	mg/kg/day	1.7E-01	mg/kg/day	5.0E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	4.4E-01	ug/m3	6.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.6E-04
			Exp. Route Total							Minimum	3.8E-06				Minimum	1.1E-01
		Exposure Point Total								Minimum	3.8E-06				Minimum	1.1E-01
Soil Gas - Indoor Air Total										Minimum	3.8E-06				Minimum	1.1E-01
										Total of Receptor Risks Across All Media	4.3E-05	Total of Receptor Hazards Across All Media				1.0E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.7A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	2.8E-01	mg/kg/day	2.1E-06
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	2.7E-10	4.3E-08	mg/kg/day	4.0E-03	mg/kg/day	1.1E-05
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.2E-11	1.1E-07	mg/kg/day	1.0E-01	mg/kg/day	1.1E-06
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	5.0E-02	mg/kg/day	1.0E-06
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	9.0E-02	mg/kg/day	3.4E-05
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	6.3E-10	8.1E-08	mg/kg/day	2.0E-02	mg/kg/day	4.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	8.3E-07	3.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.2E-03
				4,4'-DDE	1.4E-01	mg/kg	1.6E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	3.3E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				ALUMINUM	9.8E+03	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	1.0E+00	mg/kg/day	1.3E-01
				ANTIMONY	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	4.0E-04	mg/kg/day	3.9E-01
				BARIUM	1.6E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	2.0E-01	mg/kg/day	1.0E-02
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.2E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.1E-06	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	8.4E-06	8.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.8E-07	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	3.0E-01	mg/kg/day	6.6E-04
				BERYLLIUM	5.1E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	3.5E-07	3.0E-04	mg/kg/day	2.0E-02	mg/kg/day	1.5E-02
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-06	mg/kg/day	2.0E-01	mg/kg/day	4.8E-05
				CADMIUM	1.2E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	1.6E-02
				CHLOROFORM	4.7E-03	mg/kg	5.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	1.6E-10	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day	6.0E-06
				CHROMIUM III	7.1E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	1.5E+00	mg/kg/day	6.0E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.0E-02
				CHRYSENE	3.7E+00	mg/kg	4.1E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	4.9E-07	4.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	5.9E-03
				COPPER	4.0E+01	mg/kg	4.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	4.0E-02	mg/kg/day	1.3E-02
				DIELDRIN	3.1E-02	mg/kg	3.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	5.5E-07	4.0E-07	mg/kg/day	5.0E-05	mg/kg/day	8.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	4.0E-02	mg/kg/day	1.2E-04
				IRON	2.3E+04	mg/kg	2.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-01	mg/kg/day	3.0E-01	mg/kg/day	9.9E-01
				ISOPHORONE	8.2E+00	mg/kg	9.0E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	8.5E-09	1.0E-04	mg/kg/day	2.0E-01	mg/kg/day	5.2E-04
				LEAD	6.0E+01	mg/kg	6.6E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	5.6E-07	7.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.2E-02
				MERCURY	2.8E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.2E-02
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	5.0E-03	mg/kg/day	1.0E-02
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.0E-02	mg/kg/day	5.1E-04

TABLE A3-7.7A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake	
Surface Soil	
Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake	
Surface Soil	
Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	2.0E-02	mg/kg/day	1.6E-02
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.8E-06	4.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.2E-01
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.7E-06	6.4E-06	mg/kg/day	7.0E-05	mg/kg/day	9.1E-02
				PYRENE	1.9E+00	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	3.0E-02	mg/kg/day	8.0E-04
				SILVER	6.1E-01	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-06	mg/kg/day	5.0E-03	mg/kg/day	1.6E-03
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	2.5E-06	5.5E-05	mg/kg/day	1.0E-02	mg/kg/dey	5.5E-03
				THALLIUM	2.0E+00	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-05	mg/kg/day	6.6E-05	mg/kg/day	3.9E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	4.0E-10	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				VANADIUM	4.7E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-04	mg/kg/day	1.0E-03	mg/kg/day	6.0E-01
				ZINC	9.5E+01	mg/kg	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-03	mg/kg/day	3.0E-01	mg/kg/day	4.0E-03
			Exp. Route Total								2.0E-05					3.0E+00
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	8.9E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.4E-07	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	3.5E-04
				4,4'-DDE	1.4E-01	mg/kg	4.6E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.7E-09	5.3E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.9E-09	3.3E-06	mg/kg/day	1.7E-02	mg/kg/day	2.0E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	5.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.1E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.2E-06	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-07	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	3.0E+00	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.0E-07	8.6E-04	mg/kg/day	2.0E-01	mg/kg/day	4.3E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	2.0E+00	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	2.5E-02	mg/kg/day	1.9E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-03	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.2E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	9.9E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.6E-07	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	3.1E-01	mg/kg/day	4.3E-05
				IRON	2.3E+04	mg/kg	7.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.6E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.5E-09	3.0E-04	mg/kg/day	2.0E+00	mg/kg/day	1 5E-04
				LEAD	6.0E+01	mg/kg	1 9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-05	mg/kg/day	1.5E-01	mg/kg/day	1.9E-04
				NICKEL	2 5E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9 1E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.5E-07	1.3E-05	mg/kg/day	1.4E-04	mg/kg/day	8.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1 6E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	3.7E-02
				PYRENE	1.9E+00	mg/kg	6.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-05	mg/kg/day	2.3E-01	mg/kg/day	3.0E-04
				SILVER	6.1E-01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1 4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3 5E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								6.3E-06					1.3E-01
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.1E-12	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	4.0E-02	mg/kg/day	4.4E-09
				4,4'-DDE	1.4E-01	mg/kg	5.8E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.9E-14	6.8E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.7E-14	4.2E-11	mg/kg/day	1.7E-02	mg/kg/day	2.5E-09
				ALUMINUM	9.8E+03	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	6.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.4E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.3E-12	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.0E-11	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.8E-12	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-09	mg/kg/day	3.0E+00	mg/kg/day	2.5E-09
				BERYLLIUM	5.1E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.4E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.3E-12	1.1E-08	mg/kg/day	2.0E-01	mg/kg/day	5.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				CADMIUM	1.2E+00	mg/kg	5.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	2.5E-02	mg/kg/day	2.4E-08
				CHLOROFORM	4.7E-03	mg/kg	1.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.5E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.4E-12	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.3E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.0E-12	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.9E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	3.1E-01	mg/kg/day	5.6E-10
				IRON	2.3E+04	mg/kg	9.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.3E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.2E-14	3.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.9E-09
				LEAD	6.0E+01	mg/kg	2.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	1.5E-01	mg/kg/day	2.4E-09
				NICKEL	2.5E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.4E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.6E-12	1.6E-10	mg/kg/day	1.4E-04	mg/kg/day	1.1E-06
				PHENANTHRENE	3.0E+00	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	4.7E-07
				PYRENE	1.9E+00	mg/kg	7.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-10	mg/kg/day	2.3E-01	mg/kg/day	3.9E-09
				SILVER	6.1E-01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	8.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-11	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.1E-11					1.7E-06
		Exposure Point Total									2.6E-05					3.2E+00

TABLE A3-7.7A - Parcel Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-08
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.1E+02	ug/m3	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-01	mg/kg/day	6.3E-01	mg/kg/day	4.2E-01
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	8.1E+02	ug/m3	4.5E-02	mg/kg/day	NA	mg/kg/day^{-2}	---	5.2E-01	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.4E+01	ug/m3	7.7E-04	mg/kg/day	5.7E-03	mg/kg/day^{-3}	4.4E-06	9.0E-03	mg/kg/day	1.4E-01	mg/kg/day	6.3E-02
				1,1-DICHLOROETHENE	5.1E+02	ug/m3	2.8E-02	mg/kg/day	NA	mg/kg/day^{-4}	---	3.3E-01	mg/kg/day	5.7E-02	mg/kg/day	5.8E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	2.2E+00	ug/m3	1.2E-04	mg/kg/day	9.1E-02	mg/kg/day^{-6}	1.1E-05	1.4E-03	mg/kg/day	1.4E-03	mg/kg/day	1.0E+00
				ACETALDEHYDE	9.7E-02	ug/m3	5.4E-06	mg/kg/day	1.0E-02	mg/kg/day^{-7}	5.4E-08	6.3E-05	mg/kg/day	2.6E-03	mg/kg/day	2.4E-02
				ACETONE	7.0E+00	ug/m3	3.9E-04	mg/kg/day	NA	mg/kg/day^{-8}	---	4.5E-03	mg/kg/day	9.0E-01	mg/kg/day	5.0E-03
				BENZENE	1.1E+00	ug/m3	6.0E-05	mg/kg/day	1.0E-01	mg/kg/day^{-9}	6.0E-06	7.0E-04	mg/kg/day	8.6E-03	mg/kg/day	8.2E-02
				CARBON DISULFIDE	6.3E+00	ug/m3	3.5E-04	mg/kg/day	NA	mg/kg/day^{-10}	---	4.0E-03	mg/kg/day	2.0E-01	mg/kg/day	2.0E-02
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day^{-11}	1.4E-06	1.1E-04	mg/kg/day	1.1E-02	mg/kg/day	9.7E-03
				CHLOROFORM	6.7E+00	ug/m3	3.7E-04	mg/kg/day	8.1E-02	mg/kg/day^{-12}	3.0E-05	4.3E-03	mg/kg/day	8.6E-02	mg/kg/day	5.0E-02
				CIS-1,2-DICHLOROETHENE	1.0E+01	ug/m3	5.6E-04	mg/kg/day	NA	mg/kg/day^{-13}	---	6.5E-03	mg/kg/day	1.0E-02	mg/kg/day	6.5E-01
				DICHLORODIFLUOROMETHANE	6.2E-01	ug/m3	3.4E-05	mg/kg/day	NA	mg/kg/day^{-14}	---	4.0E-04	mg/kg/day	5.7E-02	mg/kg/day	7.0E-03
				TETRACHLOROETHENE	9.5E+02	ug/m3	5.2E-02	mg/kg/day	2.1E-02	mg/kg/day^{-15}	1.1E-03	6.1E-01	mg/kg/day	1.0E-02	mg/kg/day	6.1E+01
				TOLUENE	9.3E-01	ug/m3	5.1E-05	mg/kg/day	NA	mg/kg/day^{-16}	---	6.0E-04	mg/kg/day	8.6E-02	mg/kg/day	7.0E-03
				TRANS-1,2-DICHLOROETHENE	5.6E+00	ug/m3	3.1E-04	mg/kg/day	NA	mg/kg/day^{-17}	---	3.6E-03	mg/kg/day	2.0E-02	mg/kg/day	1.8E-01
				TRICHLOROETHENE	1.4E+02	ug/m3	7.8E-03	mg/kg/day	7.0E-03	mg/kg/day^{-18}	5.5E-05	9.1E-02	mg/kg/day	1.7E-01	mg/kg/day	5.3E-01
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+02	ug/m3	1.9E-02	mg/kg/day	NA	mg/kg/day^{-19}	---	2.2E-01	mg/kg/day	2.0E-01	mg/kg/day	1.1E+00
			Exp. Route Total							Maximum	1.2E-03				Maximum	7.1E+01
		Exposure Point Total								Maximum	1.2E-03				Maximum	7.1E+01
Soil Gas - Indoor Air Total										Maximum	1.2E-03				Maximum	7.1E+01
										Total of Receptor Risks Across All Media	1.2E-03	Total of Receptor Hazards Across All Media				7.4E+01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na. The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.7A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil	
Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil	
Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	2.8E-01	mg/kg/day	2.1E-06
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	2.7E-10	4.3E-08	mg/kg/day	4.0E-03	mg/kg/day	1.1E-05
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.2E-11	1.1E-07	mg/kg/day	1.0E-01	mg/kg/day	1.1E-06
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	5.0E-02	mg/kg/day	1.0E-06
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	9.0E-02	mg/kg/day	3.4E-05
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	6.3E-10	8.1E-08	mg/kg/day	2.0E-02	mg/kg/day	4.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	8.3E-07	3.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.2E-03
				4,4'-DDE	1.4E-01	mg/kg	1.6E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	3.3E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				ALUMINUM	9.8E+03	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	1.0E+00	mg/kg/day	1.3E-01
				ANTIMONY	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	4.0E-04	mg/kg/day	3.9E-01
				BARIUM	1.6E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	2.0E-01	mg/kg/day	1.0E-02
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.2E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.1E-06	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	8.4E-06	8.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.8E-07	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	3.0E-01	mg/kg/day	6.6E-04
				BERYLLIUM	5.1E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	3.5E-07	3.0E-04	mg/kg/day	2.0E-02	mg/kg/day	1.5E-02
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-06	mg/kg/day	2.0E-01	mg/kg/day	4.8E-05
				CADMIUM	1.2E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	1.6E-02
				CHLOROFORM	4.7E-03	mg/kg	5.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	1.6E-10	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day	6.0E-06
				CHROMIUM III	7.1E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	1.5E+00	mg/kg/day	6.0E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.0E-02
				CHRYSENE	3.7E+00	mg/kg	4.1E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	4.9E-07	4.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	5.9E-03
				COPPER	4.0E+01	mg/kg	4.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	4.0E-02	mg/kg/day	1.3E-02
				DIELDRIN	3.1E-02	mg/kg	3.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	5.5E-07	4.0E-07	mg/kg/day	5.0E-05	mg/kg/day	8.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	4.0E-02	mg/kg/day	1.2E-04
				IRON	2.3E+04	mg/kg	2.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-01	mg/kg/day	3.0E-01	mg/kg/day	9.9E-01
				ISOPHORONE	8.2E+00	mg/kg	9.0E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	8.5E-09	1.0E-04	mg/kg/day	2.0E-01	mg/kg/day	5.2E-04
				LEAD	6.0E+01	mg/kg	6.6E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	5.6E-07	7.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.2E-02
				MERCURY	2.8E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.2E-02
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	5.0E-03	mg/kg/day	1.0E-02
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.0E-02	mg/kg/day	5.1E-04

TABLE A3-7.7A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	2.0E-02	mg/kg/day	1.6E-02
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.8E-06	4.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.2E-01
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.7E-06	6.4E-06	mg/kg/day	7.0E-05	mg/kg/day	9.1E-02
				PYRENE	1.9E+00	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	3.0E-02	mg/kg/day	8.0E-04
				SILVER	6.1E-01	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7 9E-06	mg/kg/day	5.0E-03	mg/kg/day	1.6E-03
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	2.5E-06	5.5E-05	mg/kg/day	1.0E-02	mg/kg/day	5.5E-03
				THALLIUM	2.0E+00	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-05	mg/kg/day	6.6E-05	mg/kg/day	3.9E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	4.0E-10	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				VANADIUM	4.7E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-04	mg/kg/day	1.0E-03	mg/kg/day	6.0E-01
				ZINC	9.5E+01	mg/kg	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-03	mg/kg/day	3.0E-01	mg/kg/day	4.0E-03
			Exp. Route Total								2.0E-05					3.0E+00
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	8.9E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.4E-07	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	3.5E-04
				4,4'-DDE	1.4E-01	mg/kg	4.6E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.7E-09	5.3E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.9E-09	3.3E-06	mg/kg/day	1.7E-02	mg/kg/day	2.0E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	5.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5 8E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.1E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.2E-06	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-07	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	3.0E+00	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.0E-07	8.6E-04	mg/kg/day	2.0E-01	mg/kg/day	4.3E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	2.0E+00	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	2.5E-02	mg/kg/day	1.9E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1 7E-07	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-03	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.2E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	9.9E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.6E-07	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	3.1E-01	mg/kg/day	4.3E-05
				IRON	2.3E+04	mg/kg	7.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.6E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.5E-09	3.0E-04	mg/kg/day	2.0E+00	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-05	mg/kg/day	1.5E-01	mg/kg/day	1 9E-04
				NICKEL	2.5E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.5E-07	1.3E-05	mg/kg/day	1 4E-04	mg/kg/day	8.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 1E-04	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.6E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	3.7E-02
				PYRENE	1 9E+00	mg/kg	6.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-05	mg/kg/day	2.3E-01	mg/kg/day	3.0E-04
				SILVER	6.1E-01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								6.3E-06					1.3E-01
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.1E-12	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	4.0E-02	mg/kg/day	4.4E-09
				4,4'-DDE	1.4E-01	mg/kg	5.8E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.9E-14	6.8E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.7E-14	4.2E-11	mg/kg/day	1.7E-02	mg/kg/day	2.5E-09
				ALUMINUM	9.8E+03	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	6 4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-08	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.4E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.3E-12	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.0E-11	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.8E-12	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-09	mg/kg/day	3.0E+00	mg/kg/day	2.5E-09
				BERYLLIUM	5.1E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.4E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.3E-12	1.1E-08	mg/kg/day	2.0E-01	mg/kg/day	5.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				CADMIUM	1.2E+00	mg/kg	5.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	2.5E-02	mg/kg/day	2.4E-08
				CHLOROFORM	4.7E-03	mg/kg	1.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.5E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.4E-12	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.3E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.0E-12	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.9E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	3.1E-01	mg/kg/day	5.6E-10
				IRON	2.3E+04	mg/kg	9.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.3E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.2E-14	3.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.9E-09
				LEAD	6.0E+01	mg/kg	2.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	1.5E-01	mg/kg/day	2.4E-09
				NICKEL	2.5E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.4E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.6E-12	1.6E-10	mg/kg/day	1.4E-04	mg/kg/day	1.1E-06
				PHENANTHRENE	3.0E+00	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	4.7E-07
				PYRENE	1.9E+00	mg/kg	7.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-10	mg/kg/day	2.3E-01	mg/kg/day	3.9E-09
				SILVER	6.1E-01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	8.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-11	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.1E-11					1.7E-06
		Exposure Point Total									2.6E-05					3.2E+00
Surface Soil Total											2.6E-05					3.2E+00

TABLE A3-7.7A - Parcel Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil Gas 5-6 ft bgs	Indoor Air	Indoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	1.1E+00	ug/m3	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-04	mg/kg/day	6.3E-01	mg/kg/day	1.2E-03
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	2.0E-04	mg/kg/day	NA	mg/kg/day^{-2}	---	2.4E-03	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.6E-02	ug/m3	1.4E-06	mg/kg/day	5.7E-03	mg/kg/day^{-3}	8.2E-09	1.7E-05	mg/kg/day	1.4E-01	mg/kg/day	1.2E-04
				1,1-DICHLOROETHENE	5.5E+00	ug/m3	3.0E-04	mg/kg/day	NA	mg/kg/day^{-4}	---	3.5E-03	mg/kg/day	5.7E-02	mg/kg/day	6.2E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-5}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	8.3E-02	ug/m3	4.6E-06	mg/kg/day	9.1E-02	mg/kg/day^{-6}	4.2E-07	5.4E-05	mg/kg/day	1.4E-03	mg/kg/day	3.8E-02
				ACETALDEHYDE	9.7E-02	ug/m3	5.4E-06	mg/kg/day	1.0E-02	mg/kg/day^{-7}	5.4E-08	6.3E-05	mg/kg/day	2.6E-03	mg/kg/day	2.4E-02
				ACETONE	1.1E-01	ug/m3	5.8E-06	mg/kg/day	NA	mg/kg/day^{-8}	---	6.8E-05	mg/kg/day	9.0E-01	mg/kg/day	7.5E-05
				BENZENE	3.6E-02	ug/m3	2.0E-06	mg/kg/day	1.0E-01	mg/kg/day^{-9}	2.0E-07	2.3E-05	mg/kg/day	8.6E-03	mg/kg/day	2.7E-03
				CARBON DISULFIDE	3.3E-01	ug/m3	1.8E-05	mg/kg/day	NA	mg/kg/day^{-10}	---	2.2E-04	mg/kg/day	2.0E-01	mg/kg/day	1.1E-03
				CARBON TETRACHLORIDE	1.7E-01	ug/m3	9.5E-06	mg/kg/day	1.5E-01	mg/kg/day^{-11}	1.4E-06	1.1E-04	mg/kg/day	1.1E-02	mg/kg/day	9.7E-03
				CHLOROFORM	8.3E-02	ug/m3	4.6E-06	mg/kg/day	8.1E-02	mg/kg/day^{-12}	3.7E-07	5.3E-05	mg/kg/day	8.6E-02	mg/kg/day	6.2E-04
				CIS-1,2-DICHLOROETHENE	2.0E-01	ug/m3	1.1E-05	mg/kg/day	NA	mg/kg/day^{-13}	---	1.3E-04	mg/kg/day	1.0E-02	mg/kg/day	1.3E-02
				DICHLORODIFLUOROMETHANE	4.2E-02	ug/m3	2.3E-06	mg/kg/day	NA	mg/kg/day^{-14}	---	2.7E-05	mg/kg/day	5.7E-02	mg/kg/day	4.8E-04
				TETRACHLOROETHENE	1.1E+01	ug/m3	6.3E-04	mg/kg/day	2.1E-02	mg/kg/day^{-15}	1.3E-05	7.3E-03	mg/kg/day	1.0E-02	mg/kg/day	7.3E-01
				TOLUENE	6.0E-02	ug/m3	3.3E-06	mg/kg/day	NA	mg/kg/day^{-16}	---	3.9E-05	mg/kg/day	8.6E-02	mg/kg/day	4.5E-04
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	2.1E-06	mg/kg/day	NA	mg/kg/day^{-17}	---	2.5E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				TRICHLOROETHENE	2.3E+00	ug/m3	1.3E-04	mg/kg/day	7.0E-03	mg/kg/day^{-18}	8.8E-07	1.5E-03	mg/kg/day	1.7E-01	mg/kg/day	8.6E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.4E+00	ug/m3	1.9E-04	mg/kg/day	NA	mg/kg/day^{-19}	---	2.2E-03	mg/kg/day	2.0E-01	mg/kg/day	1.1E-02
			Exp. Route Total							Minimum	1.6E-05				Minimum	9.1E-01
		Exposure Point Total								Minimum	1.6E-05				Minimum	9.1E-01
Soil Gas - Indoor Air Total										Minimum	1.6E-05				Minimum	9.1E-01
										Total of Receptor Risks Across All Media	4.3E-05			Total of Receptor Hazards Across All Media		4.1E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	2.8E-01	mg/kg/day	2.1E-06
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	2.7E-10	4.3E-08	mg/kg/day	4.0E-03	mg/kg/day	1.1E-05
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.2E-11	1.1E-07	mg/kg/day	1.0E-01	mg/kg/day	1.1E-06
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	5.0E-02	mg/kg/day	1.0E-06
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	9.0E-02	mg/kg/day	3.4E-05
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	6.3E-10	8.1E-08	mg/kg/day	2.0E-02	mg/kg/day	4.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	8.3E-07	3.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.2E-03
				4,4'-DDE	1.4E-01	mg/kg	1.6E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	3.3E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				ALUMINUM	9.8E+03	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	1.0E+00	mg/kg/day	1.3E-01
				ANTIMONY	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	4.0E-04	mg/kg/day	3.9E-01
				BARIUM	1.6E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	2.0E-01	mg/kg/day	1.0E-02
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.2E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.1E-06	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	8.4E-06	8.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.8E-07	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	3.0E-01	mg/kg/day	6.6E-04
				BERYLLIUM	5.1E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	3.5E-07	3.0E-04	mg/kg/day	2.0E-02	mg/kg/day	1.5E-02
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-06	mg/kg/day	2.0E-01	mg/kg/day	4.8E-05
				CADMIUM	1.2E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	1.6E-02
				CHLOROFORM	4.7E-03	mg/kg	5.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	1.6E-10	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day	6.0E-06
				CHROMIUM III	7.1E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	1.5E+00	mg/kg/day	6.0E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.0E-02
				CHRYSENE	3.7E+00	mg/kg	4.1E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	4.9E-07	4.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	5.9E-03
				COPPER	4.0E+01	mg/kg	4.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	4.0E-02	mg/kg/day	1.3E-02
				DIELDRIN	3.1E-02	mg/kg	3.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	5.5E-07	4.0E-07	mg/kg/day	5.0E-05	mg/kg/day	8.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	4.0E-02	mg/kg/day	1.2E-04
				IRON	2.3E+04	mg/kg	2.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-01	mg/kg/day	3.0E-01	mg/kg/day	9.9E-01
				ISOPHORONE	8.2E+00	mg/kg	9.0E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	8.5E-09	1.0E-04	mg/kg/day	2.0E-01	mg/kg/day	5.2E-04
				LEAD	6.0E+01	mg/kg	6.6E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	5.6E-07	7.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.2E-02
				MERCURY	2.8E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.2E-02
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	5.0E-03	mg/kg/day	1.0E-02
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.0E-02	mg/kg/day	5.1E-04

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	2.0E-02	mg/kg/day	1.6E-02
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.8E-06	4.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.2E-01
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.7E-06	6.4E-06	mg/kg/day	7.0E-05	mg/kg/day	9.1E-02
				PYRENE	1.9E+00	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	3 0E-02	mg/kg/day	8.0E-04
				SILVER	6.1E-01	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-06	mg/kg/day	5.0E-03	mg/kg/day	1.6E-03
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	2.5E-06	5.5E-05	mg/kg/day	1.0E-02	mg/kg/day	5.5E-03
				THALLIUM	2.0E+00	mg/kg	2 2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2 6E-05	mg/kg/day	6.6E-05	mg/kg/day	3.9E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	4.0E-10	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				VANADIUM	4.7E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-04	mg/kg/day	1.0E-03	mg/kg/day	6.0E-01
				ZINC	9.5E+01	mg/kg	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-03	mg/kg/day	3.0E-01	mg/kg/day	4.0E-03
			Exp. Route Total								2.0E-05					3.0E+00
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8 9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	8.9E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.4E-07	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	3.5E-04
				4,4'-DDE	1.4E-01	mg/kg	4.6E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.7E-09	5.3E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.9E-09	3.3E-06	mg/kg/day	1.7E-02	mg/kg/day	2.0E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	5.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.1E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.2E-06	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-07	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5 0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	3.0E+00	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 9E-05	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.0E-07	8.6E-04	mg/kg/day	2.0E-01	mg/kg/day	4.3E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	2.0E+00	mg/kg/day	1 4E-05
				CADMIUM	1.2E+00	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	2.5E-02	mg/kg/day	1.9E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-03	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1 2E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	1.2E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	9.9E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.6E-07	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	3.1E-01	mg/kg/day	4.3E-05
				IRON	2.3E+04	mg/kg	7.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.6E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.5E-09	3.0E-04	mg/kg/day	2.0E+00	mg/kg/day	1.5E-04
				LEAD	6.0E+01	mg/kg	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-05	mg/kg/day	1.5E-01	mg/kg/day	1.9E-04
				NICKEL	2.5E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.5E-07	1.3E-05	mg/kg/day	1.4E-04	mg/kg/day	8.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.6E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	3.7E-02
				PYRENE	1.9E+00	mg/kg	6.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-05	mg/kg/day	2.3E-01	mg/kg/day	3.0E-04
				SILVER	6.1E-01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								6.3E-06					1.3E-01
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.1E-12	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	4.0E-02	mg/kg/day	4.4E-09
				4,4'-DDE	1.4E-01	mg/kg	5.8E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.9E-14	6.8E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.7E-14	4.2E-11	mg/kg/day	1.7E-02	mg/kg/day	2.5E-09
				ALUMINUM	9.8E+03	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	6.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7 5E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.4E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5 3E-12	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.0E-11	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1 8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.8E-12	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7 4E-09	mg/kg/day	3.0E+00	mg/kg/day	2.5E-09
				BERYLLIUM	5.1E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 4E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.4E-10	mg/kg/day	1 4E-03	mg/kg/day^{-1}	1.3E-12	1.1E-08	mg/kg/day	2.0E-01	mg/kg/day	5.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				CADMIUM	1.2E+00	mg/kg	5.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	2.5E-02	mg/kg/day	2.4E-08
				CHLOROFORM	4.7E-03	mg/kg	1.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2 2E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4 8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1 5E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.4E-12	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.3E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.0E-12	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.9E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	3.1E-01	mg/kg/day	5.6E-10
				IRON	2.3E+04	mg/kg	9.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.3E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.2E-14	3.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.9E-09
				LEAD	6.0E+01	mg/kg	2.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	1 5E-01	mg/kg/day	2.4E-09
				NICKEL	2.5E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.4E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.6E-12	1.6E-10	mg/kg/day	1.4E-04	mg/kg/day	1.1E-06
				PHENANTHRENE	3.0E+00	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	4.7E-07
				PYRENE	1 9E+00	mg/kg	7.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-10	mg/kg/day	2.3E-01	mg/kg/day	3 9E-09
				SILVER	6.1E-01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	8.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-11	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4 5E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.1E-11					1.7E-06
		Exposure Point Total									2.6E-05					3.2E+00

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Surface Soil Total											2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	5.7E+00	ug/m3	3.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-03	mg/kg/day	6.3E-01	mg/kg/day	5.8E-03
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.5E+03	ug/m3	1.4E-01	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E+00	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	4.1E-05	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.4E-07	4.8E-04	mg/kg/day	1.4E-01	mg/kg/day	3.4E-03
				1,1-DICHLOROETHENE	5.9E+02	ug/m3	3.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-01	mg/kg/day	5.7E-02	mg/kg/day	6.7E+00
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	1.9E-01	ug/m3	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	9.0E-01	mg/kg/day	1.3E-04
				BENZENE	1.3E-02	ug/m3	7.2E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	7.2E-08	8.4E-06	mg/kg/day	8.6E-03	mg/kg/day	9.8E-04
				CHLOROFORM	1.6E+00	ug/m3	8.7E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	7.0E-06	1.0E-03	mg/kg/day	8.6E-02	mg/kg/day	1.2E-02
				DICHLORODIFLUOROMETHANE	4.9E+00	ug/m3	2.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-03	mg/kg/day	5.7E-02	mg/kg/day	5.5E-02
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-06	mg/kg/day	2.0E-01	mg/kg/day	4.4E-05
				M,P-XYLENES	2.1E-02	ug/m3	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	2.9E-02	mg/kg/day	4.7E-04
				TETRACHLOROETHENE	1.5E+03	ug/m3	8.1E-02	mg/kg/day	2.1E-02	mg/kg/day^{-1}	1.7E-03	9.4E-01	mg/kg/day	1.0E-02	mg/kg/day	9.4E+01
				TOLUENE	2.1E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-03	mg/kg/day	8.6E-02	mg/kg/day	1.6E-02
				TRANS-1,2-DICHLOROETHENE	6.8E+00	ug/m3	3.8E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-03	mg/kg/day	2.0E-02	mg/kg/day	2.2E-01
				TRICHLOROETHENE	2.9E+02	ug/m3	1.6E-02	mg/kg/day	7.0E-03	mg/kg/day^{-1}	1.1E-04	1.9E-01	mg/kg/day	1.7E-01	mg/kg/day	1.1E+00
				TRICHLOROFLUOROMETHANE (FREON 11)	8.0E+02	ug/m3	4.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-01	mg/kg/day	2.0E-01	mg/kg/day	2.6E+00
			Exp Route Total							Maximum	1.8E-03				Maximum	1.1E+02
		Exposure Point Total								Maximum	1.8E-03				Maximum	1.1E+02
Soil Gas - Indoor Air Total										Maximum	1.8E-03				Maximum	1.1E+02
									Total of Receptor Risks Across All Media		1.8E-03	Total of Receptor Hazards Across All Media				1.1E+02

ND Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day. milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	5.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	2.8E-01	mg/kg/day	2.1E-06
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	3.7E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	2.7E-10	4.3E-08	mg/kg/day	4.0E-03	mg/kg/day	1.1E-05
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	9.2E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.2E-11	1.1E-07	mg/kg/day	1.0E-01	mg/kg/day	1.1E-06
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	4.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-08	mg/kg/day	5.0E-02	mg/kg/day	1.0E-06
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-06	mg/kg/day	9.0E-02	mg/kg/day	3.4E-05
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	6.9E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	6.3E-10	8.1E-08	mg/kg/day	2.0E-02	mg/kg/day	4.0E-06
				1,4-DIOXANE	2.8E+01	mg/kg	3.1E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	8.3E-07	3.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	4.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.2E-03
				4,4'-DDE	1.4E-01	mg/kg	1.6E-07	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	9.7E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	3.3E-08	1.1E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				ALUMINUM	9.8E+03	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-01	mg/kg/day	1.0E+00	mg/kg/day	1.3E-01
				ANTIMONY	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	4.0E-04	mg/kg/day	3.9E-01
				BARIUM	1.6E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-03	mg/kg/day	2.0E-01	mg/kg/day	1.0E-02
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	9.2E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.1E-06	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	7.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	8.4E-06	8.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	4.8E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	5.8E-07	5.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-04	mg/kg/day	3.0E-01	mg/kg/day	6.6E-04
				BERYLLIUM	5.1E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-06	mg/kg/day	2.0E-03	mg/kg/day	3.2E-03
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	2.5E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	3.5E-07	3.0E-04	mg/kg/day	2.0E-02	mg/kg/day	1.5E-02
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-06	mg/kg/day	2.0E-01	mg/kg/day	4.8E-05
				CADMIUM	1.2E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	1.0E-03	mg/kg/day	1.6E-02
				CHLOROFORM	4.7E-03	mg/kg	5.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	1.6E-10	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day	6.0E-06
				CHROMIUM III	7.1E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	1.5E+00	mg/kg/day	6.0E-04
				CHROMIUM VI	1.2E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	3.0E-03	mg/kg/day	5.0E-02
				CHRYSENE	3.7E+00	mg/kg	4.1E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	4.9E-07	4.8E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	5.9E-03
				COPPER	4.0E+01	mg/kg	4.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-04	mg/kg/day	4.0E-02	mg/kg/day	1.3E-02
				DIELDRIN	3.1E-02	mg/kg	3.4E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	5.5E-07	4.0E-07	mg/kg/day	5.0E-05	mg/kg/day	8.0E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	4.0E-02	mg/kg/day	1.2E-04
				IRON	2.3E+04	mg/kg	2.6E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-01	mg/kg/day	3.0E-01	mg/kg/day	9.9E-01
				ISOPHORONE	8.2E+00	mg/kg	9.0E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	8.5E-09	1.0E-04	mg/kg/day	2.0E-01	mg/kg/day	5.2E-04
				LEAD	6.0E+01	mg/kg	6.6E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	5.6E-07	7.7E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	3.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-03	mg/kg/day	1.4E-01	mg/kg/day	3.2E-02
				MERCURY	2.8E-01	mg/kg	3.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.2E-02
				MOLYBDENUM	3.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-05	mg/kg/day	5.0E-03	mg/kg/day	1.0E-02
				NAPHTHALENE	7.9E-01	mg/kg	8.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	2.0E-02	mg/kg/day	5.1E-04

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	2.0E-02	mg/kg/day	1.6E-02
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	3.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.8E-06	4.3E-06	mg/kg/day	2.0E-05	mg/kg/day	2.2E-01
				PHENANTHRENE	3.0E+00	mg/kg	3.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	5.5E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.7E-06	6.4E-06	mg/kg/day	7.0E-05	mg/kg/day	9.1E-02
				PYRENE	1.9E+00	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	3.0E-02	mg/kg/day	8.0E-04
				SILVER	6.1E-01	mg/kg	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-06	mg/kg/day	5.0E-03	mg/kg/day	1.6E-03
				TETRACHLOROETHENE	4.3E+00	mg/kg	4.7E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	2.5E-06	5.5E-05	mg/kg/day	1.0E-02	mg/kg/day	5.5E-03
				THALLIUM	2.0E+00	mg/kg	2.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-05	mg/kg/day	6.6E-05	mg/kg/day	3.9E-01
				TRICHLOROETHENE	2.8E-02	mg/kg	3.1E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	4.0E-10	3.6E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				VANADIUM	4.7E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-04	mg/kg/day	1.0E-03	mg/kg/day	6.0E-01
				ZINC	9.5E+01	mg/kg	1.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-03	mg/kg/day	3.0E-01	mg/kg/day	4.0E-03
			Exp Route Total								2.0E-05					3.0E+00
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2 0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	8.9E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.4E-07	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	3.5E-04
				4,4'-DDE	1.4E-01	mg/kg	4.6E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.7E-09	5.3E-06	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.9E-09	3.3E-06	mg/kg/day	1.7E-02	mg/kg/day	2.0E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	5.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.1E-07	3.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.2E-06	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.2E-07	1.6E-05	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-04	mg/kg/day	3.0E+00	mg/kg/day	1.9E-04
				BERYLLIUM	5.1E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7 4E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.0E-07	8.6E-04	mg/kg/day	2.0E-01	mg/kg/day	4.3E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	2.0E+00	mg/kg/day	1.4E-05
				CADMIUM	1.2E+00	mg/kg	4.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	2.5E-02	mg/kg/day	1.9E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-03	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-04	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		**Surface Soil**	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				CHRYSENE	3.7E+00	mg/kg	1.2E-05	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.8E-07	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-03	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	9.9E-08	mg/kg/day	1 6E+00	mg/kg/day^{-1}	1.6E-07	1.2E-06	mg/kg/day	5.0E-04	mg/kg/day	2.3E-03
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 3E-05	mg/kg/day	3 1E-01	mg/kg/day	4.3E-05
				IRON	2.3E+04	mg/kg	7.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8 2E+00	mg/kg	2.6E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2 5E-09	3.0E-04	mg/kg/day	2.0E+00	mg/kg/day	1 5E-04
				LEAD	6.0E+01	mg/kg	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-03	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1 3E-02	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-05	mg/kg/day	1.5E-01	mg/kg/day	1.9E-04
				NICKEL	2.5E+01	mg/kg	7.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.5E-07	1.3E-05	mg/kg/day	1.4E-04	mg/kg/day	8.8E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.6E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-06	1.9E-05	mg/kg/day	5.0E-04	mg/kg/day	3.7E-02
				PYRENE	1.9E+00	mg/kg	6.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-05	mg/kg/day	2.3E-01	mg/kg/day	3.0E-04
				SILVER	6.1E-01	mg/kg	2.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	6.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2 8E-02	mg/kg	8.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-03	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-03	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								6.3E-06					1.3E-01
			Inhalation Fugitive Dust	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-11	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3 9E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-12	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2 6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-12	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.1E-12	1.3E-08	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	4.0E-02	mg/kg/day	4.4E-09
				4,4'-DDE	1.4E-01	mg/kg	5.8E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.9E-14	6 8E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.7E-14	4.2E-11	mg/kg/day	1.7E-02	mg/kg/day	2.5E-09
				ALUMINUM	9.8E+03	mg/kg	4.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-09	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	6.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7 5E-08	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake

Surface Soil

Ingestion:	1.1E-06
Dermal:	3.2E-06
Inhalation of fugitive dust	4.1E-11
Inhalation of soil vapor:	5.5E-02

Noncancer Intake

Surface Soil

Ingestion:	1.3E-05
Dermal:	3.7E-05
Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.4E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.3E-12	4.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.0E-11	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.8E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.8E-12	2.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-09	mg/kg/day	3.0E+00	mg/kg/day	2.5E-09
				BERYLLIUM	5.1E-01	mg/kg	2.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.4E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.3E-12	1.1E-08	mg/kg/day	2.0E-01	mg/kg/day	5.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-10	mg/kg/day	2.0E+00	mg/kg/day	1.8E-10
				CADMIUM	1.2E+00	mg/kg	5.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-10	mg/kg/day	2.5E-02	mg/kg/day	2.4E-08
				CHLOROFORM	4.7E-03	mg/kg	1.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-12	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.5E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.4E-12	1.8E-09	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-08	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.3E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.0E-12	1.5E-11	mg/kg/day	5.0E-04	mg/kg/day	2.9E-08
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-10	mg/kg/day	3.1E-01	mg/kg/day	5.6E-10
				IRON	2.3E+04	mg/kg	9.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.3E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.2E-14	3.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.9E-09
				LEAD	6.0E+01	mg/kg	2.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-08	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-07	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	1.5E-01	mg/kg/day	2.4E-09
				NICKEL	2.5E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.4E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.6E-12	1.6E-10	mg/kg/day	1.4E-04	mg/kg/day	1.1E-06
				PHENANTHRENE	3.0E+00	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	2.4E-10	mg/kg/day	5.0E-04	mg/kg/day	4.7E-07
				PYRENE	1.9E+00	mg/kg	7.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-10	mg/kg/day	2.3E-01	mg/kg/day	3.9E-09
				SILVER	6.1E-01	mg/kg	2.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	8.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.5E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-11	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								8.1E-11					1.7E-06
		Exposure Point Total									2.6E-05					3.2E+00
Surface Soil Total											2.6E-05					3.2E+00

TABLE A3-7.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Cancer Intake		Noncancer Intake	
Surface Soil		Surface Soil	
Ingestion:	1.1E-06	Ingestion:	1.3E-05
Dermal:	3.2E-06	Dermal:	3.7E-05
Inhalation of fugitive dust	4.1E-11	Inhalation of fugitive dust	4.7E-10
Inhalation of soil vapor:	5.5E-02	Inhalation of soil vapor:	6.4E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.0E-01	ug/m3	5.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-05	mg/kg/day	6.3E-01	mg/kg/day	1.1E-04
5-6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4E+00	ug/m3	7.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	7.5E-01	ug/m3	4.1E-05	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.4E-07	4.8E-04	mg/kg/day	1.4E-01	mg/kg/day	3.4E-03
				1,1-DICHLOROETHENE	6.8E-02	ug/m3	3.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-05	mg/kg/day	5.7E-02	mg/kg/day	7.7E-04
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETONE	8.1E-02	ug/m3	4.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-05	mg/kg/day	9.0E-01	mg/kg/day	5.8E-05
				BENZENE	6.7E-03	ug/m3	3.7E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.7E-08	4.3E-06	mg/kg/day	8.6E-03	mg/kg/day	5.0E-04
				CHLOROFORM	6.5E-02	ug/m3	3.6E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.9E-07	4.2E-05	mg/kg/day	8.6E-02	mg/kg/day	4.9E-04
				DICHLORODIFLUOROMETHANE	1.2E-02	ug/m3	6.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-06	mg/kg/day	5.7E-02	mg/kg/day	1.4E-04
				HEXANE (N-HEXANE)	1.4E-02	ug/m3	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-06	mg/kg/day	2.0E-01	mg/kg/day	4.4E-05
				M,P-XYLENES	9.5E-03	ug/m3	5.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-06	mg/kg/day	2.9E-02	mg/kg/day	2.1E-04
				TETRACHLOROETHENE	6.6E-01	ug/m3	3.7E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	7.5E-07	4.3E-04	mg/kg/day	1.0E-02	mg/kg/day	4.3E-02
				TOLUENE	2.3E-02	ug/m3	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	8.6E-02	mg/kg/day	1.8E-04
				TRANS-1,2-DICHLOROETHENE	4.6E+00	ug/m3	2.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-03	mg/kg/day	2.0E-02	mg/kg/day	1.5E-01
				TRICHLOROETHENE	2.4E-01	ug/m3	1.3E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	9.4E-08	1.6E-04	mg/kg/day	1.7E-01	mg/kg/day	9.2E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	4.4E-01	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-04	mg/kg/day	2.0E-01	mg/kg/day	1.4E-03
			Exp. Route Total							Minimum	1.4E-06				Minimum	2.0E-01
		Exposure Point Total								Minimum	1.4E-06				Minimum	2.0E-01
Soil Gas - Indoor Air Total										Minimum	1.4E-06				Minimum	2.0E-01
									Total of Receptor Risks Across All Media		2.8E-05	Total of Receptor Hazards Across All Media				3.4E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	2.8E-01	mg/kg/day	8.2E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.9E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	4.3E-11	1.7E-09	mg/kg/day	4.0E-03	mg/kg/day	4.2E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.5E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.4E-12	4.1E-09	mg/kg/day	1.0E-01	mg/kg/day	4.1E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	5.0E-02	mg/kg/day	3.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.0E-10	3.1E-09	mg/kg/day	2.0E-02	mg/kg/day	1.5E-07
				1,4-DIOXANE	2.8E+01	mg/kg	4.9E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.3E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-03	mg/kg/day	4.6E-05
				4,4'-DDE	1.4E-01	mg/kg	2.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	8.5E-09	7.0E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-09	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	8.7E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	4.0E-04	mg/kg/day	1.5E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-05	mg/kg/day	2.0E-01	mg/kg/day	3.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.5E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-07	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.3E-06	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.7E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	9.2E-08	2.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-06	mg/kg/day	3.0E-01	mg/kg/day	2.5E-05
				BERYLLIUM	5.1E-01	mg/kg	8.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.0E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.7E-08	1.1E-05	mg/kg/day	2.0E-02	mg/kg/day	5.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	2.0E-01	mg/kg/day	1.8E-06
				CADMIUM	1.2E+00	mg/kg	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-07	mg/kg/day	1.0E-03	mg/kg/day	6.1E-04
				CHLOROFORM	4.7E-03	mg/kg	8.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.5E-11	2.3E-09	mg/kg/day	1.0E-02	mg/kg/day	2.3E-07
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	1.5E+00	mg/kg/day	2.3E-05
				CHROMIUM VI	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	3.0E-03	mg/kg/day	1.9E-03
				CHRYSENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	7.8E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	3.1E-02	mg/kg	5.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	8.7E-08	1.5E-08	mg/kg/day	5.0E-05	mg/kg/day	3.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-02	mg/kg/day	4.4E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	3.8E-02
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.4E-09	4.0E-06	mg/kg/day	2.0E-01	mg/kg/day	2.0E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	8.9E-08	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	2.8E-01	mg/kg	4.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	4.5E-04
				MOLYBDENUM	3.9E+00	mg/kg	6.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-06	mg/kg/day	5.0E-03	mg/kg/day	3.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.9E-05

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface & Subsurface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	4 3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.0E-04
				PCB-1254 (AROCLOR 1254)	3 4E-01	mg/kg	5.9E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2.9E-07	1.6E-07	mg/kg/day	2.0E-05	mg/kg/day	8.2E-03
				PHENANTHRENE	3.0E+00	mg/kg	5.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.7E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	4.4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3.5E-03
				PYRENE	1.9E+00	mg/kg	3.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.1E-05
				SILVER	6.1E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	5.0E-03	mg/kg/day	6.0E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	7 5E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	4.1E-07	2 1E-06	mg/kg/day	1.0E-02	mg/kg/day	2.1E-04
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	4.9E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	6.4E-11	1.4E-08	mg/kg/day	3.0E-04	mg/kg/day	4.6E-05
				VANADIUM	4.7E+01	mg/kg	8.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.3E-02
				ZINC	9.5E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	3 0E-01	mg/kg/day	1.5E-04
			Exp. Route Total								3.2E-06					1.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.5E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.7E-07	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	4.0E-02	mg/kg/day	6.0E-05
				4,4'-DDE	1.4E-01	mg/kg	3.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	9.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2 0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	5.7E-07	mg/kg/day	1 7E-02	mg/kg/day	3.4E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7 9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.9E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.0E-07	5.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	3.0E+00	mg/kg/day	3.4E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.5E-08	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.5E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	2.0E+00	mg/kg/day	2.4E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8 1E-06	mg/kg/day	2 5E-02	mg/kg/day	3.2E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				CHRYSENE	3.7E+00	mg/kg	8.6E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.3E-07	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-07	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.1E-01	mg/kg/day	7.6E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	5.3E-05	mg/kg/day	2.0E+00	mg/kg/day	2.6E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-06	mg/kg/day	1.5E-01	mg/kg/day	3.3E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.4E-07	2.2E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	1.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.2E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	9.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.6E-06					2.3E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.4E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.6E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.9E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.9E-12	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	9.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-11	mg/kg/day	4.0E-02	mg/kg/day	6.4E-10
				4,4'-DDE	1.4E-01	mg/kg	3.5E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.6E-14	9.9E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.2E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.2E-14	6.1E-12	mg/kg/day	1.7E-02	mg/kg/day	3.7E-10
				ALUMINUM	9.8E+03	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-10	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake	
	Surface & Subsurface Soil
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake	
	Surface & Subsurface Soil
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	3.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	2.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.2E-12	5.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.5E-11	4 4E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-12	3.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	3.0E+00	mg/kg/day	3.6E-10
				BERYLLIUM	5.1E-01	mg/kg	1.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3 5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.7E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.0E-13	1.6E-09	mg/kg/day	2.0E-01	mg/kg/day	8.0E-09
				BUTYLBENZYL PHTHALATE	7 6E-01	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-11	mg/kg/day	2.0E+00	mg/kg/day	2.6E-11
				CADMIUM	1.2E+00	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.6E-11	mg/kg/day	2.5E-02	mg/kg/day	3.4E-09
				CHLOROFORM	4.7E-03	mg/kg	1.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3 2E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2 9E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	9.2E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-12	2.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.7E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.2E-12	2.1E-12	mg/kg/day	5 0E-04	mg/kg/day	4.3E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-11	mg/kg/day	3.1E-01	mg/kg/day	8.1E-11
				IRON	2.3E+04	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.0E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.9E-14	5.6E-10	mg/kg/day	2.0E+00	mg/kg/day	2.8E-10
				LEAD	6.0E+01	mg/kg	1.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3 9E+00	mg/kg	9.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-11	mg/kg/day	1.5E-01	mg/kg/day	3.6E-10
				NICKEL	2.5E+01	mg/kg	6.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	8.3E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.8E-12	2.3E-11	mg/kg/day	1.4E-04	mg/kg/day	1.6E-07
				PHENANTHRENE	3.0E+00	mg/kg	7.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.6E-12	3.5E-11	mg/kg/day	5.0E-04	mg/kg/day	6.9E-08
				PYRENE	1.9E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	2.3E-01	mg/kg/day	5.6E-10
				SILVER	6.1E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.9E-11					2.5E-07

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates:	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface & Subsurface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									7.8E-06					1.4E-01
Surface Soil Total											7.8E-06					1.4E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.2E+02	ug/m3	3.9E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	6.3E-01	mg/kg/day	1.7E-02
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.3E+02	ug/m3	1.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-02	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.2E+01	ug/m3	4.1E-04	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.3E-06	1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.0E-03
				1,1-DICHLOROETHENE	2.4E+02	ug/m3	8.0E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-02	mg/kg/day	5.7E-02	mg/kg/day	3.9E-01
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	8.9E-01	ug/m3	3.0E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.7E-06	8.4E-05	mg/kg/day	1.4E-03	mg/kg/day	6.0E-02
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	4.3E-02	ug/m3	1.4E-06	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.4E-08	4.0E-06	mg/kg/day	2.6E-03	mg/kg/day	1.6E-03
				ACETONE	2.7E+00	ug/m3	8.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-04	mg/kg/day	9.0E-01	mg/kg/day	2.8E-04
				BENZENE	5.0E-01	ug/m3	1.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.7E-06	4.7E-05	mg/kg/day	8.6E-03	mg/kg/day	5.5E-03
				CARBON DISULFIDE	2.0E+00	ug/m3	6.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	2.0E-01	mg/kg/day	9.5E-04
				CARBON TETRACHLORIDE	7.6E-02	ug/m3	2.5E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.8E-07	7.1E-06	mg/kg/day	1.1E-02	mg/kg/day	6.3E-04
				CHLOROFORM	2.3E+00	ug/m3	7.6E-05	mg/kg/day	8.1E-02	mg/kg/day^{-1}	6.1E-06	2.1E-04	mg/kg/day	8.6E-02	mg/kg/day	2.5E-03
				CIS-1,2-DICHLOROETHENE	5.6E+00	ug/m3	1.9E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-04	mg/kg/day	1.0E-02	mg/kg/day	5.3E-02
				DICHLORODIFLUOROMETHANE	7.2E-01	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-05	mg/kg/day	5.7E-02	mg/kg/day	1.2E-03
				M,P-XYLENES	1.8E-01	ug/m3	6.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	2.9E-02	mg/kg/day	6.0E-04
				TETRACHLOROETHENE	3.8E+02	ug/m3	1.3E-02	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.6E-04	3.5E-02	mg/kg/day	1.0E-02	mg/kg/day	3.5E+00
				TOLUENE	5.6E-01	ug/m3	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-05	mg/kg/day	8.6E-02	mg/kg/day	6.1E-04
				TRANS-1,2-DICHLOROETHENE	2.0E+00	ug/m3	6.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-04	mg/kg/day	2.0E-02	mg/kg/day	9.6E-03
				TRICHLOROETHENE	*6.1E+01*	ug/m3	*2.0E-03*	*mg/kg/day*	*7.0E-03*	*mg/kg/day^{-1}*	*1.4E-05*	*5.7E-03*	*mg/kg/day*	*1.7E-01*	*mg/kg/day*	*3.3E-02*
				TRICHLOROFLUOROMETHANE (FREON 11)	1.7E+02	ug/m3	5.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-02	mg/kg/day	2.0E-01	mg/kg/day	8.0E-02
			Exp. Route Total								Maximum	2.9E-04				Maximum	4.2E+00
		Exposure Point Total									Maximum	2.9E-04				Maximum	4.2E+00
Soil Gas - Indoor Air Total											Maximum	2.9E-04				Maximum	4.2E+00
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E+00	ug/m3	9.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-05	mg/kg/day	6.3E-01	mg/kg/day	4.1E-05
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.3E-01	ug/m3	9.5E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.4E-09	2.7E-06	mg/kg/day	1.4E-01	mg/kg/day	1.9E-05
				1,1-DICHLOROETHENE	4.7E+00	ug/m3	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-05	mg/kg/day	5.7E-02	mg/kg/day	9.7E-04
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	1.9E-02	ug/m3	7.8E-08	mg/kg/day	9.1E-02	mg/kg/day^{-1}	7.1E-09	2.2E-07	mg/kg/day	1.4E-03	mg/kg/day	1.6E-04
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	4.0E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.0E-11	1.1E-08	mg/kg/day	2.6E-03	mg/kg/day	4.4E-06
				ACETONE	5.9E-02	ug/m3	2.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-07	mg/kg/day	9.0E-01	mg/kg/day	7.7E-07

TABLE A3-7.8 - All Parcels, CTE, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake	Surface & Subsurface Soil
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake	Surface & Subsurface Soil
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BENZENE	9.9E-03	ug/m3	4.1E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	4.1E-09	1.2E-07	mg/kg/day	8.6E-03	mg/kg/day	1.4E-05
				CARBON DISULFIDE	4.2E-02	ug/m3	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	2.0E-01	mg/kg/day	2.5E-06
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	6.0E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	9.1E-10	1.7E-08	mg/kg/day	1.1E-02	mg/kg/day	1.5E-06
				CHLOROFORM	4.7E-02	ug/m3	2.0E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.6E-08	5.5E-07	mg/kg/day	8.6E-02	mg/kg/day	6.5E-06
				CIS-1,2-DICHLOROETHENE	1.0E-01	ug/m3	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	1.0E-02	mg/kg/day	1.2E-04
				DICHLORODIFLUOROMETHANE	1.6E-02	ug/m3	6.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	5.7E-02	mg/kg/day	3.2E-06
				M,P-XYLENES	3.4E-03	ug/m3	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-08	mg/kg/day	2.9E-02	mg/kg/day	1.4E-06
				TETRACHLOROETHENE	7.0E+00	ug/m3	2.9E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	6.1E-07	8.2E-05	mg/kg/day	1.0E-02	mg/kg/day	8.2E-03
				TOLUENE	1.1E-02	ug/m3	4.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-07	mg/kg/day	8.6E-02	mg/kg/day	1.5E-06
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.2E-05
				TRICHLOROETHENE	1.2E+00	ug/m3	4.8E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	3.4E-08	1.4E-05	mg/kg/day	1.7E-01	mg/kg/day	7.9E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	3.3E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-05	mg/kg/day	2.0E-01	mg/kg/day	2.0E-04
			Exp. Route Total								Maximum	6.7E-07				Maximum	9.9E-03
		Exposure Point Total									Maximum	6.7E-07				Maximum	9.9E-03
Soil Gas - Outdoor Air Total											Maximum	6.7E-07				Maximum	9.9E-03
											Total of Receptor Risks Across All Media	3.0E-04				Total of Receptor Hazards Across All Media	4.4E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg. milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.8 - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	8.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	2.8E-01	mg/kg/day	8.2E-08
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	5.9E-10	mg/kg/day	7.2E-02	mg/kg/day^{-1}	4.3E-11	1.7E-09	mg/kg/day	4.0E-03	mg/kg/day	4.2E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.5E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.4E-12	4.1E-09	mg/kg/day	1.0E-01	mg/kg/day	4.1E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	6.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-09	mg/kg/day	5.0E-02	mg/kg/day	3.8E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	9.0E-02	mg/kg/day	1.3E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.1E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.0E-10	3.1E-09	mg/kg/day	2.0E-02	mg/kg/day	1.5E-07
				1,4-DIOXANE	2.8E+01	mg/kg	4.9E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	1.3E-07	1.4E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-03	mg/kg/day	4.6E-05
				4,4'-DDE	1.4E-01	mg/kg	2.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	8.5E-09	7.0E-08	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	5.3E-09	4.3E-08	mg/kg/day	5.0E-04	mg/kg/day	8.7E-05
				ALUMINUM	9.8E+03	mg/kg	1.7E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-03	mg/kg/day	1.0E+00	mg/kg/day	4.8E-03
				ANTIMONY	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-06	mg/kg/day	4.0E-04	mg/kg/day	1.5E-02
				BARIUM	1.6E+02	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-05	mg/kg/day	2.0E-01	mg/kg/day	3.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.5E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-07	4.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.1E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	1.3E-06	3.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	7.7E-08	mg/kg/day	1.2E+00	mg/kg/day^{-1}	9.2E-08	2.1E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-06	mg/kg/day	3.0E-01	mg/kg/day	2.5E-05
				BERYLLIUM	5.1E-01	mg/kg	8.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-07	mg/kg/day	2.0E-03	mg/kg/day	1.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.0E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	5.7E-08	1.1E-05	mg/kg/day	2.0E-02	mg/kg/day	5.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	2.0E-01	mg/kg/day	1.8E-06
				CADMIUM	1.2E+00	mg/kg	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-07	mg/kg/day	1.0E-03	mg/kg/day	6.1E-04
				CHLOROFORM	4.7E-03	mg/kg	8.2E-10	mg/kg/day	3.1E-02	mg/kg/day^{-1}	2.5E-11	2.3E-09	mg/kg/day	1.0E-02	mg/kg/day	2.3E-07
				CHROMIUM III	7.1E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-05	mg/kg/day	1.5E+00	mg/kg/day	2.3E-05
				CHROMIUM VI	1.2E+01	mg/kg	2.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-06	mg/kg/day	3.0E-03	mg/kg/day	1.9E-03
				CHRYSENE	3.7E+00	mg/kg	6.5E-07	mg/kg/day	1.2E-01	mg/kg/day^{-1}	7.8E-08	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	2.0E-02	mg/kg/day	2.3E-04
				COPPER	4.0E+01	mg/kg	7.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	4.9E-04
				DIELDRIN	3.1E-02	mg/kg	5.4E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	8.7E-08	1.5E-08	mg/kg/day	5.0E-05	mg/kg/day	3.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	6.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	4.0E-02	mg/kg/day	4.4E-06
				IRON	2.3E+04	mg/kg	4.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-02	mg/kg/day	3.0E-01	mg/kg/day	3.8E-02
				ISOPHORONE	8.2E+00	mg/kg	1.4E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	1.4E-09	4.0E-06	mg/kg/day	2.0E-01	mg/kg/day	2.0E-05
				LEAD	6.0E+01	mg/kg	1.0E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	8.9E-08	2.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	6.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-04	mg/kg/day	1.4E-01	mg/kg/day	1.2E-03
				MERCURY	2.8E-01	mg/kg	4.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	4.5E-04
				MOLYBDENUM	3.9E+00	mg/kg	6.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-06	mg/kg/day	5.0E-03	mg/kg/day	3.8E-04
				NAPHTHALENE	7.9E-01	mg/kg	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.9E-05

TABLE A3-7.8 - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface and Subsurface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.0E-04
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	5.9E-08	mg/kg/day	5.0E+00	mg/kg/day^{-1}	2 9E-07	1.6E-07	mg/kg/day	2.0E-05	mg/kg/day	8.2E-03
				PHENANTHRENE	3.0E+00	mg/kg	5.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	8.7E-08	mg/kg/day	5 0E+00	mg/kg/day^{-1}	4 4E-07	2.4E-07	mg/kg/day	7.0E-05	mg/kg/day	3 5E-03
				PYRENE	1.9E+00	mg/kg	3.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-07	mg/kg/day	3.0E-02	mg/kg/day	3.1E-05
				SILVER	6.1E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	5.0E-03	mg/kg/day	6.0E-05
				TETRACHLOROETHENE	4.3E+00	mg/kg	7.5E-07	mg/kg/day	5.4E-01	mg/kg/day^{-1}	4.1E-07	2.1E-06	mg/kg/day	1.0E-02	mg/kg/day	2.1E-04
				THALLIUM	2.0E+00	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-07	mg/kg/day	6.6E-05	mg/kg/day	1.5E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	4.9E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	6 4E-11	1.4E-08	mg/kg/day	3.0E-04	mg/kg/day	4.6E-05
				VANADIUM	4.7E+01	mg/kg	8.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2 3E-05	mg/kg/day	1.0E-03	mg/kg/day	2.3E-02
				ZINC	9.5E+01	mg/kg	1.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	3.0E-01	mg/kg/day	1.5E-04
			Exp. Route Total								3.2E-06					1.2E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1 5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.5E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.7E-07	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	4 0E-02	mg/kg/day	6.0E-05
				4,4'-DDE	1.4E-01	mg/kg	3.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	9.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	5.7E-07	mg/kg/day	1.7E-02	mg/kg/day	3.4E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.9E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.0E-07	5.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	4 1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3 6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	3.0E+00	mg/kg/day	3.4E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.5E-08	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.5E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	2.0E+00	mg/kg/day	2.4E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8 1E-06	mg/kg/day	2.5E-02	mg/kg/day	3.2E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7 6E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.8 - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.6E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.3E-07	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-07	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3 1E-01	mg/kg/day	7.6E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1 9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	5.3E-05	mg/kg/day	2.0E+00	mg/kg/day	2.6E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-06	mg/kg/day	1.5E-01	mg/kg/day	3.3E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.4E-07	2.2E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	1.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.2E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	9.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.6E-06					2.3E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	8.4E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.1E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.6E-14	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.9E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.9E-12	1.9E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	9.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-11	mg/kg/day	4.0E-02	mg/kg/day	6.4E-10
				4,4'-DDE	1.4E-01	mg/kg	3.5E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.6E-14	9.9E-12	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	2.2E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.2E-14	6.1E-12	mg/kg/day	1.7E-02	mg/kg/day	3.7E-10
				ALUMINUM	9 8E+03	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	3.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.5E-10	mg/kg/day	NA	mg/kg/day	NA

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Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	3.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.2E-12	5.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.6E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2 5E-11	4 4E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.1E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.7E-12	3.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-09	mg/kg/day	3.0E+00	mg/kg/day	3.6E-10
				BERYLLIUM	5.1E-01	mg/kg	1 2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.7E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	8.0E-13	1.6E-09	mg/kg/day	2.0E-01	mg/kg/day	8.0E-09
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-11	mg/kg/day	2.0E+00	mg/kg/day	2.6E-11
				CADMIUM	1.2E+00	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8 6E-11	mg/kg/day	2.5E-02	mg/kg/day	3.4E-09
				CHLOROFORM	4.7E-03	mg/kg	1.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.9E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-10	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	9.2E-11	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.4E-12	2.6E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	6.4E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2 8E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7 7E-13	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1 2E-12	2.1E-12	mg/kg/day	5.0E-04	mg/kg/day	4.3E-09
				FLUORANTHENE (IDRYL)	3 6E-01	mg/kg	8.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-11	mg/kg/day	3.1E-01	mg/kg/day	8.1E-11
				IRON	2.3E+04	mg/kg	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.0E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.9E-14	5.6E-10	mg/kg/day	2.0E+00	mg/kg/day	2.8E-10
				LEAD	6.0E+01	mg/kg	1.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4 1E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8 7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2 4E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.9E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2 0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-11	mg/kg/day	1.5E-01	mg/kg/day	3.6E-10
				NICKEL	2.5E+01	mg/kg	6.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	8 3E-12	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.8E-12	2 3E-11	mg/kg/day	1.4E-04	mg/kg/day	1.6E-07
				PHENANTHRENE	3.0E+00	mg/kg	7.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.6E-12	3.5E-11	mg/kg/day	5.0E-04	mg/kg/day	6.9E-08
				PYRENE	1.9E+00	mg/kg	4.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-10	mg/kg/day	2.3E-01	mg/kg/day	5.6E-10
				SILVER	6 1E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2 8E-02	mg/kg	6 9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.9E-11					2.5E-07

TABLE A3-7.8 - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil	
Ingestion:	1.7E-07
Dermal:	2.3E-06
Inhalation of soil particulates	2.5E-11
Inhalation of outdoor air	4.2E-03
Inhalation of soil vapor:	3.4E-02

Noncancer Intake

Surface and Subsurface Soil	
Ingestion:	4.9E-07
Dermal:	6.5E-06
Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									7.8E-06					1.4E-01
Surface Soil Total											7.8E-06					1.4E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.6E-02	ug/m3	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	6.3E-01	mg/kg/day	6.9E-06
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.0E-01	ug/m3	2.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.1E-02	ug/m3	3.9E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.2E-09	1.1E-06	mg/kg/day	1.4E-01	mg/kg/day	7.5E-06
				1,1-DICHLOROETHENE	3.0E-02	ug/m3	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	5.7E-02	mg/kg/day	4.9E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	3.7E-02	ug/m3	1.2E-06	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1 1E-07	3.5E-06	mg/kg/day	1.4E-03	mg/kg/day	2.5E-03
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	4.3E-02	ug/m3	1.4E-06	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.4E-08	4.0E-06	mg/kg/day	2.6E-03	mg/kg/day	1.6E-03
				ACETONE	3.6E-02	ug/m3	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	9.0E-01	mg/kg/day	3.7E-06
				BENZENE	2.9E-03	ug/m3	9.9E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	9.9E-09	2.8E-07	mg/kg/day	8.6E-03	mg/kg/day	3 2E-05
				CARBON DISULFIDE	1.5E-01	ug/m3	5.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	2.0E-01	mg/kg/day	6.9E-05
				CARBON TETRACHLORIDE	7.6E-02	ug/m3	2.5E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	3.8E-07	7.1E-06	mg/kg/day	1.1E-02	mg/kg/day	6.3E-04
				CHLOROFORM	2.9E-02	ug/m3	9.7E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	7.8E-08	2.7E-06	mg/kg/day	8.6E-02	mg/kg/day	3.2E-05
				CIS-1,2-DICHLOROETHENE	8.9E-02	ug/m3	3.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-06	mg/kg/day	1.0E-02	mg/kg/day	8.4E-04
				DICHLORODIFLUOROMETHANE	5.3E-03	ug/m3	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-07	mg/kg/day	5.7E-02	mg/kg/day	8.8E-06
				M,P-XYLENES	4.2E-03	ug/m3	1.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-07	mg/kg/day	2.9E-02	mg/kg/day	1.4E-05
				TETRACHLOROETHENE	2.9E-01	ug/m3	9.8E-06	mg/kg/day	2.1E-02	mg/kg/day^{-1}	2.0E-07	2.7E-05	mg/kg/day	1.0E-02	mg/kg/day	2.7E-03
				TOLUENE	1.0E-02	ug/m3	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-07	mg/kg/day	8.6E-02	mg/kg/day	1.1E-05
				TRANS-1,2-DICHLOROETHENE	1.7E-02	ug/m3	5.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	2.0E-02	mg/kg/day	7.9E-05
				TRICHLOROETHENE	1.1E-01	ug/m3	3.6E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.5E-08	1.0E-05	mg/kg/day	1.7E-01	mg/kg/day	5.9E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	1.9E-01	ug/m3	6.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	2.0E-01	mg/kg/day	9.1E-05
			Exp. Route Total							Minimum	8 3E-07				Minimum	8.7E-03
		Exposure Point Total								Minimum	8 3E-07				Minimum	8.7E-03
Soil Gas - Indoor Air Total										Minimum	8.3E-07				Minimum	8.7E-03
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	8.8E-04	ug/m3	3.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-08	mg/kg/day	6.3E-01	mg/kg/day	1.6E-08
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.2E-03	ug/m3	1.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.1E-04	ug/m3	9.0E-10	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.1E-12	2.5E-09	mg/kg/day	1.4E-01	mg/kg/day	1.8E-08
				1,1-DICHLOROETHENE	5.9E-04	ug/m3	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-09	mg/kg/day	5.7E-02	mg/kg/day	1.2E-07
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	7.7E-04	ug/m3	3.2E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.9E-10	9.0E-09	mg/kg/day	1.4E-03	mg/kg/day	6.4E-06
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	4.0E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.0E-11	1.1E-08	mg/kg/day	2.6E-03	mg/kg/day	4.4E-06
				ACETONE	8.0E-04	ug/m3	3.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-09	mg/kg/day	9.0E-01	mg/kg/day	1.0E-08

TABLE A3-7.8 - All Parcels, CTE, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake		Noncancer Intake	
Surface and Subsurface Soil		Surface and Subsurface Soil	
Ingestion:	1.7E-07	Ingestion:	4.9E-07
Dermal:	2.3E-06	Dermal:	6.5E-06
Inhalation of soil particulates	2.5E-11	Inhalation of soil particulates	6.9E-11
Inhalation of outdoor air	4.2E-03	Inhalation of outdoor air	1.2E-02
Inhalation of soil vapor:	3.4E-02	Inhalation of soil vapor:	9.4E-02

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	CSF Value	CSF Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/ Exposure Concentration Value	Intake/ Exposure Concentration Units	RfD Value	RfD Units	Hazard Quotient
				BENZENE	5.8E-05	ug/m3	2.4E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.4E-11	6.8E-10	mg/kg/day	8.6E-03	mg/kg/day	7.9E-08
				CARBON DISULFIDE	3.1E-03	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-08	mg/kg/day	2.0E-01	mg/kg/day	1.8E-07
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	6.0E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	9.1E-10	1.7E-08	mg/kg/day	1.1E-02	mg/kg/day	1.5E-06
				CHLOROFORM	6.0E-04	ug/m3	2.5E-09	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.0E-10	7.1E-09	mg/kg/day	8.6E-02	mg/kg/day	8.3E-08
				CIS-1,2-DICHLOROETHENE	1.7E-03	ug/m3	7.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	1.0E-02	mg/kg/day	2.0E-06
				DICHLORODIFLUOROMETHANE	1.2E-04	ug/m3	4.9E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	5.7E-02	mg/kg/day	2.4E-08
				M,P-XYLENES	7.7E-05	ug/m3	3.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.0E-10	mg/kg/day	2.9E-02	mg/kg/day	3.2E-08
				TETRACHLOROETHENE	5.4E-03	ug/m3	2.3E-08	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.7E-10	6.4E-08	mg/kg/day	1.0E-02	mg/kg/day	6.4E-06
				TOLUENE	2.0E-04	ug/m3	8.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	8.6E-02	mg/kg/day	2.8E-08
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-09	mg/kg/day	2.0E-02	mg/kg/day	1.8E-07
				TRICHLOROETHENE	2.1E-03	ug/m3	8.6E-09	mg/kg/day	7.0E-03	mg/kg/day^{-1}	6.0E-11	2.4E-08	mg/kg/day	1.7E-01	mg/kg/day	1.4E-07
				TRICHLOROFLUOROMETHANE (FREON 11)	3.8E-03	ug/m3	1.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-08	mg/kg/day	2.0E-01	mg/kg/day	2.2E-07
			Exp. Route Total							Minimum	2.0E-09				Minimum	2.2E-05
		Exposure Point Total								Minimum	2.0E-09				Minimum	2.2E-05
Soil Gas - Outdoor Air Total										Minimum	2.0E-09				Minimum	2.2E-05
										Total of Receptor Risks Across All Media	8.6E-06	Total of Receptor Hazards Across All Media				1.5E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	2.8E-01	mg/kg/day	1.6E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.2E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.6E-11	3.3E-09	mg/kg/day	4.0E-03	mg/kg/day	8.3E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.7E-11	8.2E-09	mg/kg/day	1.0E-01	mg/kg/day	8.2E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	5.0E-02	mg/kg/day	7.6E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.2E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.0E-10	6.2E-09	mg/kg/day	2.0E-02	mg/kg/day	3.1E-07
				1,4-DIOXANE	2.8E+01	mg/kg	9.8E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.6E-07	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-07	mg/kg/day	4.0E-03	mg/kg/day	9.1E-05
				4,4'-DDE	1.4E-01	mg/kg	5.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.7E-08	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.1E-08	8.7E-08	mg/kg/day	5.0E-04	mg/kg/day	1.7E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9.6E-03
				ANTIMONY	1.2E+01	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	4.0E-04	mg/kg/day	3.0E-02
				BARIUM	1.6E+02	mg/kg	5.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.7E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.5E-07	8.2E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.2E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.7E-06	6.2E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-07	4.3E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	3.0E-01	mg/kg/day	5.1E-05
				BERYLLIUM	5.1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	8.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-07	2.3E-05	mg/kg/day	2.0E-02	mg/kg/day	1.1E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-07	mg/kg/day	2.0E-01	mg/kg/day	3.7E-06
				CADMIUM	1.2E+00	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	1.0E-03	mg/kg/day	1.2E-03
				CHLOROFORM	4.7E-03	mg/kg	1.6E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	5.1E-11	4.6E-09	mg/kg/day	1.0E-02	mg/kg/day	4.6E-07
				CHROMIUM III	7.1E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	1.5E+00	mg/kg/day	4.6E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	3.0E-03	mg/kg/day	3.8E-03
				CHRYSENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.6E-07	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	4.6E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-02	mg/kg/day	9.9E-04
				DIELDRIN	3.1E-02	mg/kg	1.1E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-07	3.0E-08	mg/kg/day	5.0E-05	mg/kg/day	6.1E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-07	mg/kg/day	4.0E-02	mg/kg/day	8.8E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7.6E-02
				ISOPHORONE	8.2E+00	mg/kg	2.9E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.7E-09	8.0E-06	mg/kg/day	2.0E-01	mg/kg/day	4.0E-05
				LEAD	6.0E+01	mg/kg	2.1E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.8E-07	5.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	2.8E-01	mg/kg	9.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.1E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	5.0E-03	mg/kg/day	7.7E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-07	mg/kg/day	2.0E-02	mg/kg/day	3.9E-05

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake	
	Surface and Subsurface Soil
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	
	Surface and Subsurface Soil
Ingestion:	9.6E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	8.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.2E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.9E-07	3.3E-07	mg/kg/day	2.0E-05	mg/kg/day	1.6E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7.0E-03
				PYRENE	1.9E+00	mg/kg	6.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.1E-05
				SILVER	6.1E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	5.0E-03	mg/kg/day	1.2E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	8.1E-07	4.2E-06	mg/kg/day	1.0E-02	mg/kg/day	4.2E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	9.8E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.3E-10	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.1E-05
				VANADIUM	4 7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1 0E-03	mg/kg/day	4.6E-02
				ZINC	9.5E+01	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-05	mg/kg/day	3.0E-01	mg/kg/day	3.1E-04
			Exp. Route Total								6.4E-06					2.3E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3 9E-03	mg/kg	9.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2 4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6 3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.5E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.7E-07	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8 6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	4.0E-02	mg/kg/day	6.0E-05
				4,4'-DDE	1.4E-01	mg/kg	3.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	9.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.0E-07	mg/kg/day	1 0E-02	mg/kg/day^{-1}	2.1E-09	5.7E-07	mg/kg/day	1.7E-02	mg/kg/day	3 4E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.9E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.0E-07	5.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	3.0E+00	mg/kg/day	3.4E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.5E-08	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7 5E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	2.0E+00	mg/kg/day	2.4E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-06	mg/kg/day	2 5E-02	mg/kg/day	3.2E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age.	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.6E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.3E-07	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-07	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.1E-01	mg/kg/day	7.6E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.9E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.8E-09	5.3E-05	mg/kg/day	2.0E+00	mg/kg/day	2.6E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-06	mg/kg/day	1.5E-01	mg/kg/day	3.3E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.4E-07	2.2E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	1.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.2E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	9.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.6E-06					2.3E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.0E-12	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-11	mg/kg/day	4.0E-02	mg/kg/day	1.0E-09
				4,4'-DDE	1.4E-01	mg/kg	5.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.7E-14	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.5E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.5E-14	9.7E-12	mg/kg/day	1.7E-02	mg/kg/day	5.8E-10
				ALUMINUM	9.8E+03	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	4.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	6.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.3E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5.1E-12	9.1E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.9E-11	7.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.7E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-12	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-09	mg/kg/day	3.0E+00	mg/kg/day	5.7E-10
				BERYLLIUM	5.1E-01	mg/kg	2.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.0E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.3E-12	2.5E-09	mg/kg/day	2.0E-01	mg/kg/day	1.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	2.0E+00	mg/kg/day	4.1E-11
				CADMIUM	1.2E+00	mg/kg	4.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-10	mg/kg/day	2.5E-02	mg/kg/day	5.5E-09
				CHLOROFORM	4.7E-03	mg/kg	1.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.7E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.5E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.3E-12	4.1E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.2E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.9E-12	3.4E-12	mg/kg/day	5.0E-04	mg/kg/day	6.8E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-11	mg/kg/day	3.1E-01	mg/kg/day	1.3E-10
				IRON	2.3E+04	mg/kg	9.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.2E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.0E-14	8.9E-10	mg/kg/day	2.0E+00	mg/kg/day	4.5E-10
				LEAD	6.0E+01	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-11	mg/kg/day	1.5E-01	mg/kg/day	5.6E-10
				NICKEL	2.5E+01	mg/kg	9.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.2E-12	3.7E-11	mg/kg/day	1.4E-04	mg/kg/day	2.6E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	5.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.1E-07
				PYRENE	1.9E+00	mg/kg	7.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	2.3E-01	mg/kg/day	8.9E-10
				SILVER	6.1E-01	mg/kg	2.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	7.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								7.8E-11					4.0E-07

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	*Exposure* Medium	*Exposure* Point	*Exposure* Route	*Chemical* of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									1.1E-05					2.5E-01
Surface Soil Total											1.1E-05					2.5E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	1.2E+02	ug/m3	6.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-02	mg/kg/day	6.3E-01	mg/kg/day	2.7E-02
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.3E+02	ug/m3	2.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-02	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.2E+01	ug/m3	6.4E-04	mg/kg/day	5.7E-03	mg/kg/day^{-1}	3.7E-06	1.8E-03	mg/kg/day	1.4E-01	mg/kg/day	1.3E-02
				1,1-DICHLOROETHENE	2.4E+02	ug/m3	1.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-02	mg/kg/day	5.7E-02	mg/kg/day	6.2E-01
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	8.9E-01	ug/m3	4.7E-05	mg/kg/day	9.1E-02	mg/kg/day^{-1}	4.3E-06	1.3E-04	mg/kg/day	1.4E-03	mg/kg/day	9.5E-02
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	4.3E-02	ug/m3	2.3E-06	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.3E-08	6.4E-06	mg/kg/day	2.6E-03	mg/kg/day	2.5E-03
				ACETONE	2.7E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	9.0E-01	mg/kg/day	4.4E-04
				BENZENE	5.0E-01	ug/m3	2.7E-05	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.7E-06	7.5E-05	mg/kg/day	8.6E-03	mg/kg/day	8.7E-03
				CARBON DISULFIDE	2.0E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.0E-01	mg/kg/day	1.5E-03
				CARBON TETRACHLORIDE	7.6E-02	ug/m3	4.0E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.0E-07	1.1E-05	mg/kg/day	1.1E-02	mg/kg/day	9.9E-04
				CHLOROFORM	2.3E+00	ug/m3	1.2E-04	mg/kg/day	8.1E-02	mg/kg/day^{-1}	9.7E-06	3.4E-04	mg/kg/day	8.6E-02	mg/kg/day	3.9E-03
				CIS-1,2-DICHLOROETHENE	5.6E+00	ug/m3	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.4E-04	mg/kg/day	1.0E-02	mg/kg/day	8.4E-02
				DICHLORODIFLUOROMETHANE	7.2E-01	ug/m3	3.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-04	mg/kg/day	5.7E-02	mg/kg/day	1.9E-03
				M,P-XYLENES	1.8E-01	ug/m3	9.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-05	mg/kg/day	2.9E-02	mg/kg/day	9.6E-04
				TETRACHLOROETHENE	3.8E+02	ug/m3	2.0E-02	mg/kg/day	2.1E-02	mg/kg/day^{-1}	4.1E-04	5.6E-02	mg/kg/day	1.0E-02	mg/kg/day	5.6E+00
				TOLUENE	5.6E-01	ug/m3	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	8.6E-02	mg/kg/day	9.7E-04
				TRANS-1,2-DICHLOROETHENE	2.0E+00	ug/m3	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	2.0E-02	mg/kg/day	1.5E-02
				TRICHLOROETHENE	6.1E+01	ug/m3	3.2E-03	mg/kg/day	7.0E-03	mg/kg/day^{-1}	2.3E-05	9.0E-03	mg/kg/day	1.7E-01	mg/kg/day	5.3E-02
				TRICHLOROFLUOROMETHANE (FREON 11)	1.7E+02	ug/m3	9.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-02	mg/kg/day	2.0E-01	mg/kg/day	1.3E-01
			Exp. Route Total								Maximum	4.6E-04				Maximum	6.7E+00
		Exposure Point Total									Maximum	4.6E-04				Maximum	6.7E+00
Soil Gas - Indoor Air Total											Maximum	4.6E-04				Maximum	6.7E+00
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E+00	ug/m3	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-05	mg/kg/day	6.3E-01	mg/kg/day	6.4E-05
5-6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	2.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.8E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.3E-01	ug/m3	1.5E-06	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.6E-09	4.2E-06	mg/kg/day	1.4E-01	mg/kg/day	2.9E-05
				1,1-DICHLOROETHENE	4.7E+00	ug/m3	3.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.8E-05	mg/kg/day	5.7E-02	mg/kg/day	1.5E-03
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	1.9E-02	ug/m3	1.2E-07	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.1E-08	3.5E-07	mg/kg/day	1.4E-03	mg/kg/day	2.5E-04
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	6.3E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.3E-11	1.8E-08	mg/kg/day	2.6E-03	mg/kg/day	6.9E-06
				ACETONE	5.9E-02	ug/m3	3.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	9.0E-01	mg/kg/day	1.2E-06

TABLE A3-7.9 - All Parcels, RME, Maximum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake	Surface and Subsurface Soil
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	Surface and Subsurface Soil
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BENZENE	9.9E-03	ug/m3	6.6E-08	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6.6E-09	1.8E-07	mg/kg/day	8.6E-03	mg/kg/day	2.1E-05
				CARBON DISULFIDE	4.2E-02	ug/m3	2.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-07	mg/kg/day	2.0E-01	mg/kg/day	3.9E-06
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	9.6E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.4E-09	2.7E-08	mg/kg/day	1.1E-02	mg/kg/day	2.3E-06
				CHLOROFORM	4.7E-02	ug/m3	3.1E-07	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.5E-08	8.8E-07	mg/kg/day	8.6E-02	mg/kg/day	1.0E-05
				CIS-1,2-DICHLOROETHENE	1.0E-01	ug/m3	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-06	mg/kg/day	1.0E-02	mg/kg/day	1.9E-04
				DICHLORODIFLUOROMETHANE	1.6E-02	ug/m3	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	5.7E-02	mg/kg/day	5.1E-06
				M,P-XYLENES	3.4E-03	ug/m3	2.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-08	mg/kg/day	2.9E-02	mg/kg/day	2.2E-06
				TETRACHLOROETHENE	7.0E+00	ug/m3	4.6E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	9.6E-07	1.3E-04	mg/kg/day	1.0E-02	mg/kg/day	1.3E-02
				TOLUENE	1.1E-02	ug/m3	7.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-07	mg/kg/day	8.6E-02	mg/kg/day	2.4E-06
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	2.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-07	mg/kg/day	2.0E-02	mg/kg/day	3.5E-05
				TRICHLOROETHENE	1.2E+00	ug/m3	7.7E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.4E-08	2.1E-05	mg/kg/day	1.7E-01	mg/kg/day	1.3E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.3E+00	ug/m3	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	2.0E-01	mg/kg/day	3.1E-04
			Exp. Route Total							Maximum	1.1E-06				Maximum	1.6E-02
		Exposure Point Total								Maximum	1.1E-06				Maximum	1.6E-02
Soil Gas - Outdoor Air Total										Maximum	1.1E-06				Maximum	1.6E-02
										Total of Receptor Risks Across All Media	4.7E-04	Total of Receptor Hazards Across All Media				6.9E+00

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	*Future*
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil	
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil	
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	2.8E-01	mg/kg/day	1.6E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.2E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	8.6E-11	3.3E-09	mg/kg/day	4.0E-03	mg/kg/day	8.3E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.9E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.7E-11	8.2E-09	mg/kg/day	1.0E-01	mg/kg/day	8.2E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	5.0E-02	mg/kg/day	7.6E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-07	mg/kg/day	9.0E-02	mg/kg/day	2.6E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.2E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.0E-10	6.2E-09	mg/kg/day	2.0E-02	mg/kg/day	3.1E-07
				1,4-DIOXANE	2.8E+01	mg/kg	9 8E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.6E-07	2.7E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-07	mg/kg/day	4.0E-03	mg/kg/day	9.1E-05
				4,4'-DDE	1.4E-01	mg/kg	5.0E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.7E-08	1.4E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.1E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.1E-08	8.7E-08	mg/kg/day	5.0E-04	mg/kg/day	1.7E-04
				ALUMINUM	9.8E+03	mg/kg	3.4E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	9.6E-03
				ANTIMONY	1.2E+01	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	4.0E-04	mg/kg/day	3.0E-02
				BARIUM	1.6E+02	mg/kg	5.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.7E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.5E-07	8.2E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.2E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.7E-06	6.2E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.8E-07	4.3E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-05	mg/kg/day	3.0E-01	mg/kg/day	5.1E-05
				BERYLLIUM	5 1E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	2.0E-03	mg/kg/day	2.5E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	8.1E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.1E-07	2.3E-05	mg/kg/day	2.0E-02	mg/kg/day	1.1E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-07	mg/kg/day	2.0E-01	mg/kg/day	3.7E-06
				CADMIUM	1.2E+00	mg/kg	4.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-06	mg/kg/day	1.0E-03	mg/kg/day	1.2E-03
				CHLOROFORM	4.7E-03	mg/kg	1.6E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	5.1E-11	4.6E-09	mg/kg/day	1 0E-02	mg/kg/day	4.6E-07
				CHROMIUM III	7.1E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	1.5E+00	mg/kg/day	4.6E-05
				CHROMIUM VI	1.2E+01	mg/kg	4.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1 2E-05	mg/kg/day	3.0E-03	mg/kg/day	3.8E-03
				CHRYSENE	3.7E+00	mg/kg	1.3E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.6E-07	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	4.6E-04
				COPPER	4.0E+01	mg/kg	1.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-05	mg/kg/day	4.0E-02	mg/kg/day	9.9E-04
				DIELDRIN	3.1E-02	mg/kg	1.1E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.7E-07	3.0E-08	mg/kg/day	5.0E-05	mg/kg/day	6.1E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-07	mg/kg/day	4.0E-02	mg/kg/day	8.8E-06
				IRON	2.3E+04	mg/kg	8.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-02	mg/kg/day	3.0E-01	mg/kg/day	7.6E-02
				ISOPHORONE	8.2E+00	mg/kg	2.9E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.7E-09	8.0E-06	mg/kg/day	2.0E-01	mg/kg/day	4.0E-05
				LEAD	6.0E+01	mg/kg	2.1E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.8E-07	5.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	1.4E-01	mg/kg/day	2.5E-03
				MERCURY	2.8E-01	mg/kg	9.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.1E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-06	mg/kg/day	5.0E-03	mg/kg/day	7.7E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-07	mg/kg/day	2.0E-02	mg/kg/day	3.9E-05

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

	Surface and Subsurface Soil
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

	Surface and Subsurface Soil
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	8.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-05	mg/kg/day	2.0E-02	mg/kg/day	1.2E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.2E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.9E-07	3.3E-07	mg/kg/day	2.0E-05	mg/kg/day	1.6E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.7E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.7E-07	4.9E-07	mg/kg/day	7.0E-05	mg/kg/day	7.0E-03
				PYRENE	1.9E+00	mg/kg	6.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	3.0E-02	mg/kg/day	6.1E-05
				SILVER	6.1E-01	mg/kg	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-07	mg/kg/day	5.0E-03	mg/kg/day	1.2E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.5E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	8.1E-07	4.2E-06	mg/kg/day	1.0E-02	mg/kg/day	4.2E-04
				THALLIUM	2.0E+00	mg/kg	7.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-06	mg/kg/day	6.6E-05	mg/kg/day	3.0E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	9.8E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.3E-10	2.7E-08	mg/kg/day	3.0E-04	mg/kg/day	9.1E-05
				VANADIUM	4.7E+01	mg/kg	1.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-05	mg/kg/day	1.0E-03	mg/kg/day	4.6E-02
				ZINC	9.5E+01	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-05	mg/kg/day	3.0E-01	mg/kg/day	3.1E-04
			Exp. Route Total								6.4E-06					2.3E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.9E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	9.0E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	6.5E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.7E-07	1.8E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	8.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-06	mg/kg/day	4.0E-02	mg/kg/day	6.0E-05
				4,4'-DDE	1.4E-01	mg/kg	3.3E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.4E-09	9.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.1E-09	5.7E-07	mg/kg/day	1.7E-02	mg/kg/day	3.4E-05
				ALUMINUM	9.8E+03	mg/kg	2.3E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	6.3E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.8E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-03	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.9E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.0E-07	5.4E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.5E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-06	4.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.0E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.6E-07	2.8E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-04	mg/kg/day	3.0E+00	mg/kg/day	3.4E-05
				BERYLLIUM	5.1E-01	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	5.3E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	7.5E-08	1.5E-04	mg/kg/day	2.0E-01	mg/kg/day	7.5E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-06	mg/kg/day	2.0E+00	mg/kg/day	2.4E-06
				CADMIUM	1.2E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-06	mg/kg/day	2.5E-02	mg/kg/day	3.2E-04
				CHLOROFORM	4.7E-03	mg/kg	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.6E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.6E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	*Exposure* Medium	*Exposure* Point	*Exposure* Route	*Chemical* of Potential Concern	*EPC*		*Cancer Risk Calculations*					*Non-Cancer Hazard Calculations*				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	8.6E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.3E-07	2.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	9.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	7.2E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.1E-07	2.0E-07	mg/kg/day	5.0E-04	mg/kg/day	4.0E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	8.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	3.1E-01	mg/kg/day	7.6E-06
				IRON	2.3E+04	mg/kg	5.4E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	*8.2E+00*	*mg/kg*	1.9E-05	*mg/kg/day*	*9.5E-05*	*mg/kg/day^{-1}*	*1.8E-09*	5.3E-05	*mg/kg/day*	*2.0E+00*	*mg/kg/day*	2.6E-05
				LEAD	6.0E+01	mg/kg	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	8.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	6.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	9.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-06	mg/kg/day	1.5E-01	mg/kg/day	3.3E-05
				NICKEL	2.5E+01	mg/kg	5.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.8E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	5.4E-07	2.2E-06	mg/kg/day	1.4E-04	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.2E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.1E-07	3.2E-06	mg/kg/day	5.0E-04	mg/kg/day	6.5E-03
				PYRENE	1.9E+00	mg/kg	4.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.3E-01	mg/kg/day	5.2E-05
				SILVER	6.1E-01	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	9.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	6.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.6E-06					2.3E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.3E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	9.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.5E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.1E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.0E-12	3.1E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.5E-11	mg/kg/day	NA	*mg/kg/day^{-1}*	---	*4.1E-11*	mg/kg/day	*4.0E-02*	mg/kg/day	1.0E-09
				4,4'-DDE	1.4E-01	mg/kg	5.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.7E-14	1.6E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.5E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.5E-14	9.7E-12	mg/kg/day	1.7E-02	mg/kg/day	5.8E-10
				ALUMINUM	9.8E+03	mg/kg	3.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	4.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	6.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8 4E-01	mg/kg	3.3E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	5 1E-12	9.1E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.5E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3 9E-11	7.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.7E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-12	4.8E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	6.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1 7E-09	mg/kg/day	3.0E+00	mg/kg/day	5 7E-10
				BERYLLIUM	5.1E-01	mg/kg	2.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5 5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	9.0E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.3E-12	2.5E-09	mg/kg/day	2.0E-01	mg/kg/day	1.3E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-11	mg/kg/day	2.0E+00	mg/kg/day	4.1E-11
				CADMIUM	1.2E+00	mg/kg	4.9E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-10	mg/kg/day	2.5E-02	mg/kg/day	5.5E-09
				CHLOROFORM	4.7E-03	mg/kg	1 8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5 1E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7 7E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.5E-10	mg/kg/day	1 6E-02	mg/kg/day^{-1}	2.3E-12	4.1E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3 6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1 2E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.9E-12	3.4E-12	mg/kg/day	5.0E-04	mg/kg/day	6 8E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1 4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-11	mg/kg/day	3.1E-01	mg/kg/day	1.3E-10
				IRON	2.3E+04	mg/kg	9.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.2E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.0E-14	8.9E-10	mg/kg/day	2.0E+00	mg/kg/day	4.5E-10
				LEAD	6.0E+01	mg/kg	2.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1 4E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.3E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-11	mg/kg/day	1.5E-01	mg/kg/day	5.6E-10
				NICKEL	2.5E+01	mg/kg	9.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	9.2E-12	3 7E-11	mg/kg/day	1.4E-04	mg/kg/day	2.6E-07
				PHENANTHRENE	3.0E+00	mg/kg	1 2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.0E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.4E-11	5.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.1E-07
				PYRENE	1.9E+00	mg/kg	7.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-10	mg/kg/day	2.3E-01	mg/kg/day	8.9E-10
				SILVER	6.1E-01	mg/kg	2 4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	7.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.1E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								7.8E-11					4.0E-07

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									1.1E-05					2.5E-01
Surface Soil Total											1.1E-05					2.5E-01
Soil Gas	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	4.6E-02	ug/m3	2.5E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-06	mg/kg/day	6.3E-01	mg/kg/day	1.1E-05
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	6.0E-01	ug/m3	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.9E-05	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	1.1E-02	ug/m3	6.1E-07	mg/kg/day	5.7E-03	mg/kg/day^{-1}	3.5E-09	1.7E-06	mg/kg/day	1.4E-01	mg/kg/day	1.2E-05
				1,1-DICHLOROETHENE	3.0E-02	ug/m3	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-06	mg/kg/day	5.7E-02	mg/kg/day	7.8E-05
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	3.7E-02	ug/m3	2.0E-06	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.8E-07	5.5E-06	mg/kg/day	1.4E-03	mg/kg/day	3.9E-03
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	4.3E-02	ug/m3	2.3E-06	mg/kg/day	1.0E-02	mg/kg/day^{-1}	2.3E-08	6.4E-06	mg/kg/day	2.6E-03	mg/kg/day	2.5E-03
				ACETONE	3.6E-02	ug/m3	1.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-06	mg/kg/day	9.0E-01	mg/kg/day	5.9E-06
				BENZENE	2.9E-03	ug/m3	1.6E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	1.6E-08	4.4E-07	mg/kg/day	8.6E-03	mg/kg/day	5.1E-05
				CARBON DISULFIDE	1.5E-01	ug/m3	7.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.0E-01	mg/kg/day	1.1E-04
				CARBON TETRACHLORIDE	7.6E-02	ug/m3	4.0E-06	mg/kg/day	1.5E-01	mg/kg/day^{-1}	6.0E-07	1.1E-05	mg/kg/day	1.1E-02	mg/kg/day	9.9E-04
				CHLOROFORM	2.9E-02	ug/m3	1.5E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	1.2E-07	4.3E-06	mg/kg/day	8.6E-02	mg/kg/day	5.0E-05
				CIS-1,2-DICHLOROETHENE	8.9E-02	ug/m3	4.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-05	mg/kg/day	1.0E-02	mg/kg/day	1.3E-03
				DICHLORODIFLUOROMETHANE	5.3E-03	ug/m3	2.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.9E-07	mg/kg/day	5.7E-02	mg/kg/day	1.4E-05
				M,P-XYLENES	4.2E-03	ug/m3	2.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-07	mg/kg/day	2.9E-02	mg/kg/day	2.2E-05
				TETRACHLOROETHENE	2.9E-01	ug/m3	1.6E-05	mg/kg/day	2.1E-02	mg/kg/day^{-1}	3.2E-07	4.4E-05	mg/kg/day	1.0E-02	mg/kg/day	4.4E-03
				TOLUENE	1.0E-02	ug/m3	5.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-06	mg/kg/day	8.6E-02	mg/kg/day	1.8E-05
				TRANS-1,2-DICHLOROETHENE	1.7E-02	ug/m3	9.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	2.0E-02	mg/kg/day	1.3E-04
				TRICHLOROETHENE	1.1E-01	ug/m3	5.7E-06	mg/kg/day	7.0E-03	mg/kg/day^{-1}	4.0E-08	1.6E-05	mg/kg/day	1.7E-01	mg/kg/day	9.4E-05
				TRICHLOROFLUOROMETHANE (FREON 11)	1.9E-01	*ug/m3*	1.0E-05	*mg/kg/day*	NA	mg/kg/day^{-1}	---	2.9E-05	*mg/kg/day*	2.0E-01	*mg/kg/day*	1.4E-04
			Exp. Route Total							Minimum	1.3E-06				Minimum	1.4E-02
		Exposure Point Total								Minimum	1.3E-06				Minimum	1.4E-02
Soil Gas - Indoor Air Total										Minimum	1.3E-06				Minimum	1.4E-02
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	8.8E-04	ug/m3	5.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	6.3E-01	mg/kg/day	2.6E-08
			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.2E-03	ug/m3	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.1E-04	ug/m3	1.4E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.1E-12	4.0E-09	mg/kg/day	1.4E-01	mg/kg/day	2.8E-08
				1,1-DICHLOROETHENE	5.9E-04	ug/m3	3.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-08	mg/kg/day	5.7E-02	mg/kg/day	1.9E-07
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	7.7E-04	*ug/m3*	5.1E-09	*mg/kg/day*	9.1E-02	mg/kg/day^{-1}	4.6E-10	1.4E-08	*mg/kg/day*	1.4E-03	mg/kg/day	1.0E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	6.3E-09	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.3E-11	1.8E-08	mg/kg/day	2.6E-03	mg/kg/day	6.9E-06
				ACETONE	8.0E-04	ug/m3	5.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-08	mg/kg/day	9.0E-01	mg/kg/day	1.6E-08

TABLE A3-7.9 - All Parcels, RME, Minimum Indoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor Age:	Adult

Cancer Intake	Surface and Subsurface Soil
Ingestion:	3.5E-07
Dermal:	2.3E-06
Inhalation of soil particulates	3.9E-11
Inhalation of outdoor air	6.6E-03
Inhalation of soil vapor:	5.3E-02

Noncancer Intake	Surface and Subsurface Soil
Ingestion:	9.8E-07
Dermal:	6.5E-06
Inhalation of soil particulates	1.1E-10
Inhalation of outdoor air	1.9E-02
Inhalation of soil vapor:	1.5E-01

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BENZENE	5.8E-05	ug/m3	3.8E-10	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.8E-11	1.1E-09	mg/kg/day	8.6E-03	mg/kg/day	1.3E-07
				CARBON DISULFIDE	3.1E-03	ug/m3	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-08	mg/kg/day	2.0E-01	mg/kg/day	2.9E-07
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	9.6E-09	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.4E-09	2.7E-08	mg/kg/day	1.1E-02	mg/kg/day	2.3E-06
				CHLOROFORM	6.0E-04	ug/m3	4.0E-09	mg/kg/day	8.1E-02	mg/kg/day^{-1}	3.2E-10	1.1E-08	mg/kg/day	8.6E-02	mg/kg/day	1.3E-07
				CIS-1,2-DICHLOROETHENE	1.7E-03	ug/m3	1.1E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-08	mg/kg/day	1.0E-02	mg/kg/day	3.1E-06
				DICHLORODIFLUOROMETHANE	1.2E-04	ug/m3	7.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-09	mg/kg/day	5.7E-02	mg/kg/day	3.8E-08
				M,P-XYLENES	7.7E-05	ug/m3	5.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-09	mg/kg/day	2.9E-02	mg/kg/day	5.0E-08
				TETRACHLOROETHENE	5.4E-03	ug/m3	3.6E-08	mg/kg/day	2.1E-02	mg/kg/day^{-1}	7.4E-10	1.0E-07	mg/kg/day	1.0E-02	mg/kg/day	1.0E-05
				TOLUENE	2.0E-04	ug/m3	1.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-09	mg/kg/day	8.6E-02	mg/kg/day	4.4E-08
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.8E-09	mg/kg/day	2.0E-02	mg/kg/day	2.9E-07
				TRICHLOROETHENE	2.1E-03	ug/m3	1.4E-08	mg/kg/day	7.0E-03	mg/kg/day^{-1}	9.5E-11	3.8E-08	mg/kg/day	1.7E-01	mg/kg/day	2.2E-07
				TRICHLOROFLUOROMETHANE (FREON 11)	3.8E-03	ug/m3	2.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-08	mg/kg/day	2.0E-01	mg/kg/day	3.5E-07
			Exp. Route Total							Minimum	3.2E-09				Minimum	3.4E-05
		Exposure Point Total								Minimum	3.2E-09				Minimum	3.4E-05
Soil Gas - Outdoor Air Total										Minimum	3.2E-09				Minimum	3.4E-05
										Total of Receptor Risks Across All Media	1.2E-05	Total of Receptor Hazards Across All Media				2.7E-01

ND: Not Detected.
NS: Not selected as an exposure pathway.
na: The chemical is listed, value is not available.
ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.
---: Risk was not calculated for chemical.
mg/kg: milligram per kilogram.
mg/kg/day: milligram per kilogram per day.
mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	2.8E-01	mg/kg/day	1.5E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	7.7E-11	3.0E-09	mg/kg/day	4.0E-03	mg/kg/day	7.5E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.6E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.5E-11	7.4E-09	mg/kg/day	1.0E-01	mg/kg/day	7.4E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-09	mg/kg/day	5.0E-02	mg/kg/day	6.9E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-07	mg/kg/day	9.0E-02	mg/kg/day	2.3E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.0E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.8E-10	5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	2.8E-07
				1,4-DIOXANE	2.8E+01	mg/kg	8.8E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.4E-07	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	4.0E-03	mg/kg/day	8.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.5E-08	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	9.5E-09	7.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.6E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-03	mg/kg/day	1.0E+00	mg/kg/day	8.7E-03
				ANTIMONY	1.2E+01	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.7E-02
				BARIUM	1.6E+02	mg/kg	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	6.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.2E-07	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.4E-06	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.7E-07	3.9E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	4.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	3.0E-01	mg/kg/day	4.6E-05
				BERYLLIUM	5.1E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-07	mg/kg/day	2.0E-03	mg/kg/day	2.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.3E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.0E-07	2.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.0E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6 7E-07	mg/kg/day	2.0E-01	mg/kg/day	3.3E-06
				CADMIUM	1.2E+00	mg/kg	3.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1 1E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.6E-11	4.1E-09	mg/kg/day	1.0E-02	mg/kg/day	4.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	1.5E+00	mg/kg/day	4.2E-05
				CHROMIUM VI	1.2E+01	mg/kg	3.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	3.0E-03	mg/kg/day	3.5E-03
				CHRYSENE	3.7E+00	mg/kg	1.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.4E-07	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-06	mg/kg/day	2 0E-02	mg/kg/day	4 1E-04
				COPPER	4.0E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-05	mg/kg/day	4.0E-02	mg/kg/day	8.9E-04
				DIELDRIN	3.1E-02	mg/kg	9.8E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.6E-07	2.7E-08	mg/kg/day	5.0E-05	mg/kg/day	5.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	4.0E-02	mg/kg/day	7.9E-06
				IRON	2.3E+04	mg/kg	7.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-02	mg/kg/day	3.0E-01	mg/kg/day	6.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.4E-09	7.2E-06	mg/kg/day	2.0E-01	mg/kg/day	3.6E-05
				LEAD	6.0E+01	mg/kg	1.9E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.6E-07	5.3E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	1.4E-01	mg/kg/day	2.2E-03
				MERCURY	2.8E-01	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-07	mg/kg/day	3.0E-04	mg/kg/day	8.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	5.0E-03	mg/kg/day	6.9E-04
				NAPHTHALENE	7.9E-01	mg/kg	2 5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-07	mg/kg/day	2.0E-02	mg/kg/day	3.5E-05

TABLE A3-7.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				NICKEL	2.5E+01	mg/kg	7.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.1E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.3E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.6E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.9E-07	4.4E-07	mg/kg/day	7.0E-05	mg/kg/day	6.3E-03
				PYRENE	1.9E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	5.5E-05
				SILVER	6.1E-01	mg/kg	1.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.1E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.3E-07	3.8E-06	mg/kg/day	1.0E-02	mg/kg/day	3.8E-04
				THALLIUM	2.0E+00	mg/kg	6.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	6.6E-05	mg/kg/day	2.7E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	8.8E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.1E-10	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.2E-05
				VANADIUM	4.7E+01	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-05	mg/kg/day	1.0E-03	mg/kg/day	4.1E-02
				ZINC	9.5E+01	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	3.0E-01	mg/kg/day	2.8E-04
			Exp. Route Total								5.8E-06					2.1E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	9.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	5.8E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.6E-07	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	7.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	4.0E-02	mg/kg/day	5.4E-05
				4,4'-DDE	1.4E-01	mg/kg	3.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.0E-09	8.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.9E-09	5.1E-07	mg/kg/day	1.7E-02	mg/kg/day	3.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.3E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.1E-06	3.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	9.1E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-07	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-05	mg/kg/day	3.0E+00	mg/kg/day	3.0E-05
				BERYLLIUM	5.1E-01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	6.7E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	2.0E+00	mg/kg/day	2.2E-06
				CADMIUM	1.2E+00	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	2.5E-02	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	9.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				CHRYSENE	3.7E+00	mg/kg	7.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.2E-07	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	8.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	6.5E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.0E-07	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	3.6E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-06	mg/kg/day	3.1E-01	mg/kg/day	6.8E-06
				IRON	2.3E+04	mg/kg	4.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.7E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.6E-09	4.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.4E-05
				LEAD	6.0E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	8.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.5E-01	mg/kg/day	3.0E-05
				NICKEL	2.5E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.0E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.9E-07	2.0E-06	mg/kg/day	1.4E-04	mg/kg/day	1.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.0E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.3E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	5.8E-03
				PYRENE	1.9E+00	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.3E-01	mg/kg/day	4.7E-05
				SILVER	6.1E-01	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	8.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.1E-06					2.1E-02
			Inhalation Soil Particulates	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	9.8E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.7E-12	2.8E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-11	mg/kg/day	4.0E-02	mg/kg/day	9.2E-10
				4,4'-DDE	1.4E-01	mg/kg	5.0E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.1E-14	1.4E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.1E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.2E-14	8.7E-12	mg/kg/day	1.7E-02	mg/kg/day	5.2E-10
				ALUMINUM	9.8E+03	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	5.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.9E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.6E-12	8.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.2E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.5E-11	6.3E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.4E-12	4.3E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	3.0E+00	mg/kg/day	5.1E-10
				BERYLLIUM	5.1E-01	mg/kg	1.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	8.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.1E-12	2.3E-09	mg/kg/day	2.0E-01	mg/kg/day	1.1E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-11	mg/kg/day	2.0E+00	mg/kg/day	3.7E-11
				CADMIUM	1.2E+00	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	2.5E-02	mg/kg/day	4.9E-09
				CHLOROFORM	4.7E-03	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.3E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.0E-12	3.7E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-12	3.1E-12	mg/kg/day	5.0E-04	mg/kg/day	6.1E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-11	mg/kg/day	3.1E-01	mg/kg/day	1.2E-10
				IRON	2.3E+04	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.7E-14	8.0E-10	mg/kg/day	2.0E+00	mg/kg/day	4.0E-10
				LEAD	6.0E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	9.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-11	mg/kg/day	1.5E-01	mg/kg/day	5.1E-10
				NICKEL	2.5E+01	mg/kg	8.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.2E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.3E-12	3.3E-11	mg/kg/day	1.4E-04	mg/kg/day	2.3E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.8E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-11	4.9E-11	mg/kg/day	5.0E-04	mg/kg/day	9.8E-08
				PYRENE	1.9E+00	mg/kg	6.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	2.3E-01	mg/kg/day	8.0E-10
				SILVER	6.1E-01	mg/kg	2.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	7.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	9.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								7.0E-11					3.6E-07

TABLE A3-7 10 - All Parcels, CTE, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface & Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface & Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									9.9E-06					2.3E-01
Surface Soil Total											9.9E-06					2.3E-01
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E+00	ug/m3	1.0E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.9E-04	mg/kg/day	6.3E-01	mg/kg/day	4.6E-04
5 to 6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	1.8E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.9E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.3E-01	ug/m3	1.1E-05	mg/kg/day	5.7E-03	$mg/kg/day^{-1}$	6.2E-08	3.0E-05	mg/kg/day	1.4E-01	mg/kg/day	2.1E-04
				1,1-DICHLOROETHENE	4.7E+00	ug/m3	2.3E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	6.3E-04	mg/kg/day	5.7E-02	mg/kg/day	1.1E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-1}$	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	1.9E-02	ug/m3	8.9E-07	mg/kg/day	9.1E-02	$mg/kg/day^{-1}$	8.1E-08	2.5E-06	mg/kg/day	1.4E-03	mg/kg/day	1.8E-03
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	$mg/kg/day^{-1}$	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	4.6E-08	mg/kg/day	1.0E-02	$mg/kg/day^{-1}$	4.6E-10	1.3E-07	mg/kg/day	2.6E-03	mg/kg/day	5.0E-05
				ACETONE	5.9E-02	ug/m3	2.8E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	7.9E-06	mg/kg/day	9.0E-01	mg/kg/day	8.7E-06
				BENZENE	9.9E-03	ug/m3	4.7E-07	mg/kg/day	1.0E-01	$mg/kg/day^{-1}$	4.7E-08	1.3E-06	mg/kg/day	8.6E-03	mg/kg/day	1.5E-04
				CARBON DISULFIDE	4.2E-02	ug/m3	2.0E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.8E-05
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	6.9E-08	mg/kg/day	1.5E-01	$mg/kg/day^{-1}$	1.0E-08	1.9E-07	mg/kg/day	1.1E-02	mg/kg/day	1.7E-05
				CHLOROFORM	4.7E-02	ug/m3	2.3E-06	mg/kg/day	8.1E-02	$mg/kg/day^{-1}$	1.8E-07	6.3E-06	mg/kg/day	8.6E-02	mg/kg/day	7.4E-05
				CIS-1,2-DICHLOROETHENE	1.0E-01	ug/m3	5.0E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.4E-05	mg/kg/day	1.0E-02	mg/kg/day	1.4E-03
				DICHLORODIFLUOROMETHANE	1.6E-02	ug/m3	7.5E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	2.1E-06	mg/kg/day	5.7E-02	mg/kg/day	3.7E-05
				M,P-XYLENES	3.4E-03	ug/m3	1.6E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.5E-07	mg/kg/day	2.9E-02	mg/kg/day	1.6E-05
				TETRACHLOROETHENE	7.0E+00	ug/m3	3.3E-04	mg/kg/day	2.1E-02	$mg/kg/day^{-1}$	6.9E-06	9.4E-04	mg/kg/day	1.0E-02	mg/kg/day	9.4E-02
				TOLUENE	1.1E-02	ug/m3	5.2E-07	mg/kg/day	NA	$mg/kg/day^{-1}$	---	1.5E-06	mg/kg/day	8.6E-02	mg/kg/day	1.7E-05
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	1.8E-06	mg/kg/day	NA	$mg/kg/day^{-1}$	---	5.0E-06	mg/kg/day	2.0E-02	mg/kg/day	2.5E-04
				TRICHLOROETHENE	1.2E+00	ug/m3	5.5E-05	mg/kg/day	7.0E-03	$mg/kg/day^{-1}$	3.9E-07	1.5E-04	mg/kg/day	1.7E-01	mg/kg/day	9.0E-04
				TRICHLOROFLUOROMETHANE (FREON 11)	3.3E+00	ug/m3	1.6E-04	mg/kg/day	NA	$mg/kg/day^{-1}$	---	4.5E-04	mg/kg/day	2.0E-01	mg/kg/day	2.2E-03
			Exp Route Total								Maximum	7.7E-06				Maximum 1.1E-01
		Exposure Point Total									Maximum	7.7E-06				Maximum 1.1E-01
Soil Gas - Outdoor Air Total											Maximum	7.7E-06				Maximum 1.1E-01
											Total of Receptor Risks Across All Media	1.8E-05	Total of Receptor Hazards Across All Media			3.4E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

TABLE A3-7.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-08	mg/kg/day	2.8E-01	mg/kg/day	1.5E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.1E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	7.7E-11	3.0E-09	mg/kg/day	4.0E-03	mg/kg/day	7.5E-07
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	2.6E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	1.5E-11	7.4E-09	mg/kg/day	1.0E-01	mg/kg/day	7.4E-08
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-09	mg/kg/day	5.0E-02	mg/kg/day	6.9E-08
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	7.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-07	mg/kg/day	9.0E-02	mg/kg/day	2.3E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.0E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.8E-10	5.5E-09	mg/kg/day	2.0E-02	mg/kg/day	2.8E-07
				1,4-DIOXANE	2.8E+01	mg/kg	8.8E-06	mg/kg/day	2.7E-02	mg/kg/day^{-1}	2.4E-07	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-07	mg/kg/day	4.0E-03	mg/kg/day	8.2E-05
				4,4'-DDE	1.4E-01	mg/kg	4.5E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.5E-08	1.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	2.8E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	9.5E-09	7.8E-08	mg/kg/day	5.0E-04	mg/kg/day	1.6E-04
				ALUMINUM	9.8E+03	mg/kg	3.1E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	8.7E-03	mg/kg/day	1.0E+00	mg/kg/day	8.7E-03
				ANTIMONY	1.2E+01	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.7E-02
				BARIUM	1.6E+02	mg/kg	5.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	6.9E-04
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.6E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	3.2E-07	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	2.4E-06	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.4E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	1.7E-07	3.9E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	4.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-05	mg/kg/day	3.0E-01	mg/kg/day	4.6E-05
				BERYLLIUM	5.1E-01	mg/kg	1.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.5E-07	mg/kg/day	2.0E-03	mg/kg/day	2.2E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	7.3E-06	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.0E-07	2.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.0E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-07	mg/kg/day	2.0E-01	mg/kg/day	3.3E-06
				CADMIUM	1.2E+00	mg/kg	3.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-06	mg/kg/day	1.0E-03	mg/kg/day	1.1E-03
				CHLOROFORM	4.7E-03	mg/kg	1.5E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	4.6E-11	4.1E-09	mg/kg/day	1.0E-02	mg/kg/day	4.1E-07
				CHROMIUM III	7.1E+01	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	1.5E+00	mg/kg/day	4.2E-05
				CHROMIUM VI	1.2E+01	mg/kg	3.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	3.0E-03	mg/kg/day	3.5E-03
				CHRYSENE	3.7E+00	mg/kg	1.2E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	1.4E-07	3.3E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	2.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-06	mg/kg/day	2.0E-02	mg/kg/day	4.1E-04
				COPPER	4.0E+01	mg/kg	1.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-05	mg/kg/day	4.0E-02	mg/kg/day	8.9E-04
				DIELDRIN	3.1E-02	mg/kg	9.8E-09	mg/kg/day	1.6E+01	mg/kg/day^{-1}	1.6E-07	2.7E-08	mg/kg/day	5.0E-05	mg/kg/day	5.5E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	4.0E-02	mg/kg/day	7.9E-06
				IRON	2.3E+04	mg/kg	7.3E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-02	mg/kg/day	3.0E-01	mg/kg/day	6.8E-02
				ISOPHORONE	8.2E+00	mg/kg	2.6E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	2.4E-09	7.2E-06	mg/kg/day	2.0E-01	mg/kg/day	3.6E-05
				LEAD	6.0E+01	mg/kg	1.9E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	1.6E-07	5.3E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-04	mg/kg/day	1.4E-01	mg/kg/day	2.2E-03
				MERCURY	2.8E-01	mg/kg	8.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-07	mg/kg/day	3.0E-04	mg/kg/day	8.2E-04
				MOLYBDENUM	3.9E+00	mg/kg	1.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.4E-06	mg/kg/day	5.0E-03	mg/kg/day	6.9E-04
				NAPHTHALENE	7.9E-01	mg/kg	2.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-07	mg/kg/day	2.0E-02	mg/kg/day	3.5E-05

TABLE A3-7.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	7.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.1E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.1E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	5.3E-07	3.0E-07	mg/kg/day	2.0E-05	mg/kg/day	1.5E-02
				PHENANTHRENE	3.0E+00	mg/kg	9.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.6E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	7.9E-07	4.4E-07	mg/kg/day	7.0E-05	mg/kg/day	6.3E-03
				PYRENE	1.9E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-06	mg/kg/day	3.0E-02	mg/kg/day	5.5E-05
				SILVER	6 1E-01	mg/kg	1.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-07	mg/kg/day	5.0E-03	mg/kg/day	1.1E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.4E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	7.3E-07	3.8E-06	mg/kg/day	1.0E-02	mg/kg/day	3.8E-04
				THALLIUM	2.0E+00	mg/kg	6.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-06	mg/kg/day	6.6E-05	mg/kg/day	2.7E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	8.8E-09	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.1E-10	2.5E-08	mg/kg/day	3.0E-04	mg/kg/day	8.2E-05
				VANADIUM	4.7E+01	mg/kg	1.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-05	mg/kg/day	1.0E-03	mg/kg/day	4.1E-02
				ZINC	9.5E+01	mg/kg	3.0E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-05	mg/kg/day	3.0E-01	mg/kg/day	2.8E-04
			Exp. Route Total								5.8E-06					2.1E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	9.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	5.8E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.6E-07	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	7.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	4.0E-02	mg/kg/day	5.4E-05
				4,4'-DDE	1.4E-01	mg/kg	3.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.0E-09	8.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8 9E-02	mg/kg	1.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.9E-09	5.1E-07	mg/kg/day	1 7E-02	mg/kg/day	3 1E-05
				ALUMINUM	9.8E+03	mg/kg	2.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.3E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.1E-06	3.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	9.1E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-07	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-05	mg/kg/day	3.0E+00	mg/kg/day	3.0E-05
				BERYLLIUM	5.1E-01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	6.7E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	2.0E+00	mg/kg/day	2.2E-06
				CADMIUM	1.2E+00	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	2.5E-02	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	9.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7 10 - All Parcels, CTE, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	7.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.2E-07	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	8.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	6.5E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.0E-07	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	3.6E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-06	mg/kg/day	3.1E-01	mg/kg/day	6.8E-06
				IRON	2.3E+04	mg/kg	4.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.7E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.6E-09	4.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.4E-05
				LEAD	6.0E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	8.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.5E-01	mg/kg/day	3.0E-05
				NICKEL	2.5E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.0E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.9E-07	2.0E-06	mg/kg/day	1.4E-04	mg/kg/day	1.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.0E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.3E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	5.8E-03
				PYRENE	1.9E+00	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.3E-01	mg/kg/day	4.7E-05
				SILVER	6.1E-01	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	8.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp Route Total								4.1E-06					2.1E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	1.7E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.0E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.4E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	8.4E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	9.8E-10	mg/kg/day	2.7E-03	mg/kg/day^{-1}	2.7E-12	2.8E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-11	mg/kg/day	4.0E-02	mg/kg/day	9.2E-10
				4,4'-DDE	1.4E-01	mg/kg	5.0E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	5.1E-14	1.4E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	3.1E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.2E-14	8.7E-12	mg/kg/day	1.7E-02	mg/kg/day	5.2E-10
				ALUMINUM	9.8E+03	mg/kg	3.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	9.7E-07	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	5.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	2.9E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	4.6E-12	8.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.2E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	3.5E-11	6.3E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	1.5E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.4E-12	4.3E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	5.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	3.0E+00	mg/kg/day	5.1E-10
				BERYLLIUM	5.1E-01	mg/kg	1.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	5.0E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	8.1E-10	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.1E-12	2.3E-09	mg/kg/day	2.0E-01	mg/kg/day	1.1E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	2.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-11	mg/kg/day	2.0E+00	mg/kg/day	3.7E-11
				CADMIUM	1.2E+00	mg/kg	4.4E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-10	mg/kg/day	2 5E-02	mg/kg/day	4.9E-09
				CHLOROFORM	4.7E-03	mg/kg	1.7E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	2.5E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.0E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	4.1E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.3E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.0E-12	3.7E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	3.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-10	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.0E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.1E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.7E-12	3.1E-12	mg/kg/day	5.0E-04	mg/kg/day	6.1E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-11	mg/kg/day	3.1E-01	mg/kg/day	1.2E-10
				IRON	2.3E+04	mg/kg	8.2E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	2.9E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	2.7E-14	8.0E-10	mg/kg/day	2.0E+00	mg/kg/day	4.0E-10
				LEAD	6.0E+01	mg/kg	2.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	9.8E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	2.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-11	mg/kg/day	1.5E-01	mg/kg/day	5.1E-10
				NICKEL	2.5E+01	mg/kg	8.6E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.2E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	8.3E-12	3.3E-11	mg/kg/day	1.4E-04	mg/kg/day	2.3E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.8E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.2E-11	4.9E-11	mg/kg/day	5.0E-04	mg/kg/day	9.8E-08
				PYRENE	1.9E+00	mg/kg	6.6E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-10	mg/kg/day	2.3E-01	mg/kg/day	8.0E-10
				SILVER	6.1E-01	mg/kg	2.2E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.0E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	1.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	7.0E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	9.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	1.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	3.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.3E-09	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								7.0E-11					3.6E-07

TABLE A3-7.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Central Tendency Exposure

Omega Chemical Site - Whittier, California

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Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	3.1E-07
Dermal:	2.1E-06
Inhalation of soil particulates	3.5E-11
Inhalation of outdoor air	4.8E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	8.8E-07
Dermal:	5.8E-06
Inhalation of soil particulates	9.8E-11
Inhalation of outdoor air	1.3E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									9.9E-06					2.3E-01
Surface Soil Total											9.9E-06					2.3E-01
Soil Gas 5 to 6 ft bgs	Outdoor Air	Outdoor Air	Inhalation Minimum	1,1,1-TRICHLOROETHANE	8.8E-04	ug/m3	4.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-07	mg/kg/day	6.3E-01	mg/kg/day	1.9E-07
				1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.2E-03	ug/m3	2.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.1E-04	ug/m3	1.0E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	5.8E-11	2.9E-08	mg/kg/day	1.4E-01	mg/kg/day	2.0E-07
				1,1-DICHLOROETHENE	5.9E-04	ug/m3	2.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-08	mg/kg/day	5.7E-02	mg/kg/day	1.4E-06
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	7.7E-04	ug/m3	3.7E-08	mg/kg/day	9.1E-02	mg/kg/day^{-1}	3.3E-09	1.0E-07	mg/kg/day	1.4E-03	mg/kg/day	7.3E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	4.6E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.6E-10	1.3E-07	mg/kg/day	2.6E-03	mg/kg/day	5.0E-05
				ACETONE	8.0E-04	ug/m3	3.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-07	mg/kg/day	9.0E-01	mg/kg/day	1.2E-07
				BENZENE	5.8E-05	ug/m3	2.8E-09	mg/kg/day	1.0E-01	mg/kg/day^{-1}	2.8E-10	7.7E-09	mg/kg/day	8.6E-03	mg/kg/day	9.0E-07
				CARBON DISULFIDE	3.1E-03	ug/m3	1.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-07	mg/kg/day	2.0E-01	mg/kg/day	2.1E-06
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	6.9E-08	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.0E-08	1.9E-07	mg/kg/day	1.1E-02	mg/kg/day	1.7E-05
				CHLOROFORM	6.0E-04	ug/m3	2.9E-08	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.3E-09	8.1E-08	mg/kg/day	8.6E-02	mg/kg/day	9.4E-07
				CIS-1,2-DICHLOROETHENE	1.7E-03	ug/m3	8.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-07	mg/kg/day	1.0E-02	mg/kg/day	2.2E-05
				DICHLORODIFLUOROMETHANE	1.2E-04	ug/m3	5.6E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-08	mg/kg/day	5.7E-02	mg/kg/day	2.7E-07
				M,P-XYLENES	7.7E-05	ug/m3	3.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-08	mg/kg/day	2.9E-02	mg/kg/day	3.6E-07
				TETRACHLOROETHENE	5.4E-03	ug/m3	2.6E-07	mg/kg/day	2.1E-02	mg/kg/day^{-1}	5.3E-09	7.3E-07	mg/kg/day	1.0E-02	mg/kg/day	7.3E-05
				TOLUENE	2.0E-04	ug/m3	9.7E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-08	mg/kg/day	8.6E-02	mg/kg/day	3.2E-07
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	1.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.2E-08	mg/kg/day	2.0E-02	mg/kg/day	2.1E-06
				TRICHLOROETHENE	2.1E-03	ug/m3	9.8E-08	mg/kg/day	7.0E-03	mg/kg/day^{-1}	6.9E-10	2.7E-07	mg/kg/day	1.7E-01	mg/kg/day	1.6E-06
				TRICHLOROFLUOROMETHANE (FREON 11)	3.8E-03	ug/m3	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-07	mg/kg/day	2.0E-01	mg/kg/day	2.5E-06
			Exp. Route Total							Minimum	2.3E-08				Minimum	2.5E-04
		Exposure Point Total								Minimum	2.3E-08				Minimum	2.5E-04
Soil Gas - Outdoor Air Total										Minimum	2.3E-08				Minimum	2.5E-04
										Total of Receptor Risks Across All Media	9.9E-06	Total of Receptor Hazards Across All Media				2.3E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.11 - All Parcels, RME, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-08	mg/kg/day	2.8E-01	mg/kg/day	2.2E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.2E-10	4.5E-09	mg/kg/day	4.0E-03	mg/kg/day	1.1E-06
				1,1-DICHLOROETHANE	8 4E-03	mg/kg	4.0E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.3E-11	1.1E-08	mg/kg/day	1.0E-01	mg/kg/day	1.1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-09	mg/kg/day	5.0E-02	mg/kg/day	1.0E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1 1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	9 0E-02	mg/kg/day	3.5E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.0E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.7E-10	8.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.2E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.6E-07	3.7E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1 8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-03	mg/kg/day	1.2E-04
				4,4'-DDE	1.4E-01	mg/kg	6 8E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-08	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.3E-04
				ALUMINUM	9.8E+03	mg/kg	4.6E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	5.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	4.0E-04	mg/kg/day	4.1E-02
				BARIUM	1.6E+02	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-04	mg/kg/day	2.0E-01	mg/kg/day	1.0E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4 7E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.6E-06	8.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.1E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.5E-07	5.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	6.9E-05
				BERYLLIUM	5 1E-01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-07	mg/kg/day	2.0E-03	mg/kg/day	3.3E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-07	3.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.0E-06
				CADMIUM	1.2E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	1.0E-03	mg/kg/day	1.6E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.9E-11	6.2E-09	mg/kg/day	1.0E-02	mg/kg/day	6.2E-07
				CHROMIUM III	7.1E+01	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-05	mg/kg/day	1.5E+00	mg/kg/day	6.2E-05
				CHROMIUM VI	1.2E+01	mg/kg	5.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.2E-03
				CHRYSENE	3.7E+00	mg/kg	1.8E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.1E-04
				COPPER	4.0E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-05	mg/kg/day	4.0E-02	mg/kg/day	1.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.5E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-07	4.1E-08	mg/kg/day	5.0E-05	mg/kg/day	8 2E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-02	mg/kg/day	3.0E-01	mg/kg/day	1.0E-01
				ISOPHORONE	8.2E+00	mg/kg	3.9E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.7E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.4E-05
				LEAD	6.0E+01	mg/kg	2.8E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.4E-07	7.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-04	mg/kg/day	1.4E-01	mg/kg/day	3.3E-03
				MERCURY	2.8E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-06	mg/kg/day	5.0E-03	mg/kg/day	1.0E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.2E-05

TABLE A3-7.11 - All Parcels, RME, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates:	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.0E-07	4.5E-07	mg/kg/day	2.0E-05	mg/kg/day	2.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3 9E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.4E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1 2E-06	6.6E-07	mg/kg/day	7.0E-05	mg/kg/day	9.4E-03
				PYRENE	1.9E+00	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.3E-05
				SILVER	6.1E-01	mg/kg	2.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.6E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-06	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	5.7E-04
				THALLIUM	2.0E+00	mg/kg	9.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	6.6E-05	mg/kg/day	4.0E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-08	mg/kg/day	1 3E-02	mg/kg/day^{-1}	1.7E-10	3.7E-08	mg/kg/day	3.0E-04	mg/kg/day	1.2E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	1.0E-03	mg/kg/day	6.2E-02
				ZINC	9.5E+01	mg/kg	4.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	3.0E-01	mg/kg/day	4.2E-04
			Exp. Route Total								8.6E-06					3.1E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	9.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7 1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	5.8E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.6E-07	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	7.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	4.0E-02	mg/kg/day	5.4E-05
				4,4'-DDE	1.4E-01	mg/kg	3.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.0E-09	8.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.9E-09	5.1E-07	mg/kg/day	1.7E-02	mg/kg/day	3.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.3E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.1E-06	3.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	9.1E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-07	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-05	mg/kg/day	3.0E+00	mg/kg/day	3.0E-05
				BERYLLIUM	5.1E-01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	6.7E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	2.0E+00	mg/kg/day	2.2E-06
				CADMIUM	1.2E+00	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	2.5E-02	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	9.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	NA	mg/kg/day	NA

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Reasonable Maximum Exposure

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Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age.	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				CHRYSENE	3.7E+00	mg/kg	7.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.2E-07	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	8.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	6.5E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.0E-07	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	3.6E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-06	mg/kg/day	3.1E-01	mg/kg/day	6.8E-06
				IRON	2.3E+04	mg/kg	4.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.7E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.6E-09	4.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.4E-05
				LEAD	6.0E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	8.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.5E-01	mg/kg/day	3.0E-05
				NICKEL	2.5E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.0E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.9E-07	2.0E-06	mg/kg/day	1.4E-04	mg/kg/day	1.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.0E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.3E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	5.8E-03
				PYRENE	1.9E+00	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.3E-01	mg/kg/day	4.7E-05
				SILVER	6.1E-01	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	8.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.1E-06					2.1E-02
			Inhalation	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-12	mg/kg/day	NA	mg/kg/day	NA
			Soil Particulates	1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.5E-12	3.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	4.0E-02	mg/kg/day	1.2E-09
				4,4'-DDE	1.4E-01	mg/kg	6.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.8E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.2E-14	1.1E-11	mg/kg/day	1.7E-02	mg/kg/day	6.9E-10
				ALUMINUM	9.8E+03	mg/kg	4.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.11 - All Parcels, RME, Maximum Outdoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age.	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				BARIUM	1.6E+02	mg/kg	7.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.0E-12	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.6E-11	8.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.2E-12	5.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2 0E-09	mg/kg/day	3.0E+00	mg/kg/day	6 7E-10
				BERYLLIUM	5.1E-01	mg/kg	2.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6 5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.5E-12	3 0E-09	mg/kg/day	2.0E-01	mg/kg/day	1.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-11	mg/kg/day	2.0E+00	mg/kg/day	4.9E-11
				CADMIUM	1.2E+00	mg/kg	5 8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	2.5E-02	mg/kg/day	6.5E-09
				CHLOROFORM	4.7E-03	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3 3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.7E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.7E-12	4.8E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-12	4.0E-12	mg/kg/day	5.0E-04	mg/kg/day	8.1E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-11	mg/kg/day	3.1E-01	mg/kg/day	1.5E-10
				IRON	2.3E+04	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.8E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.6E-14	1.1E-09	mg/kg/day	2.0E+00	mg/kg/day	5.3E-10
				LEAD	6.0E+01	mg/kg	2.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	1.5E-01	mg/kg/day	6.7E-10
				NICKEL	2.5E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-11	4.4E-11	mg/kg/day	1.4E-04	mg/kg/day	3.1E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.6E-11	6.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.3E-07
				PYRENE	1.9E+00	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.3E-01	mg/kg/day	1.1E-09
				SILVER	6.1E-01	mg/kg	2.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2 6E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.2E-11					4.7E-07

TABLE A3-7.11 - All Parcels, RME, Maximum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									1.3E-05					3.3E-01
Surface Soil Total											1.3E-05					3.3E-01
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	2.2E+00	ug/m3	1.4E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-04	mg/kg/day	6.3E-01	mg/kg/day	6.1E-04
5 to 6 ft bgs			Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.7E+00	ug/m3	2.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-04	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.3E-01	ug/m3	1.4E-05	mg/kg/day	5.7E-03	mg/kg/day^{-1}	8.1E-08	4.0E-05	mg/kg/day	1.4E-01	mg/kg/day	2.8E-04
				1,1-DICHLOROETHENE	4.7E+00	ug/m3	3.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	8.3E-04	mg/kg/day	5.7E-02	mg/kg/day	1.5E-02
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	1.9E-02	ug/m3	1.2E-06	mg/kg/day	9.1E-02	mg/kg/day^{-1}	1.1E-07	3.3E-06	mg/kg/day	1.4E-03	mg/kg/day	2.3E-03
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.0E-10	1.7E-07	mg/kg/day	2.6E-03	mg/kg/day	6.5E-05
				ACETONE	5.9E-02	ug/m3	3.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-05	mg/kg/day	9.0E-01	mg/kg/day	1.1E-05
				BENZENE	9.9E-03	ug/m3	6.2E-07	mg/kg/day	1.0E-01	mg/kg/day^{-1}	6.2E-08	1.7E-06	mg/kg/day	8.6E-03	mg/kg/day	2.0E-04
				CARBON DISULFIDE	4.2E-02	ug/m3	2.7E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.5E-06	mg/kg/day	2.0E-01	mg/kg/day	3.7E-05
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	9.1E-08	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1.4E-08	2.5E-07	mg/kg/day	1.1E-02	mg/kg/day	2.2E-05
				CHLOROFORM	4.7E-02	ug/m3	3.0E-06	mg/kg/day	8.1E-02	mg/kg/day^{-1}	2.4E-07	8.3E-06	mg/kg/day	8.6E-02	mg/kg/day	9.7E-05
				CIS-1,2-DICHLOROETHENE	1.0E-01	ug/m3	6.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.8E-05	mg/kg/day	1.0E-02	mg/kg/day	1.8E-03
				DICHLORODIFLUOROMETHANE	1.6E-02	ug/m3	9.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.8E-06	mg/kg/day	5.7E-02	mg/kg/day	4.8E-05
				M,P-XYLENES	3.4E-03	ug/m3	2.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-07	mg/kg/day	2 9E-02	mg/kg/day	2.1E-05
				TETRACHLOROETHENE	7.0E+00	ug/m3	4.4E-04	mg/kg/day	2.1E-02	mg/kg/day^{-1}	9.1E-06	1.2E-03	mg/kg/day	1.0E-02	mg/kg/day	1.2E-01
				TOLUENE	1.1E-02	ug/m3	6.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.9E-06	mg/kg/day	8.6E-02	mg/kg/day	2.2E-05
				TRANS-1,2-DICHLOROETHENE	3.8E-02	ug/m3	2.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	6.6E-06	mg/kg/day	2.0E-02	mg/kg/day	3.3E-04
				TRICHLOROETHENE	1.2E+00	ug/m3	7.3E-05	mg/kg/day	7.0E-03	mg/kg/day^{-1}	5.1E-07	2.0E-04	mg/kg/day	1 7E-01	mg/kg/day	1.2E-03
				TRICHLOROFLUOROMETHANE (FREON 11)	3.3E+00	ug/m3	2.1E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.9E-04	mg/kg/day	2.0E-01	mg/kg/day	2.9E-03
			Exp. Route Total							Maximum	1.0E-05				Maximum	1.5E-01
		Exposure Point Total								Maximum	1.0E-05				Maximum	1.5E-01
Soil Gas - Outdoor Air Total										Maximum	1.0E-05				Maximum	1.5E-01
									Total of Receptor Risks Across All Media		2.3E-05	Total of Receptor Hazards Across All Media				4.8E-01

ND. Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-7.11 - All Parcels, RME, Minimum Outdoor Air Concentrations
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake	Surface and Subsurface Soil
Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake	Surface and Subsurface Soil
Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	Ingestion	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-08	mg/kg/day	2.8E-01	mg/kg/day	2.2E-07
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-09	mg/kg/day	7.2E-02	mg/kg/day^{-1}	1.2E-10	4.5E-09	mg/kg/day	4.0E-03	mg/kg/day	1.1E-06
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	4.0E-09	mg/kg/day	5.7E-03	mg/kg/day^{-1}	2.3E-11	1.1E-08	mg/kg/day	1.0E-01	mg/kg/day	1.1E-07
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-09	mg/kg/day	5.0E-02	mg/kg/day	1.0E-07
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-07	mg/kg/day	9.0E-02	mg/kg/day	3.5E-06
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	3.0E-09	mg/kg/day	9.1E-02	mg/kg/day^{-1}	2.7E-10	8.3E-09	mg/kg/day	2.0E-02	mg/kg/day	4.2E-07
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-05	mg/kg/day	2.7E-02	mg/kg/day^{-1}	3.6E-07	3.7E-05	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-07	mg/kg/day	4.0E-03	mg/kg/day	1.2E-04
				4,4'-DDE	1.4E-01	mg/kg	6.8E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	2.3E-08	1.9E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.2E-08	mg/kg/day	3.4E-01	mg/kg/day^{-1}	1.4E-08	1.2E-07	mg/kg/day	5.0E-04	mg/kg/day	2.3E-04
				ALUMINUM	9.8E+03	mg/kg	4.6E-03	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-02	mg/kg/day	1.0E+00	mg/kg/day	1.3E-02
				ANTIMONY	1.2E+01	mg/kg	5.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	4.0E-04	mg/kg/day	4.1E-02
				BARIUM	1.6E+02	mg/kg	7.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-04	mg/kg/day	2.0E-01	mg/kg/day	1.0E-03
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	4.7E-07	1.1E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	3.0E-07	mg/kg/day	1.2E+01	mg/kg/day^{-1}	3.6E-06	8.4E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.1E-07	mg/kg/day	1.2E+00	mg/kg/day^{-1}	2.5E-07	5.8E-07	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-05	mg/kg/day	3.0E-01	mg/kg/day	6.9E-05
				BERYLLIUM	5.1E-01	mg/kg	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-07	mg/kg/day	2.0E-03	mg/kg/day	3.3E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-05	mg/kg/day	1.4E-02	mg/kg/day^{-1}	1.5E-07	3.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.5E-03
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-01	mg/kg/day	5.0E-06
				CADMIUM	1.2E+00	mg/kg	5.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	1.0E-03	mg/kg/day	1.6E-03
				CHLOROFORM	4.7E-03	mg/kg	2.2E-09	mg/kg/day	3.1E-02	mg/kg/day^{-1}	6.9E-11	6.2E-09	mg/kg/day	1.0E-02	mg/kg/day	6.2E-07
				CHROMIUM III	7.1E+01	mg/kg	3.3E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.4E-05	mg/kg/day	1.5E+00	mg/kg/day	6.2E-05
				CHROMIUM VI	1.2E+01	mg/kg	5.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-05	mg/kg/day	3.0E-03	mg/kg/day	5.2E-03
				CHRYSENE	3.7E+00	mg/kg	1.8E-06	mg/kg/day	1.2E-01	mg/kg/day^{-1}	2.1E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	2.0E-02	mg/kg/day	6.1E-04
				COPPER	4.0E+01	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.3E-05	mg/kg/day	4.0E-02	mg/kg/day	1.3E-03
				DIELDRIN	3.1E-02	mg/kg	1.5E-08	mg/kg/day	1.6E+01	mg/kg/day^{-1}	2.3E-07	4.1E-08	mg/kg/day	5.0E-05	mg/kg/day	8.2E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-07	mg/kg/day	4.0E-02	mg/kg/day	1.2E-05
				IRON	2.3E+04	mg/kg	1.1E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-02	mg/kg/day	3.0E-01	mg/kg/day	1.0E-01
				ISOPHORONE	8.2E+00	mg/kg	3.9E-06	mg/kg/day	9.5E-04	mg/kg/day^{-1}	3.7E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.4E-05
				LEAD	6.0E+01	mg/kg	2.8E-05	mg/kg/day	8.5E-03	mg/kg/day^{-1}	2.4E-07	7.9E-05	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.7E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-04	mg/kg/day	1.4E-01	mg/kg/day	3.3E-03
				MERCURY	2.8E-01	mg/kg	1.3E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-07	mg/kg/day	3.0E-04	mg/kg/day	1.2E-03
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-06	mg/kg/day	5.0E-03	mg/kg/day	1.0E-03
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-06	mg/kg/day	2.0E-02	mg/kg/day	5.2E-05

TABLE A3-7.11 - All Parcels, RME, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	*Future*
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				NICKEL	2.5E+01	mg/kg	1.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-05	mg/kg/day	2.0E-02	mg/kg/day	1.6E-03
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	8.0E-07	4.5E-07	mg/kg/day	2.0E-05	mg/kg/day	2.2E-02
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.9E-06	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.4E-07	mg/kg/day	5.0E+00	mg/kg/day^{-1}	1.2E-06	6.6E-07	mg/kg/day	7.0E-05	mg/kg/day	9.4E-03
				PYRENE	1.9E+00	mg/kg	8.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-06	mg/kg/day	3.0E-02	mg/kg/day	8.3E-05
				SILVER	6.1E-01	mg/kg	2.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	8.1E-07	mg/kg/day	5.0E-03	mg/kg/day	1.6E-04
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-06	mg/kg/day	5.4E-01	mg/kg/day^{-1}	1.1E-06	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	5.7E-04
				THALLIUM	2.0E+00	mg/kg	9.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-06	mg/kg/day	6.6E-05	mg/kg/day	4.0E-02
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-08	mg/kg/day	1.3E-02	mg/kg/day^{-1}	1.7E-10	3.7E-08	mg/kg/day	3.0E-04	mg/kg/day	1.2E-04
				VANADIUM	4.7E+01	mg/kg	2.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.2E-05	mg/kg/day	1.0E-03	mg/kg/day	6.2E-02
				ZINC	9.5E+01	mg/kg	4.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-04	mg/kg/day	3.0E-01	mg/kg/day	4.2E-04
			Exp. Route Total								8.6E-06					3.1E-01
			Dermal	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	9.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	7.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	1.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.9E-08	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	8.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-08	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	5.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-06	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.7E-08	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	5.8E-05	mg/kg/day	2.7E-03	mg/kg/day^{-1}	1.6E-07	1.6E-04	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	7.7E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.2E-06	mg/kg/day	4.0E-02	mg/kg/day	5.4E-05
				4,4'-DDE	1.4E-01	mg/kg	3.0E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	3.0E-09	8.3E-07	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	1.8E-07	mg/kg/day	1.0E-02	mg/kg/day^{-1}	1.9E-09	5.1E-07	mg/kg/day	1.7E-02	mg/kg/day	3.1E-05
				ALUMINUM	9.8E+03	mg/kg	2.0E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	5.7E-02	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	2.6E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	7.1E-05	mg/kg/day	NA	mg/kg/day	NA
				BARIUM	1.6E+02	mg/kg	3.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-04	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	1.7E-06	mg/kg/day	1.6E-01	mg/kg/day^{-1}	2.7E-07	4.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	1.3E-06	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.1E-06	3.7E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	9.1E-07	mg/kg/day	1.6E-01	mg/kg/day^{-1}	1.4E-07	2.6E-06	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	3.2E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	9.1E-05	mg/kg/day	3.0E+00	mg/kg/day	3.0E-05
				BERYLLIUM	5.1E-01	mg/kg	1.0E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-06	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	4.8E-05	mg/kg/day	1.4E-03	mg/kg/day^{-1}	6.7E-08	1.3E-04	mg/kg/day	2.0E-01	mg/kg/day	6.7E-04
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-06	mg/kg/day	2.0E+00	mg/kg/day	2.2E-06
				CADMIUM	1.2E+00	mg/kg	2.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	7.3E-06	mg/kg/day	2.5E-02	mg/kg/day	2.9E-04
				CHLOROFORM	4.7E-03	mg/kg	9.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-08	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	1.5E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	4.1E-04	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	2.5E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	6.9E-05	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.11 - *All Parcels, RME*, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

	Surface and Subsurface Soil
Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

	Surface and Subsurface Soil
Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer Risk	Intake/ Exposure Concentration		RfD		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
				CHRYSENE	3.7E+00	mg/kg	7.7E-06	mg/kg/day	1.6E-02	mg/kg/day^{-1}	1.2E-07	2.2E-05	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	1.9E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-05	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	8.4E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-04	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	6.5E-08	mg/kg/day	1.6E+00	mg/kg/day^{-1}	1.0E-07	1.8E-07	mg/kg/day	5.0E-04	mg/kg/day	3.6E-04
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	7.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-06	mg/kg/day	3.1E-01	mg/kg/day	6.8E-06
				IRON	2.3E+04	mg/kg	4.8E-02	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-01	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	1.7E-05	mg/kg/day	9.5E-05	mg/kg/day^{-1}	1.6E-09	4.8E-05	mg/kg/day	2.0E+00	mg/kg/day	2.4E-05
				LEAD	6.0E+01	mg/kg	1.2E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	3.5E-04	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	7.3E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	2.1E-03	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	5.8E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-06	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	8.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.3E-05	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	1.6E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-06	mg/kg/day	1.5E-01	mg/kg/day	3.0E-05
				NICKEL	2.5E+01	mg/kg	5.1E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-04	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	7.0E-07	mg/kg/day	7.0E-01	mg/kg/day^{-1}	4.9E-07	2.0E-06	mg/kg/day	1.4E-04	mg/kg/day	1.4E-02
				PHENANTHRENE	3.0E+00	mg/kg	6.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.7E-05	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	1.0E-06	mg/kg/day	7.0E-01	mg/kg/day^{-1}	7.3E-07	2.9E-06	mg/kg/day	5.0E-04	mg/kg/day	5.8E-03
				PYRENE	1.9E+00	mg/kg	3.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-05	mg/kg/day	2.3E-01	mg/kg/day	4.7E-05
				SILVER	6.1E-01	mg/kg	1.3E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-06	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	8.9E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	2.5E-05	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	4.2E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-05	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	5.8E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-07	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	9.7E-05	mg/kg/day	NA	mg/kg/day^{-1}	---	2.7E-04	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	2.0E-04	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-04	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								4.1E-06					2.1E-02
			Inhalation Soil Particulates	1,1,1-TRICHLOROETHANE	4.7E-02	mg/kg	2.2E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1,2-TRICHLOROETHANE	3.4E-03	mg/kg	1.6E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	4.4E-13	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	8.4E-03	mg/kg	3.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	1.1E-12	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHENE	3.9E-03	mg/kg	1.8E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-13	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROBENZENE	2.4E-01	mg/kg	1.1E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.1E-11	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	6.3E-03	mg/kg	2.9E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	8.2E-13	mg/kg/day	NA	mg/kg/day	NA
				1,4-DIOXANE	2.8E+01	mg/kg	1.3E-09	mg/kg/day	2.7E-03	mg/kg/day^{-1}	3.5E-12	3.6E-09	mg/kg/day	NA	mg/kg/day	NA
				2-METHYLNAPHTHALENE	3.7E-01	mg/kg	1.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.8E-11	mg/kg/day	4.0E-02	mg/kg/day	1.2E-09
				4,4'-DDE	1.4E-01	mg/kg	6.6E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.8E-14	1.9E-11	mg/kg/day	NA	mg/kg/day	NA
				4,4'-DDT	8.9E-02	mg/kg	4.1E-12	mg/kg/day	1.0E-02	mg/kg/day^{-1}	4.2E-14	1.1E-11	mg/kg/day	1.7E-02	mg/kg/day	6.9E-10
				ALUMINUM	9.8E+03	mg/kg	4.5E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	1.3E-06	mg/kg/day	NA	mg/kg/day	NA
				ANTIMONY	1.2E+01	mg/kg	5.7E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-09	mg/kg/day	NA	mg/kg/day	NA

TABLE A3-7.11 - All Parcels, RME, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age:	Adult

Cancer Intake

Surface and Subsurface Soil

Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake

Surface and Subsurface Soil

Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
				BARIUM	1.6E+02	mg/kg	7.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)ANTHRACENE	8.4E-01	mg/kg	3.9E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	6.0E-12	1.1E-10	mg/kg/day	NA	mg/kg/day	NA
				BENZO(A)PYRENE	6.4E-01	mg/kg	2.9E-11	mg/kg/day	1.6E+00	mg/kg/day^{-1}	4.6E-11	8.2E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZO(B)FLUORANTHENE	4.4E-01	mg/kg	2.0E-11	mg/kg/day	1.6E-01	mg/kg/day^{-1}	3.2E-12	5.7E-11	mg/kg/day	NA	mg/kg/day	NA
				BENZYL ALCOHOL (PHENYLMETHANOL)	1.6E+01	mg/kg	7.2E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-09	mg/kg/day	3.0E+00	mg/kg/day	6.7E-10
				BERYLLIUM	5.1E-01	mg/kg	2.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	6.5E-11	mg/kg/day	NA	mg/kg/day	NA
				BIS(2-ETHYLHEXYL)PHTHALATE	2.3E+01	mg/kg	1.1E-09	mg/kg/day	1.4E-03	mg/kg/day^{-1}	1.5E-12	3.0E-09	mg/kg/day	2.0E-01	mg/kg/day	1.5E-08
				BUTYLBENZYL PHTHALATE	7.6E-01	mg/kg	3.5E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	9.8E-11	mg/kg/day	2.0E+00	mg/kg/day	4.9E-11
				CADMIUM	1.2E+00	mg/kg	5.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.6E-10	mg/kg/day	2.5E-02	mg/kg/day	6.5E-09
				CHLOROFORM	4.7E-03	mg/kg	2.2E-13	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-13	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM III	7.1E+01	mg/kg	3.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	9.2E-09	mg/kg/day	NA	mg/kg/day	NA
				CHROMIUM VI	1.2E+01	mg/kg	5.5E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-09	mg/kg/day	NA	mg/kg/day	NA
				CHRYSENE	3.7E+00	mg/kg	1.7E-10	mg/kg/day	1.6E-02	mg/kg/day^{-1}	2.7E-12	4.8E-10	mg/kg/day	NA	mg/kg/day	NA
				COBALT	9.3E+00	mg/kg	4.3E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-09	mg/kg/day	NA	mg/kg/day	NA
				COPPER	4.0E+01	mg/kg	1.9E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	5.2E-09	mg/kg/day	NA	mg/kg/day	NA
				DIELDRIN	3.1E-02	mg/kg	1.4E-12	mg/kg/day	1.6E+00	mg/kg/day^{-1}	2.3E-12	4.0E-12	mg/kg/day	5.0E-04	mg/kg/day	8.1E-09
				FLUORANTHENE (IDRYL)	3.6E-01	mg/kg	1.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	4.7E-11	mg/kg/day	3.1E-01	mg/kg/day	1.5E-10
				IRON	2.3E+04	mg/kg	1.1E-06	mg/kg/day	NA	mg/kg/day^{-1}	---	3.0E-06	mg/kg/day	NA	mg/kg/day	NA
				ISOPHORONE	8.2E+00	mg/kg	3.8E-10	mg/kg/day	9.5E-05	mg/kg/day^{-1}	3.6E-14	1.1E-09	mg/kg/day	2.0E+00	mg/kg/day	5.3E-10
				LEAD	6.0E+01	mg/kg	2.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	7.8E-09	mg/kg/day	NA	mg/kg/day	NA
				MANGANESE	3.5E+02	mg/kg	1.6E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	4.6E-08	mg/kg/day	NA	mg/kg/day	NA
				MERCURY	2.8E-01	mg/kg	1.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-11	mg/kg/day	NA	mg/kg/day	NA
				MOLYBDENUM	3.9E+00	mg/kg	1.8E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.1E-10	mg/kg/day	NA	mg/kg/day	NA
				NAPHTHALENE	7.9E-01	mg/kg	3.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	1.0E-10	mg/kg/day	1.5E-01	mg/kg/day	6.7E-10
				NICKEL	2.5E+01	mg/kg	1.1E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	3.2E-09	mg/kg/day	NA	mg/kg/day	NA
				PCB-1254 (AROCLOR 1254)	3.4E-01	mg/kg	1.6E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.1E-11	4.4E-11	mg/kg/day	1.4E-04	mg/kg/day	3.1E-07
				PHENANTHRENE	3.0E+00	mg/kg	1.4E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	3.8E-10	mg/kg/day	NA	mg/kg/day	NA
				POLYCHLORINATED BI PHENYLS, TOTAL	5.0E-01	mg/kg	2.3E-11	mg/kg/day	7.0E-01	mg/kg/day^{-1}	1.6E-11	6.5E-11	mg/kg/day	5.0E-04	mg/kg/day	1.3E-07
				PYRENE	1.9E+00	mg/kg	8.7E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.4E-10	mg/kg/day	2.3E-01	mg/kg/day	1.1E-09
				SILVER	6.1E-01	mg/kg	2.8E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	8.0E-11	mg/kg/day	NA	mg/kg/day	NA
				TETRACHLOROETHENE	4.3E+00	mg/kg	2.0E-10	mg/kg/day	NA	mg/kg/day^{-1}	---	5.6E-10	mg/kg/day	NA	mg/kg/day	NA
				THALLIUM	2.0E+00	mg/kg	9.3E-11	mg/kg/day	NA	mg/kg/day^{-1}	---	2.6E-10	mg/kg/day	NA	mg/kg/day	NA
				TRICHLOROETHENE	2.8E-02	mg/kg	1.3E-12	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-12	mg/kg/day	NA	mg/kg/day	NA
				VANADIUM	4.7E+01	mg/kg	2.2E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	6.1E-09	mg/kg/day	NA	mg/kg/day	NA
				ZINC	9.5E+01	mg/kg	4.4E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.2E-08	mg/kg/day	NA	mg/kg/day	NA
			Exp. Route Total								9.2E-11					4.7E-07

TABLE A3-7.11 - All Parcels, RME, Minimum Outdoor Air Concentrations

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor Age	Adult

Cancer Intake	
Surface and Subsurface Soil	
Ingestion:	4.7E-07
Dermal:	2.1E-06
Inhalation of soil particulates	4.6E-11
Inhalation of outdoor air	6.3E-02
Inhalation of soil vapor:	

Noncancer Intake	
Surface and Subsurface Soil	
Ingestion:	1.3E-06
Dermal:	5.8E-06
Inhalation of soil particulates	1.3E-10
Inhalation of outdoor air	1.8E-01
Inhalation of soil vapor:	

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/ Exposure Concentration		CSF		Cancer	Intake/ Exposure Concentration		RfD		Hazard
					Value	Units	Value	Units	Value	Units	Risk	Value	Units	Value	Units	Quotient
		Exposure Point Total									1.3E-05					3.3E-01
Surface Soil Total											1.3E-05					3.3E-01
Soil Gas	Outdoor Air	Outdoor Air	Inhalation	1,1,1-TRICHLOROETHANE	8.8E-04	ug/m3	5.5E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.5E-07	mg/kg/day	6 3E-01	mg/kg/day	2.5E-07
5 to 6 ft bgs			Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.2E-03	ug/m3	2.6E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	7.4E-07	mg/kg/day	NA	mg/kg/day	NA
				1,1-DICHLOROETHANE	2.1E-04	ug/m3	1.3E-08	mg/kg/day	5.7E-03	mg/kg/day^{-1}	7.7E-11	3.8E-08	mg/kg/day	1.4E-01	mg/kg/day	2.6E-07
				1,1-DICHLOROETHENE	5.9E-04	ug/m3	3.7E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1 0E-07	mg/kg/day	5.7E-02	mg/kg/day	1 8E-06
				1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				1,2-DICHLOROETHANE	7.7E-04	ug/m3	4.8E-08	mg/kg/day	9 1E-02	mg/kg/day^{-1}	4.4E-09	1.4E-07	mg/kg/day	1 4E-03	mg/kg/day	9.7E-05
				2,2,4-TRIMETHYLPENTANE	ND	ug/m3	---	mg/kg/day	NA	mg/kg/day^{-1}	---	---	mg/kg/day	NA	mg/kg/day	NA
				ACETALDEHYDE	9.6E-04	ug/m3	6.0E-08	mg/kg/day	1.0E-02	mg/kg/day^{-1}	6.0E-10	1.7E-07	mg/kg/day	2.6E-03	mg/kg/day	6 5E-05
				ACETONE	8.0E-04	ug/m3	5.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-07	mg/kg/day	9.0E-01	mg/kg/day	1 6E-07
				BENZENE	5.8E-05	ug/m3	3 6E-09	mg/kg/day	1.0E-01	mg/kg/day^{-1}	3.6E-10	1 0E-08	mg/kg/day	8.6E-03	mg/kg/day	1.2E-06
				CARBON DISULFIDE	3 1E-03	ug/m3	1.9E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	5.4E-07	mg/kg/day	2.0E-01	mg/kg/day	2.7E-06
				CARBON TETRACHLORIDE	1.4E-03	ug/m3	9.1E-08	mg/kg/day	1.5E-01	mg/kg/day^{-1}	1 4E-08	2.5E-07	mg/kg/day	1.1E-02	mg/kg/day	2.2E-05
				CHLOROFORM	6.0E-04	ug/m3	3.8E-08	mg/kg/day	8 1E-02	mg/kg/day^{-1}	3 1E-09	1.1E-07	mg/kg/day	8.6E-02	mg/kg/day	1.2E-06
				CIS-1,2-DICHLOROETHENE	1.7E-03	ug/m3	1.0E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	2.9E-07	mg/kg/day	1.0E-02	mg/kg/day	2.9E-05
				DICHLORODIFLUOROMETHANE	1.2E-04	ug/m3	7.3E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	2.0E-08	mg/kg/day	5.7E-02	mg/kg/day	3.6E-07
				M,P-XYLENES	7.7E-05	ug/m3	4.8E-09	mg/kg/day	NA	mg/kg/day^{-1}	---	1.4E-08	mg/kg/day	2.9E-02	mg/kg/day	4 8E-07
				TETRACHLOROETHENE	5.4E-03	ug/m3	3 4E-07	mg/kg/day	2.1E-02	mg/kg/day^{-1}	7.0E-09	9.5E-07	mg/kg/day	1.0E-02	mg/kg/day	9.5E-05
				TOLUENE	2.0E-04	ug/m3	1.3E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	3.6E-08	mg/kg/day	8.6E-02	mg/kg/day	4.2E-07
				TRANS-1,2-DICHLOROETHENE	3.1E-04	ug/m3	2.0E-08	mg/kg/day	NA	mg/kg/day^{-1}	---	5.5E-08	mg/kg/day	2.0E-02	mg/kg/day	2.7E-06
				TRICHLOROETHENE	2.1E-03	ug/m3	1.3E-07	mg/kg/day	7.0E-03	mg/kg/day^{-1}	9 0E-10	3.6E-07	mg/kg/day	1.7E-01	mg/kg/day	2.1E-06
				TRICHLOROFLUOROMETHANE (FREON 11)	3.8E-03	ug/m3	2.4E-07	mg/kg/day	NA	mg/kg/day^{-1}	---	6.7E-07	mg/kg/day	2.0E-01	mg/kg/day	3.3E-06
			Exp. Route Total							Minimum	3.0E-08				Minimum	3.3E-04
		Exposure Point Total								Minimum	3.0E-08				Minimum	3.3E-04
Soil Gas - Outdoor Air Total										Minimum	3.0E-08				Minimum	3.3E-04
									Total of Receptor Risks Across All Media		1 3E-05	Total of Receptor Hazards Across All Media				3 3E-01

ND: Not Detected.

NS: Not selected as an exposure pathway.

na: The chemical is listed, value is not available.

ne: The compound has not been evaluated by EPA for evidence of human carcinogenicity.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,4-DIOXANE	4.5E-08	6.0E-08	NA	1.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	4.8E-05	6.3E-05	NA	1.1E-04
			4,4'-DDD	9 9E-10	3.9E-10	NA	1.4E-09		NA	NA	NA	---
			4,4'-DDE	1.0E-08	4.1E-09	NA	1.4E-08		NA	NA	NA	---
			4,4'-DDT	6.3E-09	2 5E-09	NA	8 8E-09	Liver lesions	1.0E-04	4.1E-05	NA	1.5E-04
			ALUMINUM	---	---	NA	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	1.7E-02	NA	NA	1.7E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	4.0E-04	NA	NA	4.0E-04
			BENZO(A)ANTHRACENE	4.0E-07	6.9E-07	NA	1.1E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.6E-06	2.7E-06	NA	4.3E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.0E-07	1.7E-07	NA	2.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.6E-08	8.8E-08	NA	1.5E-07	Inc. liver weight	6.6E-04	8.8E-04	NA	1.5E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	2.2E-06	2.9E-06	NA	5.1E-06
			CADMIUM	---	---	NA	---	significant proteinuria	6.6E-04	3.5E-04	NA	1.0E-03
			CHROMIUM III	---	---	NA	---	No observed effects	2.5E-05	NA	NA	2.5E-05
			CHROMIUM VI	---	---	NA	---	None	2.1E-03	NA	NA	2.1E-03
			CHRYSENE	9.9E-08	1.7E-07	NA	2.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	NA	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	1.1E-07	1.5E-07	NA	2.6E-07	Liver	3.9E-04	5 1E-04	NA	9.0E-04
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	4.6E-06	7.8E-06	NA	1.2E-05
			IRON	---	---	NA	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.5E-09	2.0E-09	NA	3.5E-09	No observed effects	2.2E-05	2.9E-05	NA	5.1E-05
			LEAD	9.7E-08	---	NA	9.7E-08		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	NA	---		5.0E-04	NA	NA	5.0E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	3.3E-04	NA	NA	3.3E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	1.5E-05	2.5E-05	NA	4.0E-05
			NICKEL	---	---	NA	---	dec body and organ wts.	6.1E-04	NA	NA	6.1E-04
			PCB-1254 (AROCLOR 1254)	3.7E-07	6.9E-07	NA	1.1E-06	Ocular exudate	1.0E-02	1.9E-02	NA	3.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	NA	1.2E-06		3.5E-03	6.5E-03	NA	1.0E-02
			PYRENE	---	---	NA	---	Kidney	3.8E-05	6.5E-05	NA	1.0E-04
			SILVER	---	---	NA	---	Argyria	6.3E-05	NA	NA	6.3E-05
			THALLIUM	---	---	NA	---		1.5E-02	NA	NA	1.5E-02
			VANADIUM	---	---	NA	---		2.3E-02	NA	NA	2.3E-02

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	1 6E-04	NA	NA	1.6E-04
			Chemical Total	3.3E-06	5.6E-06	NA	8.9E-06		1.2E-01	2.8E-02	NA	1.5E-01
		Exposure Point Total					8.9E-06					1.5E-01
	Exposure Medium Total						8.9E-06					1.5E-01
Surface Soil Total							8 9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.3E-05	3.3E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.5E-02	1.5E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.2E-03	5.2E-03
			BENZENE	NA	NA	3.7E-05	3.7E-05	Dec. lymphocyte count	NA	NA	1.2E-01	1.2E-01
			CARBON TETRACHLORIDE	NA	NA	3.3E-06	3.3E-06	Liver lesions	NA	NA	5.4E-03	5.4E-03
			CHLOROFORM	NA	NA	6 8E-07	6.8E-07	Liver	NA	NA	2.7E-04	2.7E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.1E-03	5.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5 3E-03	5.3E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.7E-01	2.7E-01
			METHYLENE CHLORIDE	NA	NA	3.1E-05	3.1E-05		NA	NA	2.1E-01	2.1E-01
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.6E-02	5.6E-02
			TETRACHLOROETHENE	NA	NA	9.0E-06	9.0E-06	Liver toxicity in mice	NA	NA	1.2E-01	1.2E-01
			TOLUENE	NA	NA	---	---	Inc kidney weight	NA	NA	1.9E-01	1 9E-01
			TRICHLOROETHENE	NA	NA	7 7E-07	7.7E-07		NA	NA	1.8E-03	1.8E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.8E-03	2.8E-03
			Chemical Total	NA	NA	8 1E-05	8.1E-05		NA	NA	1 0E+00	1.0E+00
		Exposure Point Total				Maximum	8 1E-05				Maximum	1.0E+00
	Exposure Medium Total					Maximum	8.1E-05				Maximum	1.0E+00
Indoor Air Total						Maximum	8.1E-05				Maximum	1.0E+00
Outdoor Air	Outdoor Air	Outdoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.1E-05	2.1E-05
			1,1,2,2-TETRACHLOROETHANE	NA	NA	3.3E-07	3.3E-07		NA	NA	7.7E-05	7.7E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.3E-04	1.3E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	6.1E-05	6.1E-05
			1,4-DICHLOROBENZENE	NA	NA	6.6E-08	6.6E-08		NA	NA	2.0E-05	2.0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.9E-02	4.9E-02
			BENZENE	NA	NA	4.5E-07	4.5E-07	Dec. lymphocyte count	NA	NA	1.5E-03	1.5E-03
			CARBON TETRACHLORIDE	NA	NA	4.0E-07	4.0E-07	Liver lesions	NA	NA	6.5E-04	6.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.6E-04	6 6E-04
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.9E-05	3.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.3E-03	1.3E-03
			METHYLENE CHLORIDE	NA	NA	3.1E-08	3.1E-08		NA	NA	2.1E-04	2.1E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.9E-04	4.9E-04

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	1.5E-07	1.5E-07	Liver toxicity in mice	NA	NA	2.1E-03	2.1E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-03	1.1E-03
			TRICHLOROETHENE	NA	NA	3.2E-08	3.2E-08		NA	NA	7.4E-05	7.4E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	3.5E-04	3.5E-04
			Chemical Total	NA	NA	1.5E-06	1.5E-06		NA	NA	5.8E-02	5.8E-02
		Exposure Point Total				Maximum	1.5E-06				Maximum	5.8E-02
	Exposure Medium Total					Maximum	1.5E-06				Maximum	5.8E-02
Outdoor Air Total						Maximum	1.5E-06				Maximum	5.8E-02
Receptor Total							9.2E-05					1.2E+00

Total Risk Across All Media = 9.2E-05

Total Hazard Across All Media = 1.2E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.5E-01
Total Body Weight effects Across All Media =	3.3E-01
Total Kidney HI Across All Media =	2.5E-01
Total Other HI Across All Media =	4.9E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS. Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,4-DIOXANE	4.5E-08	6.0E-08	NA	1.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	4.8E-05	6.3E-05	NA	1.1E-04
			4,4'-DDD	9.9E-10	3.9E-10	NA	1.4E-09		NA	NA	NA	---
			4,4'-DDE	1.0E-08	4.1E-09	NA	1.4E-08		NA	NA	NA	---
			4,4'-DDT	6 3E-09	2.5E-09	NA	8.8E-09	Liver lesions	1.0E-04	4.1E-05	NA	1.5E-04
			ALUMINUM	---	---	NA	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	1.7E-02	NA	NA	1.7E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	4.0E-04	NA	NA	4.0E-04
			BENZO(A)ANTHRACENE	4.0E-07	6.9E-07	NA	1.1E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.6E-06	2.7E-06	NA	4.3E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.0E-07	1.7E-07	NA	2 8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.6E-08	8.8E-08	NA	1.5E-07	Inc. liver weight	6.6E-04	8.8E-04	NA	1.5E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	2.2E-06	2.9E-06	NA	5.1E-06
			CADMIUM	---	---	NA	---	significant proteinuria	6 6E-04	3.5E-04	NA	1.0E-03
			CHROMIUM III	---	---	NA	---	No observed effects	2.5E-05	NA	NA	2.5E-05
			CHROMIUM VI	---	---	NA	---	None	2 1E-03	NA	NA	2.1E-03
			CHRYSENE	9 9E-08	1.7E-07	NA	2.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	NA	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	1.1E-07	1.5E-07	NA	2.6E-07	Liver	3.9E-04	5.1E-04	NA	9.0E-04
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	4.6E-06	7.8E-06	NA	1.2E-05
			IRON	---	---	NA	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.5E-09	2.0E-09	NA	3.5E-09	No observed effects	2.2E-05	2.9E-05	NA	5.1E-05
			LEAD	9.7E-08	---	NA	9.7E-08		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	NA	---		5.0E-04	NA	NA	5.0E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	3.3E-04	NA	NA	3.3E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	1.5E-05	2.5E-05	NA	4.0E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	6 1E-04	NA	NA	6.1E-04
			PCB-1254 (AROCLOR 1254)	3.7E-07	6.9E-07	NA	1.1E-06	Ocular exudate	1.0E-02	1.9E-02	NA	3.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	NA	1.2E-06		3.5E-03	6.5E-03	NA	1.0E-02
			PYRENE	---	---	NA	---	Kidney	3.8E-05	6.5E-05	NA	1.0E-04
			SILVER	---	---	NA	---	Argyria	6.3E-05	NA	NA	6.3E-05
			THALLIUM	---	---	NA	---		1.5E-02	NA	NA	1.5E-02
			VANADIUM	---	---	NA	---		2.3E-02	NA	NA	2.3E-02

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population.	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	1.6E-04	NA	NA	1.6E-04
			Chemical Total	3.3E-06	5.6E-06	NA	8.9E-06		1.2E-01	2.8E-02	NA	1.5E-01
		Exposure Point Total					8.9E-06					1.5E-01
	Exposure Medium Total						8.9E-06					1.5E-01
Surface Soil Total							8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.1E-05	3.1E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.2E-03	1.2E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.5E-03	2.5E-03
			BENZENE	NA	NA	9.4E-06	9.4E-06	Dec. lymphocyte count	NA	NA	3.1E-02	3.1E-02
			CARBON TETRACHLORIDE	NA	NA	2.9E-06	2.9E-06	Liver lesions	NA	NA	4.7E-03	4.7E-03
			CHLOROFORM	NA	NA	6.8E-07	6.8E-07	Liver	NA	NA	2.7E-04	2.7E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2.3E-03	2.3E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.1E-03	1.1E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.6E-02	4.6E-02
			METHYLENE CHLORIDE	NA	NA	2.1E-07	2.1E-07		NA	NA	1.5E-03	1.5E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	9.5E-03	9.5E-03
			TETRACHLOROETHENE	NA	NA	6.9E-07	6.9E-07	Liver toxicity in mice	NA	NA	9.4E-03	9.4E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.7E-02	3.7E-02
			TRICHLOROETHENE	NA	NA	5.9E-08	5.9E-08		NA	NA	1.4E-04	1.4E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	9.4E-04	9.4E-04
			Chemical Total	NA	NA	1.4E-05	1.4E-05		NA	NA	1.5E-01	1.5E-01
		Exposure Point Total				Minimum	1.4E-05				Minimum	1.5E-01
	Exposure Medium Total					Minimum	1.4E-05				Minimum	1.5E-01
Indoor Air Total						Minimum	1.4E-05				Minimum	1.5E-01
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.1E-05	2.1E-05
		Minimum	1,1,2,2-TETRACHLOROETHANE	NA	NA	3.3E-07	3.3E-07		NA	NA	7.7E-05	7.7E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.3E-04	1.3E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	6.1E-05	6.1E-05
			1,4-DICHLOROBENZENE	NA	NA	6.6E-08	6.6E-08		NA	NA	2.0E-05	2.0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.9E-02	4.9E-02
			BENZENE	NA	NA	4.5E-07	4.5E-07	Dec. lymphocyte count	NA	NA	1.5E-03	1.5E-03
			CARBON TETRACHLORIDE	NA	NA	4.0E-07	4.0E-07	Liver lesions	NA	NA	6.5E-04	6.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-04	6.8E-04
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.9E-05	3.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.3E-03	1.3E-03
			METHYLENE CHLORIDE	NA	NA	3.1E-08	3.1E-08		NA	NA	2.1E-04	2.1E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.9E-04	4.9E-04

TABLE A3-9.1A - Parcel Site - 3 Kings Construction, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	1.5E-07	1.5E-07	Liver toxicity in mice	NA	NA	2.1E-03	2.1E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-03	1.1E-03
			TRICHLOROETHENE	NA	NA	3.2E-08	3.2E-08		NA	NA	7.4E-05	7.4E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.2E-04	1.2E-04
			Chemical Total	NA	NA	1.5E-06	1.5E-06		NA	NA	5.8E-02	5.8E-02
		Exposure Point Total				Minimum	1.5E-06				Minimum	5.8E-02
	Exposure Medium Total					Minimum	1.5E-06				Minimum	5.8E-02
Outdoor Air Total						Minimum	1.5E-06				Minimum	5.8E-02
Receptor Total							2.4E-05					3.5E-01

Total Risk Across All Media = 2.4E-05

Total Hazard Across All Media = 3.5E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 2.2E-02
Total Body Weight effects Across All Media = 6.1E-02
Total Kidney HI Across All Media = 9.2E-02
Total Other HI Across All Media = 1.8E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,4-DIOXANE	4.5E-08	6.0E-08	NA	1.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	4.8E-05	6.3E-05	NA	1.1E-04
			4,4'-DDD	9.9E-10	3.9E-10	NA	1.4E-09		NA	NA	NA	---
			4,4'-DDE	1.0E-08	4.1E-09	NA	1.4E-08		NA	NA	NA	---
			4,4'-DDT	6.3E-09	2.5E-09	NA	8.8E-09	Liver lesions	1.0E-04	4.1E-05	NA	1.5E-04
			ALUMINUM	---	---	NA	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	1.7E-02	NA	NA	1.7E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	4.0E-04	NA	NA	4.0E-04
			BENZO(A)ANTHRACENE	4.0E-07	6.9E-07	NA	1.1E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.6E-06	2.7E-06	NA	4.3E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.0E-07	1.7E-07	NA	2.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.6E-08	8.8E-08	NA	1.5E-07	Inc. liver weight	6.6E-04	8.8E-04	NA	1.5E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	2.2E-06	2.9E-06	NA	5.1E-06
			CADMIUM	---	---	NA	---	significant proteinuria	6.6E-04	3.5E-04	NA	1.0E-03
			CHROMIUM III	---	---	NA	---	No observed effects	2.5E-05	NA	NA	2.5E-05
			CHROMIUM VI	---	---	NA	---	None	2.1E-03	NA	NA	2.1E-03
			CHRYSENE	9.9E-08	1.7E-07	NA	2.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	NA	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	1.1E-07	1.5E-07	NA	2.6E-07	Liver	3.9E-04	5.1E-04	NA	9.0E-04
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	4.6E-06	7.8E-06	NA	1.2E-05
			IRON	---	---	NA	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.5E-09	2.0E-09	NA	3.5E-09	No observed effects	2.2E-05	2.9E-05	NA	5.1E-05
			LEAD	9.7E-08	---	NA	9.7E-08		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	NA	---		5.0E-04	NA	NA	5.0E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	3.3E-04	NA	NA	3.3E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	1.5E-05	2.5E-05	NA	4.0E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	6.1E-04	NA	NA	6.1E-04
			PCB-1254 (AROCLOR 1254)	3.7E-07	6.9E-07	NA	1.1E-06	Ocular exudate	1.0E-02	1.9E-02	NA	3.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	NA	1.2E-06		3.5E-03	6.5E-03	NA	1.0E-02
			PYRENE	---	---	NA	---	Kidney	3.8E-05	6.5E-05	NA	1.0E-04
			SILVER	---	---	NA	---	Argyria	6.3E-05	NA	NA	6.3E-05
			THALLIUM	---	---	NA	---		1.5E-02	NA	NA	1.5E-02
			VANADIUM	---	---	NA	---		2.3E-02	NA	NA	2.3E-02

TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	1.6E-04	NA	NA	1.6E-04
			Chemical Total	3.3E-06	5.6E-06	NA	8.9E-06		1.2E-01	2.8E-02	NA	1.5E-01
		Exposure Point Total					8.9E-06					1.5E-01
	Exposure Medium Total						8.9E-06					1.5E-01
Surface Soil Total							8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.9E-05	4.9E-05
		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.0E-02	3.0E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	6.3E-01	6.3E-01
			BENZENE	NA	NA	1.8E-05	1.8E-05	Dec. lymphocyte count	NA	NA	5.8E-02	5.8E-02
			CARBON TETRACHLORIDE	NA	NA	3.4E-06	3.4E-06	Liver lesions	NA	NA	5.5E-03	5.5E-03
			CHLOROFORM	NA	NA	5.1E-07	5.1E-07	Liver	NA	NA	2.1E-04	2.1E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.4E-03	4.4E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.6E-02	1.6E-02
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	8.9E-01	8.9E-01
			METHYLENE CHLORIDE	NA	NA	5.6E-07	5.6E-07		NA	NA	4.0E-03	4.0E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.6E-01	2.6E-01
			TETRACHLOROETHENE	NA	NA	2.4E-05	2.4E-05	Liver toxicity in mice	NA	NA	3.2E-01	3.2E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	2.6E+00	2.6E+00
			TRICHLOROETHENE	NA	NA	1.5E-06	1.5E-06		NA	NA	3.6E-03	3.6E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	6.6E-03	6.6E-03
			Chemical Total	NA	NA	4.7E-05	4.7E-05		NA	NA	4.8E+00	4.8E+00
		Exposure Point Total				Maximum	4.7E-05				Maximum	4.8E+00
	Exposure Medium Total					Maximum	4.7E-05				Maximum	4.8E+00
Indoor Air Total						Maximum	4.7E-05				Maximum	4.8E+00
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.1E-05	2.1E-05
		Maximum	1,1,2,2-TETRACHLOROETHANE	NA	NA	3.3E-07	3.3E-07		NA	NA	7.7E-05	7.7E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.3E-04	1.3E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	6.1E-05	6.1E-05
			1,4-DICHLOROBENZENE	NA	NA	6.6E-08	6.6E-08		NA	NA	2.0E-05	2.0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.9E-02	4.9E-02
			BENZENE	NA	NA	4.5E-07	4.5E-07	Dec. lymphocyte count	NA	NA	1.5E-03	1.5E-03
			CARBON TETRACHLORIDE	NA	NA	4.0E-07	4.0E-07	Liver lesions	NA	NA	6.5E-04	6.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-04	6.8E-04
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.9E-05	3.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.3E-03	1.3E-03
			METHYLENE CHLORIDE	NA	NA	3.1E-08	3.1E-08		NA	NA	2.1E-04	2.1E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.9E-04	4.9E-04

TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	*Dermal*	*Inhalation*	*Exposure* Routes Total	*Primary* Target Organ(s)	*Ingestion*	*Dermal*	*Inhalation*	*Exposure* Routes Total
			TETRACHLOROETHENE	NA	NA	1.5E-07	1.5E-07	Liver toxicity in mice	NA	NA	2.1E-03	2.1E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-03	1.1E-03
			TRICHLOROETHENE	NA	NA	3.2E-08	3.2E-08		NA	NA	7.4E-05	7.4E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.2E-04	8.2E-04
			Chemical Total	NA	NA	1.5E-06	1.5E-06		NA	NA	5.9E-02	5.9E-02
		Exposure Point Total				Maximum	1.5E-06				Maximum	5.9E-02
	Exposure Medium Total					Maximum	1.5E-06				Maximum	5.9E-02
Outdoor Air Total						Maximum	1.5E-06				Maximum	5.9E-02
Receptor Total							5.8E-05					5.1E+00

Total Risk Across All Media = 5.8E-05

Total Hazard Across All Media = 5.1E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 3.8E-01
Total Body Weight effects Across All Media = 1.2E+00
Total Kidney HI Across All Media = 3.3E+00
Total Other HI Across All Media = 2.2E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9 1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,4-DIOXANE	4.5E-08	6.0E-08	NA	1.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	4.8E-05	6.3E-05	NA	1.1E-04
			4,4'-DDD	9.9E-10	3.9E-10	NA	1.4E-09		NA	NA	NA	---
			4,4'-DDE	1.0E-08	4.1E-09	NA	1.4E-08		NA	NA	NA	---
			4,4'-DDT	6.3E-09	2.5E-09	NA	8.8E-09	Liver lesions	1.0E-04	4.1E-05	NA	1.5E-04
			ALUMINUM	---	---	NA	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	1.7E-02	NA	NA	1.7E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	4.0E-04	NA	NA	4.0E-04
			BENZO(A)ANTHRACENE	4.0E-07	6 9E-07	NA	1.1E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.6E-06	2.7E-06	NA	4.3E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.0E-07	1.7E-07	NA	2.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.6E-08	8 8E-08	NA	1.5E-07	Inc. liver weight	6.6E-04	8 8E-04	NA	1.5E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	2.2E-06	2.9E-06	NA	5.1E-06
			CADMIUM	---	---	NA	---	significant proteinuria	6.6E-04	3.5E-04	NA	1.0E-03
			CHROMIUM III	---	---	NA	---	No observed effects	2.5E-05	NA	NA	2.5E-05
			CHROMIUM VI	---	---	NA	---	None	2.1E-03	NA	NA	2.1E-03
			CHRYSENE	9.9E-08	1.7E-07	NA	2.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	NA	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	1.1E-07	1.5E-07	NA	2.6E-07	Liver	3.9E-04	5.1E-04	NA	9.0E-04
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	4.6E-06	7.8E-06	NA	1.2E-05
			IRON	---	---	NA	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.5E-09	2.0E-09	NA	3.5E-09	No observed effects	2.2E-05	2.9E-05	NA	5.1E-05
			LEAD	9.7E-08	---	NA	9.7E-08		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	NA	---		5.0E-04	NA	NA	5.0E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	3.3E-04	NA	NA	3 3E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	1.5E-05	2.5E-05	NA	4.0E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	6.1E-04	NA	NA	6.1E-04
			PCB-1254 (AROCLOR 1254)	3.7E-07	6.9E-07	NA	1.1E-06	Ocular exudate	1.0E-02	1.9E-02	NA	3.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	NA	1.2E-06		3.5E-03	6.5E-03	NA	1.0E-02
			PYRENE	---	---	NA	---	Kidney	3.8E-05	6.5E-05	NA	1.0E-04
			SILVER	---	---	NA	---	Argyria	6.3E-05	NA	NA	6.3E-05
			THALLIUM	---	---	NA	---		1.5E-02	NA	NA	1.5E-02
			VANADIUM	---	---	NA	---		2.3E-02	NA	NA	2.3E-02

TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	1.6E-04	NA	NA	1.6E-04
			Chemical Total	3.3E-06	5.6E-06	NA	8.9E-06		1.2E-01	2.8E-02	NA	1.5E-01
		Exposure Point Total					8.9E-06					1.5E-01
	Exposure Medium Total						8.9E-06					1.5E-01
Surface Soil Total							8.9E-06					1.5E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.8E-05	4.8E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.6E-03	2.6E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.4E-02	3.4E-02
			BENZENE	NA	NA	8.7E-06	8.7E-06	Dec. lymphocyte count	NA	NA	2.8E-02	2.8E-02
			CARBON TETRACHLORIDE	NA	NA	3.3E-06	3.3E-06	Liver lesions	NA	NA	5.4E-03	5.4E-03
			CHLOROFORM	NA	NA	5.1E-07	5.1E-07	Liver	NA	NA	2.1E-04	2.1E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.1E-03	3.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.5E-03	1.5E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6.9E-02	6.9E-02
			METHYLENE CHLORIDE	NA	NA	1.8E-07	1.8E-07		NA	NA	1.2E-03	1.2E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.7E-02	1.7E-02
			TETRACHLOROETHENE	NA	NA	4.2E-06	4.2E-06	Liver toxicity in mice	NA	NA	5.6E-02	5.6E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.9E-02	3.9E-02
			TRICHLOROETHENE	NA	NA	8.2E-07	8.2E-07		NA	NA	1.9E-03	1.9E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	5.2E-03	5.2E-03
			Chemical Total	NA	NA	1.8E-05	1.8E-05		NA	NA	2.7E-01	2.7E-01
		Exposure Point Total				Minimum	1.8E-05				Minimum	2.7E-01
	Exposure Medium Total					Minimum	1.8E-05				Minimum	2.7E-01
Indoor Air Total						Minimum	1.8E-05				Minimum	2.7E-01
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.1E-05	2.1E-05
		Minimum	1,1,2.2-TETRACHLOROETHANE	NA	NA	3.3E-07	3.3E-07		NA	NA	7.7E-05	7.7E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.3E-04	1.3E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	6 1E-05	6.1E-05
			1,4-DICHLOROBENZENE	NA	NA	6.6E-08	6.6E-08		NA	NA	2.0E-05	2.0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.9E-02	4.9E-02
			BENZENE	NA	NA	4.5E-07	4.5E-07	Dec. lymphocyte count	NA	NA	1.5E-03	1.5E-03
			CARBON TETRACHLORIDE	NA	NA	4.0E-07	4.0E-07	Liver lesions	NA	NA	6.5E-04	6 5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-04	6.8E-04
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.9E-05	3.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.3E-03	1.3E-03
			METHYLENE CHLORIDE	NA	NA	3.1E-08	3.1E-08		NA	NA	2.1E-04	2.1E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.9E-04	4.9E-04

TABLE A3-9.1B - Parcel Site - Star City Auto Body, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	1.5E-07	1.5E-07	Liver toxicity in mice	NA	NA	2.1E-03	2.1E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-03	1.1E-03
			TRICHLOROETHENE	NA	NA	3.2E-08	3.2E-08		NA	NA	7.4E-05	7.4E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	6.5E-04	6.5E-04
			Chemical Total	NA	NA	1.5E-06	1.5E-06		NA	NA	5.9E-02	5.9E-02
		Exposure Point Total				Minimum	1.5E-06				Minimum	5.9E-02
	Exposure Medium Total					Minimum	1.5E-06				Minimum	5.9E-02
Outdoor Air Total						Minimum	1.5E-06				Minimum	5.9E-02
Receptor Total							2.8E-05					4.7E-01

Total Risk Across All Media = 2.8E-05

Total Hazard Across All Media = 4.7E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 7.2E-02
Total Body Weight effects Across All Media = 9.2E-02
Total Kidney HI Across All Media = 1.3E-01
Total Other HI Across All Media = 1.8E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS. Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9 1C - Parcel North - Medlin & Sons 12484, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.1E-05	3.1E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.6E-02	1.6E-02
			1,4-DICHLOROBENZENE	NA	NA	1.3E-06	1.3E-06		NA	NA	3.9E-04	3.9E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.5E-01	3.5E-01
			BENZENE	NA	NA	3.7E-06	3.7E-06	Dec. lymphocyte count	NA	NA	1.2E-02	1.2E-02
			CARBON TETRACHLORIDE	NA	NA	6.5E-06	6.5E-06	Liver lesions	NA	NA	1.1E-02	1.1E-02
			CHLOROFORM	NA	NA	8.6E-07	8.6E-07	Liver	NA	NA	3.5E-04	3.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.4E-03	5.4E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	2.8E-04	2.8E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.9E-03	8.9E-03
			METHYLENE CHLORIDE	NA	NA	6.0E-07	6.0E-07		NA	NA	4.2E-03	4.2E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.3E-03	3.3E-03
			TETRACHLOROETHENE	NA	NA	1.5E-05	1.5E-05	Liver toxicity in mice	NA	NA	2.1E-01	2.1E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	8.1E-03	8.1E-03
			TRICHLOROETHENE	NA	NA	3.3E-06	3.3E-06		NA	NA	7.7E-03	7.7E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	5.6E-03	5.6E-03
			Chemical Total	NA	NA	3.1E-05	3.1E-05		NA	NA	6.5E-01	6.5E-01
		Exposure Point Total				Maximum	3.1E-05				Maximum	6.5E-01
	Exposure Medium Total					Maximum	3.1E-05				Maximum	6.5E-01
Indoor Air Total						Maximum	3.1E-05				Maximum	6.5E-01
Receptor Total							3.1E-05					6.5E-01

Total Risk Across All Media =	3.1E-05
Total Hazard Across All Media =	6.5E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	2.8E-02
Total Body Weight effects Across All Media =	1.8E-02
Total Kidney HI Across All Media =	3.6E-01
Total Other HI Across All Media =	2.4E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.1C - Parcel North - Medlin & Sons 12484, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.1E-05	3.1E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.8E-03	4.8E-03
			1,4-DICHLOROBENZENE	NA	NA	2.7E-07	2.7E-07		NA	NA	8.2E-05	8.2E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.3E-03	2.3E-03
			BENZENE	NA	NA	3.1E-06	3.1E-06	Dec. lymphocyte count	NA	NA	1.0E-02	1.0E-02
			CARBON TETRACHLORIDE	NA	NA	3.4E-06	3.4E-06	Liver lesions	NA	NA	5.5E-03	5.5E-03
			CHLOROFORM	NA	NA	5.4E-07	5.4E-07	Liver	NA	NA	2.2E-04	2.2E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2.0E-03	2.0E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	2.4E-04	2.4E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	7.2E-03	7.2E-03
			METHYLENE CHLORIDE	NA	NA	2.0E-07	2.0E-07		NA	NA	1.4E-03	1.4E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.9E-03	2.9E-03
			TETRACHLOROETHENE	NA	NA	3.0E-06	3.0E-06	Liver toxicity in mice	NA	NA	4.0E-02	4.0E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	5.3E-03	5.3E-03
			TRICHLOROETHENE	NA	NA	5.4E-07	5.4E-07		NA	NA	1.3E-03	1.3E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.5E-03	2.5E-03
			Chemical Total	NA	NA	1.1E-05	1.1E-05		NA	NA	8.6E-02	8.6E-02
		Exposure Point Total				Minimum	1.1E-05				Minimum	8.6E-02
	Exposure Medium Total					Minimum	1.1E-05				Minimum	8.6E-02
Indoor Air Total						Minimum	1.1E-05				Minimum	8.6E-02
Receptor Total							1.1E-05					8.6E-02

Total Risk Across All Media = 1.1E-05

Total Hazard Across All Media = 8.6E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.1E-02
Total Body Weight effects Across All Media =	1.2E-02
Total Kidney HI Across All Media =	7.8E-03
Total Other HI Across All Media =	5.6E-02

TABLE A3-9.1D - Parcel North - Medlin & Sons North 12476, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	*Current*
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.5E-02	4.5E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.3E-03	4.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.1E-03	3.1E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	7.5E-04	7.5E-04
			Chemical Total	NA	NA	0.0E+00	0.0E+00		NA	NA	5.3E-02	5.3E-02
		Exposure Point Total				Maximum	0.0E+00				Maximum	5.3E-02
	Exposure Medium Total					Maximum	0.0E+00				Maximum	5.3E-02
Indoor Air Total						Maximum	0.0E+00				Maximum	5.3E-02
Receptor Total							0.0E+00					5.3E-02

Total Risk Across All Media = 0.0E+00

Total Hazard Across All Media = 5.3E-02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 0.0E+00

Total Body Weight effects Across All Media = 4.3E-03

Total Kidney HI Across All Media = 4.8E-02

Total Other HI Across All Media = 7.5E-04

NA: Not applicable.

---: Risk was not calculated for chemical

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.1D - Parcel North - Medlin & Sons North 12476, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.5E-02	4.5E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.3E-03	4.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.1E-03	3.1E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	7.5E-04	7.5E-04
			Chemical Total	NA	NA	0.0E+00	0.0E+00		NA	NA	5.3E-02	5.3E-02
		Exposure Point Total				Minimum	0.0E+00				Minimum	5.3E-02
	Exposure Medium Total					Minimum	0.0E+00				Minimum	5.3E-02
Indoor Air Total						Minimum	0.0E+00				Minimum	5.3E-02
Receptor Total							0.0E+00					5.3E-02

Total Risk Across All Media = 0.0E+00

Total Hazard Across All Media = 5.3E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	0.0E+00
Total Body Weight effects Across All Media =	4.3E-03
Total Kidney HI Across All Media =	4.8E-02
Total Other HI Across All Media =	7.5E-04

TABLE A3-9.1E - Parcel West - Terrapave, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	7.3E-05	7.3E-05
		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.8E-02	3.8E-02
			1,4-DICHLOROBENZENE	NA	NA	3.6E-07	3.6E-07		NA	NA	1.1E-04	1.1E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.5E-03	4.5E-03
			BENZENE	NA	NA	4.7E-06	4.7E-06	Dec. lymphocyte count	NA	NA	1.5E-02	1.5E-02
			CARBON TETRACHLORIDE	NA	NA	3.4E-06	3.4E-06	Liver lesions	NA	NA	5.5E-03	5.5E-03
			CHLOROFORM	NA	NA	6.5E-07	6.5E-07	Liver	NA	NA	2.6E-04	2.6E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.8E-03	4.8E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5.3E-04	5.3E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.8E-02	1.8E-02
			METHYLENE CHLORIDE	NA	NA	1.8E-07	1.8E-07		NA	NA	1.2E-03	1.2E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6 9E-03	6.9E-03
			TETRACHLOROETHENE	NA	NA	7.6E-05	7.6E-05	Liver toxicity in mice	NA	NA	1.0E+00	1.0E+00
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-02	1.1E-02
			TRICHLOROETHENE	NA	NA	1.0E-06	1.0E-06		NA	NA	2.4E-03	2.4E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	9.3E-06	9.3E-06		NA	NA	9.5E-02	9.5E-02
			Chemical Total	NA	NA	9.6E-05	9.6E-05		NA	NA	1.2E+00	1.2E+00
		Exposure Point Total				Maximum	9.6E-05				Maximum	1.2E+00
	Exposure Medium Total					Maximum	9.6E-05				Maximum	1.2E+00
Indoor Air Total						Maximum	9.6E-05				Maximum	1.2E+00
Receptor Total							9.6E-05					1.2E+00

Total Risk Across All Media =	9.6E-05
Total Hazard Across All Media =	1.2E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.1E+00
Total Body Weight effects Across All Media =	3.0E-02
Total Kidney HI Across All Media =	1.6E-02
Total Other HI Across All Media =	1.1E-01

TABLE A3-9.1E - Parcel West - Terrapave, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	6.7E-05	6.7E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.1E-03	9.1E-03
			1,4-DICHLOROBENZENE	NA	NA	3.1E-07	3.1E-07		NA	NA	9.5E-05	9.5E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.3E-03	2.3E-03
			BENZENE	NA	NA	3.7E-06	3.7E-06	Dec. lymphocyte count	NA	NA	1.2E-02	1.2E-02
			CARBON TETRACHLORIDE	NA	NA	2.8E-06	2.8E-06	Liver lesions	NA	NA	4.6E-03	4.6E-03
			CHLOROFORM	NA	NA	5.7E-07	5.7E-07	Liver	NA	NA	2.3E-04	2 3E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2 5E-03	2.5E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.1E-04	3.1E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1 1E-02	1.1E-02
			METHYLENE CHLORIDE	NA	NA	1 4E-07	1.4E-07		NA	NA	9.9E-04	9.9E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	3.2E-03	3.2E-03
			TETRACHLOROETHENE	NA	NA	2.7E-05	2.7E-05	Liver toxicity in mice	NA	NA	3.7E-01	3.7E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	7.1E-03	7.1E-03
			TRICHLOROETHENE	NA	NA	3.8E-07	3.8E-07		NA	NA	8.8E-04	8.8E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	7.5E-06	7 5E-06		NA	NA	4.6E-02	4.6E-02
			Chemical Total	NA	NA	4.2E-05	4.2E-05		NA	NA	4.7E-01	4 7E-01
		Exposure Point Total				Minimum	4.2E-05				Minimum	4.7E-01
	Exposure Medium Total					Minimum	4.2E-05				Minimum	4.7E-01
Indoor Air Total						Minimum	4.2E-05				Minimum	4.7E-01
Receptor Total							4.2E-05					4.7E-01

Total Risk Across All Media = 4.2E-05

Total Hazard Across All Media = 4.7E-01

NA: Not applicable.

---: Risk was not calculated for chemical

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then compannng the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.8E-01
Total Body Weight effects Across All Media =	1.6E-02
Total Kidney HI Across All Media =	9.7E-03
Total Other HI Across All Media =	6.0E-02

TABLE A3-9.1F - Parcel South - Bishop, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.8E-05	2.8E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.3E-02	2.3E-02
			1,4-DICHLOROBENZENE	NA	NA	4.3E-07	4.3E-07		NA	NA	1.3E-04	1.3E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.3E-03	4.3E-03
			BENZENE	NA	NA	4.0E-06	4.0E-06	Dec. lymphocyte count	NA	NA	1.3E-02	1.3E-02
			CARBON TETRACHLORIDE	NA	NA	2.9E-06	2.9E-06	Liver lesions	NA	NA	4.7E-03	4.7E-03
			CHLOROFORM	NA	NA	4.9E-07	4.9E-07	Liver	NA	NA	2.0E-04	2.0E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.9E-03	4.9E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5.6E-04	5.6E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.6E-02	1.6E-02
			METHYL TERT-BUTYL ETHER	NA	NA	2.0E-08	2.0E-08		NA	NA	7.3E-05	7.3E-05
			METHYLENE CHLORIDE	NA	NA	2.0E-07	2.0E-07		NA	NA	1.4E-03	1.4E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.6E-03	5.6E-03
			TETRACHLOROETHENE	NA	NA	2.0E-05	2.0E-05	Liver toxicity in mice	NA	NA	2.7E-01	2.7E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	9.2E-03	9.2E-03
			TRICHLOROETHENE	NA	NA	3.5E-07	3.5E-07		NA	NA	8.2E-04	8.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.7E-03	1.7E-03
			Chemical Total	NA	NA	2.8E-05	2.8E-05		NA	NA	3.6E-01	3.6E-01
		Exposure Point Total				Maximum	2.8E-05				Maximum	3.6E-01
	Exposure Medium Total					Maximum	2.8E-05				Maximum	3.6E-01
Indoor Air Total						Maximum	2.8E-05				Maximum	3.6E-01
Receptor Total							2.8E-05					3.6E-01

Total Risk Across All Media =	2.8E-05
Total Hazard Across All Media =	3.6E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.0E-01
Total Body Weight effects Across All Media =	2.7E-02
Total Kidney HI Across All Media =	1.4E-02
Total Other HI Across All Media =	1.7E-02

NA: Not applicable

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.1F - Parcel South - Bishop, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.8E-05	2.8E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5.9E-03	5.9E-03
			1,4-DICHLOROBENZENE	NA	NA	2.8E-07	2.8E-07		NA	NA	8.6E-05	8.6E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.9E-03	2.9E-03
			BENZENE	NA	NA	3.9E-06	3.9E-06	Dec. lymphocyte count	NA	NA	1.3E-02	1.3E-02
			CARBON TETRACHLORIDE	NA	NA	2.6E-06	2.6E-06	Liver lesions	NA	NA	4.2E-03	4.2E-03
			CHLOROFORM	NA	NA	4.1E-07	4.1E-07	Liver	NA	NA	1.6E-04	1.6E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.4E-03	4.4E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	2.7E-04	2.7E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	8.9E-03	8.9E-03
			METHYL TERT-BUTYL ETHER	NA	NA	2.0E-08	2.0E-08		NA	NA	7.3E-05	7.3E-05
			METHYLENE CHLORIDE	NA	NA	1.2E-07	1.2E-07		NA	NA	8.2E-04	8.2E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.3E-03	3.3E-03
			TETRACHLOROETHENE	NA	NA	4.9E-06	4.9E-06	Liver toxicity in mice	NA	NA	6.7E-02	6.7E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	7.6E-03	7.6E-03
			TRICHLOROETHENE	NA	NA	1.0E-07	1.0E-07		NA	NA	2.4E-04	2.4E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.0E-03	1.0E-03
			Chemical Total	NA	NA	1.2E-05	1.2E-05		NA	NA	1.2E-01	1.2E-01
		Exposure Point Total				Minimum	1.2E-05				Minimum	1.2E-01
	Exposure Medium Total					Minimum	1.2E-05				Minimum	1.2E-01
Indoor Air Total						Minimum	1.2E-05				Minimum	1.2E-01
Receptor Total							1.2E-05					1.2E-01

Total Risk Across All Media = 1.2E-05

Total Hazard Across All Media = 1.2E-01

NA: Not applicable

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	7.7E-02
Total Body Weight effects Across All Media =	1.7E-02
Total Kidney HI Across All Media =	1.1E-02
Total Other HI Across All Media =	1.5E-02

TABLE A3-9.1G - Parcel South - LA Carts, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5.9E-03	5.9E-03
			1,4-DICHLOROBENZENE	NA	NA	2.1E-07	2.1E-07		NA	NA	6.6E-05	6.6E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.3E-01	1.3E-01
			BENZENE	NA	NA	7.4E-06	7.4E-06	Dec. lymphocyte count	NA	NA	2.4E-02	2.4E-02
			CARBON TETRACHLORIDE	NA	NA	2.6E-06	2.6E-06	Liver lesions	NA	NA	4.3E-03	4.3E-03
			CHLOROFORM	NA	NA	1.0E-06	1.0E-06	Liver	NA	NA	4.1E-04	4.1E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.3E-03	5.3E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	6.6E-04	6.6E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.4E-02	2.4E-02
			METHYLENE CHLORIDE	NA	NA	6.9E-07	6.9E-07		NA	NA	4.9E-03	4.9E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.5E-03	8.5E-03
			TETRACHLOROETHENE	NA	NA	1.1E-06	1.1E-06	Liver toxicity in mice	NA	NA	1.5E-02	1.5E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	6.2E-01	6.2E-01
			TRICHLOROETHENE	NA	NA	2.8E-07	2.8E-07		NA	NA	6.6E-04	6.6E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.5E-03	1.5E-03
			Chemical Total	NA	NA	1.3E-05	1.3E-05		NA	NA	8.5E-01	8.5E-01
		Exposure Point Total				Maximum	1.3E-05				Maximum	8.5E-01
	Exposure Medium Total					Maximum	1.3E-05				Maximum	8.5E-01
Indoor Air Total						Maximum	1.3E-05				Maximum	8.5E-01
Receptor Total							1.3E-05					8.5E-01

Total Risk Across All Media = 1.3E-05

Total Hazard Across All Media = 8.5E-01

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	2.6E-02
Total Body Weight effects Across All Media =	3.8E-02
Total Kidney HI Across All Media =	7.5E-01
Total Other HI Across All Media =	3.1E-02

TABLE A3-9.1G - Parcel South - LA Carts, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population.	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.9E-05	9.9E-05
			1,4-DICHLOROBENZENE	NA	NA	2.1E-07	2.1E-07		NA	NA	6 6E-05	6.6E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.7E-03	7.7E-03
			BENZENE	NA	NA	4.4E-06	4.4E-06	Dec. lymphocyte count	NA	NA	1.4E-02	1.4E-02
			CARBON TETRACHLORIDE	NA	NA	2.5E-06	2.5E-06	Liver lesions	NA	NA	4.1E-03	4.1E-03
			CHLOROFORM	NA	NA	3.8E-07	3.8E-07	Liver	NA	NA	1.5E-04	1.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.3E-03	4 3E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.1E-04	3.1E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	9.5E-03	9.5E-03
			METHYLENE CHLORIDE	NA	NA	6.1E-07	6.1E-07		NA	NA	4 3E-03	4.3E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.3E-03	3.3E-03
			TETRACHLOROETHENE	NA	NA	1.7E-07	1.7E-07	Liver toxicity in mice	NA	NA	2.3E-03	2.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-02	1.1E-02
			TRICHLOROETHENE	NA	NA	2.8E-07	2 8E-07		NA	NA	6.6E-04	6.6E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	7.0E-04	7.0E-04
			Chemical Total	NA	NA	8.5E-06	8.5E-06		NA	NA	6.3E-02	6.3E-02
		Exposure Point Total				Minimum	8.5E-06				Minimum	6.3E-02
	Exposure Medium Total					Minimum	8.5E-06				Minimum	6.3E-02
Indoor Air Total						Minimum	8.5E-06				Minimum	6.3E-02
Receptor Total							8.5E-06					6.3E-02

Total Risk Across All Media = 8.5E-06

Total Hazard Across All Media = 6.3E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	6.9E-03
Total Body Weight effects Across All Media =	1.7E-02
Total Kidney HI Across All Media =	1.9E-02
Total Other HI Across All Media =	2.0E-02

TABLE A3-9.1H - Parcel South - Oncology Care, CTE, *Maximum* Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	*Indoor Air*	*Indoor Air*	*1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE*	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.8E-04	3.8E-04
			1,2-DICHLOROETHANE	NA	NA	9.8E-07	9.8E-07		NA	NA	2.1E-02	2.1E-02
			1,4-DICHLOROBENZENE	NA	NA	5.2E-07	5.2E-07		NA	NA	1.6E-04	1.6E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.0E-02	1.0E-02
			BENZENE	NA	NA	4.0E-06	4.0E-06	Dec. lymphocyte count	NA	NA	1.3E-02	1.3E-02
			CARBON TETRACHLORIDE	NA	NA	2.6E-06	2.6E-06	Liver lesions	NA	NA	4.3E-03	4.3E-03
			CHLOROFORM	NA	NA	1.8E-06	1.8E-06	Liver	NA	NA	7.2E-04	7.2E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.6E-03	5.6E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.3E-04	3.3E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.0E-02	1.0E-02
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.3E-03	4.3E-03
			TETRACHLOROETHENE	NA	NA	3.0E-07	3.0E-07	Liver toxicity in mice	NA	NA	4.1E-03	4.1E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.9E-02	1.9E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.5E-04	8.5E-04
			Chemical Total	NA	NA	1.0E-05	1.0E-05		NA	NA	9.4E-02	9.4E-02
		Exposure Point Total				Maximum	1.0E-05				Maximum	9.4E-02
	Exposure Medium Total					Maximum	1.0E-05				Maximum	9.4E-02
Indoor Air Total						Maximum	1.0E-05				Maximum	9.4E-02
Receptor Total							1.0E-05					9.4E-02

Total Risk Across All Media =	1.0E-05
Total Hazard Across All Media =	9.4E-02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	9.8E-03
Total Body Weight effects Across All Media =	2.0E-02
Total Kidney HI Across All Media =	2.9E-02
Total Other HI Across All Media =	3.6E-02

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9 1H - Parcel South - Oncology Care, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.3E-04	3.3E-04
			1,2-DICHLOROETHANE	NA	NA	9.8E-07	9.8E-07		NA	NA	2.1E-02	2.1E-02
			1,4-DICHLOROBENZENE	NA	NA	5.2E-07	5.2E-07		NA	NA	1.6E-04	1.6E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	9.9E-03	9.9E-03
			BENZENE	NA	NA	3.7E-06	3.7E-06	Dec. lymphocyte count	NA	NA	1.2E-02	1.2E-02
			CARBON TETRACHLORIDE	NA	NA	2.5E-06	2.5E-06	Liver lesions	NA	NA	4.1E-03	4.1E-03
			CHLOROFORM	NA	NA	1.5E-06	1.5E-06	Liver	NA	NA	6.2E-04	6.2E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.8E-03	4.8E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.1E-04	3.1E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	9.9E-03	9.9E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	3.9E-03	3.9E-03
			TETRACHLOROETHENE	NA	NA	3.0E-07	3.0E-07	Liver toxicity in mice	NA	NA	4.1E-03	4.1E-03
			TOLUENE	NA	NA	---	---	inc. kidney weight	NA	NA	1.8E-02	1.8E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.0E-04	8.0E-04
			Chemical Total	NA	NA	9.6E-06	9.6E-06		NA	NA	9.0E-02	9.0E-02
		Exposure Point Total				Minimum	9.6E-06				Minimum	9.0E-02
	Exposure Medium Total					Minimum	9.6E-06				Minimum	9.0E-02
Indoor Air Total						Minimum	9.6E-06				Minimum	9.0E-02
Receptor Total							9.6E-06					9.0E-02

Total Risk Across All Media =	9.6E-06	Total Hazard Across All Media =	9.0E-02
		Hazards by Toxicity Endpoint(1)	
		Total Liver HI Across All Media =	9.5E-03
		Total Body Weight effects Across All Media =	1.9E-02
		Total Kidney HI Across All Media =	2.8E-02
		Total Other HI Across All Media =	3.4E-02

NA: Not applicable.
---: Risk was not calculated for chemical
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,4-DIOXANE	9.1E-08	6.0E-08	NA	1.5E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	*Pulmonary alveolar proteinosis*	9.5E-05	6.3E-05	NA	1.6E-04
			4,4'-DDD	2.0E-09	3.9E-10	NA	2.4E-09		NA	NA	NA	---
			4,4'-DDE	2.1E-08	4.1E-09	NA	2.5E-08		NA	NA	NA	---
			4,4'-DDT	1.3E-08	2.5E-09	NA	1.5E-08	Liver lesions	2.1E-04	4.1E-05	NA	2 5E-04
			ALUMINUM	---	---	NA	---		9.6E-03	NA	NA	9.6E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	3.4E-02	NA	NA	3.4E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	7.9E-04	NA	NA	7.9E-04
			BENZO(A)ANTHRACENE	8.1E-07	6.9E-07	NA	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	3.2E-06	2.7E-06	NA	5.9E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.0E-07	1.7E-07	NA	3.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.3E-07	8.8E-08	NA	2.2E-07	Inc. liver weight	1.3E-03	8.8E-04	NA	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	4.4E-06	2.9E-06	NA	7.3E-06
			CADMIUM	---	---	NA	---	significant proteinuria	1 3E-03	3.5E-04	NA	1.7E-03
			CHROMIUM III	---	---	NA	---	No observed effects	5.0E-05	NA	NA	5.0E-05
			CHROMIUM VI	---	---	NA	---	None	4.1E-03	NA	NA	4.1E-03
			CHRYSENE	2.0E-07	1.7E-07	NA	3.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		4.7E-04	NA	NA	4.7E-04
			COPPER	---	---	NA	---		9.8E-04	NA	NA	9.8E-04
			DIELDRIN	2.2E-07	1.5E-07	NA	3.7E-07	Liver	7.8E-04	5.1E-04	NA	1.3E-03
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	9.1E-06	7.8E-06	NA	1.7E-05
			IRON	---	---	NA	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	3.0E-09	2.0E-09	NA	5.0E-09	No observed effects	4.4E-05	2.9E-05	NA	7.4E-05
			LEAD	1.9E-07	---	NA	1.9E-07		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	NA	---		9.9E-04	NA	NA	9.9E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	6.6E-04	NA	NA	6.6E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	2.9E-05	2.5E-05	NA	5.4E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03
			PCB-1254 (AROCLOR 1254)	7.4E-07	6.9E-07	NA	1.4E-06	Ocular exudate	2.1E-02	1.9E-02	NA	4.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8.1E-07	NA	1.7E-06		7.0E-03	6.5E-03	NA	1.3E-02
			PYRENE	---	---	NA	---	Kidney	7.5E-05	6.5E-05	NA	1.4E-04
			SILVER	---	---	NA	---	Argyria	1.3E-04	NA	NA	1.3E-04
			THALLIUM	---	---	NA	---		3.0E-02	NA	NA	3.0E-02
			VANADIUM	---	---	NA	---		4.6E-02	NA	NA	4.6E-02

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	3.2E-04	NA	NA	3.2E-04
			Chemical Total	6.7E-06	5.6E-06	NA	1.2E-05		2.4E-01	2.8E-02	NA	2.7E-01
		Exposure Point Total					1.2E-05					2.7E-01
	Exposure Medium Total						1.2E-05					2.7E-01
Surface Soil Total							1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.2E-05	5.2E-05
		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.4E-02	2.4E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	8.3E-03	8.3E-03
			BENZENE	NA	NA	5.8E-05	5.8E-05	Dec. lymphocyte count	NA	NA	1.9E-01	1.9E-01
			CARBON TETRACHLORIDE	NA	NA	5.2E-06	5.2E-06	Liver lesions	NA	NA	8.5E-03	8.5E-03
			CHLOROFORM	NA	NA	1.1E-06	1.1E-06	Liver	NA	NA	4.3E-04	4.3E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	8.1E-03	8.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	8.3E-03	8.3E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.3E-01	4.3E-01
			METHYLENE CHLORIDE	NA	NA	4.8E-05	4.8E-05		NA	NA	3.4E-01	3.4E-01
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.8E-02	8.8E-02
			TETRACHLOROETHENE	NA	NA	1.4E-05	1.4E-05	Liver toxicity in mice	NA	NA	1.9E-01	1.9E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.0E-01	3.0E-01
			TRICHLOROETHENE	NA	NA	1.2E-06	1.2E-06		NA	NA	2.9E-03	2.9E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	4.4E-03	4.4E-03
			Chemical Total	NA	NA	1.3E-04	1.3E-04		NA	NA	1.6E+00	1.6E+00
		Exposure Point Total				Maximum	1.3E-04				Maximum	1.6E+00
	Exposure Medium Total					Maximum	1.3E-04				Maximum	1.6E+00
Indoor Air Total						Maximum	1.3E-04				Maximum	1.6E+00
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.4E-05	3.4E-05
		Maximum	1,1,2,2-TETRACHLOROETHANE	NA	NA	5.2E-07	5.2E-07		NA	NA	1.2E-04	1.2E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.1E-04	2.1E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	9.6E-05	9.6E-05
			1,4-DICHLOROBENZENE	NA	NA	1.0E-07	1.0E-07		NA	NA	3.2E-05	3.2E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.8E-02	7.8E-02
			BENZENE	NA	NA	7.2E-07	7.2E-07	Dec. lymphocyte count	NA	NA	2.4E-03	2.4E-03
			CARBON TETRACHLORIDE	NA	NA	6.3E-07	6.3E-07	Liver lesions	NA	NA	1.0E-03	1.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.1E-03	1.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	6.2E-05	6.2E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.0E-03	2.0E-03
			METHYLENE CHLORIDE	NA	NA	4.8E-08	4.8E-08		NA	NA	3.4E-04	3.4E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	7.8E-04	7.8E-04

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	2.4E-07	2.4E-07	Liver toxicity in mice	NA	NA	3.3E-03	3.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-03	1.8E-03
			TRICHLOROETHENE	NA	NA	5.0E-08	5.0E-08		NA	NA	1.2E-04	1.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.9E-04	1.9E-04
			Chemical Total	NA	NA	2.3E-06	2.3E-06		NA	NA	9.2E-02	9.2E-02
		Exposure Point Total				Maximum	2.3E-06				Maximum	9.2E-02
	Exposure Medium Total					*Maximum*	2.3E-06				*Maximum*	9.2E-02
Outdoor Air Total						Maximum	2.3E-06				Maximum	9.2E-02
Receptor Total							1.4E-04					2.0E+00

Total Risk Across All Media = 1.4E-04

Total Hazard Across All Media = 2.0E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 2.4E-01
Total Body Weight effects Across All Media = 5.3E-01
Total Kidney HI Across All Media = 3.9E-01
Total Other HI Across All Media = 8.0E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS. Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2 2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,4-DIOXANE	9.1E-08	6.0E-08	NA	1.5E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	9.5E-05	6 3E-05	NA	1.6E-04
			4,4'-DDD	2 0E-09	3.9E-10	NA	2.4E-09		NA	NA	NA	---
			4,4'-DDE	2.1E-08	4.1E-09	NA	2.5E-08		NA	NA	NA	---
			4,4'-DDT	1.3E-08	2.5E-09	NA	1.5E-08	Liver lesions	2.1E-04	4.1E-05	NA	2.5E-04
			ALUMINUM	---	---	NA	---		9.6E-03	NA	NA	9.6E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	3 4E-02	NA	NA	3.4E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	7.9E-04	NA	NA	7.9E-04
			BENZO(A)ANTHRACENE	8 1E-07	6.9E-07	NA	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	3.2E-06	2.7E-06	NA	5.9E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.0E-07	1.7E-07	NA	3.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.3E-07	8.8E-08	NA	2 2E-07	Inc liver weight	1.3E-03	8.8E-04	NA	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	4.4E-06	2.9E-06	NA	7.3E-06
			CADMIUM	---	---	NA	---	significant proteinuria	1 3E-03	3.5E-04	NA	1.7E-03
			CHROMIUM III	---	---	NA	---	No observed effects	5.0E-05	NA	NA	5.0E-05
			CHROMIUM VI	---	---	NA	---	None	4.1E-03	NA	NA	4.1E-03
			CHRYSENE	2.0E-07	1.7E-07	NA	3 7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		4.7E-04	NA	NA	4.7E-04
			COPPER	---	---	NA	---		9 8E-04	NA	NA	9.8E-04
			DIELDRIN	2.2E-07	1.5E-07	NA	3.7E-07	Liver	7.8E-04	5.1E-04	NA	1.3E-03
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt	9.1E-06	7.8E-06	NA	1.7E-05
			IRON	---	---	NA	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	3.0E-09	2.0E-09	NA	5.0E-09	No observed effects	4.4E-05	2.9E-05	NA	7.4E-05
			LEAD	1.9E-07	---	NA	1 9E-07		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	NA	---		9.9E-04	NA	NA	9.9E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	6.6E-04	NA	NA	6.6E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	2.9E-05	2.5E-05	NA	5.4E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03
			PCB-1254 (AROCLOR 1254)	7.4E-07	6.9E-07	NA	1.4E-06	Ocular exudate	2.1E-02	1.9E-02	NA	4.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8.1E-07	NA	1.7E-06		7.0E-03	6.5E-03	NA	1.3E-02
			PYRENE	---	---	NA	---	Kidney	7.5E-05	6.5E-05	NA	1 4E-04
			SILVER	---	---	NA	---	Argyria	1.3E-04	NA	NA	1.3E-04
			THALLIUM	---	---	NA	---		3.0E-02	NA	NA	3.0E-02
			VANADIUM	---	---	NA	---		4.6E-02	NA	NA	4.6E-02

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	3.2E-04	NA	NA	3.2E-04
			Chemical Total	6.7E-06	5.6E-06	NA	1.2E-05		2.4E-01	2.8E-02	NA	2.7E-01
		Exposure Point Total					1.2E-05					2.7E-01
	Exposure Medium Total						1.2E-05					2.7E-01
Surface Soil Total							1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.0E-05	5.0E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.8E-03	1 8E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.0E-03	4.0E-03
			BENZENE	NA	NA	1.5E-05	1.5E-05	Dec. lymphocyte count	NA	NA	4.9E-02	4.9E-02
			CARBON TETRACHLORIDE	NA	NA	4.5E-06	4.5E-06	Liver lesions	NA	NA	7.4E-03	7.4E-03
			CHLOROFORM	NA	NA	1.1E-06	1.1E-06	Liver	NA	NA	4.3E-04	4.3E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.6E-03	3.6E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.7E-03	1.7E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	7.3E-02	7.3E-02
			METHYLENE CHLORIDE	NA	NA	3 3E-07	3.3E-07		NA	NA	2.3E-03	2.3E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.5E-02	1.5E-02
			TETRACHLOROETHENE	NA	NA	1.1E-06	1.1E-06	Liver toxicity in mice	NA	NA	1.5E-02	1.5E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	5.9E-02	5.9E-02
			TRICHLOROETHENE	NA	NA	9.3E-08	9.3E-08		NA	NA	2.2E-04	2.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.5E-03	1.5E-03
			Chemical Total	NA	NA	2.2E-05	2.2E-05		NA	NA	2.3E-01	2.3E-01
		Exposure Point Total				Minimum	2.2E-05				Minimum	2.3E-01
	Exposure Medium Total					Minimum	2.2E-05				Minimum	2.3E-01
Indoor Air Total						Minimum	2.2E-05				Minimum	2.3E-01
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.4E-05	3.4E-05
		Minimum	1,1,2,2-TETRACHLOROETHANE	NA	NA	5.2E-07	5.2E-07		NA	NA	1.2E-04	1.2E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.1E-04	2.1E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	9.6E-05	9.6E-05
			1,4-DICHLOROBENZENE	NA	NA	1.0E-07	1.0E-07		NA	NA	3.2E-05	3.2E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.8E-02	7.8E-02
			BENZENE	NA	NA	7.2E-07	7.2E-07	Dec. lymphocyte count	NA	NA	2.4E-03	2.4E-03
			CARBON TETRACHLORIDE	NA	NA	6.3E-07	6.3E-07	Liver lesions	NA	NA	1.0E-03	1.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.1E-03	1.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	6.2E-05	6.2E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	2.0E-03	2.0E-03
			METHYLENE CHLORIDE	NA	NA	4.8E-08	4.8E-08		NA	NA	3.4E-04	3.4E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	7.8E-04	7.8E-04

TABLE A3-9.2A - Parcel Site - 3 Kings Construction, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	2.4E-07	2.4E-07	Liver toxicity in mice	NA	NA	3.3E-03	3.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-03	1.8E-03
			TRICHLOROETHENE	NA	NA	5.0E-08	5.0E-08		NA	NA	1.2E-04	1.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.9E-04	1.9E-04
			Chemical Total	NA	NA	2.3E-06	2.3E-06		NA	NA	9.2E-02	9.2E-02
		Exposure Point Total				Minimum	2.3E-06				Minimum	9.2E-02
	Exposure Medium Total					Minimum	2.3E-06				Minimum	9.2E-02
Outdoor Air Total						Minimum	2.3E-06				Minimum	9.2E-02
Receptor Total							3.7E-05					5.9E-01

Total Risk Across All Media = 3.7E-05

Total Hazard Across All Media = 5.9E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.5E-02
Total Body Weight effects Across All Media =	9.7E-02
Total Kidney HI Across All Media =	1.5E-01
Total Other HI Across All Media =	3.2E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	*Industrial Worker*
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	*Dermal*	*Inhalation*	*Exposure Routes Total*	*Primary Target Organ(s)*	*Ingestion*	*Dermal*	*Inhalation*	*Exposure Routes Total*
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,4-DIOXANE	9.1E-08	6.0E-08	NA	1.5E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	9.5E-05	6.3E-05	NA	1.6E-04
			4,4'-DDD	2.0E-09	3.9E-10	NA	2.4E-09		NA	NA	NA	---
			4,4'-DDE	2.1E-08	4.1E-09	NA	2.5E-08		NA	NA	NA	---
			4,4'-DDT	1.3E-08	2.5E-09	NA	1.5E-08	Liver lesions	2.1E-04	4 1E-05	NA	2.5E-04
			ALUMINUM	---	---	NA	---		9.6E-03	NA	NA	9 6E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	3.4E-02	NA	NA	3.4E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	7.9E-04	NA	NA	7.9E-04
			BENZO(A)ANTHRACENE	8.1E-07	6.9E-07	NA	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	3.2E-06	2.7E-06	NA	5.9E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.0E-07	1.7E-07	NA	3.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.3E-07	8 8E-08	NA	2.2E-07	Inc. liver weight	1.3E-03	8.8E-04	NA	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	4.4E-06	2.9E-06	NA	7.3E-06
			CADMIUM	---	---	NA	---	significant proteinuria	1.3E-03	3.5E-04	NA	1.7E-03
			CHROMIUM III	---	---	NA	---	No observed effects	5.0E-05	NA	NA	5.0E-05
			CHROMIUM VI	---	---	NA	---	None	4.1E-03	NA	NA	4.1E-03
			CHRYSENE	2.0E-07	1.7E-07	NA	3.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		4.7E-04	NA	NA	4.7E-04
			COPPER	---	---	NA	---		9.8E-04	NA	NA	9.8E-04
			DIELDRIN	2.2E-07	1.5E-07	NA	3.7E-07	Liver	7.8E-04	5.1E-04	NA	1.3E-03
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	9.1E-06	7.8E-06	NA	1.7E-05
			IRON	---	---	NA	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	3.0E-09	2.0E-09	NA	5.0E-09	No observed effects	4.4E-05	2.9E-05	NA	7.4E-05
			LEAD	1.9E-07	---	NA	1.9E-07		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	NA	---		9.9E-04	NA	NA	9.9E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	6.6E-04	NA	NA	6.6E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	2.9E-05	2.5E-05	NA	5.4E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03
			PCB-1254 (AROCLOR 1254)	7.4E-07	6.9E-07	NA	1.4E-06	Ocular exudate	2.1E-02	1.9E-02	NA	4.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8.1E-07	NA	1.7E-06		7.0E-03	6.5E-03	NA	1.3E-02
			PYRENE	---	---	NA	---	Kidney	7.5E-05	6.5E-05	NA	1.4E-04
			SILVER	---	---	NA	---	*Argyria*	1.3E-04	NA	NA	1.3E-04
			THALLIUM	---	---	NA	---		3.0E-02	NA	NA	3.0E-02
			VANADIUM	---	---	NA	---		4.6E-02	NA	NA	4.6E-02

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	3.2E-04	NA	NA	3.2E-04
			Chemical Total	6.7E-06	5.6E-06	NA	1.2E-05		2.4E-01	2.8E-02	NA	2.7E-01
		Exposure Point Total					1.2E-05					2.7E-01
	Exposure Medium Total						1.2E-05					2.7E-01
Surface Soil Total							1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	7.8E-05	7.8E-05
		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.7E-02	4.7E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	9.9E-01	9.9E-01
			BENZENE	NA	NA	2.8E-05	2 8E-05	Dec lymphocyte count	NA	NA	9.2E-02	9.2E-02
			CARBON TETRACHLORIDE	NA	NA	5.3E-06	5.3E-06	Liver lesions	NA	NA	8.7E-03	8.7E-03
			CHLOROFORM	NA	NA	8.1E-07	8.1E-07	Liver	NA	NA	3.3E-04	3.3E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.0E-03	7.0E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	2.5E-02	2.5E-02
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	1.4E+00	1.4E+00
			METHYLENE CHLORIDE	NA	NA	8.9E-07	8.9E-07		NA	NA	6.3E-03	6.3E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	4.1E-01	4.1E-01
			TETRACHLOROETHENE	NA	NA	3.7E-05	3.7E-05	Liver toxicity in mice	NA	NA	5 1E-01	5.1E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.2E+00	4.2E+00
			TRICHLOROETHENE	NA	NA	2 4E-06	2.4E-06		NA	NA	5.7E-03	5.7E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.0E-02	1.0E-02
			Chemical Total	NA	NA	7.5E-05	7.5E-05		NA	NA	7.7E+00	7.7E+00
		Exposure Point Total				Maximum	7.5E-05				Maximum	7.7E+00
	Exposure Medium Total					Maximum	7.5E-05				Maximum	7.7E+00
Indoor Air Total						Maximum	7.5E-05				Maximum	7.7E+00
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.4E-05	3.4E-05
		Maximum	1,1,2,2-TETRACHLOROETHANE	NA	NA	5 2E-07	5.2E-07		NA	NA	1.2E-04	1.2E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.1E-04	2.1E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	9.6E-05	9.6E-05
			1,4-DICHLOROBENZENE	NA	NA	1.0E-07	1.0E-07		NA	NA	3.2E-05	3.2E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.8E-02	7.8E-02
			BENZENE	NA	NA	7.2E-07	7.2E-07	Dec. lymphocyte count	NA	NA	2.4E-03	2.4E-03
			CARBON TETRACHLORIDE	NA	NA	6.3E-07	6.3E-07	Liver lesions	NA	NA	1.0E-03	1.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	1.1E-03	1.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	6.2E-05	6 2E-05
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	2.0E-03	2.0E-03
			METHYLENE CHLORIDE	NA	NA	4.8E-08	4.8E-08		NA	NA	3.4E-04	3.4E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	7.8E-04	7.8E-04

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	2.4E-07	2.4E-07	Liver toxicity in mice	NA	NA	3.3E-03	3.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-03	1.8E-03
			TRICHLOROETHENE	NA	NA	5.0E-08	5.0E-08		NA	NA	1.2E-04	1.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.9E-04	1.9E-04
			Chemical Total	NA	NA	2.3E-06	2.3E-06		NA	NA	9.2E-02	9.2E-02
		Exposure Point Total				Maximum	2.3E-06				Maximum	9.2E-02
	Exposure Medium Total					Maximum	2.3E-06				Maximum	9.2E-02
Outdoor Air Total						Maximum	2.3E-06				Maximum	9.2E-02
Receptor Total							8.9E-05					8.0E+00

Total Risk Across All Media =	*8.9E-05*	*Total Hazard Across All Media =*	*8.0E+00*

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	6.0E-01
Total Body Weight effects Across All Media =	1.8E+00
Total Kidney HI Across All Media =	5.3E+00
Total Other HI Across All Media =	3.8E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil 0'-2.2'	Surface Soil 0'-2.2'	1,2-DICHLOROBENZENE	---	---	NA	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,4-DIOXANE	9.1E-08	6.0E-08	NA	1.5E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	NA	---	Pulmonary alveolar proteinosis	9.5E-05	6.3E-05	NA	1.6E-04
			4,4'-DDD	2.0E-09	3.9E-10	NA	2.4E-09		NA	NA	NA	---
			4,4'-DDE	2.1E-08	4.1E-09	NA	2.5E-08		NA	NA	NA	---
			4,4'-DDT	1.3E-08	2.5E-09	NA	1.5E-08	Liver lesions	2.1E-04	4.1E-05	NA	2.5E-04
			ALUMINUM	---	---	NA	---		9.6E-03	NA	NA	9.6E-03
			ANTIMONY	---	---	NA	---	longevity, blood glucose and chloesterol	3.4E-02	NA	NA	3.4E-02
			BARIUM	---	---	NA	---	Nephropathy (kidney)	7.9E-04	NA	NA	7.9E-04
			BENZO(A)ANTHRACENE	8.1E-07	6.9E-07	NA	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	3.2E-06	2.7E-06	NA	5.9E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.0E-07	1.7E-07	NA	3.8E-07		NA	NA	NA	---
			BERYLLIUM	---	---	NA	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.3E-07	8.8E-08	NA	2.2E-07	Inc. liver weight	1.3E-03	8.8E-04	NA	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	NA	---	inc. body wt. and liver to brain ratio	4.4E-06	2.9E-06	NA	7.3E-06
			CADMIUM	---	---	NA	---	significant proteinuna	1.3E-03	3.5E-04	NA	1.7E-03
			CHROMIUM III	---	---	NA	---	No observed effects	5.0E-05	NA	NA	5.0E-05
			CHROMIUM VI	---	---	NA	---	None	4.1E-03	NA	NA	4.1E-03
			CHRYSENE	2.0E-07	1.7E-07	NA	3.7E-07		NA	NA	NA	---
			COBALT	---	---	NA	---		4.7E-04	NA	NA	4.7E-04
			COPPER	---	---	NA	---		9.8E-04	NA	NA	9.8E-04
			DIELDRIN	2.2E-07	1.5E-07	NA	3.7E-07	Liver	7.8E-04	5.1E-04	NA	1.3E-03
			FLUORANTHENE (IDRYL)	---	---	NA	---	Nephropathy (kidney), inc. liver wt.	9.1E-06	7.8E-06	NA	1.7E-05
			IRON	---	---	NA	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	3.0E-09	2.0E-09	NA	5.0E-09	No observed effects	4.4E-05	2.9E-05	NA	7.4E-05
			LEAD	1.9E-07	---	NA	1.9E-07		NA	NA	NA	---
			MANGANESE	---	---	NA	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	NA	---		9.9E-04	NA	NA	9.9E-04
			MOLYBDENUM	---	---	NA	---	Inc. uric acid levels	6.6E-04	NA	NA	6.6E-04
			NAPHTHALENE	---	---	NA	---	Dec. body weight in males	2.9E-05	2.5E-05	NA	5.4E-05
			NICKEL	---	---	NA	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03
			PCB-1254 (AROCLOR 1254)	7.4E-07	6.9E-07	NA	1.4E-06	Ocular exudate	2.1E-02	1.9E-02	NA	4.0E-02
			PHENANTHRENE	---	---	NA	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8.1E-07	NA	1.7E-06		7.0E-03	6.5E-03	NA	1.3E-02
			PYRENE	---	---	NA	---	Kidney	7.5E-05	6.5E-05	NA	1.4E-04
			SILVER	---	---	NA	---	Argyria	1.3E-04	NA	NA	1.3E-04
			THALLIUM	---	---	NA	---		3.0E-02	NA	NA	3.0E-02
			VANADIUM	---	---	NA	---		4.6E-02	NA	NA	4.6E-02

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			ZINC	---	---	NA	---	Dec. euythrocyte Cu	3.2E-04	NA	NA	3.2E-04
			Chemical Total	6.7E-06	5.6E-06	NA	1.2E-05		2.4E-01	2.8E-02	NA	2.7E-01
		Exposure Point Total					1.2E-05					2.7E-01
	Exposure Medium Total						1.2E-05					2.7E-01
Surface Soil Total							1.2E-05					2.7E-01
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	7.6E-05	7.6E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.2E-03	4.2E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.5E-02	5.5E-02
			BENZENE	NA	NA	1.4E-05	1.4E-05	Dec. lymphocyte count	NA	NA	4.5E-02	4.5E-02
			CARBON TETRACHLORIDE	NA	NA	5.3E-06	5.3E-06	Liver lesions	NA	NA	8.6E-03	8.6E-03
			CHLOROFORM	NA	NA	8.1E-07	8.1E-07	Liver	NA	NA	3.3E-04	3.3E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.9E-03	4.9E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	2 4E-03	2.4E-03
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	1.1E-01	1.1E-01
			METHYLENE CHLORIDE	NA	NA	2.8E-07	2.8E-07		NA	NA	2.0E-03	2.0E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.7E-02	2.7E-02
			TETRACHLOROETHENE	NA	NA	6.6E-06	6.6E-06	Liver toxicity in mice	NA	NA	8 9E-02	8.9E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	6.2E-02	6.2E-02
			TRICHLOROETHENE	NA	NA	1.3E-06	1.3E-06		NA	NA	3.0E-03	3.0E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.2E-03	8.2E-03
			Chemical Total	NA	NA	2.8E-05	2.8E-05		NA	NA	4.2E-01	4.2E-01
		Exposure Point Total				Minimum	2.8E-05				Minimum	4.2E-01
	Exposure Medium Total					Minimum	2.8E-05				Minimum	4.2E-01
Indoor Air Total						Minimum	2.8E-05				Minimum	4.2E-01
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.4E-05	3.4E-05
		Minimum	1,1,2,2-TETRACHLOROETHANE	NA	NA	5.2E-07	5.2E-07		NA	NA	1.2E-04	1.2E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.1E-04	2.1E-04
			1,2-DICHLOROBENZENE	NA	NA	---	---	No observed effects	NA	NA	9.6E-05	9.6E-05
			1,4-DICHLOROBENZENE	NA	NA	1.0E-07	1.0E-07		NA	NA	3.2E-05	3.2E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.8E-02	7.8E-02
			BENZENE	NA	NA	7.2E-07	7.2E-07	Dec. lymphocyte count	NA	NA	2.4E-03	2.4E-03
			CARBON TETRACHLORIDE	NA	NA	6.3E-07	6.3E-07	Liver lesions	NA	NA	1.0E-03	1.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.1E-03	1.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	6.2E-05	6.2E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.0E-03	2.0E-03
			METHYLENE CHLORIDE	NA	NA	4.8E-08	4.8E-08		NA	NA	3.4E-04	3.4E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	7.8E-04	7.8E-04

TABLE A3-9.2B - Parcel Site - Star City Auto Body, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			TETRACHLOROETHENE	NA	NA	2.4E-07	2.4E-07	Liver toxicity in mice	NA	NA	3.3E-03	3.3E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-03	1.8E-03
			TRICHLOROETHENE	NA	NA	5.0E-08	5.0E-08		NA	NA	1.2E-04	1.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.9E-04	1.9E-04
			Chemical Total	NA	NA	2.3E-06	2.3E-06		NA	NA	9.2E-02	9.2E-02
		Exposure Point Total				Minimum	2.3E-06				Minimum	9.2E-02
	Exposure Medium Total					Minimum	2.3E-06				Minimum	9.2E-02
Outdoor Air Total						Minimum	2.3E-06				Minimum	9.2E-02
Receptor Total							4.3E-05					7.8E-01

Total Risk Across All Media = 4.3E-05

Total Hazard Across All Media = 7.8E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.1E-01
Total Body Weight effects Across All Media =	1.5E-01
Total Kidney HI Across All Media =	2.0E-01
Total Other HI Across All Media =	3.2E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2C - Parcel North - Medlin & Sons 12484, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.0E-05	5.0E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.6E-02	2.6E-02
			1,4-DICHLOROBENZENE	NA	NA	2.0E-06	2.0E-06		NA	NA	6.2E-04	6.2E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.6E-01	5.6E-01
			BENZENE	NA	NA	5.8E-06	5.8E-06	Dec. lymphocyte count	NA	NA	1.9E-02	1.9E-02
			CARBON TETRACHLORIDE	NA	NA	1.0E-05	1.0E-05	Liver lesions	NA	NA	1.7E-02	1.7E-02
			CHLOROFORM	NA	NA	1.4E-06	1.4E-06	Liver	NA	NA	5.6E-04	5.6E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	8.6E-03	8.6E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.4E-04	4.4E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.4E-02	1.4E-02
			METHYLENE CHLORIDE	NA	NA	9.5E-07	9.5E-07		NA	NA	6.7E-03	6.7E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. *mortality*	NA	NA	5.2E-03	5.2E-03
			TETRACHLOROETHENE	NA	NA	2.4E-05	2.4E-05	Liver toxicity in mice	NA	NA	3.3E-01	3.3E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.3E-02	1.3E-02
			TRICHLOROETHENE	NA	NA	5.2E-06	5.2E-06		NA	NA	1.2E-02	1.2E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.9E-03	8.9E-03
			Chemical Total	NA	NA	5.0E-05	5.0E-05		NA	NA	1.0E+00	1.0E+00
		Exposure Point Total				Maximum	5.0E-05				Maximum	1.0E+00
	Exposure Medium Total					Maximum	5.0E-05				Maximum	1.0E+00
Indoor Air Total						Maximum	5.0E-05				Maximum	1.0E+00
Receptor Total							5.0E-05					1.0E+00

Total Risk Across All Media = 5.0E-05

Total Hazard Across All Media = 1.0E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 4.4E-02

Total Body Weight effects Across All Media = 2.8E-02

Total Kidney HI Across All Media = 5.8E-01

Total Other HI Across All Media = 3.7E-01

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2C - Parcel North - Medlin & Sons 12484, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.0E-05	5.0E-05
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	7 6E-03	7 6E-03
			1,4-DICHLOROBENZENE	NA	NA	4.2E-07	4.2E-07		NA	NA	1.3E-04	1.3E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.6E-03	3.6E-03
			BENZENE	NA	NA	4.8E-06	4.8E-06	Dec. lymphocyte count	NA	NA	1.6E-02	1.6E-02
			CARBON TETRACHLORIDE	NA	NA	5 3E-06	5.3E-06	Liver lesions	NA	NA	8.7E-03	8.7E-03
			CHLOROFORM	NA	NA	8.6E-07	8.6E-07	Liver	NA	NA	3.5E-04	3.5E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	3.1E-03	3.1E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.7E-04	3.7E-04
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	1.1E-02	1.1E-02
			METHYLENE CHLORIDE	NA	NA	3.2E-07	3 2E-07		NA	NA	2 2E-03	2 2E-03
			O-XYLENE	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	4.5E-03	4.5E-03
			TETRACHLOROETHENE	NA	NA	4.7E-06	4.7E-06	Liver toxicity in mice	NA	NA	6.4E-02	6.4E-02
			TOLUENE	NA	NA	---	---	Inc kidney weight	NA	NA	8.3E-03	8.3E-03
			TRICHLOROETHENE	NA	NA	8.6E-07	8.6E-07		NA	NA	2.0E-03	2.0E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	4 0E-03	4.0E-03
			Chemical Total	NA	NA	1 7E-05	1.7E-05		NA	NA	1.4E-01	1.4E-01
		Exposure Point Total				Minimum	1.7E-05				Minimum	1.4E-01
	Exposure Medium Total					Minimum	1.7E-05				Minimum	1.4E-01
Indoor Air Total						Minimum	1.7E-05				Minimum	1.4E-01
Receptor Total							1.7E-05					1.4E-01

Total Risk Across All Media = 1.7E-05

Total Hazard Across All Media = 1.4E-01

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.7E-02
Total Body Weight effects Across All Media =	1.9E-02
Total Kidney HI Across All Media =	1.2E-02
Total Other HI Across All Media =	8.8E-02

TABLE A3-9.2D - Parcel North - Medlin & Sons North 12476, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.1E-02	7.1E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-03	6.8E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.9E-03	4.9E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	*Survival and histopathology*	NA	NA	1.2E-03	1.2E-03
			Chemical Total	NA	NA	0.0E+00	0.0E+00		NA	NA	8.4E-02	8.4E-02
		Exposure Point Total					Maximum 0.0E+00				Maximum	8.4E-02
	Exposure Medium Total						Maximum 0.0E+00				Maximum	8.4E-02
Indoor Air Total							Maximum 0.0E+00				Maximum	8.4E-02
Receptor Total							0.0E+00					8.4E-02

Total Risk Across All Media = 0.0E+00

Total Hazard Across All Media = 8.4E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	0.0E+00
Total Body Weight effects Across All Media =	6.8E-03
Total Kidney HI Across All Media =	7.6E-02
Total Other HI Across All Media =	1.2E-03

TABLE A3-9.2D - Parcel North - Medlin & Sons North 12476, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.1E-02	7.1E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-03	6.8E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.9E-03	4.9E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.2E-03	1.2E-03
			Chemical Total	NA	NA	0.0E+00	0.0E+00		NA	NA	8.4E-02	8.4E-02
		Exposure Point Total				Minimum	0.0E+00				Minimum	8.4E-02
	Exposure Medium Total					Minimum	0.0E+00				Minimum	8.4E-02
Indoor Air Total						Minimum	0.0E+00				Minimum	8.4E-02
Receptor Total							0.0E+00					8.4E-02

Total Risk Across All Media = 0.0E+00

Total Hazard Across All Media = 8.4E-02

NA. Not applicable.

---. Risk was not calculated for chemical.

HI. Hazard Index.

CNS. Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	0.0E+00
Total Body Weight effects Across All Media =	6.8E-03
Total Kidney HI Across All Media =	7.6E-02
Total Other HI Across All Media =	1.2E-03

TABLE A3-9.2E - Parcel West - Terrapave, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population.	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.2E-04	1.2E-04
		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.0E-02	6.0E-02
			1,4-DICHLOROBENZENE	NA	NA	5.7E-07	5.7E-07		NA	NA	1.8E-04	1.8E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.1E-03	7.1E-03
			BENZENE	NA	NA	7.4E-06	7.4E-06	Dec. lymphocyte count	NA	NA	2.4E-02	2.4E-02
			CARBON TETRACHLORIDE	NA	NA	5.3E-06	5.3E-06	Liver lesions	NA	NA	8.7E-03	8.7E-03
			CHLOROFORM	NA	NA	1.0E-06	1.0E-06	Liver	NA	NA	4.2E-04	4.2E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.5E-03	7.5E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	8.3E-04	8.3E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.9E-02	2.9E-02
			METHYLENE CHLORIDE	NA	NA	2.8E-07	2.8E-07		NA	NA	2.0E-03	2.0E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.1E-02	1.1E-02
			TETRACHLOROETHENE	NA	NA	1.2E-04	1.2E-04	Liver toxicity in mice	NA	NA	1.6E+00	1.6E+00
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.7E-02	1.7E-02
			TRICHLOROETHENE	NA	NA	1.6E-06	1.6E-06		NA	NA	3.8E-03	3.8E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	5.2E-03	5.2E-03
			Chemical Total	NA	NA	1.4E-04	1.4E-04		NA	NA	1.8E+00	1.8E+00
		Exposure Point Total				Maximum	1.4E-04				Maximum	1.8E+00
	Exposure Medium Total					Maximum	1.4E-04				Maximum	1.8E+00
Indoor Air Total						Maximum	1.4E-04				Maximum	1.8E+00
Receptor Total							1.4E-04					1.8E+00

Total Risk Across All Media =	1.4E-04	Total Hazard Across All Media =	1.8E+00
		Hazards by Toxicity Endpoint(1)	
		Total Liver HI Across All Media =	1.7E+00
		Total Body Weight effects Across All Media =	4.7E-02
		Total Kidney HI Across All Media =	2.5E-02
		Total Other HI Across All Media =	3.6E-02

NA: Not applicable.
---: *Risk was not calculated for chemical.*
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2E - Parcel West - Terrapave, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.1E-04	1.1E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.4E-02	1.4E-02
			1,4-DICHLOROBENZENE	NA	NA	4.9E-07	4.9E-07		NA	NA	1.5E-04	1.5E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.6E-03	3.6E-03
			BENZENE	NA	NA	5.8E-06	5.8E-06	Dec. lymphocyte count	NA	NA	1.9E-02	1.9E-02
			CARBON TETRACHLORIDE	NA	NA	4.5E-06	4.5E-06	Liver lesions	NA	NA	7.3E-03	7.3E-03
			CHLOROFORM	NA	NA	9.0E-07	9.0E-07	Liver	NA	NA	3.6E-04	3.6E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.9E-03	3 9E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.8E-04	4.8E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1 7E-02	1.7E-02
			METHYLENE CHLORIDE	NA	NA	2.2E-07	2.2E-07		NA	NA	1.6E-03	1.6E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.0E-03	5.0E-03
			TETRACHLOROETHENE	NA	NA	4.3E-05	4.3E-05	Liver toxicity in mice	NA	NA	5 8E-01	5.8E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-02	1 1E-02
			TRICHLOROETHENE	NA	NA	5 9E-07	5.9E-07		NA	NA	1.4E-03	1.4E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.5E-03	2.5E-03
			Chemical Total	NA	NA	5 5E-05	5.5E-05		NA	NA	6.7E-01	6.7E-01
		Exposure Point Total				Minimum	5.5E-05				Minimum	6.7E-01
	Exposure Medium Total					Minimum	5.5E-05				Minimum	6.7E-01
Indoor Air Total						Minimum	5.5E-05				Minimum	6.7E-01
Receptor Total							5.5E-05					6 7E-01

Total Risk Across All Media =	5.5E-05	Total Hazard Across All Media =	6.7E-01
		Hazards by Toxicity Endpoint(1)	
		Total Liver HI Across All Media =	6 0E-01
		Total Body Weight effects Across All Media =	2.6E-02
		Total Kidney HI Across All Media =	1.5E-02
		Total Other HI Across All Media =	2.5E-02

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2F - Parcel South - Bishop, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.5E-05	4.5E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.7E-02	3.7E-02
			1,4-DICHLOROBENZENE	NA	NA	6.8E-07	6.8E-07		NA	NA	2.1E-04	2.1E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	6.8E-03	6.8E-03
			BENZENE	NA	NA	6.4E-06	6.4E-06	Dec. lymphocyte count	NA	NA	2.1E-02	2.1E-02
			CARBON TETRACHLORIDE	NA	NA	4.6E-06	4.6E-06	Liver lesions	NA	NA	7.5E-03	7.5E-03
			CHLOROFORM	NA	NA	7.7E-07	7.7E-07	Liver	NA	NA	3.1E-04	3.1E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.8E-03	7.8E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	8.8E-04	8.8E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.6E-02	2.6E-02
			METHYL TERT-BUTYL ETHER	NA	NA	3.2E-08	3.2E-08		NA	NA	1.2E-04	1.2E-04
			METHYLENE CHLORIDE	NA	NA	3.2E-07	3.2E-07		NA	NA	2.2E-03	2.2E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.8E-03	8.8E-03
			TETRACHLOROETHENE	NA	NA	3.2E-05	3.2E-05	Liver toxicity in mice	NA	NA	4.3E-01	4.3E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.5E-02	1.5E-02
			TRICHLOROETHENE	NA	NA	5.6E-07	5.6E-07		NA	NA	1.3E-03	1.3E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.8E-03	2.8E-03
			Chemical Total	NA	NA	4.5E-05	4.5E-05		NA	NA	5.7E-01	5.7E-01
		Exposure Point Total				Maximum	4.5E-05				Maximum	5.7E-01
	Exposure Medium Total					Maximum	4.5E-05				Maximum	5.7E-01
Indoor Air Total						Maximum	4.5E-05				Maximum	5.7E-01
Receptor Total							4.5E-05					5.7E-01

Total Risk Across All Media =	4.5E-05
Total Hazard Across All Media =	5.7E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	4.8E-01
Total Body Weight effects Across All Media =	4.2E-02
Total Kidney HI Across All Media =	2.2E-02
Total Other HI Across All Media =	2.7E-02

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2F - Parcel South - Bishop, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4 5E-05	4.5E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.4E-03	9.4E-03
			1,4-DICHLOROBENZENE	NA	NA	4.5E-07	4.5E-07		NA	NA	1.4E-04	1.4E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.6E-03	4 6E-03
			BENZENE	NA	NA	6 1E-06	6.1E-06	Dec. lymphocyte count	NA	NA	2.0E-02	2.0E-02
			CARBON TETRACHLORIDE	NA	NA	4.1E-06	4.1E-06	Liver lesions	NA	NA	6.7E-03	6.7E-03
			CHLOROFORM	NA	NA	6.4E-07	6.4E-07	Liver	NA	NA	2.6E-04	2.6E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.0E-03	7.0E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.2E-04	4 2E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.4E-02	1.4E-02
			METHYL TERT-BUTYL ETHER	NA	NA	3.2E-08	3.2E-08		NA	NA	1.2E-04	1.2E-04
			METHYLENE CHLORIDE	NA	NA	1.9E-07	1.9E-07		NA	NA	1.3E-03	1.3E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.3E-03	5.3E-03
			TETRACHLOROETHENE	NA	NA	7.8E-06	7 8E-06	Liver toxicity in mice	NA	NA	1.1E-01	1.1E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.2E-02	1.2E-02
			TRICHLOROETHENE	NA	NA	1 6E-07	1.6E-07		NA	NA	3.8E-04	3.8E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1 6E-03	1.6E-03
			Chemical Total	NA	NA	1.9E-05	1 9E-05		NA	NA	1.9E-01	1.9E-01
		Exposure Point Total				Minimum	1 9E-05				Minimum	1.9E-01
	Exposure Medium Total					Minimum	1.9E-05				Minimum	1.9E-01
Indoor Air Total						Minimum	1.9E-05				Minimum	1.9E-01
Receptor Total							1.9E-05					1.9E-01

Total Risk Across All Media = 1.9E-05

Total Hazard Across All Media = 1.9E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 1.2E-01

Total Body Weight effects Across All Media = 2.6E-02

Total Kidney HI Across All Media = 1.7E-02

Total Other HI Across All Media = 2.4E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.2G - Parcel South - LA Carts, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.4E-03	9.4E-03
			1,4-DICHLOROBENZENE	NA	NA	3.4E-07	3.4E-07		NA	NA	1.0E-04	1.0E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.0E-01	2.0E-01
			BENZENE	NA	NA	1.2E-05	1.2E-05	Dec. lymphocyte count	NA	NA	3.8E-02	3.8E-02
			CARBON TETRACHLORIDE	NA	NA	4.1E-06	4.1E-06	Liver lesions	NA	NA	6.8E-03	6.8E-03
			CHLOROFORM	NA	NA	1.6E-06	1.6E-06	Liver	NA	NA	6.4E-04	6.4E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	8.3E-03	8.3E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.0E-03	1.0E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.8E-02	3.8E-02
			METHYLENE CHLORIDE	NA	NA	1.1E-06	1.1E-06		NA	NA	7.7E-03	7.7E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.4E-02	1.4E-02
			TETRACHLOROETHENE	NA	NA	1.8E-06	1.8E-06	Liver toxicity in mice	NA	NA	2.4E-02	2.4E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	9.9E-01	9.9E-01
			TRICHLOROETHENE	NA	NA	4.5E-07	4.5E-07		NA	NA	1.0E-03	1.0E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.4E-03	2.4E-03
			Chemical Total	NA	NA	2.1E-05	2.1E-05		NA	NA	1.3E+00	1.3E+00
		Exposure Point Total				Maximum	2.1E-05				Maximum	1.3E+00
	Exposure Medium Total					Maximum	2.1E-05				Maximum	1.3E+00
Indoor Air Total						Maximum	2.1E-05				Maximum	1.3E+00
Receptor Total							2.1E-05					1.3E+00

Total Risk Across All Media = 2.1E-05

Total Hazard Across All Media = 1.3E+00

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	4.2E-02
Total Body Weight effects Across All Media =	6.0E-02
Total Kidney HI Across All Media =	1.2E+00
Total Other HI Across All Media =	4.9E-02

TABLE A3-9.2G - Parcel South - LA Carts, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population.	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.6E-04	1.6E-04
			1,4-DICHLOROBENZENE	NA	NA	3.4E-07	3.4E-07		NA	NA	1 0E-04	1.0E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.2E-02	1.2E-02
			BENZENE	NA	NA	6.9E-06	6.9E-06	Dec. lymphocyte count	NA	NA	2.3E-02	2.3E-02
			CARBON TETRACHLORIDE	NA	NA	4.0E-06	4.0E-06	Liver lesions	NA	NA	6.5E-03	6.5E-03
			CHLOROFORM	NA	NA	6.0E-07	6.0E-07	Liver	NA	NA	2.4E-04	2.4E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.8E-03	6.8E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.9E-04	4.9E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.5E-02	1.5E-02
			METHYLENE CHLORIDE	NA	NA	9.7E-07	9.7E-07		NA	NA	6 8E-03	6.8E-03
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.2E-03	5.2E-03
			TETRACHLOROETHENE	NA	NA	2.6E-07	2.6E-07	Liver toxicity in mice	NA	NA	3.6E-03	3 6E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.7E-02	1.7E-02
			TRICHLOROETHENE	NA	NA	4.5E-07	4.5E-07		NA	NA	1.0E-03	1.0E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.1E-03	1.1E-03
			Chemical Total	NA	NA	1.4E-05	1.4E-05		NA	NA	9.9E-02	9.9E-02
		Exposure Point Total				Minimum	1.4E-05				Minimum	9.9E-02
	Exposure Medium Total					Minimum	1.4E-05				Minimum	9.9E-02
Indoor Air Total						Minimum	1.4E-05				Minimum	9.9E-02
Receptor Total							1.4E-05					9.9E-02

Total Risk Across All Media = 1.4E-05

Total Hazard Across All Media = 9.9E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.1E-02
Total Body Weight effects Across All Media =	2.7E-02
Total Kidney HI Across All Media =	3.0E-02
Total Other HI Across All Media =	3.2E-02

TABLE A3-9.2H - Parcel South - Oncology Care, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.0E-04	6.0E-04
			1,2-DICHLOROETHANE	NA	NA	1.5E-06	1.5E-06		NA	NA	3.4E-02	3.4E-02
			1,4-DICHLOROBENZENE	NA	NA	8.3E-07	8.3E-07		NA	NA	2.5E-04	2.5E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-02	1.6E-02
			BENZENE	NA	NA	6.4E-06	6.4E-06	Dec. lymphocyte count	NA	NA	2.1E-02	2.1E-02
			CARBON TETRACHLORIDE	NA	NA	4.1E-06	4.1E-06	Liver lesions	NA	NA	6.8E-03	6.8E-03
			CHLOROFORM	NA	NA	2.8E-06	2.8E-06	Liver	NA	NA	1.1E-03	1.1E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	8.8E-03	8.8E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5.2E-04	5.2E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.6E-02	1.6E-02
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6.8E-03	6.8E-03
			TETRACHLOROETHENE	NA	NA	4.8E-07	4.8E-07	Liver toxicity in mice	NA	NA	6.5E-03	6.5E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.0E-02	3.0E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.3E-03	1.3E-03
			Chemical Total	NA	NA	1.6E-05	1.6E-05		NA	NA	1.5E-01	1.5E-01
		Exposure Point Total				Maximum	1.6E-05				Maximum	1.5E-01
	Exposure Medium Total					Maximum	1.6E-05				Maximum	1.5E-01
Indoor Air Total						Maximum	1.6E-05				Maximum	1.5E-01
Receptor Total							1.6E-05					1.5E-01

Total Risk Across All Media = 1.6E-05

Total Hazard Across All Media = 1.5E-01

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.6E-02
Total Body Weight effects Across All Media =	3.2E-02
Total Kidney HI Across All Media =	4.6E-02
Total Other HI Across All Media =	5.6E-02

TABLE A3-9.2H - Parcel South - Oncology Care, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current
Receptor Population:	Industrial Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Indoor Air	Indoor Air	Indoor Air Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5.2E-04	5.2E-04
			1,2-DICHLOROETHANE	NA	NA	1.5E-06	1.5E-06		NA	NA	3.4E-02	3.4E-02
			1,4-DICHLOROBENZENE	NA	NA	8.3E-07	8.3E-07		NA	NA	2.5E-04	2.5E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-02	1.6E-02
			BENZENE	NA	NA	5.8E-06	5.8E-06	Dec. lymphocyte count	NA	NA	1.9E-02	1.9E-02
			CARBON TETRACHLORIDE	NA	NA	4.0E-06	4.0E-06	Liver lesions	NA	NA	6.5E-03	6.5E-03
			CHLOROFORM	NA	NA	2.4E-06	2.4E-06	Liver	NA	NA	9.9E-04	9.9E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.5E-03	7.5E-03
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.9E-04	4.9E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.6E-02	1.6E-02
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6.2E-03	6.2E-03
			TETRACHLOROETHENE	NA	NA	4.8E-07	4.8E-07	Liver toxicity in mice	NA	NA	6.5E-03	6.5E-03
			TOLUENE	NA	NA	---	---	Inc kidney weight	NA	NA	2.8E-02	2.8E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.3E-03	1.3E-03
			Chemical Total	NA	NA	1.5E-05	1.5E-05		NA	NA	1.4E-01	1.4E-01
		Exposure Point Total				Minimum	1.5E-05				Minimum	1.4E-01
	Exposure Medium Total					Minimum	1.5E-05				Minimum	1.4E-01
Indoor Air Total						Minimum	1.5E-05				Minimum	1.4E-01
Receptor Total							1.5E-05					1.4E-01

Total Risk Across All Media = 1.5E-05

Total Hazard Across All Media = 1.4E-01

NA: Not applicable.

--- Risk was not calculated for chemical.

HI Hazard Index.

CNS: Central Nervous System

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.5E-02
Total Body Weight effects Across All Media =	2.9E-02
Total Kidney HI Across All Media =	4.4E-02
Total Other HI Across All Media =	5.5E-02

TABLE A3-9.3A - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3.9E-08
			1,1,2-TRICHLOROETHANE	8.2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2.5E-09	6.7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2 9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1.8E-10	Liver lesions	4.2E-05	3.3E-05	2.3E-10	7.5E-05
			ALUMINUM	---	---	---	---		2.3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3.4E-09	1.2E-08	8.0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-09	2 9E-09	2.0E-14	4.0E-09	Inc. liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5.1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9.6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2.9E-05

TABLE A3-9 3A - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1.0E-04	NA	NA	1.0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7.8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.8E-04	3.8E-04
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1,2-TRICHLOROETHANE	NA	NA	6.2E-10	6.2E-10	Clinical serum chemistry	NA	NA	1.9E-04	1.9E-04
			1,1-DICHLOROETHANE	NA	NA	8.3E-10	8.3E-10		NA	NA	7.2E-05	7.2E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5.1E-03	5.1E-03
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	1.1E-05	1.1E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	1.8E-09	1.8E-09		NA	NA	9.8E-04	9.8E-04
			1,3-BUTADIENE	NA	NA	8.6E-10	8.6E-10		NA	NA	1.8E-05	1.8E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	8.0E-08	8.0E-08
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			ACETALDEHYDE	NA	NA	1.4E-11	1.4E-11		NA	NA	3.9E-05	3.9E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.8E-06	4.8E-06
			BENZENE	NA	NA	1.1E-09	1.1E-09	Dec. lymphocyte count	NA	NA	9.3E-05	9.3E-05
			BROMODICHLOROMETHANE	NA	NA	9.8E-12	9.8E-12	Kidney	NA	NA	2.6E-07	2.6E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.1E-05	1.1E-05
			CARBON TETRACHLORIDE	NA	NA	2.8E-10	2.8E-10	Liver lesions	NA	NA	1.2E-05	1.2E-05
			CHLOROFORM	NA	NA	5.2E-09	5.2E-09	Liver	NA	NA	5.3E-05	5.3E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	4.7E-04	4.7E-04
			CYCLOHEXANE	NA	NA	---	---		NA	NA	3.3E-07	3.3E-07
			DIBROMOCHLOROMETHANE	NA	NA	1.3E-11	1.3E-11	Liver lesions	NA	NA	4.8E-07	4.8E-07
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.4E-05	1.4E-05
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5.8E-08	5.8E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	8.4E-06	8.4E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.1E-05	1.1E-05
			METHYL TERT-BUTYL ETHER	NA	NA	1.6E-13	1.6E-13		NA	NA	1.4E-08	1.4E-08
			METHYLENE CHLORIDE	NA	NA	5.4E-11	5.4E-11		NA	NA	9.4E-06	9.4E-06
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.7E-05	2.7E-05
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	8.9E-08	8.9E-08	Liver toxicity in mice	NA	NA	3.0E-02	3.0E-02
			TETRAHYDROFURAN	NA	NA	7.2E-11	7.2E-11		NA	NA	8.7E-06	8.7E-06
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.0E-05	1.0E-05

TABLE A3-9.3A - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.1E-04	1.1E-04
			TRICHLOROETHENE	NA	NA	5.0E-09	5.0E-09		NA	NA	2.9E-04	2.9E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.6E-04	8.6E-04
			VINYL CHLORIDE	NA	NA	2.4E-10	2.4E-10	Liver	NA	NA	2.2E-06	2.2E-06
			Chemical Total	0.0E+00	0.0E+00	1.1E-07	1.1E-07		0.0E+00	0.0E+00	3.9E-02	3.9E-02
		Exposure Point Total				Maximum	1.1E-07				Maximum	3.9E-02
	Exposure Medium Total					Maximum	1.1E-07				Maximum	3.9E-02
Soil Gas - Outdoor Air Total						Maximum	1.1E-07				Maximum	3.9E-02
Receptor Total							3.4E-07					1.2E-01

Total Risk Across All Media= 3E-07

Total Hazard Across All Media = 1.2E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = #VALUE!

Total Body Weight effects Across All Media = 3.8E-04

Total Kidney HI Across All Media = 2.7E-04

Total Other HI Across All Media = 7.9E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.3A - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3.9E-08
			1,1,2-TRICHLOROETHANE	8.2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2.5E-09	6.7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2.9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1.8E-10	Liver lesions	4.2E-05	3.3E-05	2.3E-10	7.5E-05
			ALUMINUM	---	---	---	---		2.3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3.4E-09	1.2E-08	8.0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-09	2.9E-09	2.0E-14	4.0E-09	Inc. liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5.1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9.6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2.9E-05

TABLE A3-9.3A - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	*Construction Worker - CTE*
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1.0E-04	NA	NA	1.0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7.8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.3E-07	1.3E-07
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1,2-TRICHLOROETHANE	NA	NA	1.5E-10	1.5E-10	Clinical serum chemistry	NA	NA	4.7E-05	4.7E-05
			1,1-DICHLOROETHANE	NA	NA	1.1E-12	1.1E-12		NA	NA	9.2E-08	9.2E-08
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.6E-07	9.6E-07
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	2.9E-06	2.9E-06
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	3.1E-11	3.1E-11		NA	NA	1.7E-05	1.7E-05
			1,3-BUTADIENE	NA	NA	1.8E-11	1.8E-11		NA	NA	3.6E-07	3.6E-07
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	2.0E-09	2.0E-09
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			ACETALDEHYDE	NA	NA	1.3E-11	1.3E-11		NA	NA	3.4E-05	3.4E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-08	1.6E-08
			BENZENE	NA	NA	2.6E-12	2.6E-12	Dec. lymphocyte count	NA	NA	2.2E-07	2.2E-07
			BROMODICHLOROMETHANE	NA	NA	3.8E-12	3.8E-12	Kidney	NA	NA	1.0E-07	1.0E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.2E-08	1.2E-08
			CARBON TETRACHLORIDE	NA	NA	1.5E-10	1.5E-10	Liver lesions	NA	NA	6.3E-06	6.3E-06
			CHLOROFORM	NA	NA	6.4E-12	6.4E-12	Liver	NA	NA	6.5E-08	6.5E-08
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.8E-06	2.8E-06
			CYCLOHEXANE	NA	NA	---	---		NA	NA	1.4E-09	1.4E-09
			DIBROMOCHLOROMETHANE	NA	NA	8.8E-12	8.8E-12	Liver lesions	NA	NA	3.3E-07	3.3E-07
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.2E-07	1.2E-07
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.1E-08	1.1E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.8E-08	2.8E-08
			M,P-XYLENES	NA	NA	---	---	*Dec. body weight, inc* mortality	NA	NA	1.8E-07	1.8E-07
			METHYL TERT-BUTYL ETHER	NA	NA	1.5E-13	1.5E-13		NA	NA	1.3E-08	1.3E-08
			METHYLENE CHLORIDE	NA	NA	3.1E-13	3.1E-13		NA	NA	5.4E-08	5.4E-08
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.6E-08	8.6E-08
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	1.9E-12	1.9E-12	*Liver toxicity in mice*	NA	NA	6.4E-07	6.4E-07
			TETRAHYDROFURAN	NA	NA	2.1E-13	2.1E-13		NA	NA	2.5E-08	2.5E-08
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	5.6E-08	5.6E-08

TABLE A3-9.3A - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
				NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	9.1E-07	9.1E-07
			TRANS-1,2-DICHLOROETHENE									
			TRICHLOROETHENE	NA	NA	3.1E-12	3.1E-12		NA	NA	1.8E-07	1.8E-07
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.8E-08	1.8E-08
			VINYL CHLORIDE	NA	NA	1.0E-10	1.0E-10	Liver	NA	NA	9.0E-07	9.0E-07
			Chemical Total	0.0E+00	0.0E+00	5.0E-10	5.0E-10		0.0E+00	0.0E+00	1.2E-04	1.2E-04
		Exposure Point Total				Minimum	5.0E-10				Minimum	1.2E-04
	Exposure Medium Total					Minimum	5.0E-10				Minimum	1.2E-04
Soil Gas - Outdoor Air Total						Minimum	5.0E-10				Minimum	1.2E-04
Receptor Total							2.4E-07					7.8E-02

Total Risk Across All Media= 2E-07

Total Hazard Across All Media = 7.8E-02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = #VALUE!

Total Body Weight effects Across All Media = 3.3E-04

Total Kidney HI Across All Media = 2.6E-04

Total Other HI Across All Media = 7.6E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS Central Nervous System.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3.9E-08
			1,1,2-TRICHLOROETHANE	8.2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2.5E-09	6.7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2.9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1.8E-10	Liver lesions	4.2E-05	3.3E-05	2.3E-10	7.5E-05
			ALUMINUM	---	---	---	---		2.3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3.4E-09	1.2E-08	8.0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-09	2.9E-09	2.0E-14	4.0E-09	Inc. liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5.1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9.6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2.9E-05

TABLE A3-9.3B - Site Parcel, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1.0E-04	NA	NA	1.0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7.8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.6E-04	2.6E-04
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1,2-TRICHLOROETHANE	NA	NA	6.4E-10	6.4E-10	Clinical serum chemistry	NA	NA	2.0E-04	2.0E-04
			1,1-DICHLOROETHANE	NA	NA	1.1E-09	1.1E-09		NA	NA	9.2E-05	9.2E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.2E-03	6.2E-03
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	5.0E-09	5.0E-09		NA	NA	2.8E-03	2.8E-03
			1,3-BUTADIENE	NA	NA	6.9E-11	6.9E-11		NA	NA	1.4E-06	1.4E-06
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	7.8E-08	7.8E-08
			ACETALDEHYDE	NA	NA	1.4E-11	1.4E-11		NA	NA	3.9E-05	3.9E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	6.5E-06	6.5E-06
			BENZENE	NA	NA	1.2E-09	1.2E-09	Dec. lymphocyte count	NA	NA	9.7E-05	9.7E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.7E-05	1.7E-05
			CARBON TETRACHLORIDE	NA	NA	2.8E-10	2.8E-10	Liver lesions	NA	NA	1.2E-05	1.2E-05
			CHLOROFORM	NA	NA	6.1E-09	6.1E-09	Liver	NA	NA	6.2E-05	6.2E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	5.3E-04	5.3E-04
			CYCLOHEXANE	NA	NA	---	---		NA	NA	8.2E-09	8.2E-09
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.3E-05	1.3E-05
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	5.8E-08	5.8E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.4E-05	1.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc. mortality	NA	NA	1.1E-05	1.1E-05
			METHYLENE CHLORIDE	NA	NA	9.2E-11	9.2E-11		NA	NA	1.6E-05	1.6E-05
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.3E-05	3.3E-05
			TETRACHLOROETHENE	NA	NA	1.1E-07	1.1E-07	Liver toxicity in mice	NA	NA	3.8E-02	3.8E-02
			TETRAHYDROFURAN	NA	NA	1.2E-10	1.2E-10		NA	NA	1.4E-05	1.4E-05
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	8.8E-06	8.8E-06
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.7E-04	1.7E-04
			TRICHLOROETHENE	NA	NA	6.3E-09	6.3E-09		NA	NA	3.7E-04	3.7E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.0E-03	1.0E-03
			VINYL CHLORIDE	NA	NA	2.4E-10	2.4E-10	Liver	NA	NA	2.2E-06	2.2E-06
			Chemical Total	0.0E+00	0.0E+00	1.3E-07	1.3E-07		0.0E+00	0.0E+00	5.0E-02	5.0E-02

TABLE A3-9 3B - Site Parcel, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
		Exposure Point Total				Maximum	1.3E-07				Maximum	5.0E-02
	Exposure Medium Total					Maximum	1.3E-07				Maximum	5.0E-02
Soil Gas - Outdoor Air Total						Maximum	1.3E-07				Maximum	5.0E-02
Receptor Total							3.7E-07					1.3E-01

Total Risk Across All Media= 4E-07

Total Hazard Across All Media = 1.3E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 4.0E-02

Total Body Weight effects Across All Media = 3.9E-04

Total Kidney HI Across All Media = 2.7E-04

Total Other HI Across All Media = 8.1E-02

NA Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3.9E-08
			1,1,2-TRICHLOROETHANE	8.2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2.5E-09	6.7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2.9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1.8E-10	Liver lesions	4.2E-05	3.3E-05	2.3E-10	7.5E-05
			ALUMINUM	---	---	---	---		2.3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3.4E-09	1.2E-08	8.0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-09	2.9E-09	2.0E-14	4.0E-09	Inc. liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5.1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9.6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2.9E-05

TABLE A3-9.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1.0E-04	NA	NA	1.0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7.8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.8E-07	1.8E-07
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1,2-TRICHLOROETHANE	NA	NA	1.5E-10	1.5E-10	*Clinical serum chemistry*	NA	NA	4.7E-05	4.7E-05
			1,1-DICHLOROETHANE	NA	NA	1.1E-12	1.1E-12		NA	NA	9.2E-08	9.2E-08
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.8E-05	1.8E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	3.1E-11	3.1E-11		NA	NA	1.7E-05	1.7E-05
			1,3-BUTADIENE	NA	NA	6.9E-11	6.9E-11		NA	NA	1.4E-06	1.4E-06
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	4.7E-08	4.7E-08
			ACETALDEHYDE	NA	NA	1.3E-11	1.3E-11		NA	NA	3.4E-05	3.4E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.1E-07	1.1E-07
			BENZENE	NA	NA	2.9E-11	2.9E-11	Dec. lymphocyte count	NA	NA	2.3E-06	2.3E-06
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	9.5E-07	9.5E-07
			CARBON TETRACHLORIDE	NA	NA	1.5E-10	1.5E-10	Liver lesions	NA	NA	6.3E-06	6.3E-06
			CHLOROFORM	NA	NA	4.3E-11	4.3E-11	Liver	NA	NA	4.3E-07	4.3E-07
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.8E-06	2.8E-06
			CYCLOHEXANE	NA	NA	---	---		NA	NA	5.9E-09	5.9E-09
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	6.1E-07	6.1E-07
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.3E-08	3.3E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.4E-06	1.4E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.1E-06	1.1E-06
			METHYLENE CHLORIDE	NA	NA	2.1E-11	2.1E-11		NA	NA	3.6E-06	3.6E-06
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5.1E-07	5.1E-07
			TETRACHLOROETHENE	NA	NA	7.6E-11	7.6E-11	Liver toxicity in mice	NA	NA	2.6E-05	2.6E-05
			TETRAHYDROFURAN	NA	NA	2.7E-10	2.7E-10		NA	NA	3.2E-05	3.2E-05
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.5E-07	4.5E-07
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	9.1E-07	9.1E-07
			TRICHLOROETHENE	NA	NA	1.1E-11	1.1E-11		NA	NA	6.7E-07	6.7E-07
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	3.4E-06	3.4E-06
			VINYL CHLORIDE	NA	NA	1.0E-10	1.0E-10	Liver	NA	NA	9.0E-07	9.0E-07
			Chemical Total	0.0E+00	0.0E+00	9.7E-10	9.7E-10		0.0E+00	0.0E+00	2.0E-04	2.0E-04

TABLE A3-9.3B - Site Parcel, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
		Exposure Point Total				Minimum	9.7E-10				Minimum	2.0E-04
	Exposure Medium Total					Minimum	9.7E-10				Minimum	2.0E-04
Soil Gas - Outdoor Air Total						Minimum	9.7E-10				Minimum	2.0E-04
Receptor Total							2.4E-07					7.8E-02

Total Risk Across All Media= 2E-07

Total Hazard Across All Media = 7.8E-02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 1.7E-03
Total Body Weight effects Across All Media = 3.3E-04
Total Kidney HI Across All Media = 2.6E-04
Total Other HI Across All Media = 7.6E-02

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3.9E-08
			1,1,2-TRICHLOROETHANE	8.2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2.5E-09	6 7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2.9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1.8E-10	Liver lesions	4.2E-05	3.3E-05	2.3E-10	7.5E-05
			ALUMINUM	---	---	---	---		2.3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3 4E-09	1.2E-08	8 0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-09	2.9E-09	2.0E-14	4.0E-09	Inc. liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5 1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9.6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2.9E-05

TABLE A3-9.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1 0E-04	NA	NA	1 0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7 8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.8E-05	5.8E-05
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1-DICHLOROETHANE	NA	NA	8.3E-11	8.3E-11		NA	NA	7.1E-06	7 1E-06
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.4E-03	4.4E-03
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	5 1E-06	5.1E-06
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,3-BUTADIENE	NA	NA	8.6E-10	8.6E-10		NA	NA	1.8E-05	1 8E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	8.0E-08	8.0E-08
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			4-ETHYLTOLUENE	NA	NA	---	---		NA	NA	---	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.0E-07	5.0E-07
			BENZENE	NA	NA	8.2E-11	8.2E-11	Dec lymphocyte count	NA	NA	6.7E-06	6.7E-06
			BROMODICHLOROMETHANE	NA	NA	9.8E-12	9.8E-12	Kidney	NA	NA	2 6E-07	2 6E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.0E-07	1.0E-07
			CHLOROFORM	NA	NA	1 1E-08	1.1E-08	Liver	NA	NA	1.1E-04	1.1E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	8 9E-05	8.9E-05
			CYCLOHEXANE	NA	NA	---	---		NA	NA	3 3E-07	3.3E-07
			DIBROMOCHLOROMETHANE	NA	NA	1.3E-11	1.3E-11	Liver lesions	NA	NA	4.8E-07	4.8E-07
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2.1E-05	2.1E-05
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.9E-08	3.9E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	7.3E-06	7.3E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.3E-06	2.3E-06
			METHYL TERT-BUTYL ETHER	NA	NA	1.6E-13	1.6E-13		NA	NA	1.4E-08	1.4E-08
			METHYLENE CHLORIDE	NA	NA	1 1E-11	1.1E-11		NA	NA	1.9E-06	1.9E-06
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.3E-07	4.3E-07
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	1.1E-07	1.1E-07	Liver toxicity in mice	NA	NA	3.7E-02	3.7E-02
			TETRAHYDROFURAN	NA	NA	2 9E-13	2.9E-13		NA	NA	3.5E-08	3.5E-08
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-05	1.8E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	4.1E-05	4.1E-05

TABLE A3-9.3C - Other Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TRICHLOROETHENE	NA	NA	7.1E-09	7.1E-09		NA	NA	4.2E-04	4.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	7.6E-04	7.6E-04
			Chemical Total	0.0E+00	0.0E+00	1.3E-07	1.3E-07		0.0E+00	0.0E+00	4.3E-02	4.3E-02
		Exposure Point Total				Maximum	1.3E-07				Maximum	4.3E-02
	Exposure Medium Total					Maximum	1.3E-07				Maximum	4.3E-02
Soil Gas - Outdoor Air Total						Maximum	1.3E-07				Maximum	4.3E-02
Receptor Total							3.7E-07					1.2E-01

Total Risk Across All Media= 4E-07

Total Hazard Across All Media = 1.2E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = #VALUE!

Total Body Weight effects Across All Media = 3.6E-04

Total Kidney HI Across All Media = 2.8E-04

Total Other HI Across All Media = 7.7E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by pnmary target organs across all media

TABLE A3-9.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		3.9E-08	NA	NA	3 9E-08
			1,1,2-TRICHLOROETHANE	8 2E-13	---	---	8.2E-13	Clinical serum chemistry	2.0E-07	NA	NA	2.0E-07
			1,1-DICHLOROETHANE	1.6E-13	---	---	1.6E-13		2.0E-08	NA	NA	2.0E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.8E-08	NA	NA	1.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	6.3E-07	NA	NA	6.3E-07
			1,2-DICHLOROETHANE	1.9E-12	---	---	1.9E-12		7.4E-08	NA	NA	7.4E-08
			1,4-DIOXANE	2 5E-09	6 7E-09	4.7E-14	9.2E-09		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	2.2E-05	5.8E-05	4.0E-10	8.0E-05
			4,4'-DDE	1.6E-10	1.3E-10	9.0E-16	2.9E-10		NA	NA	NA	---
			4,4'-DDT	1.0E-10	8.0E-11	5.6E-16	1 8E-10	Liver lesions	4 2E-05	3.3E-05	2 3E-10	7 5E-05
			ALUMINUM	---	---	---	---		2 3E-03	NA	NA	2.3E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	7.2E-03	NA	NA	7.2E-03
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.9E-04	NA	NA	1.9E-04
			BENZO(A)ANTHRACENE	3.4E-09	1.2E-08	8 0E-14	1.5E-08		NA	NA	NA	---
			BENZO(A)PYRENE	2.6E-08	8.8E-08	6.1E-13	1.1E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-09	6.1E-09	4.2E-14	7.8E-09		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1 2E-05	3.2E-05	2.2E-10	4.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	5.9E-05	NA	NA	5.9E-05
			BIS(2-ETHYLHEXYL)PHTHALATE	1 1E-09	2.9E-09	2.0E-14	4.0E-09	Inc liver weight	2.7E-04	7.2E-04	5.0E-09	9.9E-04
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	8.9E-07	2.3E-06	1.6E-11	3.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	2.9E-04	3.1E-04	2.2E-09	6.0E-04
			CHLOROFORM	4.9E-13	---	---	4.9E-13	Liver	1.1E-07	NA	NA	1.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	1.1E-05	NA	NA	1.1E-05
			CHROMIUM VI	---	---	---	---	None	9.2E-04	NA	NA	9.2E-04
			CHRYSENE	1.5E-09	5.1E-09	3.6E-14	6.6E-09		NA	NA	NA	---
			COBALT	---	---	---	---		1.1E-04	NA	NA	1.1E-04
			COPPER	---	---	---	---		2.4E-04	NA	NA	2.4E-04
			DIELDRIN	1.7E-09	4.4E-09	3.1E-14	6.1E-09	Liver	1.5E-04	3.9E-04	2.7E-09	5.3E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.1E-06	7.3E-06	5.1E-11	9.4E-06
			IRON	---	---	---	---		1.8E-02	NA	NA	1.8E-02
			ISOPHORONE	2.6E-11	6.9E-11	4.8E-16	9.5E-11	No observed effects	9 6E-06	2.5E-05	1.8E-10	3.5E-05
			LEAD	1.7E-09	---	---	1.7E-09		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	5.9E-04	NA	NA	5.9E-04
			MERCURY	---	---	---	---		2.2E-04	NA	NA	2.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.8E-04	NA	NA	1.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	9.3E-06	3.2E-05	2.2E-10	4.1E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	2.9E-04	NA	NA	2.9E-04
			PCB-1254 (AROCLOR 1254)	5.7E-09	2.1E-08	1.5E-13	2.7E-08	Ocular exudate	4.0E-03	1.5E-02	1.0E-07	1.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.4E-09	3.1E-08	2.2E-13	3.9E-08		1.7E-03	6.2E-03	4.3E-08	7.9E-03
			PYRENE	---	---	---	---	Kidney	1.5E-05	5.0E-05	3.5E-10	6.5E-05
			SILVER	---	---	---	---	Argyria	2.9E-05	NA	NA	2 9E-05

TABLE A3-9.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	7.8E-09	---	---	7.8E-09	Liver toxicity in mice	1.0E-04	NA	NA	1.0E-04
			THALLIUM	---	---	---	---		7.1E-03	NA	NA	7.1E-03
			TRICHLOROETHENE	1.2E-12	---	---	1.2E-12		2.2E-05	NA	NA	2.2E-05
			VANADIUM	---	---	---	---		1.1E-02	NA	NA	1.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	7.4E-05	NA	NA	7.4E-05
			Chemical Total	6.1E-08	1.8E-07	1.2E-12	2.4E-07		5.5E-02	2.2E-02	1.6E-07	7.8E-02
		Exposure Point Total					2.4E-07					7.8E-02
	Exposure Medium Total						2.4E-07					7.8E-02
Surface Soil Total							2.4E-07					7.8E-02
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.3E-07	1.3E-07
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1-DICHLOROETHANE	NA	NA	2.1E-11	2.1E-11		NA	NA	1.8E-06	1.8E-06
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.6E-07	9.6E-07
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	2.9E-06	2.9E-06
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,3-BUTADIENE	NA	NA	1.8E-11	1.8E-11		NA	NA	3 6E-07	3.6E-07
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	2.0E-09	2.0E-09
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			4-ETHYLTOLUENE	NA	NA	---	---		NA	NA	---	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-08	1.6E-08
			BENZENE	NA	NA	2.6E-12	2.6E-12	Dec. lymphocyte count	NA	NA	2.2E-07	2.2E-07
			BROMODICHLOROMETHANE	NA	NA	3.8E-12	3.8E-12	Kidney	NA	NA	1.0E-07	1.0E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.2E-08	1.2E-08
			CHLOROFORM	NA	NA	6.4E-12	6.4E-12	Liver	NA	NA	6.5E-08	6 5E-08
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	3.8E-05	3.8E-05
			CYCLOHEXANE	NA	NA	---	---		NA	NA	1.4E-09	1.4E-09
			DIBROMOCHLOROMETHANE	NA	NA	8.8E-12	8.8E-12	Liver lesions	NA	NA	3.3E-07	3.3E-07
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.2E-07	1.2E-07
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	1.1E-08	1.1E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.8E-08	2.8E-08
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.8E-07	1.8E-07
			METHYL TERT-BUTYL ETHER	NA	NA	1.5E-13	1.5E-13		NA	NA	1.3E-08	1.3E-08
			METHYLENE CHLORIDE	NA	NA	3.1E-13	3.1E-13		NA	NA	5.4E-08	5 4E-08
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.6E-08	8.6E-08
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	1.9E-12	1.9E-12	Liver toxicity in mice	NA	NA	6.4E-07	6.4E-07
			TETRAHYDROFURAN	NA	NA	2.1E-13	2.1E-13		NA	NA	2.5E-08	2.5E-08
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	5.6E-08	5.6E-08
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.7E-05	1.7E-05

TABLE A3-9.3C - Other Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - CTE
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TRICHLOROETHENE	NA	NA	3.1E-12	3.1E-12		NA	NA	1.8E-07	1.8E-07
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.8E-08	1.8E-08
			Chemical Total	0.0E+00	0.0E+00	6.6E-11	6.6E-11		0.0E+00	0.0E+00	6.4E-05	6.4E-05
		Exposure Point Total				Minimum	6.6E-11				Minimum	6.4E-05
	Exposure Medium Total					Minimum	6.6E-11				Minimum	6.4E-05
Soil Gas - Outdoor Air Total						Minimum	6.6E-11				Minimum	6.4E-05
Receptor Total							2.4E-07					7.8E-02

Total Risk Across All Media= 2E-07

Total Hazard Across All Media = 7.8E-02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = #VALUE!

Total Body Weight effects Across All Media = 3.3E-04

Total Kidney HI Across All Media = 2.6E-04

Total Other HI Across All Media = 7.6E-02

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

CTE: central tendency exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.4A - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2.7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	8 6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4 8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4.1E-04
			4,4'-DDE	2.3E-09	2.5E-10	7 2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4.5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2.5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6.4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4 9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6.2E-05	1.8E-09	2.3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5.5E-09	1.6E-13	2.0E-08	Inc. liver weight	3.7E-03	1.4E-03	4.0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6.0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1.3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3.1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.9E-05	1.4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3.8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2.3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4 0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7.8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8.2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9.7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4A - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1.1E-07	Liver toxicity in mice	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1.7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8.4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8.1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.1E-03	3.1E-03
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1,2-TRICHLOROETHANE	NA	NA	5.0E-09	5.0E-09	Clinical serum chemistry	NA	NA	1.5E-03	1.5E-03
			1,1-DICHLOROETHANE	NA	NA	6.7E-09	6.7E-09		NA	NA	5.7E-04	5.7E-04
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.1E-02	4.1E-02
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	8.6E-05	8.6E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	1.4E-08	1.4E-08		NA	NA	7.8E-03	7.8E-03
			1,3-BUTADIENE	NA	NA	6.8E-09	6.8E-09		NA	NA	1.4E-04	1.4E-04
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec offspring weight	NA	NA	6.4E-07	6.4E-07
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			ACETALDEHYDE	NA	NA	1.2E-10	1.2E-10		NA	NA	3.1E-04	3.1E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.9E-05	3.9E-05
			BENZENE	NA	NA	9.1E-09	9.1E-09	Dec. lymphocyte count	NA	NA	7.4E-04	7.4E-04
			BROMODICHLOROMETHANE	NA	NA	7.8E-11	7.8E-11	Kidney	NA	NA	2.1E-06	2.1E-06
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	8.8E-05	8.8E-05
			CARBON TETRACHLORIDE	NA	NA	2.3E-09	2.3E-09	Liver lesions	NA	NA	9.3E-05	9.3E-05
			CHLOROFORM	NA	NA	4.2E-08	4.2E-08	Liver	NA	NA	4.3E-04	4.3E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	3.8E-03	3.8E-03
			CYCLOHEXANE	NA	NA	---	---		NA	NA	2.6E-06	2.6E-06
			DIBROMOCHLOROMETHANE	NA	NA	1.0E-10	1.0E-10	Liver lesions	NA	NA	3.8E-06	3.8E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.1E-04	1.1E-04
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.7E-07	4.7E-07
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	6.7E-05	6.7E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.7E-05	8.7E-05
			METHYL TERT-BUTYL ETHER	NA	NA	1.3E-12	1.3E-12		NA	NA	1.1E-07	1.1E-07
			METHYLENE CHLORIDE	NA	NA	4.3E-10	4.3E-10		NA	NA	7.5E-05	7.5E-05
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.2E-04	2.2E-04
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	7.1E-07	7.1E-07	Liver toxicity in mice	NA	NA	2.4E-01	2.4E-01
			TETRAHYDROFURAN	NA	NA	5.8E-10	5.8E-10		NA	NA	6.9E-05	6.9E-05
			TOLUENE	NA	NA	---	---	Inc kidney weight	NA	NA	8.1E-05	8.1E-05

TABLE A3-9.4A - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, Califomia

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
				NA	NA	---	---	Inc serum alkaline phosphatase in male mice	NA	NA	9.1E-04	9.1E-04
			TRANS-1,2-DICHLOROETHENE									
			TRICHLOROETHENE	NA	NA	4.0E-08	4.0E-08		NA	NA	2.4E-03	2.4E-03
				NA	NA	---	---	Survival and histopathology	NA	NA	6.8E-03	6.8E-03
			TRICHLOROFLUOROMETHANE (FREON 11)									
			VINYL CHLORIDE	NA	NA	1.9E-09	1.9E-09	Liver	NA	NA	1.7E-05	1.7E-05
			Chemical Total	0.0E+00	0.0E+00	8.4E-07	8.4E-07		0.0E+00	0.0E+00	3.1E-01	3.1E-01
		Exposure Point Total				Maximum	8.4E-07				Maximum	3.1E-01
	Exposure Medium Total					Maximum	8.4E-07				Maximum	3.1E-01
Soil Gas - Outdoor Air Total						Maximum	8.4E-07				Maximum	3.1E-01
Receptor Total							2.0E-06					1.1E+00

Total Risk Across All Media= 2E-06

Total Hazard Across All Media = 1.1E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = #VALUE!

Total Body Weight effects Across All Media = 4.6E-03

Total Kidney HI Across All Media = 3.0E-03

Total Other HI Across All Media = 8.2E-01

NA. Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.4A - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2.7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	8.6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4.8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4 1E-04
			4,4'-DDE	2.3E-09	2 5E-10	7.2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4.5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2.5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6 4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4 9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6.2E-05	1.8E-09	2 3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5 5E-09	1.6E-13	2.0E-08	Inc. liver weight	3.7E-03	1 4E-03	4 0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6 0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1.3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3.1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.9E-05	1 4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3.8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2.3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7.8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8.2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9.7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4A - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1.1E-07	Liver toxicity in mice	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1.7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8.4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8.1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.0E-06	1.0E-06
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1,2-TRICHLOROETHANE	NA	NA	1.2E-09	1.2E-09	Clinical serum chemistry	NA	NA	3.7E-04	3.7E-04
			1,1-DICHLOROETHANE	NA	NA	8.6E-12	8.6E-12		NA	NA	7.4E-07	7.4E-07
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	7.7E-06	7.7E-06
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	2.3E-05	2.3E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	2.5E-10	2.5E-10		NA	NA	1.4E-04	1.4E-04
			1,3-BUTADIENE	NA	NA	1.4E-10	1.4E-10		NA	NA	2.9E-06	2.9E-06
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	1.6E-08	1.6E-08
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			ACETALDEHYDE	NA	NA	1.0E-10	1.0E-10		NA	NA	2.7E-04	2.7E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.2E-07	1.2E-07
			BENZENE	NA	NA	2.1E-11	2.1E-11	Dec. lymphocyte count	NA	NA	1.7E-06	1.7E-06
			BROMODICHLOROMETHANE	NA	NA	3.0E-11	3.0E-11	Kidney	NA	NA	8.2E-07	8.2E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	9.5E-08	9.5E-08
			CARBON TETRACHLORIDE	NA	NA	1.2E-09	1.2E-09	Liver lesions	NA	NA	5.0E-05	5.0E-05
			CHLOROFORM	NA	NA	5.1E-11	5.1E-11	Liver	NA	NA	5.2E-07	5.2E-07
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.2E-05	2.2E-05
			CYCLOHEXANE	NA	NA	---	---		NA	NA	1.1E-08	1.1E-08
			DIBROMOCHLOROMETHANE	NA	NA	7.1E-11	7.1E-11	Liver lesions	NA	NA	2.6E-06	2.6E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	9.3E-07	9.3E-07
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	8.7E-08	8.7E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.3E-07	2.3E-07
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	1.4E-06	1.4E-06
			METHYL TERT-BUTYL ETHER	NA	NA	1.2E-12	1.2E-12		NA	NA	1.0E-07	1.0E-07
			METHYLENE CHLORIDE	NA	NA	2.5E-12	2.5E-12		NA	NA	4.3E-07	4.3E-07
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	6.8E-07	6.8E-07
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	1.5E-11	1.5E-11	Liver toxicity in mice	NA	NA	5.1E-06	5.1E-06
			TETRAHYDROFURAN	NA	NA	1.6E-12	1.6E-12		NA	NA	2.0E-07	2.0E-07
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.5E-07	4.5E-07

TABLE A3-9.4A - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
				NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	7.3E-06	7.3E-06
			TRANS-1,2-DICHLOROETHENE									
			TRICHLOROETHENE	NA	NA	2.5E-11	2.5E-11		NA	NA	1.5E-06	1.5E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.4E-07	1.4E-07
			VINYL CHLORIDE	NA	NA	8.0E-10	8.0E-10	Liver	NA	NA	7.2E-06	7.2E-06
			Chemical Total	0.0E+00	0.0E+00	4.0E-09	4.0E-09		0.0E+00	0.0E+00	9.2E-04	9.2E-04
		Exposure Point Total				Minimum	4.0E-09				Minimum	9.2E-04
	Exposure Medium Total					Minimum	4.0E-09				Minimum	9.2E-04
Soil Gas - Outdoor Air Total						Minimum	4.0E-09				Minimum	9.2E-04
Receptor Total							1.2E-06					8.1E-01

Total Risk Across All Media=	1E-06	Total Hazard Across All Media =	8.1E-01
		Hazards by Toxicity Endpoint(1)	
		Total Liver HI Across All Media =	#VALUE!
		Total Body Weight effects Across All Media =	4.2E-03
		Total Kidney HI Across All Media =	2.9E-03
		Total Other HI Across All Media =	7.9E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System
RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media

TABLE A3-9 4B - Site Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2.7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	8.6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4.8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4.1E-04
			4,4'-DDE	2.3E-09	2.5E-10	7.2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4.5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2.5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6.4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4.9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6.2E-05	1.8E-09	2.3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5.5E-09	1.6E-13	2.0E-08	Inc. liver weight	3.7E-03	1.4E-03	4.0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6.0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1.3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3.1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	2.9E-05	1.4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3.8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2.3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7.8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8.2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9.7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4B - Site Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1 1E-07	Liver toxicity in mice	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1 7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8.4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8.1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2 1E-03	2.1E-03
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1,2-TRICHLOROETHANE	NA	NA	5 1E-09	5.1E-09	Clinical serum chemistry	NA	NA	1.6E-03	1.6E-03
			1,1-DICHLOROETHANE	NA	NA	8 5E-09	8.5E-09		NA	NA	7.3E-04	7.3E-04
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5 0E-02	5.0E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	4.0E-08	4.0E-08		NA	NA	2.2E-02	2.2E-02
			1,3-BUTADIENE	NA	NA	5.5E-10	5.5E-10		NA	NA	1.1E-05	1.1E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	6.3E-07	6.3E-07
			ACETALDEHYDE	NA	NA	1.2E-10	1.2E-10		NA	NA	3.1E-04	3.1E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.2E-05	5.2E-05
			BENZENE	NA	NA	9.5E-09	9.5E-09	Dec lymphocyte count	NA	NA	7.8E-04	7.8E-04
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.3E-04	1.3E-04
			CARBON TETRACHLORIDE	NA	NA	2.3E-09	2 3E-09	Liver lesions	NA	NA	9.3E-05	9.3E-05
			CHLOROFORM	NA	NA	4.9E-08	4.9E-08	Liver	NA	NA	5.0E-04	5.0E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	4.2E-03	4.2E-03
			CYCLOHEXANE	NA	NA	---	---		NA	NA	6.6E-08	6.6E-08
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.0E-04	1.0E-04
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	4.7E-07	4.7E-07
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.1E-04	1.1E-04
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	8.7E-05	8.7E-05
			METHYLENE CHLORIDE	NA	NA	7.4E-10	7.4E-10		NA	NA	1.3E-04	1.3E-04
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.6E-04	2.6E-04
			TETRACHLOROETHENE	NA	NA	9.0E-07	9.0E-07	Liver toxicity in mice	NA	NA	3.0E-01	3 0E-01
			TETRAHYDROFURAN	NA	NA	9.4E-10	9.4E-10		NA	NA	1.1E-04	1.1E-04
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	7.1E-05	7.1E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.3E-03	1.3E-03
			TRICHLOROETHENE	NA	NA	5.0E-08	5.0E-08		NA	NA	2.9E-03	2.9E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.3E-03	8.3E-03
			VINYL CHLORIDE	NA	NA	1.9E-09	1.9E-09	Liver	NA	NA	1.7E-05	1.7E-05
			Chemical Total	0.0E+00	0.0E+00	1.1E-06	1.1E-06		0.0E+00	0 0E+00	4.0E-01	4.0E-01

TABLE A3-9.4B - Site Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
		Exposure Point Total				Maximum	1.1E-06				Maximum	4.0E-01
	Exposure Medium Total					Maximum	1.1E-06				Maximum	4.0E-01
Soil Gas - Outdoor Air Total						Maximum	1.1E-06				Maximum	4.0E-01
Receptor Total							2.2E-06					1.2E+00

Total Risk Across All Media= 2E-06

Total Hazard Across All Media = 1.2E+00

NA. Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.1E-01
Total Body Weight effects Across All Media =	4.6E-03
Total Kidney HI Across All Media =	3.0E-03
Total Other HI Across All Media =	8.3E-01

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.4B - Site Parcel, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2.7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	8.6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4.8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4.1E-04
			4,4'-DDE	2.3E-09	2.5E-10	7.2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4.5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2.5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6.4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4.9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6.2E-05	1.8E-09	2.3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5.5E-09	1.6E-13	2.0E-08	Inc. liver weight	3.7E-03	1.4E-03	4.0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6.0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1.3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3.1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.9E-05	1.4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3.8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2.3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7.8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8.2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9.7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4B - Site Parcel, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1.1E-07	*Liver toxicity in mice*	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1.7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8 4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8 1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.4E-06	1.4E-06
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1,2-TRICHLOROETHANE	NA	NA	1.2E-09	1.2E-09	Clinical serum chemistry	NA	NA	3.7E-04	3.7E-04
			1,1-DICHLOROETHANE	NA	NA	8.6E-12	8.6E-12		NA	NA	7.4E-07	7.4E-07
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1 4E-04	1 4E-04
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,2-DICHLOROETHANE	NA	NA	2.5E-10	2.5E-10		NA	NA	1.4E-04	1.4E-04
			1,3-BUTADIENE	NA	NA	5.5E-10	5.5E-10		NA	NA	1.1E-05	1.1E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	3.8E-07	3.8E-07
			ACETALDEHYDE	NA	NA	1.0E-10	1.0E-10		NA	NA	2.7E-04	2.7E-04
			ACETONE	NA	NA	---	---	Kidney	NA	NA	8.4E-07	8.4E-07
			BENZENE	NA	NA	2.3E-10	2.3E-10	Dec. lymphocyte count	NA	NA	1.9E-05	1.9E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	7.6E-06	7.6E-06
			CARBON TETRACHLORIDE	NA	NA	1.2E-09	1.2E-09	Liver lesions	NA	NA	5.0E-05	5.0E-05
			CHLOROFORM	NA	NA	3.4E-10	3.4E-10	Liver	NA	NA	3.5E-06	3.5E-06
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.2E-05	2.2E-05
			CYCLOHEXANE	NA	NA	---	---		NA	NA	4.7E-08	4.7E-08
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4.9E-06	4.9E-06
			ETHYLBENZENE	NA	NA	---	---	*Liver and kidney toxicity*	NA	NA	2.7E-07	2.7E-07
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.2E-05	1.2E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	8.7E-06	8.7E-06
			METHYLENE CHLORIDE	NA	NA	1.6E-10	1.6E-10		NA	NA	2.9E-05	2.9E-05
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.1E-06	4.1E-06
			TETRACHLOROETHENE	NA	NA	6.1E-10	6.1E-10	Liver toxicity in mice	NA	NA	2.1E-04	2.1E-04
			TETRAHYDROFURAN	NA	NA	2.1E-09	2.1E-09		NA	NA	2.6E-04	2.6E-04
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.6E-06	3.6E-06
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	7.3E-06	7.3E-06
			TRICHLOROETHENE	NA	NA	9.2E-11	9.2E-11		NA	NA	5.4E-06	5.4E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2 7E-05	2.7E-05
			VINYL CHLORIDE	NA	NA	8.0E-10	8 0E-10	Liver	NA	NA	7.2E-06	7.2E-06
			Chemical Total	0.0E+00	0.0E+00	7.7E-09	7.7E-09		0.0E+00	0.0E+00	1.6E-03	1.6E-03

TABLE A3-9.4B - Site Parcel, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
		Exposure Point Total				Minimum	7.7E-09				Minimum	1.6E-03
	Exposure Medium Total					Minimum	7.7E-09				Minimum	1.6E-03
Soil Gas - Outdoor Air Total						Minimum	7.7E-09				Minimum	1.6E-03
Receptor Total							1.2E-06					8.1E-01

Total Risk Across All Media= 1E-06

Total Hazard Across All Media = 8.1E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 1.0E-02
Total Body Weight effects Across All Media = 4.2E-03
Total Kidney HI Across All Media = 2.9E-03
Total Other HI Across All Media = 7.9E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summanze the hazard quotients by primary target organs across all media.

TABLE A3-9.4C - Other Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2 7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	*No observed effects*	8.6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4.8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4.1E-04
			4,4'-DDE	2.3E-09	2.5E-10	7.2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4.5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2 5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6.4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4.9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6.2E-05	1.8E-09	2.3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5.5E-09	1 6E-13	2.0E-08	Inc. liver weight	3.7E-03	1.4E-03	4.0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6.0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1 3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3 1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	2.9E-05	1.4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3.8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2 3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7.8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8.2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9.7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4C - Other Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1.1E-07	Liver toxicity in mice	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1.7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8.4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8.1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.7E-04	4.7E-04
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Maximum	1,1-DICHLOROETHANE	NA	NA	6.6E-10	6.6E-10		NA	NA	5.7E-05	5.7E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.5E-02	3.5E-02
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	4.1E-05	4.1E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,3-BUTADIENE	NA	NA	6.8E-09	6.8E-09		NA	NA	1.4E-04	1.4E-04
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	6.4E-07	6.4E-07
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			4-ETHYLTOLUENE	NA	NA	---	---		NA	NA	---	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.0E-06	4.0E-06
			BENZENE	NA	NA	6.6E-10	6.6E-10	Dec lymphocyte count	NA	NA	5.4E-05	5.4E-05
			BROMODICHLOROMETHANE	NA	NA	7.8E-11	7.8E-11	Kidney	NA	NA	2.1E-06	2.1E-06
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	8.0E-07	8.0E-07
			CHLOROFORM	NA	NA	8.8E-08	8.8E-08	Liver	NA	NA	8.9E-04	8.9E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	7.1E-04	7.1E-04
			CYCLOHEXANE	NA	NA	---	---		NA	NA	2.6E-06	2.6E-06
			DIBROMOCHLOROMETHANE	NA	NA	1.0E-10	1.0E-10	Liver lesions	NA	NA	3.8E-06	3.8E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.7E-04	1.7E-04
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	3.1E-07	3.1E-07
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	5.9E-05	5.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	1.8E-05	1.8E-05
			METHYL TERT-BUTYL ETHER	NA	NA	1.3E-12	1.3E-12		NA	NA	1.1E-07	1.1E-07
			METHYLENE CHLORIDE	NA	NA	8.8E-11	8.8E-11		NA	NA	1.5E-05	1.5E-05
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	3.4E-06	3.4E-06
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	8.8E-07	8.8E-07	Liver toxicity in mice	NA	NA	3.0E-01	3.0E-01
			TETRAHYDROFURAN	NA	NA	2.3E-12	2.3E-12		NA	NA	2.8E-07	2.8E-07
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.5E-04	1.5E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	3.3E-04	3.3E-04

TABLE A3-9 4C - Other Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TRICHLOROETHENE	NA	NA	5.7E-08	5.7E-08		NA	NA	3.3E-03	3.3E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	6.0E-03	6.0E-03
			Chemical Total	0.0E+00	0.0E+00	1.0E-06	1.0E-06		0.0E+00	0.0E+00	3.5E-01	3.5E-01
		Exposure Point Total				Maximum	1.0E-06				Maximum	3.5E-01
	Exposure Medium Total					Maximum	1.0E-06				Maximum	3.5E-01
Soil Gas - Outdoor Air Total						Maximum	1.0E-06				Maximum	3.5E-01
Receptor Total							2.2E-06					1.2E+00

Total Risk Across All Media= 2E-06

Total Hazard Across All Media = 1.2E+00

NA: Not applicable.

---: Risk was not calculated for chemical.

HI: Hazard Index.

CNS: Central Nervous System.

RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.1E-01
Total Body Weight effects Across All Media =	4.4E-03
Total Kidney HI Across All Media =	3.0E-03
Total Other HI Across All Media =	8.0E-01

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.4C - Other Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		5.4E-07	NA	NA	5.4E-07
			1,1,2-TRICHLOROETHANE	1.1E-11	---	---	1.1E-11	Clinical serum chemistry	2.7E-06	NA	NA	2.7E-06
			1,1-DICHLOROETHANE	2.2E-12	---	---	2.2E-12		2.7E-07	NA	NA	2.7E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.5E-07	NA	NA	2.5E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	8.6E-06	NA	NA	8.6E-06
			1,2-DICHLOROETHANE	2.6E-11	---	---	2.6E-11		1.0E-06	NA	NA	1.0E-06
			1,4-DIOXANE	3.5E-08	1.3E-08	3.7E-13	4.8E-08		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.0E-04	1.1E-04	3.2E-09	4.1E-04
			4,4'-DDE	2.3E-09	2.5E-10	7 2E-15	2.5E-09		NA	NA	NA	---
			4,4'-DDT	1.4E-09	1.5E-10	4 5E-15	1.5E-09	Liver lesions	5.7E-04	6.3E-05	1.8E-09	6.4E-04
			ALUMINUM	---	---	---	---		3.2E-02	NA	NA	3.2E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	9.9E-02	NA	NA	9.9E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.5E-03	NA	NA	2 5E-03
			BENZO(A)ANTHRACENE	4.6E-08	2.2E-08	6.4E-13	6.9E-08		NA	NA	NA	---
			BENZO(A)PYRENE	3.5E-07	1.7E-07	4.9E-12	5.2E-07		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.4E-08	1.2E-08	3.4E-13	3.6E-08		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.7E-04	6 2E-05	1 8E-09	2.3E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	8.2E-04	NA	NA	8.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-08	5 5E-09	1.6E-13	2.0E-08	Inc. liver weight	3.7E-03	1.4E-03	4.0E-08	5.1E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.2E-05	4.5E-06	1.3E-10	1.7E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.0E-03	6.0E-04	1.7E-08	4.6E-03
			CHLOROFORM	6.7E-12	---	---	6.7E-12	Liver	1.5E-06	NA	NA	1.5E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.5E-04	NA	NA	1.5E-04
			CHROMIUM VI	---	---	---	---	None	1.3E-02	NA	NA	1.3E-02
			CHRYSENE	2.1E-08	9.9E-09	2.9E-13	3.1E-08		NA	NA	NA	---
			COBALT	---	---	---	---		1.5E-03	NA	NA	1.5E-03
			COPPER	---	---	---	---		3.3E-03	NA	NA	3.3E-03
			DIELDRIN	2.3E-08	8.5E-09	2.5E-13	3.1E-08	Liver	2.0E-03	7.4E-04	2.1E-08	2.8E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc liver wt.	2.9E-05	1.4E-05	4.0E-10	4.3E-05
			IRON	---	---	---	---		2.5E-01	NA	NA	2.5E-01
			ISOPHORONE	3.6E-10	1.3E-10	3 8E-15	4.9E-10	No observed effects	1.3E-04	4.9E-05	1.4E-09	1.8E-04
			LEAD	2.3E-08	---	---	2.3E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	8.1E-03	NA	NA	8.1E-03
			MERCURY	---	---	---	---		3.0E-03	NA	NA	3.0E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.5E-03	NA	NA	2.5E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.3E-04	6.2E-05	1.8E-09	1.9E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.0E-03	NA	NA	4.0E-03
			PCB-1254 (AROCLOR 1254)	7 8E-08	4.0E-08	1.2E-12	1.2E-07	Ocular exudate	5.4E-02	2.8E-02	8 2E-07	8.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-07	6.0E-08	1.7E-12	1.8E-07		2.3E-02	1.2E-02	3.5E-07	3.5E-02
			PYRENE	---	---	---	---	Kidney	2.0E-04	9 7E-05	2.8E-09	3.0E-04
			SILVER	---	---	---	---	Argyria	4.0E-04	NA	NA	4.0E-04

TABLE A3-9.4C - Other Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TETRACHLOROETHENE	1.1E-07	---	---	1.1E-07	Liver toxicity in mice	1.4E-03	NA	NA	1.4E-03
			THALLIUM	---	---	---	---		9.8E-02	NA	NA	9.8E-02
			TRICHLOROETHENE	1.7E-11	---	---	1.7E-11		3.0E-04	NA	NA	3.0E-04
			VANADIUM	---	---	---	---		1.5E-01	NA	NA	1.5E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.0E-03	NA	NA	1.0E-03
			Chemical Total	8.4E-07	3.4E-07	9.9E-12	1.2E-06		7.6E-01	4.3E-02	1.3E-06	8.1E-01
		Exposure Point Total					1.2E-06					8.1E-01
	Exposure Medium Total						1.2E-06					8.1E-01
Surface Soil Total							1.2E-06					8.1E-01
Soil gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.0E-06	1.0E-06
5-12 ft bgs		in excavation	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
		Minimum	1,1-DICHLOROETHANE	NA	NA	1.7E-10	1.7E-10		NA	NA	1.5E-05	1.5E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	7.7E-06	7.7E-06
			1,2,4-TRIMETHYLBENZENE	NA	NA	---	---		NA	NA	2.3E-05	2.3E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	---	---
			1,3-BUTADIENE	NA	NA	1.4E-10	1.4E-10		NA	NA	2.9E-06	2.9E-06
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	---	---
			2-BUTANONE	NA	NA	---	---	Dec. offspring weight	NA	NA	1.6E-08	1.6E-08
			2-PROPANOL	NA	NA	---	---		NA	NA	---	---
			4-ETHYLTOLUENE	NA	NA	---	---		NA	NA	---	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.2E-07	1.2E-07
			BENZENE	NA	NA	2.1E-11	2.1E-11	Dec. lymphocyte count	NA	NA	1.7E-06	1.7E-06
			BROMODICHLOROMETHANE	NA	NA	3.0E-11	3.0E-11	Kidney	NA	NA	8.2E-07	8.2E-07
			BROMOFORM	NA	NA	---	---	Liver lesions	NA	NA	---	---
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	9.5E-08	9.5E-08
			CHLOROFORM	NA	NA	5.1E-11	5.1E-11	Liver	NA	NA	5.2E-07	5.2E-07
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	3.1E-04	3.1E-04
			CYCLOHEXANE	NA	NA	---	---		NA	NA	1.1E-08	1.1E-08
			DIBROMOCHLOROMETHANE	NA	NA	7.1E-11	7.1E-11	Liver lesions	NA	NA	2.6E-06	2.6E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	9.3E-07	9.3E-07
			ETHANOL	NA	NA	---	---		NA	NA	---	---
			ETHYLBENZENE	NA	NA	---	---	Liver and kidney toxicity	NA	NA	8.7E-08	8.7E-08
			HEPTANE	NA	NA	---	---		NA	NA	---	---
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.3E-07	2.3E-07
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.4E-06	1.4E-06
			METHYL TERT-BUTYL ETHER	NA	NA	1.2E-12	1.2E-12		NA	NA	1.0E-07	1.0E-07
			METHYLENE CHLORIDE	NA	NA	2.5E-12	2.5E-12		NA	NA	4.3E-07	4.3E-07
			O-XYLENE	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6.8E-07	6.8E-07
			PENTANE	NA	NA	---	---		NA	NA	---	---
			TETRACHLOROETHENE	NA	NA	1.5E-11	1.5E-11	Liver toxicity in mice	NA	NA	5.1E-06	5.1E-06
			TETRAHYDROFURAN	NA	NA	1.6E-12	1.6E-12		NA	NA	2.0E-07	2.0E-07
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.5E-07	4.5E-07
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.4E-04	1.4E-04

TABLE A3-9.4C - Other Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation of Fugitive Dust	Exposure Routes Total
			TRICHLOROETHENE	NA	NA	2.5E-11	2.5E-11		NA	NA	1.5E-06	1.5E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.4E-07	1.4E-07
			Chemical Total	0.0E+00	0.0E+00	5.3E-10	5.3E-10		0.0E+00	0.0E+00	5.1E-04	5.1E-04
		Exposure Point Total				Minimum	5.3E-10				Minimum	5.1E-04
	Exposure Medium Total					Minimum	5.3E-10				Minimum	5.1E-04
Soil Gas - Outdoor Air Total						Minimum	5.3E-10				Minimum	5.1E-04
Receptor Total							1.2E-06					8.1E-01

Total Risk Across All Media= 1E-06

Total Hazard Across All Media = 8.1E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 1.0E-02
Total Body Weight effects Across All Media = 4.2E-03
Total Kidney HI Across All Media = 2.9E-03
Total Other HI Across All Media = 7.9E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
RME: reasonable maximum exposure

Note: The 0 to 12 ft bgs soil dataset is the same as the 0 to 10 ft bgs dataset as no additional samples were collected between 10 and 12 ft bgs

(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.5A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	*Resident*
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		2.3E-07	NA	NA	2.3E-07
			1,1,2-TRICHLOROETHANE	1.4E-10	---	---	1.4E-10	Clinical serum chemistry	1.2E-06	NA	NA	1.2E-06
			1,1-DICHLOROETHANE	2.8E-11	---	---	2.8E-11		1.2E-07	NA	NA	1.2E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.1E-07	NA	NA	1.1E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.7E-06	NA	NA	3.7E-06
			1,2-DICHLOROETHANE	3.4E-10	---	---	3.4E-10		4.3E-07	NA	NA	4.3E-07
			1,4-DIOXANE	4.4E-07	1.8E-07	6.5E-12	6.2E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.3E-04	5.1E-05	1.9E-09	1.8E-04
			4,4'-DDE	2 9E-08	3.4E-09	1.3E-13	3.2E-08		NA	NA	NA	---
			4,4'-DDT	1.8E-08	2.1E-09	7.8E-14	2.0E-08	Liver lesions	2.4E-04	2.9E-05	1.1E-09	2.7E-04
			ALUMINUM	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	4.2E-02	NA	NA	4.2E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.1E-03	NA	NA	1.1E-03
			BENZO(A)ANTHRACENE	5 9E-07	3.1E-07	1.1E-11	8.9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	4.5E-06	2.3E-06	8.5E-11	6.8E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	3.1E-07	1.6E-07	5.9E-12	4.7E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		7.1E-05	2.8E-05	1.0E-09	1.0E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3 5E-04	NA	NA	3.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.9E-07	7.6E-08	2.8E-12	2.7E-07	Inc. liver weight	1.6E-03	6.3E-04	2.3E-08	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	5.2E-06	2.1E-06	7.6E-11	7.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.7E-03	2.7E-04	1.0E-08	2.0E-03
			CHLOROFORM	8.6E-11	---	---	8.6E-11	Liver	6.4E-07	NA	NA	6.4E-07
			CHROMIUM III	---	---	---	---	No observed effects	6.5E-05	NA	NA	6.5E-05
			CHROMIUM VI	---	---	---	---	None	5.4E-03	NA	NA	5.4E-03
			CHRYSENE	2.6E-07	1 4E-07	5.0E-12	4.0E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6.4E-04	NA	NA	6.4E-04
			COPPER	---	---	---	---		1.4E-03	NA	NA	1.4E-03
			DIELDRIN	2.9E-07	1.2E-07	4.3E-12	4.1E-07	Liver	8.5E-04	3.4E-04	1.2E-08	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	1.2E-05	6.4E-06	2.4E-10	1.9E-05
			IRON	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			ISOPHORONE	4.6E-09	1.8E-09	6.7E-14	6.4E-09	No observed effects	5.6E-05	2.2E-05	8.2E-10	7.8E-05
			LEAD	3.0E-07	---	---	3.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.5E-03	NA	NA	3.5E-03
			MERCURY	---	---	---	---		1.3E-03	NA	NA	1.3E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.1E-03	NA	NA	1.1E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in *males*	5 4E-05	2.8E-05	1.0E-09	8.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.7E-03	NA	NA	1.7E-03

TABLE A3-9.5A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	9.9E-07	5.5E-07	2.0E-11	1.5E-06	Ocular exudate	2.3E-02	1.3E-02	4.7E-07	3.6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.5E-06	8.2E-07	3.0E-11	2.3E-06		9.8E-03	5.5E-03	2.0E-07	1.5E-02
			PYRENE	---	---	---	---	Kidney	8.6E-05	4.4E-05	1.6E-09	1.3E-04
			SILVER	---	---	---	---	Argyria	1.7E-04	NA	NA	1.7E-04
			TETRACHLOROETHENE	1.4E-06	---	---	1.4E-06	Liver toxicity in mice	5.9E-04	NA	NA	5.9E-04
			THALLIUM	---	---	---	---		4.2E-02	NA	NA	4.2E-02
			TRICHLOROETHENE	2.1E-10	---	---	2 1E-10		1 3E-04	NA	NA	1.3E-04
			VANADIUM	---	---	---	---		6.4E-02	NA	NA	6.4E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.3E-04	NA	NA	4.3E-04
			Chemical Total	1.1E-05	4.7E-06	1.7E-10	1.5E-05		3.2E-01	2.0E-02	7.3E-07	3.4E-01
		Exposure Point Total					1 5E-05					3.4E-01
	Exposure Medium Total						1.5E-05					3.4E-01
Surface Soil Total							1 5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.8E-01	1.8E-01
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	9.3E-06	9.3E-06		NA	NA	2.7E-02	2.7E-02
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.4E+00	2.4E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	2 4E-05	2.4E-05		NA	NA	4.4E-01	4 4E-01
			ACETALDEHYDE	NA	NA	1.1E-07	1.1E-07		NA	NA	1.0E-02	1.0E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.1E-03	2.1E-03
			BENZENE	NA	NA	1.3E-05	1.3E-05	Dec. lymphocyte count	NA	NA	3.5E-02	3.5E-02
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	8.6E-03	8.6E-03
			CARBON TETRACHLORIDE	NA	NA	3.0E-06	3.0E-06	Liver lesions	NA	NA	4.1E-03	4.1E-03
			CHLOROFORM	NA	NA	6.3E-05	6 3E-05	Liver	NA	NA	2.1E-02	2.1E-02
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.8E-01	2.8E-01
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.0E-03	3.0E-03
			TETRACHLOROETHENE	NA	NA	2.3E-03	2.3E-03	Liver toxicity in mice	NA	NA	2.6E+01	2.6E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.0E-03	3.0E-03
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	7.6E-02	7.6E-02
			TRICHLOROETHENE	NA	NA	1.2E-04	1.2E-04		NA	NA	2.3E-01	2.3E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	4.7E-01	4.7E-01
			Chemical Total	NA	NA	2.5E-03	2.5E-03		NA	NA	3.0E+01	3.0E+01
		Exposure Point Total				Maximum	2.5E-03				Maximum	3.0E+01
	Exposure Medium Total					Maximum	2.5E-03				Maximum	3.0E+01
Soil Gas Total						Maximum	2.5E-03				Maximum	3.0E+01

TABLE A3-9.5A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	*Dermal*	*Inhalation*	*Exposure* Routes Total	*Primary* Target Organ(s)	*Ingestion*	*Dermal*	*Inhalation*	*Exposure* Routes Total
Receptor Total							2.5E-03					3.0E+01

Total Risk Across All Media = 2.5E-03

Total Hazard Across All Media = 3.0E+01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 2.8E+01
Total Body Weight effects Across All Media = 4.7E-03
Total Kidney HI Across All Media = 6.3E-03
Total Other HI Across All Media = 2.1E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.5A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2.3E-07	NA	NA	2.3E-07
			1,1,2-TRICHLOROETHANE	1.4E-10	---	---	1.4E-10	Clinical serum chemistry	1.2E-06	NA	NA	1.2E-06
	Soil 0'-12'	Soil 0'-12'	1,1-DICHLOROETHANE	2.8E-11	---	---	2.8E-11		1.2E-07	NA	NA	1.2E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.1E-07	NA	NA	1.1E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.7E-06	NA	NA	3.7E-06
			1,2-DICHLOROETHANE	3.4E-10	---	---	3.4E-10		4.3E-07	NA	NA	4.3E-07
			1,4-DIOXANE	4.4E-07	1.8E-07	6.5E-12	6.2E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.3E-04	5.1E-05	1.9E-09	1.8E-04
			4,4'-DDE	2 9E-08	3.4E-09	1.3E-13	3.2E-08		NA	NA	NA	---
			4,4'-DDT	1.8E-08	2.1E-09	7.8E-14	2.0E-08	Liver lesions	2.4E-04	2.9E-05	1.1E-09	2 7E-04
			ALUMINUM	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	4.2E-02	NA	NA	4.2E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.1E-03	NA	NA	1.1E-03
			BENZO(A)ANTHRACENE	5.9E-07	3.1E-07	1.1E-11	8 9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	4 5E-06	2.3E-06	8.5E-11	6 8E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	3.1E-07	1.6E-07	5.9E-12	4.7E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		7 1E-05	2.8E-05	1 0E-09	1.0E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3 5E-04	NA	NA	3.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.9E-07	7 6E-08	2 8E-12	2.7E-07	Inc liver weight	1.6E-03	6 3E-04	2.3E-08	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt and liver to brain ratio	5.2E-06	2.1E-06	7.6E-11	7.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.7E-03	2.7E-04	1.0E-08	2.0E-03
			CHLOROFORM	8.6E-11	---	---	8.6E-11	Liver	6.4E-07	NA	NA	6.4E-07
			CHROMIUM III	---	---	---	---	No observed effects	6.5E-05	NA	NA	6.5E-05
			CHROMIUM VI	---	---	---	---	None	5 4E-03	NA	NA	5.4E-03
			CHRYSENE	2.6E-07	1.4E-07	5.0E-12	4.0E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6.4E-04	NA	NA	6.4E-04
			COPPER	---	---	---	---		1.4E-03	NA	NA	1.4E-03
			DIELDRIN	2.9E-07	1.2E-07	4.3E-12	4.1E-07	Liver	8.5E-04	3.4E-04	1 2E-08	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc liver wt.	1.2E-05	6.4E-06	2.4E-10	1.9E-05
			IRON	---	---	---	---		1 1E-01	NA	NA	1.1E-01
			ISOPHORONE	4.6E-09	1.8E-09	6.7E-14	6.4E-09	No observed effects	5 6E-05	2.2E-05	8.2E-10	7.8E-05
			LEAD	3.0E-07	---	---	3.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.5E-03	NA	NA	3.5E-03
			MERCURY	---	---	---	---		1.3E-03	NA	NA	1.3E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.1E-03	NA	NA	1.1E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.4E-05	2.8E-05	1.0E-09	8.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.7E-03	NA	NA	1.7E-03

TABLE A3-9.5A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	9.9E-07	5.5E-07	2.0E-11	1.5E-06	Ocular exudate	2.3E-02	1.3E-02	4.7E-07	3.6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.5E-06	8.2E-07	3.0E-11	2.3E-06		9.8E-03	5.5E-03	2.0E-07	1.5E-02
			PYRENE	---	---	---	---	Kidney	8.6E-05	4.4E-05	1.6E-09	1.3E-04
			SILVER	---	---	---	---	Argyria	1.7E-04	NA	NA	1.7E-04
			TETRACHLOROETHENE	1.4E-06	---	---	1.4E-06	Liver toxicity in mice	5.9E-04	NA	NA	5.9E-04
			THALLIUM	---	---	---	---		4.2E-02	NA	NA	4.2E-02
			TRICHLOROETHENE	2.1E-10	---	---	2.1E-10		1.3E-04	NA	NA	1.3E-04
			VANADIUM	---	---	---	---		6.4E-02	NA	NA	6.4E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.3E-04	NA	NA	4.3E-04
			Chemical Total	1.1E-05	4.7E-06	1.7E-10	1.5E-05		3.2E-01	2.0E-02	7.3E-07	3.4E-01
		Exposure Point Total					1.5E-05					3.4E-01
	Exposure Medium Total						1.5E-05					3.4E-01
Surface Soil Total							1.5E-05					3.4E-01
Soil Gas 5' to 6'	Indoor Air	Indoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.9E-04	4.9E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	1.7E-08	1.7E-08		NA	NA	5.0E-05	5.0E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.6E-02	2.6E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	8.9E-07	8.9E-07		NA	NA	1.6E-02	1.6E-02
			ACETALDEHYDE	NA	NA	1.1E-07	1.1E-07		NA	NA	1.0E-02	1.0E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.2E-05	3.2E-05
			BENZENE	NA	NA	4.2E-07	4.2E-07	Dec. lymphocyte count	NA	NA	1.1E-03	1.1E-03
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	4.6E-04	4.6E-04
			CARBON TETRACHLORIDE	NA	NA	3.0E-06	3.0E-06	Liver lesions	NA	NA	4.1E-03	4.1E-03
			CHLOROFORM	NA	NA	7.8E-07	7.8E-07	Liver	NA	NA	2.6E-04	2.6E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	5.5E-03	5.5E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2.0E-04	2.0E-04
			TETRACHLOROETHENE	NA	NA	2.7E-05	2.7E-05	Liver toxicity in mice	NA	NA	3.1E-01	3.1E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.9E-04	1.9E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	5.2E-04	5.2E-04
			TRICHLOROETHENE	NA	NA	1.9E-06	1.9E-06		NA	NA	3.6E-03	3.6E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	4.6E-03	4.6E-03
			Chemical Total	NA	NA	3.4E-05	3.4E-05		NA	NA	3.8E-01	3.8E-01
		Exposure Point Total				Minimum	3.4E-05				Minimum	3.8E-01
	Exposure Medium Total					Minimum	3.4E-05				Minimum	3.8E-01
Soil Gas Total						Minimum	3.4E-05				Minimum	3.8E-01

TABLE A3-9.5A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							5 0E-05					7.3E-01

Total Risk Across All Media = 5.0E-05

Total Hazard Across All Media = 7.3E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 3.4E-01
Total Body Weight effects Across All Media = 2.0E-03
Total Kidney HI Across All Media = 1.5E-03
Total Other HI Across All Media = 3.6E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2.3E-07	NA	NA	2.3E-07
			1,1,2-TRICHLOROETHANE	1.4E-10	---	---	1.4E-10	Clinical serum chemistry	1.2E-06	NA	NA	1.2E-06
	Soil	Soil	1,1-DICHLOROETHANE	2.8E-11	---	---	2.8E-11		1.2E-07	NA	NA	1.2E-07
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.1E-07	NA	NA	1.1E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.7E-06	NA	NA	3.7E-06
			1,2-DICHLOROETHANE	3 4E-10	---	---	3.4E-10		4.3E-07	NA	NA	4.3E-07
			1,4-DIOXANE	4.4E-07	1.8E-07	6.5E-12	6.2E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.3E-04	5.1E-05	1.9E-09	1.8E-04
			4,4'-DDE	2.9E-08	3.4E-09	1.3E-13	3 2E-08		NA	NA	NA	---
			4,4'-DDT	1.8E-08	2.1E-09	7.8E-14	2.0E-08	Liver lesions	2.4E-04	2.9E-05	1.1E-09	2.7E-04
			ALUMINUM	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	4.2E-02	NA	NA	4.2E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.1E-03	NA	NA	1.1E-03
			BENZO(A)ANTHRACENE	5.9E-07	3.1E-07	1.1E-11	8.9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	4.5E-06	2.3E-06	8.5E-11	6.8E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	3.1E-07	1.6E-07	5.9E-12	4.7E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		7.1E-05	2.8E-05	1.0E-09	1.0E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.5E-04	NA	NA	3.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.9E-07	7.6E-08	2.8E-12	2.7E-07	Inc. liver weight	1.6E-03	6.3E-04	2.3E-08	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	5.2E-06	2.1E-06	7.6E-11	7.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.7E-03	2.7E-04	1.0E-08	2.0E-03
			CHLOROFORM	8 6E-11	---	---	8.6E-11	Liver	6.4E-07	NA	NA	6.4E-07
			CHROMIUM III	---	---	---	---	No observed effects	6.5E-05	NA	NA	6.5E-05
			CHROMIUM VI	---	---	---	---	None	5 4E-03	NA	NA	5.4E-03
			CHRYSENE	2.6E-07	1.4E-07	5.0E-12	4.0E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6.4E-04	NA	NA	6.4E-04
			COPPER	---	---	---	---		1.4E-03	NA	NA	1.4E-03
			DIELDRIN	2.9E-07	1.2E-07	4.3E-12	4.1E-07	Liver	8.5E-04	3.4E-04	1.2E-08	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	1.2E-05	6.4E-06	2.4E-10	1.9E-05
			IRON	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			ISOPHORONE	4.6E-09	1.8E-09	6.7E-14	6.4E-09	No observed effects	5.6E-05	2.2E-05	8.2E-10	7.8E-05
			LEAD	3 0E-07	---	---	3.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.5E-03	NA	NA	3.5E-03
			MERCURY	---	---	---	---		1.3E-03	NA	NA	1.3E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.1E-03	NA	NA	1.1E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.4E-05	2.8E-05	1.0E-09	8.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.7E-03	NA	NA	1.7E-03

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	9.9E-07	5.5E-07	2.0E-11	1.5E-06	Ocular exudate	2.3E-02	1.3E-02	4.7E-07	3.6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.5E-06	8.2E-07	3.0E-11	2.3E-06		9.8E-03	5.5E-03	2.0E-07	1.5E-02
			PYRENE	---	---	---	---	Kidney	8.6E-05	4.4E-05	1.6E-09	1.3E-04
			SILVER	---	---	---	---	Argyria	1.7E-04	NA	NA	1.7E-04
			TETRACHLOROETHENE	1.4E-06	---	---	1.4E-06	Liver toxicity in mice	5.9E-04	NA	NA	5.9E-04
			THALLIUM	---	---	---	---		4.2E-02	NA	NA	4.2E-02
			TRICHLOROETHENE	2.1E-10	---	---	2.1E-10		1.3E-04	NA	NA	1.3E-04
			VANADIUM	---	---	---	---		6.4E-02	NA	NA	6.4E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.3E-04	NA	NA	4.3E-04
			Chemical Total	1.1E-05	4.7E-06	1.7E-10	1.5E-05		3.2E-01	2.0E-02	7.3E-07	3.4E-01
		Exposure Point Total					1.5E-05					3.4E-01
	Exposure Medium Total						1.5E-05					3.4E-01
Surface Soil Total							1.5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.5E-03	2.5E-03
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	5.0E-07	5.0E-07		NA	NA	1.4E-03	1.4E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	2.8E+00	2.8E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.7E-05	5.7E-05
			BENZENE	NA	NA	1.5E-07	1.5E-07	Dec. lymphocyte count	NA	NA	4.2E-04	4.2E-04
			CHLOROFORM	NA	NA	1.5E-05	1.5E-05	Liver	NA	NA	5.0E-03	5.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	2.3E-02	2.3E-02
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.9E-05	1.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.0E-04	2.0E-04
			TETRACHLOROETHENE	NA	NA	3.5E-03	3.5E-03	Liver toxicity in mice	NA	NA	4.0E+01	4.0E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	6.6E-03	6.6E-03
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	9.3E-02	9.3E-02
			TRICHLOROETHENE	NA	NA	2.4E-04	2.4E-04		NA	NA	4.7E-01	4.7E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.1E+00	1.1E+00
			Chemical Total	NA	NA	3.8E-03	3.8E-03		NA	NA	4.5E+01	4.5E+01
		Exposure Point Total				Maximum	3.8E-03				Maximum	4.5E+01
	Exposure Medium Total					Maximum	3.8E-03				Maximum	4.5E+01
Soil Gas Total						Maximum	3.8E-03				Maximum	4.5E+01

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							3.8E-03					4.5E+01

Total Risk Across All Media = 3.8E-03

Total Hazard Across All Media = 4.5E+01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	4.3E+01
Total Body Weight effects Across All Media =	2.5E-02
Total Kidney HI Across All Media =	7.9E-03
Total Other HI Across All Media =	2.0E+00

NA: Not applicable.
---: Risk was not calculated for chemical
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients *for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize* the hazard quotients by primary target organs across all media.

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2.3E-07	NA	NA	2.3E-07
			1,1,2-TRICHLOROETHANE	1.4E-10	---	---	1.4E-10	Clinical serum chemistry	1.2E-06	NA	NA	1.2E-06
	Soil	Soil	1,1-DICHLOROETHANE	2.8E-11	---	---	2.8E-11		1.2E-07	NA	NA	1 2E-07
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.1E-07	NA	NA	1.1E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.7E-06	NA	NA	3.7E-06
			1,2-DICHLOROETHANE	3.4E-10	---	---	3.4E-10		4.3E-07	NA	NA	4.3E-07
			1,4-DIOXANE	4.4E-07	1.8E-07	6.5E-12	6.2E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.3E-04	5.1E-05	1.9E-09	1.8E-04
			4,4'-DDE	2.9E-08	3.4E-09	1.3E-13	3.2E-08		NA	NA	NA	---
			4,4'-DDT	1.8E-08	2.1E-09	7.8E-14	2.0E-08	Liver lesions	2.4E-04	2.9E-05	1.1E-09	2.7E-04
			ALUMINUM	---	---	---	---		1 3E-02	NA	NA	1.3E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	4 2E-02	NA	NA	4 2E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.1E-03	NA	NA	1.1E-03
			BENZO(A)ANTHRACENE	5.9E-07	3.1E-07	1.1E-11	8.9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	4.5E-06	2.3E-06	8.5E-11	6.8E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	3.1E-07	1.6E-07	5.9E-12	4.7E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		7.1E-05	2.8E-05	1.0E-09	1.0E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.5E-04	NA	NA	3.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.9E-07	7.6E-08	2.8E-12	2.7E-07	Inc. liver weight	1.6E-03	6.3E-04	2.3E-08	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	5.2E-06	2.1E-06	7.6E-11	7.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.7E-03	2.7E-04	1.0E-08	2.0E-03
			CHLOROFORM	8.6E-11	---	---	8.6E-11	Liver	6.4E-07	NA	NA	6.4E-07
			CHROMIUM III	---	---	---	---	No observed effects	6.5E-05	NA	NA	6.5E-05
			CHROMIUM VI	---	---	---	---	None	5.4E-03	NA	NA	5.4E-03
			CHRYSENE	2.6E-07	1.4E-07	5.0E-12	4.0E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6.4E-04	NA	NA	6.4E-04
			COPPER	---	---	---	---		1.4E-03	NA	NA	1.4E-03
			DIELDRIN	2.9E-07	1.2E-07	4.3E-12	4.1E-07	Liver	8.5E-04	3.4E-04	1.2E-08	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	1.2E-05	6.4E-06	2.4E-10	1.9E-05
			IRON	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			ISOPHORONE	4.6E-09	1.8E-09	6.7E-14	6 4E-09	No observed effects	5.6E-05	2.2E-05	8.2E-10	7.8E-05
			LEAD	3.0E-07	---	---	3.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.5E-03	NA	NA	3.5E-03
			MERCURY	---	---	---	---		1.3E-03	NA	NA	1.3E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1 1E-03	NA	NA	1.1E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.4E-05	2.8E-05	1.0E-09	8.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.7E-03	NA	NA	1.7E-03

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult

Medium	*Exposure* Medium	*Exposure* Point	*Chemical* of Potential Concern	*Carcinogenic Risk*				*Non-Carcinogenic Hazard Quotient*				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	9.9E-07	5.5E-07	2 0E-11	1.5E-06	Ocular exudate	2.3E-02	1.3E-02	4.7E-07	3.6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.5E-06	8.2E-07	3.0E-11	2.3E-06		9.8E-03	5.5E-03	2.0E-07	1.5E-02
			PYRENE	---	---	---	---	Kidney	8.6E-05	4.4E-05	1.6E-09	1.3E-04
			SILVER	---	---	---	---	Argyria	1.7E-04	NA	NA	1.7E-04
			TETRACHLOROETHENE	1.4E-06	---	---	1.4E-06	Liver toxicity in mice	5.9E-04	NA	NA	5.9E-04
			THALLIUM	---	---	---	---		4.2E-02	NA	NA	4.2E-02
			TRICHLOROETHENE	2 1E-10	---	---	2 1E-10		1.3E-04	NA	NA	1.3E-04
			VANADIUM	---	---	---	---		6.4E-02	NA	NA	6.4E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.3E-04	NA	NA	4.3E-04
			Chemical Total	1.1E-05	4.7E-06	1.7E-10	1.5E-05		3.2E-01	2.0E-02	7.3E-07	3.4E-01
		Exposure Point Total					1.5E-05					3.4E-01
	Exposure Medium Total						1.5E-05					3.4E-01
Surface Soil Total							1.5E-05					3.4E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.5E-05	4.5E-05
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	5.0E-07	5.0E-07		NA	NA	1.4E-03	1.4E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.2E-04	3.2E-04
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.5E-05	2.5E-05
			BENZENE	NA	NA	7.8E-08	7.8E-08	Dec. lymphocyte count	NA	NA	2.1E-04	2.1E-04
			CHLOROFORM	NA	NA	6.2E-07	6.2E-07	Liver	NA	NA	2.1E-04	2.1E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.8E-05	5.8E-05
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	1.9E-05	1.9E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	9 1E-05	9.1E-05
			TETRACHLOROETHENE	NA	NA	1.6E-06	1.6E-06	Liver toxicity in mice	NA	NA	1.8E-02	1.8E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	7.4E-05	7.4E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	6.3E-02	6.3E-02
			TRICHLOROETHENE	NA	NA	2.0E-07	2.0E-07		NA	NA	3.9E-04	3.9E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	6.0E-04	6.0E-04
			Chemical Total	NA	NA	3.0E-06	3.0E-06		NA	NA	8.5E-02	8.5E-02
		Exposure Point Total				Minimum	3.0E-06				Minimum	8.5E-02
	Exposure Medium Total					Minimum	3.0E-06				Minimum	8 5E-02
Soil Gas Total						Minimum	3.0E-06				Minimum	8.5E-02

TABLE A3-9.5B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Resident
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							1.8E-05					4.3E-01

Total Risk Across All Media = 1.8E-05

Total Hazard Across All Media = 4.3E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	2.3E-02
Total Body Weight effects Across All Media =	1.9E-03
Total Kidney HI Across All Media =	1.3E-03
Total Other HI Across All Media =	4.0E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.6A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		6.1E-07	NA	NA	6.1E-07
			1,1,2-TRICHLOROETHANE	3.8E-10	---	---	3.8E-10	Clinical serum chemistry	3.1E-06	NA	NA	3.1E-06
			1,1-DICHLOROETHANE	7.5E-11	---	---	7.5E-11		3.1E-07	NA	NA	3.1E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.8E-07	NA	NA	2.8E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	9.7E-06	NA	NA	9.7E-06
			1,2-DICHLOROETHANE	9.0E-10	---	---	9.0E-10		1.2E-06	NA	NA	1.2E-06
			1,4-DIOXANE	1.2E-06	3.8E-07	8.3E-12	1.6E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.4E-04	1.1E-04	3.0E-09	4.5E-04
			4,4'-DDE	7.6E-08	7.4E-09	1.6E-13	8.4E-08		NA	NA	NA	---
			4,4'-DDT	4.7E-08	4.6E-09	9.9E-14	5.2E-08	Liver lesions	6.5E-04	6.3E-05	1.7E-09	7.1E-04
			ALUMINUM	---	---	---	---		3.6E-02	NA	NA	3.6E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.1E-01	NA	NA	1.1E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.9E-03	NA	NA	2.9E-03
			BENZO(A)ANTHRACENE	1.6E-06	6.6E-07	1.4E-11	2.2E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.2E-05	5.0E-06	1.1E-10	1.7E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	8.2E-07	3.5E-07	7.5E-12	1.2E-06		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.9E-04	6.1E-05	1.7E-09	2.5E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	9.2E-04	NA	NA	9.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.1E-07	1.6E-07	3.5E-12	6.7E-07	Inc. liver weight	4.2E-03	1.4E-03	3.7E-08	5.6E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.4E-05	4 5E-06	1 2E-10	1.8E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.6E-03	5.9E-04	1.6E-08	5.1E-03
			CHLOROFORM	2.3E-10	---	---	2.3E-10	Liver	1.7E-06	NA	NA	1 7E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.7E-04	NA	NA	1.7E-04
			CHROMIUM VI	---	---	---	---	None	1.4E-02	NA	NA	1.4E-02
			CHRYSENE	7.0E-07	2.9E-07	6.4E-12	9.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		1.7E-03	NA	NA	1.7E-03
			COPPER	---	---	---	---		3.7E-03	NA	NA	3.7E-03
			DIELDRIN	7 8E-07	2.5E-07	5.4E-12	1.0E-06	Liver	2.3E-03	7.3E-04	2.0E-08	3.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	3.3E-05	1.4E-05	3.7E-10	4.7E-05
			IRON	---	---	---	---		2.8E-01	NA	NA	2.8E-01
			ISOPHORONE	1.2E-08	3.9E-09	8.5E-14	1.6E-08	No observed effects	1.5E-04	4.8E-05	1.3E-09	2.0E-04
			LEAD	8.0E-07	---	---	8.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	9.2E-03	NA	NA	9.2E-03
			MERCURY	---	---	---	---		3.4E-03	NA	NA	3.4E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.9E-03	NA	NA	2 9E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in *males*	1.4E-04	6.1E-05	1.6E-09	2.1E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.5E-03	NA	NA	4.5E-03

TABLE A3-9.6A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.6E-06	1.2E-06	2.6E-11	3.8E-06	Ocular exudate	6.2E-02	2.8E-02	7.5E-07	8.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	3 9E-06	1.8E-06	3.8E-11	5.7E-06		2 6E-02	1.2E-02	3.2E-07	3.8E-02
			PYRENE	---	---	---	---	Kidney	2.3E-04	9 6E-05	2 6E-09	3.2E-04
			SILVER	---	---	---	---	Argyria	4.5E-04	NA	NA	4.5E-04
			TETRACHLOROETHENE	3.6E-06	---	---	3.6E-06	Liver toxicity in mice	1.6E-03	NA	NA	1.6E-03
			THALLIUM	---	---	---	---		1 1E-01	NA	NA	1.1E-01
			TRICHLOROETHENE	5.7E-10	---	---	5.7E-10		3.4E-04	NA	NA	3.4E-04
			VANADIUM	---	---	---	---		1.7E-01	NA	NA	1.7E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1 2E-03	NA	NA	1.2E-03
			Chemical Total	2.9E-05	1.0E-05	2 2E-10	3.9E-05		8.6E-01	4.3E-02	1.2E-06	9.0E-01
		Exposure Point Total					3.9E-05					9.0E-01
	Exposure Medium Total						3.9E-05					9.0E-01
Surface Soil Total							3.9E-05					9.0E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.3E-01	2.3E-01
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	1.2E-05	1.2E-05		NA	NA	3.4E-02	3.4E-02
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.1E+00	3.1E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	3.0E-05	3.0E-05		NA	NA	5.5E-01	5.5E-01
			ACETALDEHYDE	NA	NA	1.4E-07	1.4E-07		NA	NA	1.3E-02	1.3E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.7E-03	2.7E-03
			BENZENE	NA	NA	1.6E-05	1.6E-05	Dec. lymphocyte count	NA	NA	4.4E-02	4.4E-02
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.1E-02	1.1E-02
			CARBON TETRACHLORIDE	NA	NA	3.8E-06	3.8E-06	Liver lesions	NA	NA	5.2E-03	5.2E-03
			CHLOROFORM	NA	NA	8.0E-05	8.0E-05	Liver	NA	NA	2.7E-02	2 7E-02
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	3.5E-01	3.5E-01
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.8E-03	3.8E-03
			TETRACHLOROETHENE	NA	NA	2.9E-03	2.9E-03	Liver toxicity in mice	NA	NA	3.3E+01	3.3E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	3.8E-03	3.8E-03
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	9.6E-02	9.6E-02
			TRICHLOROETHENE	NA	NA	1.5E-04	1.5E-04		NA	NA	2.9E-01	2.9E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	5.9E-01	5.9E-01
			Chemical Total	NA	NA	3.2E-03	3.2E-03		NA	NA	3 8E+01	3.8E+01
		Exposure Point Total				Maximum	3 2E-03				Maximum	3.8E+01
	Exposure Medium Total					Maximum	3.2E-03				Maximum	3.8E+01
Soil Gas Total						Maximum	3.2E-03				Maximum	3.8E+01

TABLE A3-9 6A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							3.2E-03					3.9E+01

Total Risk Across All Media = 3.2E-03

Total Hazard Across All Media = 3.9E+01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	3.6E+01
Total Body Weight effects Across All Media =	8.5E-03
Total Kidney HI Across All Media =	9.7E-03
Total Other HI Across All Media =	3.1E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.6A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		6.1E-07	NA	NA	6.1E-07
			1,1,2-TRICHLOROETHANE	3.8E-10	---	---	3.8E-10	Clinical serum chemistry	3.1E-06	NA	NA	3.1E-06
	Soil	Soil	1,1-DICHLOROETHANE	7.5E-11	---	---	7.5E-11		3.1E-07	NA	NA	3.1E-07
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.8E-07	NA	NA	2.8E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	9.7E-06	NA	NA	9.7E-06
			1,2-DICHLOROETHANE	9.0E-10	---	---	9.0E-10		1.2E-06	NA	NA	1.2E-06
			1,4-DIOXANE	1.2E-06	3.8E-07	8.3E-12	1.6E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.4E-04	1.1E-04	3.0E-09	4.5E-04
			4,4'-DDE	7.6E-08	7.4E-09	1.6E-13	8.4E-08		NA	NA	NA	---
			4,4'-DDT	4.7E-08	4.6E-09	9.9E-14	5.2E-08	Liver lesions	6.5E-04	6.3E-05	1.7E-09	7.1E-04
			ALUMINUM	---	---	---	---		3.6E-02	NA	NA	3.6E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.1E-01	NA	NA	1.1E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.9E-03	NA	NA	2.9E-03
			BENZO(A)ANTHRACENE	1.6E-06	6.6E-07	1.4E-11	2.2E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.2E-05	5.0E-06	1.1E-10	1.7E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	8.2E-07	3.5E-07	7.5E-12	1.2E-06		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.9E-04	6.1E-05	1.7E-09	2.5E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	9.2E-04	NA	NA	9.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.1E-07	1.6E-07	3.5E-12	6.7E-07	Inc liver weight	4.2E-03	1.4E-03	3.7E-08	5.6E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.4E-05	4.5E-06	1.2E-10	1.8E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.6E-03	5.9E-04	1.6E-08	5.1E-03
			CHLOROFORM	2.3E-10	---	---	2.3E-10	Liver	1.7E-06	NA	NA	1.7E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.7E-04	NA	NA	1.7E-04
			CHROMIUM VI	---	---	---	---	None	1.4E-02	NA	NA	1.4E-02
			CHRYSENE	7.0E-07	2.9E-07	6.4E-12	9.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		1.7E-03	NA	NA	1.7E-03
			COPPER	---	---	---	---		3.7E-03	NA	NA	3.7E-03
			DIELDRIN	7.8E-07	2.5E-07	5.4E-12	1.0E-06	Liver	2.3E-03	7.3E-04	2.0E-08	3.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	3.3E-05	1.4E-05	3.7E-10	4.7E-05
			IRON	---	---	---	---		2.8E-01	NA	NA	2.8E-01
			ISOPHORONE	1.2E-08	3.9E-09	8.5E-14	1.6E-08	No observed effects	1.5E-04	4.8E-05	1.3E-09	2.0E-04
			LEAD	8.0E-07	---	---	8.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	9.2E-03	NA	NA	9.2E-03
			MERCURY	---	---	---	---		3.4E-03	NA	NA	3.4E-03
			MOLYBDENUM	---	---	---	---	Inc uric acid levels	2.9E-03	NA	NA	2.9E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.4E-04	6.1E-05	1.6E-09	2.1E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.5E-03	NA	NA	4.5E-03

TABLE A3-9.6A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.6E-06	1.2E-06	2 6E-11	3.8E-06	Ocular exudate	6.2E-02	2.8E-02	7.5E-07	8.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	3.9E-06	1.8E-06	3.8E-11	5.7E-06		2.6E-02	1.2E-02	3 2E-07	3.8E-02
			PYRENE	---	---	---	---	Kidney	2.3E-04	9.6E-05	2.6E-09	3.2E-04
			SILVER	---	---	---	---	Argyria	4.5E-04	NA	NA	4.5E-04
			TETRACHLOROETHENE	3.6E-06	---	---	3.6E-06	Liver toxicity in mice	1.6E-03	NA	NA	1.6E-03
			THALLIUM	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			TRICHLOROETHENE	5.7E-10	---	---	5 7E-10		3.4E-04	NA	NA	3.4E-04
			VANADIUM	---	---	---	---		1.7E-01	NA	NA	1.7E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.2E-03	NA	NA	1.2E-03
			Chemical Total	2.9E-05	1.0E-05	2.2E-10	3.9E-05		8.6E-01	4.3E-02	1.2E-06	9.0E-01
		Exposure Point Total					3.9E-05					9.0E-01
	Exposure Medium Total						3.9E-05					9.0E-01
Surface Soil Total							3.9E-05					9.0E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	6.2E-04	6.2E-04
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	2.2E-08	2.2E-08		NA	NA	6.3E-05	6.3E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.3E-02	3.3E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1.1E-06	1.1E-06		NA	NA	2.1E-02	2.1E-02
			ACETALDEHYDE	NA	NA	1.4E-07	1.4E-07		NA	NA	1.3E-02	1.3E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.1E-05	4.1E-05
			BENZENE	NA	NA	5.3E-07	5 3E-07	Dec. lymphocyte count	NA	NA	1.5E-03	1.5E-03
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	5.8E-04	5.8E-04
			CARBON TETRACHLORIDE	NA	NA	3.8E-06	3.8E-06	Liver lesions	NA	NA	5.2E-03	5.2E-03
			CHLOROFORM	NA	NA	9.9E-07	9.9E-07	Liver	NA	NA	3.4E-04	3.4E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	7.0E-03	7.0E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	2.6E-04	2.6E-04
			TETRACHLOROETHENE	NA	NA	3.5E-05	3.5E-05	Liver toxicity in mice	NA	NA	3.9E-01	3.9E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	2.4E-04	2.4E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	6.6E-04	6.6E-04
			TRICHLOROETHENE	NA	NA	2.4E-06	2.4E-06		NA	NA	4.6E-03	4.6E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	5.9E-03	5.9E-03
			Chemical Total	NA	NA	4.4E-05	4.4E-05		NA	NA	4.9E-01	4.9E-01
		Exposure Point Total				Minimum	4.4E-05				Minimum	4.9E-01
	Exposure Medium Total					Minimum	4.4E-05				Minimum	4.9E-01
Soil Gas Total						Minimum	4.4E-05				Minimum	4.9E-01

TABLE A3-9.6A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Resident
Receptor.	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							8.3E-05					1.4E+00

Total Risk Across All Media = 8.3E-05

Total Hazard Across All Media = 1.4E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	4.4E-01
Total Body Weight effects Across All Media =	5.0E-03
Total Kidney HI Across All Media =	3.5E-03
Total Other HI Across All Media =	9.4E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then compannng the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		6.1E-07	NA	NA	6.1E-07
			1,1,2-TRICHLOROETHANE	3.8E-10	---	---	3.8E-10	Clinical serum chemistry	3.1E-06	NA	NA	3.1E-06
			1,1-DICHLOROETHANE	7.5E-11	---	---	7.5E-11		3.1E-07	NA	NA	3.1E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.8E-07	NA	NA	2.8E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	9.7E-06	NA	NA	9.7E-06
			1,2-DICHLOROETHANE	9.0E-10	---	---	9.0E-10		1.2E-06	NA	NA	1.2E-06
			1,4-DIOXANE	1.2E-06	3.8E-07	8.3E-12	1.6E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.4E-04	1.1E-04	3.0E-09	4.5E-04
			4,4'-DDE	7.6E-08	7.4E-09	1.6E-13	8.4E-08		NA	NA	NA	---
			4,4'-DDT	4.7E-08	4.6E-09	9.9E-14	5.2E-08	Liver lesions	6.5E-04	6.3E-05	1.7E-09	7.1E-04
			ALUMINUM	---	---	---	---		3.6E-02	NA	NA	3.6E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.1E-01	NA	NA	1.1E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	2.9E-03	NA	NA	2.9E-03
			BENZO(A)ANTHRACENE	1.6E-06	6.6E-07	1.4E-11	2.2E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.2E-05	5.0E-06	1.1E-10	1.7E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	8.2E-07	3.5E-07	7.5E-12	1.2E-06		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.9E-04	6.1E-05	1.7E-09	2.5E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	9.2E-04	NA	NA	9.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.1E-07	1.6E-07	3.5E-12	6.7E-07	Inc. liver weight	4.2E-03	1.4E-03	3.7E-08	5.6E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.4E-05	4.5E-06	1.2E-10	1.8E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.6E-03	5.9E-04	1.6E-08	5.1E-03
			CHLOROFORM	2.3E-10	---	---	2.3E-10	Liver	1.7E-06	NA	NA	1.7E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.7E-04	NA	NA	1.7E-04
			CHROMIUM VI	---	---	---	---	None	1.4E-02	NA	NA	1.4E-02
			CHRYSENE	7.0E-07	2.9E-07	6.4E-12	9.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		1.7E-03	NA	NA	1.7E-03
			COPPER	---	---	---	---		3.7E-03	NA	NA	3.7E-03
			DIELDRIN	7.8E-07	2.5E-07	5.4E-12	1.0E-06	Liver	2.3E-03	7.3E-04	2.0E-08	3.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	3.3E-05	1.4E-05	3.7E-10	4.7E-05
			IRON	---	---	---	---		2.8E-01	NA	NA	2.8E-01
			ISOPHORONE	1.2E-08	3.9E-09	8.5E-14	1.6E-08	No observed effects	1.5E-04	4.8E-05	1.3E-09	2.0E-04
			LEAD	8.0E-07	---	---	8.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	9.2E-03	NA	NA	9.2E-03
			MERCURY	---	---	---	---		3.4E-03	NA	NA	3.4E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.9E-03	NA	NA	2.9E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.4E-04	6.1E-05	1.6E-09	2.1E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.5E-03	NA	NA	4.5E-03

TABLE A3-9.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.6E-06	1.2E-06	2.6E-11	3.8E-06	Ocular exudate	6.2E-02	2.8E-02	7.5E-07	8.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	3.9E-06	1.8E-06	3 8E-11	5.7E-06		2.6E-02	1.2E-02	3.2E-07	3.8E-02
			PYRENE	---	---	---	---	Kidney	2.3E-04	9.6E-05	2.6E-09	3.2E-04
			SILVER	---	---	---	---	Argyria	4.5E-04	NA	NA	4 5E-04
			TETRACHLOROETHENE	3.6E-06	---	---	3.6E-06	Liver toxicity in mice	1.6E-03	NA	NA	1.6E-03
			THALLIUM	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			TRICHLOROETHENE	5.7E-10	---	---	5.7E-10		3.4E-04	NA	NA	3.4E-04
			VANADIUM	---	---	---	---		1.7E-01	NA	NA	1.7E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.2E-03	NA	NA	1.2E-03
			Chemical Total	2.9E-05	1.0E-05	2.2E-10	3.9E-05		8.6E-01	4.3E-02	1.2E-06	9.0E-01
		Exposure Point Total					3.9E-05					9.0E-01
	Exposure Medium Total						3.9E-05					9.0E-01
Surface Soil Total							3.9E-05					9.0E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	3.1E-03	3 1E-03
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	6.4E-07	6.4E-07		NA	NA	1.8E-03	1.8E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.6E+00	3.6E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.2E-05	7.2E-05
			BENZENE	NA	NA	1.9E-07	1.9E-07	Dec. lymphocyte count	NA	NA	5.3E-04	5.3E-04
			CHLOROFORM	NA	NA	1 9E-05	1.9E-05	Liver	NA	NA	6.4E-03	6.4E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.0E-02	3.0E-02
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.4E-05	2.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.5E-04	2.5E-04
			TETRACHLOROETHENE	NA	NA	4.5E-03	4 5E-03	Liver toxicity in mice	NA	NA	5.1E+01	5 1E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	8.4E-03	8.4E-03
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.2E-01	1.2E-01
			TRICHLOROETHENE	NA	NA	3.1E-04	3.1E-04		NA	NA	5.9E-01	5.9E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.4E+00	1.4E+00
			Chemical Total	NA	NA	4.8E-03	4.8E-03		NA	NA	5.7E+01	5.7E+01
		Exposure Point Total				Maximum	4.8E-03				Maximum	5.7E+01
	Exposure Medium Total					Maximum	4 8E-03				Maximum	5.7E+01
Soil Gas Total						Maximum	4.8E-03				Maximum	5.7E+01

TABLE A3-9.6B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							4.9E-03					5.8E+01

Total Risk Across All Media = 4.9E-03

Total Hazard Across All Media = 5.8E+01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	5.5E+01
Total Body Weight effects Across All Media =	3.5E-02
Total Kidney HI Across All Media =	1.2E-02
Total Other HI Across All Media =	3.0E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		6.1E-07	NA	NA	6 1E-07
			1,1,2-TRICHLOROETHANE	3.8E-10	---	---	3.8E-10	Clinical serum chemistry	3.1E-06	NA	NA	3.1E-06
			1,1-DICHLOROETHANE	7.5E-11	---	---	7.5E-11		3.1E-07	NA	NA	3.1E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	2.8E-07	NA	NA	2 8E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	9.7E-06	NA	NA	9.7E-06
			1,2-DICHLOROETHANE	9.0E-10	---	---	9.0E-10		1 2E-06	NA	NA	1.2E-06
			1,4-DIOXANE	1.2E-06	3.8E-07	8.3E-12	1.6E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	3.4E-04	1.1E-04	3.0E-09	4.5E-04
			4,4'-DDE	7 6E-08	7.4E-09	1.6E-13	8 4E-08		NA	NA	NA	---
			4,4'-DDT	4.7E-08	4.6E-09	9.9E-14	5.2E-08	Liver lesions	6.5E-04	6.3E-05	1.7E-09	7.1E-04
			ALUMINUM	---	---	---	---		3.6E-02	NA	NA	3 6E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.1E-01	NA	NA	1.1E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	2 9E-03	NA	NA	2.9E-03
			BENZO(A)ANTHRACENE	1.6E-06	6 6E-07	1 4E-11	2.2E-06		NA	NA	NA	---
			BENZO(A)PYRENE	1.2E-05	5.0E-06	1.1E-10	1.7E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	8.2E-07	3.5E-07	7.5E-12	1.2E-06		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		1.9E-04	6.1E-05	1.7E-09	2.5E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	9.2E-04	NA	NA	9 2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.1E-07	1.6E-07	3.5E-12	6.7E-07	Inc. liver weight	4.2E-03	1.4E-03	3.7E-08	5.6E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.4E-05	4.5E-06	1.2E-10	1.8E-05
			CADMIUM	---	---	---	---	significant proteinuria	4.6E-03	5.9E-04	1.6E-08	5.1E-03
			CHLOROFORM	2 3E-10	---	---	2.3E-10	Liver	1.7E-06	NA	NA	1.7E-06
			CHROMIUM III	---	---	---	---	No observed effects	1.7E-04	NA	NA	1.7E-04
			CHROMIUM VI	---	---	---	---	None	1.4E-02	NA	NA	1.4E-02
			CHRYSENE	7.0E-07	2.9E-07	6.4E-12	9.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		1.7E-03	NA	NA	1.7E-03
			COPPER	---	---	---	---		3.7E-03	NA	NA	3.7E-03
			DIELDRIN	7.8E-07	2.5E-07	5.4E-12	1 0E-06	Liver	2.3E-03	7.3E-04	2.0E-08	3.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	3.3E-05	1.4E-05	3.7E-10	4.7E-05
			IRON	---	---	---	---		2.8E-01	NA	NA	2.8E-01
			ISOPHORONE	1.2E-08	3.9E-09	8.5E-14	1.6E-08	No observed effects	1.5E-04	4.8E-05	1.3E-09	2.0E-04
			LEAD	8.0E-07	---	---	8.0E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	9.2E-03	NA	NA	9.2E-03
			MERCURY	---	---	---	---		3.4E-03	NA	NA	3.4E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	2.9E-03	NA	NA	2.9E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.4E-04	6.1E-05	1.6E-09	2.1E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	4.5E-03	NA	NA	4.5E-03

TABLE A3-9 6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.6E-06	1.2E-06	2.6E-11	3.8E-06	Ocular exudate	6.2E-02	2.8E-02	7.5E-07	8.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	3.9E-06	1.8E-06	3.8E-11	5.7E-06		2.6E-02	1.2E-02	3.2E-07	3.8E-02
			PYRENE	---	---	---	---	Kidney	2.3E-04	9.6E-05	2.6E-09	3.2E-04
			SILVER	---	---	---	---	Argyria	4.5E-04	NA	NA	4.5E-04
			TETRACHLOROETHENE	3.6E-06	---	---	3.6E-06	Liver toxicity in mice	1.6E-03	NA	NA	1.6E-03
			THALLIUM	---	---	---	---		1.1E-01	NA	NA	1.1E-01
			TRICHLOROETHENE	5.7E-10	---	---	5.7E-10		3.4E-04	NA	NA	3.4E-04
			VANADIUM	---	---	---	---		1.7E-01	NA	NA	1.7E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.2E-03	NA	NA	1.2E-03
			Chemical Total	2.9E-05	1.0E-05	2.2E-10	3.9E-05		8.6E-01	4.3E-02	1.2E-06	9.0E-01
		Exposure Point Total					3.9E-05					9.0E-01
	Exposure Medium Total						3.9E-05					9.0E-01
Surface Soil Total							3.9E-05					9.0E-01
Soil Gas 5' to 6'	Indoor Air	Indoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.8E-05	5.8E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	6.4E-07	6.4E-07		NA	NA	1.8E-03	1.8E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.1E-04	4.1E-04
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.1E-05	3.1E-05
			BENZENE	NA	NA	9.9E-08	9.9E-08	Dec. lymphocyte count	NA	NA	2.7E-04	2.7E-04
			CHLOROFORM	NA	NA	7.8E-07	7.8E-07	Liver	NA	NA	2.7E-04	2.7E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.3E-05	7.3E-05
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	2.4E-05	2.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	1.2E-04	1.2E-04
			TETRACHLOROETHENE	NA	NA	2.0E-06	2.0E-06	Liver toxicity in mice	NA	NA	2.3E-02	2.3E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	9.5E-05	9.5E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	8.0E-02	8.0E-02
			TRICHLOROETHENE	NA	NA	2.5E-07	2.5E-07		NA	NA	5.0E-04	5.0E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	7.6E-04	7.6E-04
			Chemical Total	NA	NA	3.8E-06	3.8E-06		NA	NA	1.1E-01	1.1E-01
		Exposure Point Total				Minimum	3.8E-06				Minimum	1.1E-01
	Exposure Medium Total					Minimum	3.8E-06				Minimum	1.1E-01
Soil Gas Total						Minimum	3.8E-06				Minimum	1.1E-01

TABLE A3-9.6B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Resident
Receptor:	Adult plus Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							4.3E-05					1.0E+00

Total Risk Across All Media = 4.3E-05

Total Hazard Across All Media = 1.0E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 3.5E-02
Total Body Weight effects Across All Media = 4.9E-03
Total Kidney HI Across All Media = 3.4E-03
Total Other HI Across All Media = 9.7E-01

NA: Not applicable.
---. Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.7A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2.1E-06	NA	NA	2.1E-06
			1,1,2-TRICHLOROETHANE	2.7E-10	---	---	2.7E-10	Clinical serum chemistry	1.1E-05	NA	NA	1.1E-05
	Soil	Soil	1,1-DICHLOROETHANE	5.2E-11	---	---	5.2E-11		1.1E-06	NA	NA	1.1E-06
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-06	NA	NA	1.0E-06
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.4E-05	NA	NA	3.4E-05
			1,2-DICHLOROETHANE	6.3E-10	---	---	6.3E-10		4.0E-06	NA	NA	4.0E-06
			1,4-DIOXANE	8.3E-07	2.4E-07	3.1E-12	1.1E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.2E-03	3.5E-04	4 4E-09	1.5E-03
			4,4'-DDE	5.3E-08	4.7E-09	5.9E-14	5.8E-08		NA	NA	NA	---
			4,4'-DDT	3.3E-08	2.9E-09	3.7E-14	3.6E-08	Liver lesions	2.3E-03	2.0E-04	2.5E-09	2.5E-03
			ALUMINUM	---	---	---	---		1.3E-01	NA	NA	1.3E-01
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.9E-01	NA	NA	3.9E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.0E-02	NA	NA	1.0E-02
			BENZO(A)ANTHRACENE	1.1E-06	4.1E-07	5.3E-12	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	8.4E-06	3.2E-06	4.0E-11	1.2E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	5.8E-07	2.2E-07	2.8E-12	8.0E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6.6E-04	1.9E-04	2.5E-09	8.6E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.2E-03	NA	NA	3.2E-03
			BIS(2-ETHYLHEXYL)PHTHALATE	3.5E-07	1.0E-07	1.3E-12	4.6E-07	Inc liver weight	1.5E-02	4.3E-03	5 5E-08	1.9E-02
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	4.8E-05	1.4E-05	1.8E-10	6.2E-05
			CADMIUM	---	---	---	---	significant proteinuria	1.6E-02	1.9E-03	2.4E-08	1.8E-02
			CHLOROFORM	1 6E-10	---	---	1.6E-10	Liver	6.0E-06	NA	NA	6.0E-06
			CHROMIUM III	---	---	---	---	No observed effects	6.0E-04	NA	NA	6.0E-04
			CHROMIUM VI	---	---	---	---	None	5.0E-02	NA	NA	5.0E-02
			CHRYSENE	4.9E-07	1.8E-07	2.4E-12	6.7E-07		NA	NA	NA	---
			COBALT	---	---	---	---		5.9E-03	NA	NA	5.9E-03
			COPPER	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			DIELDRIN	5.5E-07	1.6E-07	2.0E-12	7.0E-07	Liver	8.0E-03	2 3E-03	2.9E-08	1.0E-02
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	1.2E-04	4.3E-05	5.6E-10	1.6E-04
			IRON	---	---	---	---		9.9E-01	NA	NA	9.9E-01
			ISOPHORONE	8.5E-09	2.5E-09	3.2E-14	1.1E-08	No observed effects	5.2E-04	1.5E-04	1.9E-09	6.7E-04
			LEAD	5.6E-07	---	---	5.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.2E-02	NA	NA	3.2E-02
			MERCURY	---	---	---	---		1.2E-02	NA	NA	1.2E-02
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.0E-02	NA	NA	1.0E-02
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.1E-04	1.9E-04	2.4E-09	7.0E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	1.6E-02	NA	NA	1.6E-02

TABLE A3-9.7A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	1.8E-06	7.5E-07	9.6E-12	2.6E-06	Ocular exudate	2.2E-01	8.8E-02	1.1E-06	3.0E-01
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	2.7E-06	1.1E-06	1.4E-11	3.9E-06		9.1E-02	3.7E-02	4.7E-07	1.3E-01
			PYRENE	---	---	---	---	Kidney	8.0E-04	3.0E-04	3.9E-09	1.1E-03
			SILVER	---	---	---	---	Argyria	1.6E-03	NA	NA	1.6E-03
			TETRACHLOROETHENE	2.5E-06	---	---	2.5E-06	Liver toxicity in mice	5.5E-03	NA	NA	5.5E-03
			THALLIUM	---	---	---	---		3.9E-01	NA	NA	3 9E-01
			TRICHLOROETHENE	4.0E-10	---	---	4.0E-10		1.2E-03	NA	NA	1.2E-03
			VANADIUM	---	---	---	---		6.0E-01	NA	NA	6.0E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.0E-03	NA	NA	4 0E-03
			Chemical Total	2.0E-05	6.3E-06	8.1E-11	2.6E-05		3.0E+00	1.3E-01	1.7E-06	3.2E+00
		Exposure Point Total					2.6E-05					3.2E+00
	Exposure Medium Total						2.6E-05					3 2E+00
Surface Soil Total							2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4 2E-01	4.2E-01
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	4.4E-06	4.4E-06		NA	NA	6.3E-02	6.3E-02
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	5.8E+00	5.8E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1.1E-05	1.1E-05		NA	NA	1.0E+00	1.0E+00
			ACETALDEHYDE	NA	NA	5.4E-08	5.4E-08		NA	NA	2.4E-02	2.4E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.0E-03	5 0E-03
			BENZENE	NA	NA	6.0E-06	6.0E-06	Dec. lymphocyte count	NA	NA	8.2E-02	8.2E-02
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2.0E-02	2.0E-02
			CARBON TETRACHLORIDE	NA	NA	1.4E-06	1.4E-06	Liver lesions	NA	NA	9.7E-03	9.7E-03
			CHLOROFORM	NA	NA	3.0E-05	3.0E-05	Liver	NA	NA	5.0E-02	5.0E-02
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	6.5E-01	6.5E-01
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	7.0E-03	7.0E-03
			TETRACHLOROETHENE	NA	NA	1.1E-03	1.1E-03	Liver toxicity in mice	NA	NA	6.1E+01	6.1E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	7.0E-03	7.0E-03
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.8E-01	1.8E-01
			TRICHLOROETHENE	NA	NA	5.5E-05	5.5E-05		NA	NA	5.3E-01	5.3E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.1E+00	1.1E+00
			Chemical Total	NA	NA	1.2E-03	1.2E-03		NA	NA	7.1E+01	7.1E+01
		Exposure Point Total				Maximum	1.2E-03				Maximum	7.1E+01
	Exposure Medium Total					Maximum	1.2E-03				Maximum	7.1E+01
Soil Gas Total						Maximum	1.2E-03				Maximum	7.1E+01

TABLE A3-9.7A - Parcel Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	*Child*

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							1.2E-03					7.4E+01

Total Risk Across All Media = 1.2E-03

Total Hazard Across All Media = 7.4E+01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	6.7E+01
Total Body Weight effects Across All Media =	2.3E-02
Total Kidney HI Across All Media =	2.3E-02
Total Other HI Across All Media =	7.2E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index
CNS: Central Nervous System.
(1) *When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients* for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.7A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		2.1E-06	NA	NA	2.1E-06
			1,1,2-TRICHLOROETHANE	2.7E-10	---	---	2.7E-10	Clinical serum chemistry	1.1E-05	NA	NA	1.1E-05
			1,1-DICHLOROETHANE	5.2E-11	---	---	5.2E-11		1.1E-06	NA	NA	1.1E-06
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-06	NA	NA	1.0E-06
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.4E-05	NA	NA	3.4E-05
			1,2-DICHLOROETHANE	6.3E-10	---	---	6.3E-10		4.0E-06	NA	NA	4.0E-06
			1,4-DIOXANE	8.3E-07	2.4E-07	3.1E-12	1.1E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.2E-03	3.5E-04	4.4E-09	1.5E-03
			4,4'-DDE	5.3E-08	4.7E-09	5.9E-14	5.8E-08		NA	NA	NA	---
			4,4'-DDT	3.3E-08	2.9E-09	3.7E-14	3.6E-08	Liver lesions	2.3E-03	2.0E-04	2.5E-09	2.5E-03
			ALUMINUM	---	---	---	---		1.3E-01	NA	NA	1.3E-01
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.9E-01	NA	NA	3.9E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.0E-02	NA	NA	1.0E-02
			BENZO(A)ANTHRACENE	1.1E-06	4.1E-07	5.3E-12	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	8.4E-06	3.2E-06	4.0E-11	1.2E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	5.8E-07	2.2E-07	2.8E-12	8.0E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6.6E-04	1.9E-04	2.5E-09	8.6E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.2E-03	NA	NA	3.2E-03
			BIS(2-ETHYLHEXYL)PHTHALATE	3.5E-07	1.0E-07	1.3E-12	4.6E-07	Inc. liver weight	1.5E-02	4.3E-03	5.5E-08	1.9E-02
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	4.8E-05	1.4E-05	1.8E-10	6.2E-05
			CADMIUM	---	---	---	---	significant proteinuria	1.6E-02	1.9E-03	2.4E-08	1.8E-02
			CHLOROFORM	1.6E-10	---	---	1.6E-10	Liver	6.0E-06	NA	NA	6.0E-06
			CHROMIUM III	---	---	---	---	No observed effects	6.0E-04	NA	NA	6.0E-04
			CHROMIUM VI	---	---	---	---	None	5.0E-02	NA	NA	5.0E-02
			CHRYSENE	4.9E-07	1.8E-07	2.4E-12	6.7E-07		NA	NA	NA	---
			COBALT	---	---	---	---		5.9E-03	NA	NA	5.9E-03
			COPPER	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			DIELDRIN	5.5E-07	1.6E-07	2.0E-12	7.0E-07	Liver	8.0E-03	2.3E-03	2.9E-08	1.0E-02
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	1.2E-04	4.3E-05	5.6E-10	1.6E-04
			IRON	---	---	---	---		9.9E-01	NA	NA	9.9E-01
			ISOPHORONE	8.5E-09	2.5E-09	3.2E-14	1.1E-08	No observed effects	5.2E-04	1.5E-04	1.9E-09	6.7E-04
			LEAD	5.6E-07	---	---	5.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.2E-02	NA	NA	3.2E-02
			MERCURY	---	---	---	---		1.2E-02	NA	NA	1.2E-02
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.0E-02	NA	NA	1.0E-02
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.1E-04	1.9E-04	2.4E-09	7.0E-04
			NICKEL	---	---	---	---	dec body and organ wts.	1.6E-02	NA	NA	1.6E-02

TABLE A3-9.7A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	1.8E-06	7.5E-07	9.6E-12	2.6E-06	Ocular exudate	2.2E-01	8.8E-02	1.1E-06	3.0E-01
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	2.7E-06	1.1E-06	1.4E-11	3.9E-06		9.1E-02	3.7E-02	4.7E-07	1.3E-01
			PYRENE	---	---	---	---	Kidney	8.0E-04	3.0E-04	3.9E-09	1.1E-03
			SILVER	---	---	---	---	Argyria	1.6E-03	NA	NA	1.6E-03
			TETRACHLOROETHENE	2.5E-06	---	---	2.5E-06	Liver toxicity in mice	5.5E-03	NA	NA	5.5E-03
			THALLIUM	---	---	---	---		3.9E-01	NA	NA	3.9E-01
			TRICHLOROETHENE	4.0E-10	---	---	4.0E-10		1.2E-03	NA	NA	1.2E-03
			VANADIUM	---	---	---	---		6.0E-01	NA	NA	6.0E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.0E-03	NA	NA	4.0E-03
			Chemical Total	2.0E-05	6.3E-06	8.1E-11	2.6E-05		3.0E+00	1.3E-01	1.7E-06	3.2E+00
		Exposure Point Total					2.6E-05					3.2E+00
	Exposure Medium Total						2.6E-05					3.2E+00
Surface Soil Total							2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.2E-03	1.2E-03
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	8.2E-09	8.2E-09		NA	NA	1.2E-04	1.2E-04
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.2E-02	6.2E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	4.2E-07	4.2E-07		NA	NA	3.8E-02	3.8E-02
			ACETALDEHYDE	NA	NA	5.4E-08	5.4E-08		NA	NA	2.4E-02	2.4E-02
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.5E-05	7.5E-05
			BENZENE	NA	NA	2.0E-07	2.0E-07	Dec. lymphocyte count	NA	NA	2.7E-03	2.7E-03
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.1E-03	1.1E-03
			CARBON TETRACHLORIDE	NA	NA	1.4E-06	1.4E-06	Liver lesions	NA	NA	9.7E-03	9.7E-03
			CHLOROFORM	NA	NA	3.7E-07	3.7E-07	Liver	NA	NA	6.2E-04	6.2E-04
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1.3E-02	1.3E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	4.8E-04	4.8E-04
			TETRACHLOROETHENE	NA	NA	1.3E-05	1.3E-05	Liver toxicity in mice	NA	NA	7.3E-01	7.3E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.5E-04	4.5E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.2E-03	1.2E-03
			TRICHLOROETHENE	NA	NA	8.8E-07	8.8E-07		NA	NA	8.6E-03	8.6E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.1E-02	1.1E-02
			Chemical Total	NA	NA	1.6E-05	1.6E-05		NA	NA	9.1E-01	9.1E-01
		Exposure Point Total				Minimum	1.6E-05				Minimum	9.1E-01
	Exposure Medium Total					Minimum	1.6E-05				Minimum	9.1E-01
Soil Gas Total						Minimum	1.6E-05				Minimum	9.1E-01

TABLE A3-9.7A - Parcel Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							4.3E-05					4.1E+00

Total Risk Across All Media = 4.3E-05

Total Hazard Across All Media = 4.1E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	8.4E-01
Total Body Weight effects Across All Media =	1.7E-02
Total Kidney HI Across All Media =	1.2E-02
Total Other HI Across All Media =	3.2E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2.1E-06	NA	NA	2.1E-06
			1,1,2-TRICHLOROETHANE	2.7E-10	---	---	2.7E-10	Clinical serum chemistry	1.1E-05	NA	NA	1.1E-05
	Soil	Soil	1,1-DICHLOROETHANE	5.2E-11	---	---	5.2E-11		1.1E-06	NA	NA	1.1E-06
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-06	NA	NA	1.0E-06
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.4E-05	NA	NA	3.4E-05
			1,2-DICHLOROETHANE	6.3E-10	---	---	6.3E-10		4.0E-06	NA	NA	4.0E-06
			1,4-DIOXANE	8.3E-07	2.4E-07	3.1E-12	1.1E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.2E-03	3.5E-04	4.4E-09	1.5E-03
			4,4'-DDE	5.3E-08	4.7E-09	5.9E-14	5.8E-08		NA	NA	NA	---
			4,4'-DDT	3.3E-08	2.9E-09	3.7E-14	3.6E-08	Liver lesions	2.3E-03	2.0E-04	2.5E-09	2.5E-03
			ALUMINUM	---	---	---	---		1.3E-01	NA	NA	1.3E-01
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.9E-01	NA	NA	3.9E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.0E-02	NA	NA	1.0E-02
			BENZO(A)ANTHRACENE	1.1E-06	4.1E-07	5.3E-12	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	8.4E-06	3.2E-06	4.0E-11	1.2E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	5.8E-07	2.2E-07	2.8E-12	8.0E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6.6E-04	1.9E-04	2.5E-09	8.6E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.2E-03	NA	NA	3.2E-03
			BIS(2-ETHYLHEXYL)PHTHALATE	3.5E-07	1.0E-07	1.3E-12	4.6E-07	Inc liver weight	1.5E-02	4.3E-03	5.5E-08	1.9E-02
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	4.8E-05	1.4E-05	1.8E-10	6.2E-05
			CADMIUM	---	---	---	---	significant proteinuria	1.6E-02	1.9E-03	2.4E-08	1.8E-02
			CHLOROFORM	1.6E-10	---	---	1.6E-10	Liver	6.0E-06	NA	NA	6.0E-06
			CHROMIUM III	---	---	---	---	No observed effects	6.0E-04	NA	NA	6.0E-04
			CHROMIUM VI	---	---	---	---	None	5.0E-02	NA	NA	5.0E-02
			CHRYSENE	4.9E-07	1.8E-07	2.4E-12	6.7E-07		NA	NA	NA	---
			COBALT	---	---	---	---		5.9E-03	NA	NA	5.9E-03
			COPPER	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			DIELDRIN	5.5E-07	1.6E-07	2.0E-12	7.0E-07	Liver	8.0E-03	2.3E-03	2.9E-08	1.0E-02
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	1.2E-04	4.3E-05	5.6E-10	1.6E-04
			IRON	---	---	---	---		9.9E-01	NA	NA	9.9E-01
			ISOPHORONE	8.5E-09	2.5E-09	3.2E-14	1.1E-08	No observed effects	5.2E-04	1.5E-04	1.9E-09	6.7E-04
			LEAD	5.6E-07	---	---	5.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.2E-02	NA	NA	3.2E-02
			MERCURY	---	---	---	---		1.2E-02	NA	NA	1.2E-02
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.0E-02	NA	NA	1.0E-02
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.1E-04	1.9E-04	2.4E-09	7.0E-04
			NICKEL	---	---	---	---	dec body and organ wts.	1.6E-02	NA	NA	1.6E-02

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	1.8E-06	7.5E-07	9.6E-12	2.6E-06	Ocular exudate	2.2E-01	8.8E-02	1.1E-06	3.0E-01
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	2.7E-06	1.1E-06	1.4E-11	3.9E-06		9.1E-02	3.7E-02	4.7E-07	1.3E-01
			PYRENE	---	---	---	---	Kidney	8.0E-04	3.0E-04	3.9E-09	1.1E-03
			SILVER	---	---	---	---	Argyria	1.6E-03	NA	NA	1.6E-03
			TETRACHLOROETHENE	2.5E-06	---	---	2.5E-06	Liver toxicity in mice	5.5E-03	NA	NA	5.5E-03
			THALLIUM	---	---	---	---		3.9E-01	NA	NA	3.9E-01
			TRICHLOROETHENE	4.0E-10	---	---	4 0E-10		1.2E-03	NA	NA	1.2E-03
			VANADIUM	---	---	---	---		6.0E-01	NA	NA	6.0E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4.0E-03	NA	NA	4.0E-03
			Chemical Total	2.0E-05	6.3E-06	8.1E-11	2.6E-05		3.0E+00	1.3E-01	1.7E-06	3.2E+00
		Exposure Point Total					2.6E-05					3.2E+00
	Exposure Medium Total						2 6E-05					3.2E+00
Surface Soil Total							2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	5.8E-03	5 8E-03
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	2.4E-07	2.4E-07		NA	NA	3.4E-03	3.4E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.7E+00	6.7E+00
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.3E-04	1.3E-04
			BENZENE	NA	NA	7.2E-08	7 2E-08	Dec lymphocyte count	NA	NA	9 8E-04	9.8E-04
			CHLOROFORM	NA	NA	7.0E-06	7.0E-06	Liver	NA	NA	1.2E-02	1.2E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.5E-02	5.5E-02
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	4.4E-05	4.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	4.7E-04	4.7E-04
			TETRACHLOROETHENE	NA	NA	1.7E-03	1.7E-03	Liver toxicity in mice	NA	NA	9.4E+01	9.4E+01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.6E-02	1.6E-02
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	2.2E-01	2.2E-01
			TRICHLOROETHENE	NA	NA	1.1E-04	1.1E-04		NA	NA	1.1E+00	1.1E+00
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.6E+00	2.6E+00
			Chemical Total	NA	NA	1.8E-03	1.8E-03		NA	NA	1.1E+02	1.1E+02
		Exposure Point Total				Maximum	1.8E-03				Maximum	1.1E+02
	Exposure Medium Total					Maximum	1.8E-03				Maximum	1.1E+02
Soil Gas Total						Maximum	1.8E-03				Maximum	1.1E+02

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							1.8E-03					1.1E+02

Total Risk Across All Media = 1.8E-03

Total Hazard Across All Media = 1.1E+02

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	1.0E+02
Total Body Weight effects Across All Media =	7.2E-02
Total Kidney HI Across All Media =	2.7E-02
Total Other HI Across All Media =	7.0E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		2.1E-06	NA	NA	2.1E-06
			1,1,2-TRICHLOROETHANE	2.7E-10	---	---	2.7E-10	Clinical serum chemistry	1.1E-05	NA	NA	1.1E-05
			1,1-DICHLOROETHANE	5.2E-11	---	---	5.2E-11		1.1E-06	NA	NA	1.1E-06
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-06	NA	NA	1.0E-06
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.4E-05	NA	NA	3.4E-05
			1,2-DICHLOROETHANE	6.3E-10	---	---	6.3E-10		4.0E-06	NA	NA	4.0E-06
			1,4-DIOXANE	8.3E-07	2.4E-07	3.1E-12	1.1E-06		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.2E-03	3.5E-04	4.4E-09	1.5E-03
			4,4'-DDE	5.3E-08	4.7E-09	5.9E-14	5.8E-08		NA	NA	NA	---
			4,4'-DDT	3.3E-08	2.9E-09	3.7E-14	3.6E-08	Liver lesions	2.3E-03	2.0E-04	2.5E-09	2.5E-03
			ALUMINUM	---	---	---	---		1.3E-01	NA	NA	1.3E-01
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.9E-01	NA	NA	3.9E-01
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.0E-02	NA	NA	1.0E-02
			BENZO(A)ANTHRACENE	1.1E-06	4.1E-07	5.3E-12	1.5E-06		NA	NA	NA	---
			BENZO(A)PYRENE	8.4E-06	3.2E-06	4.0E-11	1.2E-05		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	5.8E-07	2.2E-07	2.8E-12	8.0E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6.6E-04	1.9E-04	2.5E-09	8.6E-04
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.2E-03	NA	NA	3.2E-03
			BIS(2-ETHYLHEXYL)PHTHALATE	3.5E-07	1.0E-07	1.3E-12	4.6E-07	Inc. liver weight	1.5E-02	4.3E-03	5.5E-08	1.9E-02
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt. and liver to brain ratio	4.8E-05	1.4E-05	1.8E-10	6.2E-05
			CADMIUM	---	---	---	---	significant proteinuna	1.6E-02	1.9E-03	2.4E-08	1.8E-02
			CHLOROFORM	1.6E-10	---	---	1.6E-10	Liver	6.0E-06	NA	NA	6.0E-06
			CHROMIUM III	---	---	---	---	No observed effects	6.0E-04	NA	NA	6.0E-04
			CHROMIUM VI	---	---	---	---	None	5.0E-02	NA	NA	5.0E-02
			CHRYSENE	4.9E-07	1.8E-07	2.4E-12	6.7E-07		NA	NA	NA	---
			COBALT	---	---	---	---		5.9E-03	NA	NA	5.9E-03
			COPPER	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			DIELDRIN	5.5E-07	1.6E-07	2.0E-12	7.0E-07	Liver	8.0E-03	2.3E-03	2.9E-08	1.0E-02
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc liver wt.	1.2E-04	4.3E-05	5.6E-10	1.6E-04
			IRON	---	---	---	---		9.9E-01	NA	NA	9.9E-01
			ISOPHORONE	8.5E-09	2.5E-09	3.2E-14	1.1E-08	No observed effects	5.2E-04	1.5E-04	1.9E-09	6.7E-04
			LEAD	5.6E-07	---	---	5.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.2E-02	NA	NA	3.2E-02
			MERCURY	---	---	---	---		1.2E-02	NA	NA	1.2E-02
			MOLYBDENUM	---	---	---	---	Inc uric acid levels	1.0E-02	NA	NA	1.0E-02
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.1E-04	1.9E-04	2.4E-09	7.0E-04
			NICKEL	---	---	---	---	dec. body and organ wts.	1.6E-02	NA	NA	1.6E-02

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	1.8E-06	7.5E-07	9.6E-12	2.6E-06	Ocular exudate	2.2E-01	8.8E-02	1.1E-06	3 0E-01
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	2.7E-06	1.1E-06	1.4E-11	3.9E-06		9.1E-02	3.7E-02	4.7E-07	1.3E-01
			PYRENE	---	---	---	---	Kidney	8.0E-04	3.0E-04	3.9E-09	1.1E-03
			SILVER	---	---	---	---	Argyria	1.6E-03	NA	NA	1.6E-03
			TETRACHLOROETHENE	2.5E-06	---	---	2.5E-06	Liver toxicity in mice	5.5E-03	NA	NA	5.5E-03
			THALLIUM	---	---	---	---		3.9E-01	NA	NA	3.9E-01
			TRICHLOROETHENE	4.0E-10	---	---	4.0E-10		1.2E-03	NA	NA	1.2E-03
			VANADIUM	---	---	---	---		6.0E-01	NA	NA	6.0E-01
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4 0E-03	NA	NA	4.0E-03
			Chemical Total	2.0E-05	6.3E-06	8.1E-11	2.6E-05		3.0E+00	1.3E-01	1.7E-06	3.2E+00
		Exposure Point Total					2.6E-05					3.2E+00
	Exposure Medium Total						2.6E-05					3.2E+00
Surface Soil Total							2.6E-05					3.2E+00
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.1E-04	1.1E-04
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	2.4E-07	2.4E-07		NA	NA	3.4E-03	3.4E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	7.7E-04	7 7E-04
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.8E-05	5.8E-05
			BENZENE	NA	NA	3.7E-08	3.7E-08	*Dec. lymphocyte count*	NA	NA	5.0E-04	5.0E-04
			CHLOROFORM	NA	NA	2 9E-07	2.9E-07	Liver	NA	NA	4.9E-04	4.9E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.4E-04	1.4E-04
			HEXANE (N-HEXANE)	NA	NA	---	---		NA	NA	4.4E-05	4.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.1E-04	2.1E-04
			TETRACHLOROETHENE	NA	NA	7 5E-07	7.5E-07	Liver toxicity in mice	NA	NA	4.3E-02	4.3E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-04	1.8E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.5E-01	1.5E-01
			TRICHLOROETHENE	NA	NA	9.4E-08	9.4E-08		NA	NA	9.2E-04	9.2E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.4E-03	1.4E-03
			Chemical Total	NA	NA	1.4E-06	1.4E-06		NA	NA	2.0E-01	2.0E-01
		Exposure Point Total				Minimum	1.4E-06				Minimum	2.0E-01
	Exposure Medium Total					Minimum	1.4E-06				Minimum	2.0E-01
Soil Gas Total						Minimum	1.4E-06				Minimum	2.0E-01

TABLE A3-9.7B - Parcel Other than Omega Site - RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population.	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Receptor Total							2 8E-05					3.4E+00

Total Risk Across All Media = 2.8E-05

Total Hazard Across All Media = 3 4E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 8 1E-02
Total Body Weight effects Across All Media = 1.7E-02
Total Kidney HI Across All Media = 1.2E-02
Total Other HI Across All Media = 3.2E+00

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.8 - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		8.2E-08	NA	NA	8.2E-08
			1,1,2-TRICHLOROETHANE	4.3E-11	---	---	4.3E-11	Clinical serum chemistry	4.2E-07	NA	NA	4.2E-07
	Soil 0'-12'	Soil 0'-12'	1,1-DICHLOROETHANE	8.4E-12	---	---	8.4E-12		4 1E-08	NA	NA	4.1E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	3.8E-08	NA	NA	3.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,2-DICHLOROETHANE	1 0E-10	---	---	1.0E-10		1.5E-07	NA	NA	1.5E-07
			1,4-DIOXANE	1.3E-07	1.7E-07	1.9E-12	3.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	4.6E-05	6.0E-05	6 4E-10	1.1E-04
			4,4'-DDE	6.5E-09	3.4E-09	3.6E-14	1.2E-08		NA	NA	NA	---
			4,4'-DDT	5.3E-09	2.1E-09	2.2E-14	7.3E-09	Liver lesions	8.7E-05	3.4E-05	3.7E-10	1.2E-04
			ALUMINUM	---	---	---	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.5E-02	NA	NA	1.5E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	3.9E-04	NA	NA	3.9E-04
			BENZO(A)ANTHRACENE	1.8E-07	3.0E-07	3.2E-12	4.8E-07		NA	NA	NA	---
			BENZO(A)PYRENE	1.3E-06	2.3E-06	2.5E-11	3.6E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	9.2E-08	1.6E-07	1.7E-12	2.5E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		2.5E-05	3.4E-05	3.6E-10	5.9E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.7E-08	7.5E-08	8.0E-13	1.3E-07	Inc. liver weight	5.7E-04	7.5E-04	8.0E-09	1.3E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	1.8E-06	2.4E-06	2.6E-11	4.3E-06
			CADMIUM	---	---	---	---	significant proteinuria	6.1E-04	3.2E-04	3.4E-09	9.3E-04
			CHLOROFORM	2 5E-11	---	---	2.5E-11	Liver	2.3E-07	NA	NA	2.3E-07
			CHROMIUM III	---	---	---	---	No observed effects	2.3E-05	NA	NA	2.3E-05
			CHROMIUM VI	---	---	---	---	None	1.9E-03	NA	NA	1.9E-03
			CHRYSENE	7.8E-08	1.3E-07	1.4E-12	2.1E-07		NA	NA	NA	---
			COBALT	---	---	---	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	---	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	8.7E-08	1.1E-07	1.2E-12	2.0E-07	Liver	3.0E-04	4.0E-04	4.3E-09	7.1E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	4.4E-06	7.6E-06	8.1E-11	1.2E-05
			IRON	---	---	---	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.4E-09	1.8E-09	1.9E-14	3.1E-09	No observed effects	2.0E-05	2.6E-05	2.8E-10	4.6E-05
			LEAD	8.9E-08	---	---	8.9E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	---	---		4.5E-04	NA	NA	4.5E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	3.8E-04	NA	NA	3 8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.9E-05	3.3E-05	3.6E-10	5.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	6.0E-04	NA	NA	6.0E-04

TABLE A3-9.8 - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.9E-07	5.4E-07	5.8E-12	8.4E-07	Ocular exudate	8.2E-03	1.5E-02	1.6E-07	2.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	8.6E-12	1.2E-06		3.5E-03	6.5E-03	6.9E-08	1.0E-02
			PYRENE	---	---	---	---	Kidney	3.1E-05	5.2E-05	5.6E-10	8.3E-05
			SILVER	---	---	---	---	Argyria	6.0E-05	NA	NA	6.0E-05
			TETRACHLOROETHENE	4.1E-07	---	---	4.1E-07	Liver toxicity in mice	2.1E-04	NA	NA	2.1E-04
			THALLIUM	---	---	---	---		1.5E-02	NA	NA	1.5E-02
			TRICHLOROETHENE	6.4E-11	---	---	6.4E-11		4.6E-05	NA	NA	4.6E-05
			VANADIUM	---	---	---	---		2.3E-02	NA	NA	2.3E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.5E-04	NA	NA	1.5E-04
			Chemical Total	3.2E-06	4.6E-06	4.9E-11	7.8E-06		1.2E-01	2.3E-02	2.5E-07	1.4E-01
		Exposure Point Total					7.8E-06					1.4E-01
	Exposure Medium Total						7.8E-06					1.4E-01
Surface Soil Total							7.8E-06					1.4E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.7E-02	1.7E-02
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	2.3E-06	2.3E-06		NA	NA	8.0E-03	8.0E-03
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	3.9E-01	3.9E-01
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	2.7E-06	2.7E-06		NA	NA	6.0E-02	6.0E-02
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	1.4E-08	1.4E-08		NA	NA	1.6E-03	1.6E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	2.8E-04	2.8E-04
			BENZENE	NA	NA	1.7E-06	1.7E-06	Dec. lymphocyte count	NA	NA	5.5E-03	5.5E-03
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	9.5E-04	9.5E-04
			CARBON TETRACHLORIDE	NA	NA	3.8E-07	3.8E-07	Liver lesions	NA	NA	6.3E-04	6.3E-04
			CHLOROFORM	NA	NA	6.1E-06	6.1E-06	Liver	NA	NA	2.5E-03	2.5E-03
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	5.3E-02	5.3E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.2E-03	1.2E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	6.0E-04	6.0E-04
			TETRACHLOROETHENE	NA	NA	2.6E-04	2.6E-04	Liver toxicity in mice	NA	NA	3.5E+00	3.5E+00
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	6.1E-04	6.1E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	9.6E-03	9.6E-03
			TRICHLOROETHENE	NA	NA	1.4E-05	1.4E-05		NA	NA	3.3E-02	3.3E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	8.0E-02	8.0E-02
			Chemical Total	NA	NA	2.9E-04	2.9E-04		NA	NA	4.2E+00	4.2E+00
		Exposure Point Total				Maximum	2.9E-04				Maximum	4.2E+00
	Exposure Medium Total					Maximum	2.9E-04				Maximum	4.2E+00
Soil Gas - Indoor Air Total						Maximum	2.9E-04				Maximum	4.2E+00

TABLE A3-9.8 - All Parcels, CTE, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil Gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.1E-05	4.1E-05
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	5.4E-09	5.4E-09		NA	NA	1.9E-05	1.9E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	9.7E-04	9.7E-04
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	7.1E-09	7.1E-09		NA	NA	1.6E-04	1.6E-04
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	4.0E-11	4.0E-11		NA	NA	4.4E-06	4.4E-06
			ACETONE	NA	NA	---	---	Kidney	NA	NA	7.7E-07	7.7E-07
			BENZENE	NA	NA	4.1E-09	4.1E-09	Dec. lymphocyte count	NA	NA	1.4E-05	1.4E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2.5E-06	2.5E-06
			CARBON TETRACHLORIDE	NA	NA	9.1E-10	9.1E-10	Liver lesions	NA	NA	1.5E-06	1.5E-06
			CHLOROFORM	NA	NA	1.6E-08	1.6E-08	Liver	NA	NA	6.5E-06	6.5E-06
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1.2E-04	1.2E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.2E-06	3.2E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	1.4E-06	1.4E-06
			TETRACHLOROETHENE	NA	NA	6.1E-07	6.1E-07	Liver toxicity in mice	NA	NA	8.2E-03	8.2E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.5E-06	1.5E-06
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	2.2E-05	2.2E-05
			TRICHLOROETHENE	NA	NA	3.4E-08	3.4E-08		NA	NA	7.9E-05	7.9E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.0E-04	2.0E-04
			Chemical Total	NA	NA	6.7E-07	6.7E-07		NA	NA	9.9E-03	9.9E-03
		Exposure Point Total				Maximum	6.7E-07				Maximum	9.9E-03
	Exposure Medium Total					Maximum	6.7E-07				Maximum	9.9E-03
Soil Gas - Outdoor Air Total						Maximum	6.7E-07				Maximum	9.9E-03
Receptor Total							3.0E-04					4.4E+00

Total Risk Across All Media = 3.0E-04

Total Hazard Across All Media = 4.4E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	4.0E+00
Total Body Weight effects Across All Media =	2.4E-03
Total Kidney HI Across All Media =	1.4E-03
Total Other HI Across All Media =	4.0E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9 8 - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		8.2E-08	NA	NA	8.2E-08
			1,1,2-TRICHLOROETHANE	4.3E-11	---	---	4.3E-11	Clinical serum chemistry	4.2E-07	NA	NA	4.2E-07
	Soil 0'-12'	Soil 0'-12'	1,1-DICHLOROETHANE	8.4E-12	---	---	8.4E-12		4.1E-08	NA	NA	4.1E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	3.8E-08	NA	NA	3.8E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	1.3E-06	NA	NA	1.3E-06
			1,2-DICHLOROETHANE	1.0E-10	---	---	1.0E-10		1.5E-07	NA	NA	1.5E-07
			1,4-DIOXANE	1.3E-07	1.7E-07	1.9E-12	3.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	4.6E-05	6.0E-05	6.4E-10	1.1E-04
			4,4'-DDE	8.5E-09	3.4E-09	3.6E-14	1.2E-08		NA	NA	NA	---
			4,4'-DDT	5.3E-09	2.1E-09	2.2E-14	7.3E-09	Liver lesions	8.7E-05	3.4E-05	3.7E-10	1.2E-04
			ALUMINUM	---	---	---	---		4.8E-03	NA	NA	4.8E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	1.5E-02	NA	NA	1.5E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	3.9E-04	NA	NA	3.9E-04
			BENZO(A)ANTHRACENE	1.8E-07	3.0E-07	3.2E-12	4.8E-07		NA	NA	NA	---
			BENZO(A)PYRENE	1.3E-06	2.3E-06	2.5E-11	3.6E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	9.2E-08	1.6E-07	1.7E-12	2.5E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		2.5E-05	3.4E-05	3.6E-10	5.9E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	1.2E-04	NA	NA	1.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	5.7E-08	7.5E-08	8.0E-13	1.3E-07	Inc liver weight	5.7E-04	7.5E-04	8.0E-09	1.3E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt. and liver to brain ratio	1.8E-06	2.4E-06	2.6E-11	4.3E-06
			CADMIUM	---	---	---	---	significant proteinuria	6.1E-04	3.2E-04	3.4E-09	9.3E-04
			CHLOROFORM	2.5E-11	---	---	2.5E-11	Liver	2.3E-07	NA	NA	2.3E-07
			CHROMIUM III	---	---	---	---	No observed effects	2.3E-05	NA	NA	2.3E-05
			CHROMIUM VI	---	---	---	---	None	1.9E-03	NA	NA	1.9E-03
			CHRYSENE	7.8E-08	1.3E-07	1.4E-12	2.1E-07		NA	NA	NA	---
			COBALT	---	---	---	---		2.3E-04	NA	NA	2.3E-04
			COPPER	---	---	---	---		4.9E-04	NA	NA	4.9E-04
			DIELDRIN	8.7E-08	1.1E-07	1.2E-12	2.0E-07	Liver	3.0E-04	4.0E-04	4.3E-09	7.1E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	4.4E-06	7.6E-06	8.1E-11	1.2E-05
			IRON	---	---	---	---		3.8E-02	NA	NA	3.8E-02
			ISOPHORONE	1.4E-09	1.8E-09	1.9E-14	3.1E-09	No observed effects	2.0E-05	2.6E-05	2.8E-10	4.6E-05
			LEAD	8.9E-08	---	---	8.9E-08		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	1.2E-03	NA	NA	1.2E-03
			MERCURY	---	---	---	---		4.5E-04	NA	NA	4.5E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	3.8E-04	NA	NA	3.8E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	1.9E-05	3.3E-05	3.6E-10	5.3E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	6.0E-04	NA	NA	6.0E-04

TABLE A3-9.8 - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	2.9E-07	5.4E-07	5.8E-12	8.4E-07	Ocular exudate	8.2E-03	1.5E-02	1.6E-07	2.3E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	4.4E-07	8.1E-07	8.6E-12	1.2E-06		3.5E-03	6.5E-03	6.9E-08	1.0E-02
			PYRENE	---	---	---	---	Kidney	3.1E-05	5.2E-05	5.6E-10	8.3E-05
			SILVER	---	---	---	---	Argyria	6.0E-05	NA	NA	6.0E-05
			TETRACHLOROETHENE	4.1E-07	---	---	4.1E-07	Liver toxicity in mice	2.1E-04	NA	NA	2.1E-04
			THALLIUM	---	---	---	---		1.5E-02	NA	NA	1.5E-02
			TRICHLOROETHENE	6.4E-11	---	---	6.4E-11		4.6E-05	NA	NA	4.6E-05
			VANADIUM	---	---	---	---		2.3E-02	NA	NA	2.3E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	1.5E-04	NA	NA	1.5E-04
			Chemical Total	3.2E-06	4.6E-06	4.9E-11	7.8E-06		1.2E-01	2.3E-02	2.5E-07	1.4E-01
		Exposure Point Total					7.8E-06					1.4E-01
	Exposure Medium Total						7.8E-06					1.4E-01
Surface Soil Total							7.8E-06					1.4E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	6.9E-06	6.9E-06
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	2.2E-09	2.2E-09		NA	NA	7.5E-06	7.5E-06
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	4.9E-05	4.9E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1.1E-07	1.1E-07		NA	NA	2.5E-03	2.5E-03
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	1.4E-08	1.4E-08		NA	NA	1.6E-03	1.6E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	3.7E-06	3.7E-06
			BENZENE	NA	NA	9.9E-09	9.9E-09	Dec. lymphocyte count	NA	NA	3.2E-05	3.2E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	6.9E-05	6.9E-05
			CARBON TETRACHLORIDE	NA	NA	3.8E-07	3.8E-07	Liver lesions	NA	NA	6.3E-04	6.3E-04
			CHLOROFORM	NA	NA	7.8E-08	7.8E-08	Liver	NA	NA	3.2E-05	3.2E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	8.4E-04	8.4E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	8.6E-06	8.6E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	1.4E-05	1.4E-05
			TETRACHLOROETHENE	NA	NA	2.0E-07	2.0E-07	Liver toxicity in mice	NA	NA	2.7E-03	2.7E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.1E-05	1.1E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	7.9E-05	7.9E-05
			TRICHLOROETHENE	NA	NA	2.5E-08	2.5E-08		NA	NA	5.9E-05	5.9E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	9.1E-05	9.1E-05
			Chemical Total	NA	NA	8.3E-07	8.3E-07		NA	NA	8.7E-03	8.7E-03
		Exposure Point Total				Minimum	8.3E-07				Minimum	8.7E-03
	Exposure Medium Total					Minimum	8.3E-07				Minimum	8.7E-03
Soil Gas - Indoor Air Total						Minimum	8.3E-07				Minimum	8.7E-03

TABLE A3-9.8 - All Parcels, CTE, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil Gas 5' to 6'	Outdoor Air	Outdoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.6E-08	1.6E-08
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	5.1E-12	5.1E-12		NA	NA	1.8E-08	1.8E-08
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.2E-07	1.2E-07
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	2.9E-10	2.9E-10		NA	NA	6.4E-06	6.4E-06
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	4.0E-11	4.0E-11		NA	NA	4.4E-06	4.4E-06
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.0E-08	1.0E-08
			BENZENE	NA	NA	2.4E-11	2.4E-11	Dec. lymphocyte count	NA	NA	7.9E-08	7.9E-08
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.8E-07	1.8E-07
			CARBON TETRACHLORIDE	NA	NA	9.1E-10	9.1E-10	Liver lesions	NA	NA	1.5E-06	1.5E-06
			CHLOROFORM	NA	NA	2.0E-10	2.0E-10	Liver	NA	NA	8.3E-08	8.3E-08
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.0E-06	2.0E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	2.4E-08	2.4E-08
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	3.2E-08	3.2E-08
			TETRACHLOROETHENE	NA	NA	4.7E-10	4.7E-10	Liver toxicity in mice	NA	NA	6.4E-06	6.4E-06
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	2.8E-08	2.8E-08
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.8E-07	1.8E-07
			TRICHLOROETHENE	NA	NA	6.0E-11	6.0E-11		NA	NA	1.4E-07	1.4E-07
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.2E-07	2.2E-07
			Chemical Total	NA	NA	2.0E-09	2.0E-09		NA	NA	2.2E-05	2.2E-05
		Exposure Point Total				Minimum	2.0E-09				Minimum	2.2E-05
	Exposure Medium Total					Minimum	2.0E-09				Minimum	2.2E-05
Soil Gas - Outdoor Air Total						Minimum	2.0E-09				Minimum	2.2E-05
Receptor Total							8.6E-06					1.5E-01

Total Risk Across All Media =	8.6E-06
Total Hazard Across All Media =	1.5E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	5.8E-03
Total Body Weight effects Across All Media =	6.8E-04
Total Kidney HI Across All Media =	5.0E-04
Total Other HI Across All Media =	1.4E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.9 - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	*Industrial Worker - Indoors*
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		1.6E-07	NA	NA	1.6E-07
			1,1,2-TRICHLOROETHANE	8.6E-11	---	---	8.6E-11	Clinical serum chemistry	8.3E-07	NA	NA	8.3E-07
	Soil	Soil	1,1-DICHLOROETHANE	1.7E-11	---	---	1.7E-11		8.2E-08	NA	NA	8.2E-08
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	7.6E-08	NA	NA	7.6E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,2-DICHLOROETHANE	2.0E-10	---	---	2.0E-10		3.1E-07	NA	NA	3.1E-07
			1,4-DIOXANE	2.6E-07	1.7E-07	3.0E-12	4.4E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	9.1E-05	6.0E-05	1.0E-09	1.5E-04
			4,4'-DDE	1.7E-08	3.4E-09	5.7E-14	2.0E-08		NA	NA	NA	---
			4,4'-DDT	1.1E-08	2.1E-09	3.5E-14	1.3E-08	Liver lesions	1.7E-04	3.4E-05	5.8E-10	2.1E-04
			ALUMINUM	---	---	---	---		9.6E-03	NA	NA	9.6E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.0E-02	NA	NA	3.0E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	7.7E-04	NA	NA	7.7E-04
			BENZO(A)ANTHRACENE	3.5E-07	3.0E-07	5.1E-12	6.5E-07		NA	NA	NA	---
			BENZO(A)PYRENE	2.7E-06	2.3E-06	3.9E-11	5.0E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-07	1.6E-07	2.7E-12	3.4E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		5.1E-05	3.4E-05	5.7E-10	8.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-07	7.5E-08	1.3E-12	1.9E-07	Inc. liver weight	1.1E-03	7.5E-04	1.3E-08	1.9E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt. and liver to brain ratio	3.7E-06	2.4E-06	4.1E-11	6.1E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.2E-03	3.2E-04	5.5E-09	1.5E-03
			CHLOROFORM	5.1E-11	---	---	5.1E-11	Liver	4.6E-07	NA	NA	4.6E-07
			CHROMIUM III	---	---	---	---	No observed effects	4.6E-05	NA	NA	4.6E-05
			CHROMIUM VI	---	---	---	---	None	3.8E-03	NA	NA	3.8E-03
			CHRYSENE	1.6E-07	1.3E-07	2.3E-12	2.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		4.6E-04	NA	NA	4.6E-04
			COPPER	---	---	---	---		9.9E-04	NA	NA	9.9E-04
			DIELDRIN	1.7E-07	1.1E-07	1.9E-12	2.9E-07	Liver	6.1E-04	4.0E-04	6.8E-09	1.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	8.8E-06	7.6E-06	1.3E-10	1.6E-05
			IRON	---	---	---	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	2.7E-09	1.8E-09	3.0E-14	4.5E-09	No observed effects	4.0E-05	2.6E-05	4.5E-10	6.6E-05
			LEAD	1.8E-07	---	---	1.8E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	---	---		9.1E-04	NA	NA	9.1E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	7.7E-04	NA	NA	7.7E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	3.9E-05	3.3E-05	5.6E-10	7.2E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03

TABLE A3-9 9 - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	5.9E-07	5.4E-07	9.2E-12	1.1E-06	Ocular exudate	1.6E-02	1.5E-02	2.6E-07	3.2E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8.1E-07	1.4E-11	1.7E-06		7.0E-03	6.5E-03	1.1E-07	1.3E-02
			PYRENE	---	---	---	---	Kidney	6.1E-05	5.2E-05	8.9E-10	1.1E-04
			SILVER	---	---	---	---	Argyria	1.2E-04	NA	NA	1.2E-04
			TETRACHLOROETHENE	8.1E-07	---	---	8.1E-07	Liver toxicity in mice	4.2E-04	NA	NA	4.2E-04
			THALLIUM	---	---	---	---		3.0E-02	NA	NA	3.0E-02
			TRICHLOROETHENE	1.3E-10	---	---	1.3E-10		9.1E-05	NA	NA	9.1E-05
			VANADIUM	---	---	---	---		4.6E-02	NA	NA	4.6E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	3.1E-04	NA	NA	3.1E-04
			Chemical Total	6.4E-06	4.6E-06	7.8E-11	1.1E-05		2.3E-01	2.3E-02	4.0E-07	2.5E-01
		Exposure Point Total					1.1E-05					2.5E-01
	Exposure Medium Total						1.1E-05					2.5E-01
Surface Soil Total							1.1E-05					2.5E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.7E-02	2.7E-02
5' to 6'		Maximum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	3.7E-06	3.7E-06		NA	NA	1.3E-02	1.3E-02
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	6.2E-01	6.2E-01
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	4.3E-06	4.3E-06		NA	NA	9.5E-02	9.5E-02
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	2.3E-08	2.3E-08		NA	NA	2.5E-03	2.5E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	4.4E-04	4.4E-04
			BENZENE	NA	NA	2.7E-06	2.7E-06	Dec. lymphocyte count	NA	NA	8.7E-03	8.7E-03
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.5E-03	1.5E-03
			CARBON TETRACHLORIDE	NA	NA	6.0E-07	6.0E-07	Liver lesions	NA	NA	9.9E-04	9.9E-04
			CHLOROFORM	NA	NA	9.7E-06	9.7E-06	Liver	NA	NA	3.9E-03	3.9E-03
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	8.4E-02	8.4E-02
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.9E-03	1.9E-03
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	9.6E-04	9.6E-04
			TETRACHLOROETHENE	NA	NA	4.1E-04	4.1E-04	Liver toxicity in mice	NA	NA	5.6E+00	5.6E+00
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	9.7E-04	9.7E-04
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.5E-02	1.5E-02
			TRICHLOROETHENE	NA	NA	2.3E-05	2.3E-05		NA	NA	5.3E-02	5.3E-02
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.3E-01	1.3E-01
			Chemical Total	NA	NA	4.6E-04	4.6E-04		NA	NA	6.7E+00	6.7E+00
		Exposure Point Total				Maximum	4.6E-04				Maximum	6.7E+00
	Exposure Medium Total					Maximum	4.6E-04				Maximum	6.7E+00
Soil Gas - Indoor Air Total						Maximum	4.6E-04				Maximum	6.7E+00

TABLE A3-9.9 - All Parcels, RME, Maximum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil Gas 5' to 6'	Outdoor Air	Outdoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	6.4E-05	6.4E-05
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	8.6E-09	8.6E-09		NA	NA	2.9E-05	2.9E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.5E-03	1.5E-03
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1.1E-08	1.1E-08		NA	NA	2.5E-04	2.5E-04
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	6.3E-11	6.3E-11		NA	NA	6.9E-06	6.9E-06
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.2E-06	1.2E-06
			BENZENE	NA	NA	6.6E-09	6.6E-09	Dec. lymphocyte count	NA	NA	2.1E-05	2.1E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	3.9E-06	3.9E-06
			CARBON TETRACHLORIDE	NA	NA	1.4E-09	1.4E-09	Liver lesions	NA	NA	2.3E-06	2.3E-06
			CHLOROFORM	NA	NA	2.5E-08	2.5E-08	Liver	NA	NA	1.0E-05	1.0E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1.9E-04	1.9E-04
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	5.1E-06	5.1E-06
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	2.2E-06	2.2E-06
			TETRACHLOROETHENE	NA	NA	9.6E-07	9.6E-07	Liver toxicity in mice	NA	NA	1.3E-02	1.3E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	2.4E-06	2.4E-06
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	3.5E-05	3.5E-05
			TRICHLOROETHENE	NA	NA	5.4E-08	5.4E-08		NA	NA	1.3E-04	1.3E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	3.1E-04	3.1E-04
			Chemical Total	NA	NA	1.1E-06	1.1E-06		NA	NA	1.6E-02	1.6E-02
		Exposure Point Total				Maximum	1.1E-06				Maximum	1.6E-02
	Exposure Medium Total					Maximum	1.1E-06				Maximum	1.6E-02
Soil Gas - Outdoor Air Total						Maximum	1.1E-06				Maximum	1.6E-02
Receptor Total							4.7E-04					6.9E+00

Total Risk Across All Media = 4.7E-04

Total Hazard Across All Media = 6.9E+00

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 6.3E+00
Total Body Weight effects Across All Media = 4.1E-03
Total Kidney HI Across All Media = 2.3E-03
Total Other HI Across All Media = 6.8E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.9 - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		1.6E-07	NA	NA	1.6E-07
			1,1,2-TRICHLOROETHANE	8.6E-11	---	---	8.6E-11	Clinical serum chemistry	8.3E-07	NA	NA	8.3E-07
			1,1-DICHLOROETHANE	1.7E-11	---	---	1.7E-11		8.2E-08	NA	NA	8.2E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	7.6E-08	NA	NA	7.6E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	2.6E-06	NA	NA	2.6E-06
			1,2-DICHLOROETHANE	2.0E-10	---	---	2.0E-10		3.1E-07	NA	NA	3.1E-07
			1,4-DIOXANE	2.6E-07	1.7E-07	3.0E-12	4.4E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	9.1E-05	6.0E-05	1.0E-09	1.5E-04
			4,4'-DDE	1.7E-08	3.4E-09	5.7E-14	2.0E-08		NA	NA	NA	---
			4,4'-DDT	1.1E-08	2.1E-09	3.5E-14	1.3E-08	Liver lesions	1.7E-04	3.4E-05	5.8E-10	2.1E-04
			ALUMINUM	---	---	---	---		9.6E-03	NA	NA	9.6E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	3.0E-02	NA	NA	3.0E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	7.7E-04	NA	NA	7.7E-04
			BENZO(A)ANTHRACENE	3.5E-07	3.0E-07	5.1E-12	6.5E-07		NA	NA	NA	---
			BENZO(A)PYRENE	2.7E-06	2.3E-06	3.9E-11	5.0E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.8E-07	1.6E-07	2.7E-12	3.4E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		5.1E-05	3.4E-05	5.7E-10	8.4E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	2.5E-04	NA	NA	2.5E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E-07	7.5E-08	1.3E-12	1.9E-07	Inc. liver weight	1.1E-03	7.5E-04	1.3E-08	1.9E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	3.7E-06	2.4E-06	4.1E-11	6.1E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.2E-03	3.2E-04	5.5E-09	1.5E-03
			CHLOROFORM	5.1E-11	---	---	5.1E-11	Liver	4.6E-07	NA	NA	4.6E-07
			CHROMIUM III	---	---	---	---	No observed effects	4.6E-05	NA	NA	4.6E-05
			CHROMIUM VI	---	---	---	---	None	3.8E-03	NA	NA	3.8E-03
			CHRYSENE	1.6E-07	1.3E-07	2.3E-12	2.9E-07		NA	NA	NA	---
			COBALT	---	---	---	---		4.6E-04	NA	NA	4.6E-04
			COPPER	---	---	---	---		9.9E-04	NA	NA	9.9E-04
			DIELDRIN	1.7E-07	1.1E-07	1.9E-12	2.9E-07	Liver	6.1E-04	4.0E-04	6.8E-09	1.0E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt.	8.8E-06	7.6E-06	1.3E-10	1.6E-05
			IRON	---	---	---	---		7.6E-02	NA	NA	7.6E-02
			ISOPHORONE	2.7E-09	1.8E-09	3.0E-14	4.5E-09	No observed effects	4.0E-05	2.6E-05	4.5E-10	6.6E-05
			LEAD	1.8E-07	---	---	1.8E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	2.5E-03	NA	NA	2.5E-03
			MERCURY	---	---	---	---		9.1E-04	NA	NA	9.1E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	7.7E-04	NA	NA	7.7E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	3.9E-05	3.3E-05	5.6E-10	7.2E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1.2E-03	NA	NA	1.2E-03

TABLE A3-9.9 - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	5.9E-07	5.4E-07	9.2E-12	1.1E-06	Ocular exudate	1.6E-02	1.5E-02	2.6E-07	3.2E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	8.7E-07	8 1E-07	1.4E-11	1.7E-06		7.0E-03	6.5E-03	1.1E-07	1.3E-02
			PYRENE	---	---	---	---	Kidney	6.1E-05	5.2E-05	8.9E-10	1.1E-04
			SILVER	---	---	---	---	Argyria	1.2E-04	NA	NA	1.2E-04
			TETRACHLOROETHENE	8.1E-07	---	---	8.1E-07	Liver toxicity in mice	4.2E-04	NA	NA	4.2E-04
			THALLIUM	---	---	---	---		3.0E-02	NA	NA	3.0E-02
			TRICHLOROETHENE	1.3E-10	---	---	1.3E-10		9.1E-05	NA	NA	9.1E-05
			VANADIUM	---	---	---	---		4.6E-02	NA	NA	4.6E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	3.1E-04	NA	NA	3.1E-04
			Chemical Total	6.4E-06	4.6E-06	7.8E-11	1.1E-05		2.3E-01	2.3E-02	4.0E-07	2.5E-01
		Exposure Point Total					1.1E-05					2.5E-01
	Exposure Medium Total						1.1E-05					2.5E-01
Surface Soil Total							1.1E-05					2.5E-01
Soil Gas	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.1E-05	1.1E-05
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	3.5E-09	3.5E-09		NA	NA	1.2E-05	1.2E-05
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	7.8E-05	7.8E-05
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1.8E-07	1.8E-07		NA	NA	3.9E-03	3.9E-03
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	2.3E-08	2.3E-08		NA	NA	2.5E-03	2.5E-03
			ACETONE	NA	NA	---	---	Kidney	NA	NA	5.9E-06	5.9E-06
			BENZENE	NA	NA	1.6E-08	1.6E-08	Dec. lymphocyte count	NA	NA	5.1E-05	5 1E-05
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	1.1E-04	1.1E-04
			CARBON TETRACHLORIDE	NA	NA	6.0E-07	6.0E-07	Liver lesions	NA	NA	9.9E-04	9.9E-04
			CHLOROFORM	NA	NA	1.2E-07	1.2E-07	Liver	NA	NA	5.0E-05	5.0E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1.3E-03	1.3E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	1.4E-05	1.4E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	2.2E-05	2.2E-05
			TETRACHLOROETHENE	NA	NA	3.2E-07	3.2E-07	Liver toxicity in mice	NA	NA	4.4E-03	4.4E-03
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.8E-05	1.8E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	1.3E-04	1.3E-04
			TRICHLOROETHENE	NA	NA	4.0E-08	4.0E-08		NA	NA	9.4E-05	9.4E-05
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	1.4E-04	1.4E-04
			Chemical Total	NA	NA	1 3E-06	1.3E-06		NA	NA	1.4E-02	1.4E-02
		Exposure Point Total				Minimum	1.3E-06				Minimum	1.4E-02
	Exposure Medium Total					Minimum	1 3E-06				Minimum	1 4E-02
Soil Gas - Indoor Air Total						Minimum	1.3E-06				Minimum	1.4E-02

TABLE A3-9 9 - All Parcels, RME, Minimum Indoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil Gas	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.6E-08	2.6E-08
5' to 6'		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	8 1E-12	8.1E-12		NA	NA	2.8E-08	2.8E-08
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.9E-07	1.9E-07
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	4.6E-10	4.6E-10		NA	NA	1.0E-05	1.0E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	6.3E-11	6.3E-11		NA	NA	6.9E-06	6.9E-06
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-08	1.6E-08
			BENZENE	NA	NA	3.8E-11	3.8E-11	Dec. lymphocyte count	NA	NA	1.3E-07	1.3E-07
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2.9E-07	2 9E-07
			CARBON TETRACHLORIDE	NA	NA	1.4E-09	1.4E-09	Liver lesions	NA	NA	2 3E-06	2.3E-06
			CHLOROFORM	NA	NA	3.2E-10	3.2E-10	Liver	NA	NA	1.3E-07	1.3E-07
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	3.1E-06	3.1E-06
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.8E-08	3 8E-08
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc. mortality	NA	NA	5 0E-08	5.0E-08
			TETRACHLOROETHENE	NA	NA	7 4E-10	7.4E-10	Liver toxicity in mice	NA	NA	1 0E-05	1.0E-05
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.4E-08	4.4E-08
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	2.9E-07	2.9E-07
			TRICHLOROETHENE	NA	NA	9.5E-11	9.5E-11		NA	NA	2.2E-07	2.2E-07
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	3.5E-07	3.5E-07
			Chemical Total	NA	NA	3.2E-09	3.2E-09		NA	NA	3 4E-05	3.4E-05
		Exposure Point Total				Minimum	3.2E-09				Minimum	3.4E-05
	Exposure Medium Total					Minimum	3.2E-09				Minimum	3.4E-05
Soil Gas - Outdoor Air Total						Minimum	3.2E-09				Minimum	3.4E-05
Receptor Total							1.2E-05					2.7E-01

Total Risk Across All Media =	1 2E-05
Total Hazard Across All Media =	2.7E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media =	9.0E-03
Total Body Weight effects Across All Media =	1.3E-03
Total Kidney HI Across All Media =	9.3E-04
Total Other HI Across All Media =	2.6E-01

NA: Not applicable.
---: Risk was not calculated for chemical.
HI: Hazard Index.
CNS: Central Nervous System.
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9 10 - All Parcels, CTE, Maximum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		1.5E-07	NA	NA	1.5E-07
			1,1,2-TRICHLOROETHANE	7.7E-11	---	---	7.7E-11	Clinical serum chemistry	7.5E-07	NA	NA	7.5E-07
			1,1-DICHLOROETHANE	1.5E-11	---	---	1.5E-11		7.4E-08	NA	NA	7.4E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	6.9E-08	NA	NA	6.9E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	2.3E-06	NA	NA	2.3E-06
			1,2-DICHLOROETHANE	1.8E-10	---	---	1.8E-10		2.8E-07	NA	NA	2.8E-07
			1,4-DIOXANE	2.4E-07	1.6E-07	2.7E-12	3.9E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	8.2E-05	5.4E-05	9.2E-10	1.4E-04
			4,4'-DDE	1.5E-08	3.0E-09	5.1E-14	1.8E-08		NA	NA	NA	---
			4,4'-DDT	9.5E-09	1.9E-09	3.2E-14	1.1E-08	Liver lesions	1.6E-04	3.1E-05	5.2E-10	1.9E-04
			ALUMINUM	---	---	---	---		8.7E-03	NA	NA	8.7E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	2.7E-02	NA	NA	2.7E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	6.9E-04	NA	NA	6.9E-04
			BENZO(A)ANTHRACENE	3.2E-07	2.7E-07	4.6E-12	5.9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	2.4E-06	2.1E-06	3.5E-11	4.5E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.7E-07	1.4E-07	2.4E-12	3.1E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		4.6E-05	3.0E-05	5.1E-10	7.6E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	2.2E-04	NA	NA	2.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-07	6.7E-08	1.1E-12	1.7E-07	Inc. liver weight	1.0E-03	6.7E-04	1.1E-08	1.7E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc. body wt. and liver to brain ratio	3.3E-06	2.2E-06	3.7E-11	5.5E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.1E-03	2.9E-04	4.9E-09	1.4E-03
			CHLOROFORM	4.6E-11	---	---	4.6E-11	Liver	4.1E-07	NA	NA	4.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	4.2E-05	NA	NA	4.2E-05
			CHROMIUM VI	---	---	---	---	None	3.5E-03	NA	NA	3.5E-03
			CHRYSENE	1.4E-07	1.2E-07	2.0E-12	2.6E-07		NA	NA	NA	---
			COBALT	---	---	---	---		4.1E-04	NA	NA	4.1E-04
			COPPER	---	---	---	---		8.9E-04	NA	NA	8.9E-04
			DIELDRIN	1.6E-07	1.0E-07	1.7E-12	2.6E-07	Liver	5.5E-04	3.6E-04	6.1E-09	9.1E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	7.9E-06	6.8E-06	1.2E-10	1.5E-05
			IRON	---	---	---	---		6.8E-02	NA	NA	6.8E-02
			ISOPHORONE	2.4E-09	1.6E-09	2.7E-14	4.1E-09	No observed effects	3.6E-05	2.4E-05	4.0E-10	6.0E-05
			LEAD	1.6E-07	---	---	1.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	2.2E-03	NA	NA	2.2E-03
			MERCURY	---	---	---	---		8.2E-04	NA	NA	8.2E-04
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	6.9E-04	NA	NA	6.9E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	3.5E-05	3.0E-05	5.1E-10	6.5E-05
			NICKEL	---	---	---	---	dec. body and organ wts	1.1E-03	NA	NA	1.1E-03

TABLE A3-9.10 - All Parcels, CTE, Maximum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	5.3E-07	4.9E-07	8.3E-12	1.0E-06	Ocular exudate	1.5E-02	1.4E-02	2.3E-07	2.9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	7.9E-07	7.3E-07	1.2E-11	1.5E-06		6.3E-03	5.8E-03	9.8E-08	1.2E-02
			PYRENE	---	---	---	---	Kidney	5.5E-05	4.7E-05	8.0E-10	1.0E-04
			SILVER	---	---	---	---	Argyria	1.1E-04	NA	NA	1.1E-04
			TETRACHLOROETHENE	7.3E-07	---	---	7.3E-07	Liver toxicity in mice	3.8E-04	NA	NA	3.8E-04
			THALLIUM	---	---	---	---		2.7E-02	NA	NA	2.7E-02
			TRICHLOROETHENE	1.1E-10	---	---	1.1E-10		8.2E-05	NA	NA	8.2E-05
			VANADIUM	---	---	---	---		4.1E-02	NA	NA	4.1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	2.8E-04	NA	NA	2.8E-04
			Chemical Total	5.8E-06	4.1E-06	7.0E-11	9.9E-06		2.1E-01	2.1E-02	3.6E-07	2.3E-01
		Exposure Point Total					9.9E-06					2.3E-01
	Exposure Medium Total						9.9E-06					2.3E-01
Surface Soil Total							9.9E-06					2.3E-01
Outdoor Air	Outdoor Air	Outdoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	4.6E-04	4.6E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	6.2E-08	6.2E-08		NA	NA	2.1E-04	2.1E-04
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.1E-02	1.1E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	8.1E-08	8.1E-08		NA	NA	1.8E-03	1.8E-03
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	4.6E-10	4.6E-10		NA	NA	5.0E-05	5.0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	8.7E-06	8.7E-06
			BENZENE	NA	NA	4.7E-08	4.7E-08	Dec. lymphocyte count	NA	NA	1.5E-04	1.5E-04
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2.8E-05	2.8E-05
			CARBON TETRACHLORIDE	NA	NA	1.0E-08	1.0E-08	Liver lesions	NA	NA	1.7E-05	1.7E-05
			CHLOROFORM	NA	NA	1.8E-07	1.8E-07	Liver	NA	NA	7.4E-05	7.4E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1.4E-03	1.4E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3.7E-05	3.7E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	1.6E-05	1.6E-05
			TETRACHLOROETHENE	NA	NA	6.9E-06	6.9E-06	Liver toxicity in mice	NA	NA	9.4E-02	9.4E-02
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	1.7E-05	1.7E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	2.5E-04	2.5E-04
			TRICHLOROETHENE	NA	NA	3.9E-07	3.9E-07		NA	NA	9.0E-04	9.0E-04
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and hrstopathology	NA	NA	2.2E-03	2.2E-03
			Chemical Total	NA	NA	7.7E-06	7.7E-06		NA	NA	1.1E-01	1.1E-01
		Exposure Point Total				Maximum	7.7E-06				Maximum	1.1E-01
	Exposure Medium Total					Maximum	7.7E-06				Maximum	1.1E-01
Outdoor Air Total						Maximum	7.7E-06				Maximum	1.1E-01
Receptor Total							1.8E-05					3.4E-01

Total Risk Across All Media =	1.8E-05
Total Hazard Across All Media =	3.4E-01
Hazards by Toxicity Endpoint(1)	
Total Liver HI Across All Media =	1.1E-01
Total Body Weight effects Across All Media =	1.2E-03
Total Kidney HI Across All Media =	8.4E-04
Total Other HI Across All Media =	2.3E-01

NA Not applicable
— Risk was not calculated for chemical
HI Hazard Index
CNS Central Nervous System
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media

TABLE A3-9.10 - All Parcels, CTE, Minimum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface Soil 0'-12'	Surface & Subsurface Soil 0'-12'	1,1,1-TRICHLOROETHANE	---	---	---	---		1.5E-07	NA	NA	1.5E-07
			1,1,2-TRICHLOROETHANE	7.7E-11	---	---	7.7E-11	Clinical serum chemistry	7.5E-07	NA	NA	7.5E-07
			1,1-DICHLOROETHANE	1.5E-11	---	---	1.5E-11		7.4E-08	NA	NA	7.4E-08
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	6.9E-08	NA	NA	6.9E-08
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	2.3E-06	NA	NA	2.3E-06
			1,2-DICHLOROETHANE	1.8E-10	---	---	1.8E-10		2.8E-07	NA	NA	2.8E-07
			1,4-DIOXANE	2.4E-07	1.6E-07	2.7E-12	3.9E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	8.2E-05	5.4E-05	9.2E-10	1.4E-04
			4,4'-DDE	1.5E-08	3.0E-09	5.1E-14	1.8E-08		NA	NA	NA	---
			4,4'-DDT	9.5E-09	1.9E-09	3.2E-14	1.1E-08	Liver lesions	1.6E-04	3.1E-05	5.2E-10	1.9E-04
			ALUMINUM	---	---	---	---		8.7E-03	NA	NA	8.7E-03
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	2.7E-02	NA	NA	2.7E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	6.9E-04	NA	NA	6.9E-04
			BENZO(A)ANTHRACENE	3.2E-07	2.7E-07	4.6E-12	5.9E-07		NA	NA	NA	---
			BENZO(A)PYRENE	2.4E-06	2.1E-06	3.5E-11	4.5E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	1.7E-07	1.4E-07	2.4E-12	3.1E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		4.6E-05	3.0E-05	5.1E-10	7.6E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	2.2E-04	NA	NA	2.2E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-07	6.7E-08	1.1E-12	1.7E-07	Inc liver weight	1.0E-03	6.7E-04	1.1E-08	1.7E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt. and liver to brain ratio	3.3E-06	2.2E-06	3.7E-11	5.5E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.1E-03	2.9E-04	4.9E-09	1.4E-03
			CHLOROFORM	4.6E-11	---	---	4.6E-11	Liver	4.1E-07	NA	NA	4.1E-07
			CHROMIUM III	---	---	---	---	No observed effects	4.2E-05	NA	NA	4.2E-05
			CHROMIUM VI	---	---	---	---	None	3.5E-03	NA	NA	3.5E-03
			CHRYSENE	1.4E-07	1.2E-07	2.0E-12	2.6E-07		NA	NA	NA	---
			COBALT	---	---	---	---		4.1E-04	NA	NA	4.1E-04
			COPPER	---	---	---	---		8.9E-04	NA	NA	8.9E-04
			DIELDRIN	1.6E-07	1.0E-07	1.7E-12	2.6E-07	Liver	5.5E-04	3.6E-04	6.1E-09	9.1E-04
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc. liver wt	7.9E-06	6.8E-06	1.2E-10	1.5E-05
			IRON	---	---	---	---		6.8E-02	NA	NA	6.8E-02
			ISOPHORONE	2.4E-09	1.6E-09	2.7E-14	4.1E-09	No observed effects	3.6E-05	2.4E-05	4.0E-10	6.0E-05
			LEAD	1.6E-07	---	---	1.6E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	2.2E-03	NA	NA	2.2E-03
			MERCURY	---	---	---	---		8.2E-04	NA	NA	8.2E-04
			MOLYBDENUM	---	---	---	---	Inc uric acid levels	6.9E-04	NA	NA	6.9E-04
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	3.5E-05	3.0E-05	5.1E-10	6.5E-05
			NICKEL	---	---	---	---	dec. body and organ wts	1.1E-03	NA	NA	1.1E-03

TABLE A3-9 10 - All Parcels, CTE Minimum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Central Tendency Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	5 3E-07	4 9E-07	8 3E-12	1 0E-06	Ocular exudate	1.5E-02	1.4E-02	2 3E-07	2 9E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	7 9E-07	7 3E-07	1.2E-11	1 5E-06		6 3E-03	5.8E-03	9 8E-08	1 2E-02
			PYRENE	---	---	---	---	Kidney	5 5E-05	4 7E-05	8 0E-10	1 0E-04
			SILVER	---	---	---	---	Argyria	1 1E-04	NA	NA	1 1E-04
			TETRACHLOROETHENE	7 3E-07	---	---	7 3E-07	Liver toxicity in mice	3 8E-04	NA	NA	3 8E-04
			THALLIUM	---	---	---	---		2 7E-02	NA	NA	2.7E-02
			TRICHLOROETHENE	1 1E-10	---	---	1 1E-10		8 2E-05	NA	NA	8 2E-05
			VANADIUM	---	---	---	---		4 1E-02	NA	NA	4 1E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	2 8E-04	NA	NA	2.8E-04
			Chemical Total	5 8E-06	4 1E-06	7.0E-11	9 9E-06		2 1E-01	2 1E-02	3 6E-07	2 3E-01
		Exposure Point Total					9 9E-06					2.3E-01
	Exposure Medium Total						9.9E-06					2 3E-01
Surface Soil Total							9 9E-06					2.3E-01
Outdoor Air	Outdoor Air	Outdoor Air Minimum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	1.9E-07	1 9E-07
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	5 8E-11	5 8E-11		NA	NA	2.0E-07	2.0E-07
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.4E-06	1.4E-06
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	3 3E-09	3 3E-09		NA	NA	7 3E-05	7 3E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	4 6E-10	4 6E-10		NA	NA	5 0E-05	5 0E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.2E-07	1.2E-07
			BENZENE	NA	NA	2 8E-10	2 8E-10	Dec lymphocyte count	NA	NA	9 0E-07	9 0E-07
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2 1E-06	2.1E-06
			CARBON TETRACHLORIDE	NA	NA	1 0E-08	1 0E-08	Liver lesions	NA	NA	1.7E-05	1 7E-05
			CHLOROFORM	NA	NA	2 3E-09	2.3E-09	Liver	NA	NA	9.4E-07	9 4E-07
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2.2E-05	2 2E-05
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec body weight	NA	NA	2 7E-07	2 7E-07
			M,P-XYLENES	NA	NA	---	---	Dec body weight, inc mortality	NA	NA	3 6E-07	3 6E-07
			TETRACHLOROETHENE	NA	NA	5 3E-09	5 3E-09	Liver toxicity in mice	NA	NA	7 3E-05	7.3E-05
			TOLUENE	NA	NA	---	---	Inc kidney weight	NA	NA	3 2E-07	3 2E-07
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc serum alkaline phosphatase in male mice	NA	NA	2 1E-06	2.1E-06
			TRICHLOROETHENE	NA	NA	6 9E-10	6.9E-10		NA	NA	1 6E-06	1.6E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2.5E-06	2.5E-06
			Chemical Total	NA	NA	2 3E-08	2 3E-08		NA	NA	2 5E-04	2 5E-04
		Exposure Point Total				Minimum	2 3E-08				Minimum	2 5E-04
	Exposure Medium Total					Minimum	2.3E-08				Minimum	2 5E-04
Outdoor Air Total						Minimum	2.3E-08				Minimum	2.5E-04
Receptor Total							9 9E-06					2 3E-01

Total Risk Across All Media = 9 9E-06

Total Hazard Across All Media = 2.3E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 3.3E-03
Total Body Weight effects Across All Media = 1 2E-03
Total Kidney HI Across All Media = 8 1E-04
Total Other HI Across All Media = 2 2E-01

NA Not applicable.
--- Risk was not calculated for chemical
HI Hazard Index
CNS Central Nervous System
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one The totals below summarize the hazard quotients by primary target organs across all media

TABLE A3-9 11 - All Parcels, RME, Maximum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population:	Industrial Worker - Outdoors
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & Subsurface	Surface & Subsurface	1,1,1-TRICHLOROETHANE	---	---	---	---		2 2E-07	NA	NA	2 2E-07
			1,1,2-TRICHLOROETHANE	1.2E-10	---	---	1 2E-10	Clinical serum chemistry	1 1E-06	NA	NA	1.1E-06
	Soil	Soil	1,1-DICHLOROETHANE	2.3E-11	---	---	2.3E-11		1 1E-07	NA	NA	1.1E-07
	0'-12'	0'-12'	1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-07	NA	NA	1 0E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3 5E-06	NA	NA	3 5E-06
			1,2-DICHLOROETHANE	2 7E-10	---	---	2 7E-10		4 2E-07	NA	NA	4 2E-07
			1,4-DIOXANE	3 6E-07	1 6E-07	3.5E-12	5 1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1 2E-04	5.4E-05	1 2E-09	1.8E-04
			4,4'-DDE	2 3E-08	3 0E-09	6 8E-14	2 6E-08		NA	NA	NA	---
			4,4'-DDT	1 4E-08	1.9E-09	4 2E-14	1 6E-08	Liver lesions	2 3E-04	3 1E-05	6 9E-10	2 6E-04
			ALUMINUM	---	---	---	---		1.3E-02	NA	NA	1 3E-02
			ANTIMONY	---	---	---	---	longevity, blood glucose and chloesterol	4 1E-02	NA	NA	4 1E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1 0E-03	NA	NA	1.0E-03
			BENZO(A)ANTHRACENE	4 7E-07	2 7E-07	6 0E-12	7 4E-07		NA	NA	NA	---
			BENZO(A)PYRENE	3 6E-06	2.1E-06	4 6E-11	5 7E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2 5E-07	1 4E-07	3 2E-12	3 9E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6 9E-05	3 0E-05	6.7E-10	9 9E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	3 3E-04	NA	NA	3 3E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-07	6 7E-08	1 5E-12	2.2E-07	Inc liver weight	1 5E-03	6.7E-04	1 5E-08	2 2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt and liver to brain ratio	5.0E-06	2.2E-06	4 9E-11	7 2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1 6E-03	2.9E-04	6 5E-09	1 9E-03
			CHLOROFORM	6 9E-11	---	---	6 9E-11	Liver	6 2E-07	NA	NA	6 2E-07
			CHROMIUM III	---	---	---	---	No observed effects	6 2E-05	NA	NA	6.2E-05
			CHROMIUM VI	---	---	---	---	None	5 2E-03	NA	NA	5 2E-03
			CHRYSENE	2 1E-07	1 2E-07	2 7E-12	3.3E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6 1E-04	NA	NA	6 1E-04
			COPPER	---	---	---	---		1 3E-03	NA	NA	1 3E-03
			DIELDRIN	2 3E-07	1.0E-07	2 3E-12	3 4E-07	Liver	8.2E-04	3 6E-04	8 1E-09	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney). inc liver wt	1.2E-05	6 8E-06	1 5E-10	1.9E-05
			IRON	---	---	---	---		1 0E-01	NA	NA	1.0E-01
			ISOPHORONE	3.7E-09	1 6E-09	3.6E-14	5 3E-09	No observed effects	5 4E-05	2.4E-05	5 3E-10	7.8E-05
			LEAD	2 4E-07	---	---	2 4E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.3E-03	NA	NA	3 3E-03
			MERCURY	---	---	---	---		1.2E-03	NA	NA	1.2E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.0E-03	NA	NA	1 0E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5 2E-05	3.0E-05	6.7E-10	8 2E-05
			NICKEL	---	---	---	---	dec. body and organ wts.	1 6E-03	NA	NA	1.6E-03

TABLE A3-9.11 - All Parcels, RME Maximum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	8 0E-07	4 9E-07	1.1E-11	1 3E-06	Ocular exudate	2.2E-02	1.4E-02	3 1E-07	3 6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1 2E-06	7.3E-07	1 6E-11	1 9E-06		9.4E-03	5 8E-03	1.3E-07	1 5E-02
			PYRENE	---	---	---	---	Kidney	8 3E-05	4 7E-05	1.1E-09	1 3E-04
			SILVER	---	---	---	---	Argyria	1.6E-04	NA	NA	1.6E-04
			TETRACHLOROETHENE	1.1E-06	---	---	1.1E-06	Liver toxicity in mice	5 7E-04	NA	NA	5 7E-04
			THALLIUM	---	---	---	---		4 0E-02	NA	NA	4 0E-02
			TRICHLOROETHENE	1.7E-10	---	---	1.7E-10		1 2E-04	NA	NA	1.2E-04
			VANADIUM	---	---	---	---		6 2E-02	NA	NA	6 2E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4 2E-04	NA	NA	4 2E-04
			Chemical Total	8 6E-06	4 1E-06	9 2E-11	1 3E-05		3.1E-01	2 1E-02	4 7E-07	3 3E-01
		Exposure Point Total					1 3E-05					3.3E-01
	Exposure Medium Total						1 3E-05					3 3E-01
Surface Soil Total							1 3E-05					3 3E-01
Outdoor Air	Outdoor Air	Outdoor Air Maximum	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	6 1E-04	6 1E-04
			1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	8 1E-08	8 1E-08		NA	NA	2 8E-04	2 8E-04
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1 5E-02	1.5E-02
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	1 1E-07	1.1E-07		NA	NA	2 3E-03	2 3E-03
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	6 0E-10	6.0E-10		NA	NA	6.5E-05	6 5E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1 1E-05	1 1E-05
			BENZENE	NA	NA	6 2E-08	6 2E-08	Dec. lymphocyte count	NA	NA	2 0E-04	2 0E-04
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	3 7E-05	3 7E-05
			CARBON TETRACHLORIDE	NA	NA	1.4E-08	1 4E-08	Liver lesions	NA	NA	2 2E-05	2.2E-05
			CHLOROFORM	NA	NA	2 4E-07	2.4E-07	Liver	NA	NA	9 7E-05	9.7E-05
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	1 8E-03	1 8E-03
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	4 8E-05	4.8E-05
			M,P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	2 1E-05	2.1E-05
			TETRACHLOROETHENE	NA	NA	9.1E-06	9 1E-06	Liver toxicity in mice	NA	NA	1 2E-01	1 2E-01
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	2 2E-05	2 2E-05
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	3.3E-04	3 3E-04
			TRICHLOROETHENE	NA	NA	5 1E-07	5 1E-07		NA	NA	1 2E-03	1 2E-03
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	2 9E-03	2 9E-03
			Chemical Total	NA	NA	1 0E-05	1.0E-05		NA	NA	1 5E-01	1 5E-01
		Exposure Point Total				Maximum	1 0E-05				Maximum	1.5E-01
	Exposure Medium Total					Maximum	1 0E-05				Maximum	1.5E-01
Outdoor Air Total						Maximum	1 0E-05				Maximum	1 5E-01
Receptor Total							2 3E-05					4 8E-01

Total Risk Across All Media = 2 3E-05

Total Hazard Across All Media = 4.8E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 1.4E-01
Total Body Weight effects Across All Media = 1 8E-03
Total Kidney HI Across All Media = 1 2E-03
Total Other HI Across All Media = 3 4E-01

NA: Not applicable
— Risk was not calculated for chemical
HI Hazard Index
CNS Central Nervous System
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media.

TABLE A3-9.11 - All Parcels, RME, Minimum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker - Outdoors
Receptor.	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface & *Subsurface*	Surface & *Subsurface*	1,1,1-TRICHLOROETHANE	---	---	---	---		2.2E-07	NA	NA	2.2E-07
			1,1,2-TRICHLOROETHANE	*1.2E-10*	---	---	*1.2E-10*	*Clinical serum* chemistry	*1.1E-06*	NA	NA	*1.1E-06*
	Soil 0'-12'	Soil 0'-12'	1,1-DICHLOROETHANE	2.3E-11	---	---	2.3E-11		1.1E-07	NA	NA	1.1E-07
			1,1-DICHLOROETHENE	---	---	---	---	Liver toxicity	1.0E-07	NA	NA	1.0E-07
			1,2-DICHLOROBENZENE	---	---	---	---	No observed effects	3.5E-06	NA	NA	3.5E-06
			1,2-DICHLOROETHANE	2.7E-10	---	---	2.7E-10		4.2E-07	NA	NA	4.2E-07
			1,4-DIOXANE	3.6E-07	1.6E-07	3.5E-12	5.1E-07		NA	NA	NA	---
			2-METHYLNAPHTHALENE	---	---	---	---	Pulmonary alveolar proteinosis	1.2E-04	5.4E-05	1.2E-09	1.8E-04
			4,4'-DDE	2.3E-08	3.0E-09	6.8E-14	2.6E-08		NA	NA	NA	---
			4,4'-DDT	1.4E-08	1.9E-09	4.2E-14	1.6E-08	Liver lesions	2.3E-04	3.1E-05	6.9E-10	2.6E-04
			ALUMINUM	---	---	---	---		1.3E-02	NA	NA	1.3E-02
			ANTIMONY	---	---	---	---	*longevity, blood* glucose and chloesterol	4.1E-02	NA	NA	4.1E-02
			BARIUM	---	---	---	---	Nephropathy (kidney)	1.0E-03	NA	NA	1.0E-03
			BENZO(A)ANTHRACENE	4.7E-07	2.7E-07	6.0E-12	7.4E-07		NA	NA	NA	---
			BENZO(A)PYRENE	3.6E-06	2.1E-06	4.6E-11	5.7E-06		NA	NA	NA	---
			BENZO(B)FLUORANTHENE	2.5E-07	1.4E-07	3.2E-12	3.9E-07		NA	NA	NA	---
			BENZYL ALCOHOL (PHENYLMETHANOL)	---	---	---	---		6.9E-05	3.0E-05	6.7E-10	9.9E-05
			BERYLLIUM	---	---	---	---	small intestinal lesions	3.3E-04	NA	NA	3.3E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	1.5E-07	6.7E-08	1.5E-12	2.2E-07	Inc liver weight	1.5E-03	6.7E-04	1.5E-08	2.2E-03
			BUTYLBENZYL PHTHALATE	---	---	---	---	inc body wt and liver to brain ratio	5.0E-06	2.2E-06	4.9E-11	7.2E-06
			CADMIUM	---	---	---	---	significant proteinuria	1.6E-03	2.9E-04	6.5E-09	1.9E-03
			CHLOROFORM	6.9E-11	---	---	6.9E-11	Liver	6.2E-07	NA	NA	6.2E-07
			CHROMIUM III	---	---	---	---	No observed effects	6.2E-05	NA	NA	6.2E-05
			CHROMIUM VI	---	---	---	---	None	5.2E-03	NA	NA	5.2E-03
			CHRYSENE	2.1E-07	1.2E-07	2.7E-12	3.3E-07		NA	NA	NA	---
			COBALT	---	---	---	---		6.1E-04	NA	NA	6.1E-04
			COPPER	---	---	---	---		1.3E-03	NA	NA	1.3E-03
			DIELDRIN	2.3E-07	1.0E-07	2.3E-12	3.4E-07	Liver	8.2E-04	3.6E-04	8.1E-09	1.2E-03
			FLUORANTHENE (IDRYL)	---	---	---	---	Nephropathy (kidney), inc liver wt	1.2E-05	6.8E-06	1.5E-10	1.9E-05
			IRON	---	---	---	---		1.0E-01	NA	NA	1.0E-01
			ISOPHORONE	3.7E-09	1.6E-09	3.6E-14	5.3E-09	No observed effects	5.4E-05	2.4E-05	5.3E-10	7.8E-05
			LEAD	2.4E-07	---	---	2.4E-07		NA	NA	NA	---
			MANGANESE	---	---	---	---	CNS	3.3E-03	NA	NA	3.3E-03
			MERCURY	---	---	---	---		1.2E-03	NA	NA	1.2E-03
			MOLYBDENUM	---	---	---	---	Inc. uric acid levels	1.0E-03	NA	NA	1.0E-03
			NAPHTHALENE	---	---	---	---	Dec. body weight in males	5.2E-05	3.0E-05	6.7E-10	8.2E-05
			NICKEL	---	---	---	---	dec body and organ wts	1.6E-03	NA	NA	1.6E-03

TABLE A3-9 11 - All Parcels, RME, Minimum Outdoor Air Concentrations
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker - Outdoors
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Dermal	Inhalation	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Dermal	Inhalation	Exposure Routes Total
			PCB-1254 (AROCLOR 1254)	8 0E-07	4 9E-07	1.1E-11	1 3E-06	Ocular exudate	2.2E-02	1 4E-02	3 1E-07	3 6E-02
			PHENANTHRENE	---	---	---	---		NA	NA	NA	---
			POLYCHLORINATED BI PHENYLS, TOTAL	1.2E-06	7.3E-07	1.6E-11	1 9E-06		9 4E-03	5.8E-03	1 3E-07	1 5E-02
			PYRENE	---	---	---	---	Kidney	8.3E-05	4 7E-05	1 1E-09	1 3E-04
			SILVER	---	---	---	---	Argyria	1 6E-04	NA	NA	1 6E-04
			TETRACHLOROETHENE	1.1E-06	---	---	1 1E-06	Liver toxicity in mice	5 7E-04	NA	NA	5 7E-04
			THALLIUM	---	---	---	---		4 0E-02	NA	NA	4 0E-02
			TRICHLOROETHENE	1 7E-10	---	---	1.7E-10		1 2E-04	NA	NA	1 2E-04
			VANADIUM	---	---	---	---		6 2E-02	NA	NA	6 2E-02
			ZINC	---	---	---	---	Dec. euythrocyte Cu	4 2E-04	NA	NA	4 2E-04
			Chemical Total	8 6E-06	4 1E-06	9 2E-11	1 3E-05		3 1E-01	2.1E-02	4 7E-07	3 3E-01
		Exposure Point Total					1 3E-05					3 3E-01
	Exposure Medium Total						1 3E-05					3 3E-01
Surface Soil Total							1 3E-05					3 3E-01
Outdoor Air	Outdoor Air	Outdoor Air	1,1,1-TRICHLOROETHANE	NA	NA	---	---		NA	NA	2.5E-07	2 5E-07
		Minimum	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	NA	NA	---	---	CNS	NA	NA	NA	---
			1,1-DICHLOROETHANE	NA	NA	7.7E-11	7 7E-11		NA	NA	2 6E-07	2 6E-07
			1,1-DICHLOROETHENE	NA	NA	---	---	Liver toxicity	NA	NA	1.8E-06	1 8E-06
			1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	NA	NA	---	---		NA	NA	NA	---
			1,2-DICHLOROETHANE	NA	NA	4 4E-09	4.4E-09		NA	NA	9 7E-05	9 7E-05
			2,2,4-TRIMETHYLPENTANE	NA	NA	---	---		NA	NA	NA	---
			ACETALDEHYDE	NA	NA	6 0E-10	6.0E-10		NA	NA	6 5E-05	6 5E-05
			ACETONE	NA	NA	---	---	Kidney	NA	NA	1.6E-07	1 6E-07
			BENZENE	NA	NA	3 6E-10	3 6E-10	Dec. lymphocyte count	NA	NA	1 2E-06	1 2E-06
			CARBON DISULFIDE	NA	NA	---	---	Fetal toxicity	NA	NA	2 7E-06	2 7E-06
			CARBON TETRACHLORIDE	NA	NA	1 4E-08	1 4E-08	Liver lesions	NA	NA	2 2E-05	2 2E-05
			CHLOROFORM	NA	NA	3 1E-09	3 1E-09	Liver	NA	NA	1 2E-06	1.2E-06
			CIS-1,2-DICHLOROETHENE	NA	NA	---	---		NA	NA	2 9E-05	2.9E-05
			DICHLORODIFLUOROMETHANE	NA	NA	---	---	Dec. body weight	NA	NA	3 6E-07	3 6E-07
			M P-XYLENES	NA	NA	---	---	Dec. body weight, inc mortality	NA	NA	4 8E-07	4 8E-07
			TETRACHLOROETHENE	NA	NA	7.0E-09	7.0E-09	Liver toxicity in mice	NA	NA	9 5E-05	9 5E-05
			TOLUENE	NA	NA	---	---	Inc. kidney weight	NA	NA	4.2E-07	4 2E-07
			TRANS-1,2-DICHLOROETHENE	NA	NA	---	---	Inc. serum alkaline phosphatase in male mice	NA	NA	2.7E-06	2 7E-06
			TRICHLOROETHENE	NA	NA	9 0E-10	9 0E-10		NA	NA	2 1E-06	2 1E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	NA	NA	---	---	Survival and histopathology	NA	NA	3 3E-06	3 3E-06
			Chemical Total	NA	NA	3 0E-08	3 0E-08		NA	NA	3 3E-04	3.3E-04
		Exposure Point Total				Minimum	3 0E-08				Minimum	3 3E-04
	Exposure Medium Total					Minimum	3 0E-08				Minimum	3.3E-04
Outdoor Air Total						Minimum	3 0E-08				Minimum	3 3E-04
Receptor Total							1.3E-05					3 3E-01

Total Risk Across All Media = 1 3E-05

Total Hazard Across All Media = 3 3E-01

Hazards by Toxicity Endpoint(1)

Total Liver HI Across All Media = 4.4E-03
Total Body Weight effects Across All Media = 1.7E-03
Total Kidney HI Across All Media = 1.2E-03
Total Other HI Across All Media = 3.3E-01

NA: Not applicable
--- Risk was not calculated for chemical
HI: Hazard Index
CNS: Central Nervous System
(1) When the total non-cancer hazard index is greater than one, the hazard index should evaluated by totalling the hazard quotients for each toxicity endpoint and then comparing the total by organ to the target threshold of one. The totals below summarize the hazard quotients by primary target organs across all media

Appendix A-4
Johnson and Ettinger Model Calculations

A-4.1 Soil Gas (5-6 ft bgs) to Indoor Air for Future Industrial Worker Exposure – All Parcels

Appendix A4-1
Summary of Johnson and Ettinger Model Results for
Soil Gas to Indoor Air for Future Industrial Worker Exposure - All Parcels

CAS #	Chemical	All Parcel Soil Gas 5-6 ft bgs Concentration		EPC Cbuilding	Minimum Cbuilding	Unit risk factor, URF	CSF	Reference conc., RfC	RfD
		EPC ug/m^3	Minimum ug/m^3	ug/m^3	ug/m^3	$(\mu g/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/m^3)	(mg/kg/day)
71556	1,1,1-TRICHLOROETHANE	352,624	142	1.15E+02	4.63E-02	0.00E+00	0.00E+00	1.00E+00	2.86E-01
76131	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1,611,795	1,838	5.26E+02	6.00E-01	0.00E+00	0.00E+00	3.01E+01	8.60E+00
75343	1,1-DICHLOROETHANE	38,423	36	1.21E+01	1.15E-02	1.60E-06	5.60E-03	5.00E-01	1.43E-01
75354	1,1-DICHLOROETHENE	659,877	83	2.37E+02	3.00E-02	0.00E+00	0.00E+00	7.00E-02	2.00E-02
354234	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	93,750	4,813						
107062	1,2-DICHLOROETHANE	2,253	93	8.91E-01	3.68E-02	2.10E-05	7.35E-02	4.00E-01	1.14E-01
540841	2,2,4-TRIMETHYLPENTANE	56	36						
75070	ACETALDEHYDE	97	97	4.30E-02	4.30E-02	2.70E-06	9.45E-03	9.00E-03	2.57E-03
67641	ACETONE	5,971	81	2.65E+00	3.59E-02	0.00E+00	0.00E+00	3.50E-01	1.00E-01
71432	BENZENE	1,418	8	5.03E-01	2.94E-03	2.90E-05	1.02E-01	3.00E-02	8.57E-03
75150	CARBON DISULFIDE	5,132	373	2.03E+00	1.48E-01	0.00E+00	0.00E+00	7.00E-01	2.00E-01
56235	CARBON TETRACHLORIDE	233	233	7.59E-02	7.59E-02	4.20E-05	1.47E-01	4.00E-02	1.14E-02
67663	CHLOROFORM	5,726	73	2.26E+00	2.89E-02	5.30E-06	1.86E-02	3.00E-01	8.57E-02
156592	CIS-1,2-DICHLOROETHENE	17,957	285	5.62E+00	8.93E-02	0.00E+00	0.00E+00	3.50E-02	1.00E-02
75718	DICHLORODIFLUOROMETHANE	2,478	18	7.21E-01	5.33E-03	0.00E+00	0.00E+00	2.00E-01	5.71E-02
108383	M,P-XYLENES	608	14	1.84E-01	4.20E-03	0.00E+00	0.00E+00	1.00E-01	2.86E-02
127184	TETRACHLOROETHENE	1,225,830	949	3.78E+02	2.93E-01	5.90E-06	2.07E-02	3.50E-02	1.00E-02
108883	TOLUENE	1,586	29	5.58E-01	1.03E-02	0.00E+00	0.00E+00	3.00E-01	8.57E-02
156605	TRANS-1,2-DICHLOROETHENE	6,704	55	2.04E+00	1.69E-02	0.00E+00	0.00E+00	7.00E-02	2.00E-02
79016	TRICHLOROETHENE	184,300	328	6.07E+01	1.08E-01	2.00E-06	7.00E-03	6.00E-01	1.71E-01
75694	TRICHLOROFLUOROMETHANE (FREON 11)	485,399	551	1.71E+02	1.94E-01	0.00E+00	0.00E+00	7.00E-01	2.00E-01

(1) Assumed an average soil temperature of 19.4oC per Figure A-1 in DTSC Indoor Air Guidance (Feb. 2005)
(2) Assumed the soil was loam.
(3) Exposure frequency and duration of 250 days per year and 25 years typical for a commercial worker and exposure time of 8 hrs/day.
(4) Default building size of 10 meters length, 10 meters width, and 9-foot (276 cm) ceiling height was used.
(5) Building air exchange for commercial business of 1 per hour.

SG-ADV
Version 3.1; 02/04

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	1.23E+06			Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Totals must add up to value of Ls (cell F24) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	152.4	19.4	152.4			L		

MORE ↓

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
L	1.59	0.399	0.148	L	1.59	0.399	0.148	L	1.59	0.399	0.148

MORE ↓

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
15	40	1000	1000	276	0.1	1	5

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure time ET (hrs/day)
70	25	25	250	18.24

END

Note: exposure time was entered as 18.24 hrs to adjust the model for the commercial/industrial worker inhalation rate of 15.2 m3/d compared to the 20 m3/day that the model uses for residents.

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Molecular weight, MW (g/mol)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02

INTERMEDIATE CALCULATIONS SHEET

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
4.10E+08	137.4	0.251	0.251	0.251	0.257	1.88E-09	0.854	1.61E-09	4,000	1.23E+06	7.67E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	9,458	1.35E-02	5.63E-01	1.78E-04	4.53E-03	0.00E+00	0.00E+00	4.53E-03	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
15	1.23E+06	0.10	8.33E+01	4.53E-03	4.00E+02	2.79E+299	3.08E-04	3.78E+02	5.9E-06	3.5E-02

END

Exposure duration formula in seconds was altered to accommodate time

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
4.1E-04	5.6E+00

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

Formulas were altered to incorporate exposure time

SCROLL DOWN TO "END"

END

A-4.2 Soil Gas (5-6 ft bgs) to Indoor Air for Future Residential Exposure – Site Parcel

Appendix A4-2
Summary of Johnson and Ettinger Model Results for
Soil Gas to Indoor Air for Hypothetical Residential Exposure - Site Parcel

CAS #	Chemical	Site Soil Gas 5-6 ft bgs Concentration		EPC Cbuilding	Minimum Cbuilding	Unit risk factor, URF	CSF	Reference conc., RfC	RfD
		EPC	Minimum						
		ug/m^3	ug/m^3	ug/m^3	ug/m^3	$(\mu g/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/m^3)	(mg/kg/day)
71556	1,1,1-TRICHLOROETHANE	553,427	1,529	408.4296863	1.13E+00	0.00E+00	0.00E+00	1.00E+00	2.86E-01
76131	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1,100,465	4,979	8.12E+02	3.67E+00	0.00E+00	0.00E+00	3.01E+01	8.60E+00
75343	1,1-DICHLOROETHANE	19,662	36	1.40E+01	2.60E-02	1.60E-06	5.60E-03	5.00E-01	1.43E-01
75354	1,1-DICHLOROETHENE	626,769	6,749	5.10E+02	5.49E+00	0.00E+00	0.00E+00	7.00E-02	2.00E-02
354234	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	81,250	4,813						
107062	1,2-DICHLOROETHANE	2,496	93	2.23E+00	8.34E-02	2.10E-05	7.35E-02	4.00E-01	1.14E-01
75070	ACETALDEHYDE	97	97	9.73E-02	9.73E-02	2.70E-06	9.45E-03	9.00E-03	2.57E-03
67641	ACETONE	7,001	105	7.03E+00	1.05E-01	0.00E+00	0.00E+00	3.50E-01	1.00E-01
71432	BENZENE	1,362	45	1.09E+00	3.58E-02	2.90E-05	1.02E-01	3.00E-02	8.57E-03
75150	CARBON DISULFIDE	7,008	373	6.27E+00	3.34E-01	0.00E+00	0.00E+00	7.00E-01	2.00E-01
56235	CARBON TETRACHLORIDE	233	233	1.72E-01	1.72E-01	4.20E-05	1.47E-01	4.00E-02	1.14E-02
67663	CHLOROFORM	7,482	93	6.69E+00	8.29E-02	5.30E-06	1.86E-02	3.00E-01	8.57E-02
156592	CIS-1,2-DICHLOROETHENE	14,326	285	1.01E+01	2.02E-01	0.00E+00	0.00E+00	3.50E-02	1.00E-02
75718	DICHLORODIFLUOROMETHANE	941	64	6.19E-01	4.24E-02	0.00E+00	0.00E+00	2.00E-01	5.71E-02
127184	TETRACHLOROETHENE	1,355,479	16,272	9.45E+02	1.13E+01	5.90E-06	2.07E-02	3.50E-02	1.00E-02
108883	TOLUENE	1,169	75	9.30E-01	6.00E-02	0.00E+00	0.00E+00	3.00E-01	8.57E-02
156605	TRANS-1,2-DICHLOROETHENE	8,064	55	5.55E+00	3.82E-02	0.00E+00	0.00E+00	7.00E-02	2.00E-02
79016	TRICHLOROETHENE	190,082	3,061	1.42E+02	2.28E+00	2.00E-06	7.00E-03	6.00E-01	1.71E-01
75694	TRICHLOROFLUOROMETHANE (FREON 11)	430,192	4,271	3.42E+02	3.40E+00	0.00E+00	0.00E+00	7.00E-01	2.00E-01

(1) Assumed an average soil temperature of 19.4oC per Figure A-1 in DTSC Indoor Air Guidance (Feb. 2005)
(2) Assumed the soil was loam.
(3) Default exposure frequency and duration of 350 days per year and 30 years typical for a resident and exposure time of 24 hrs/day.
(4) Default building size of 10 meters length, 10 meters width, and 8-foot (244 cm) ceiling height was used.
(5) Building air exchange for resident home of 0.5 per hour.

DATA ENTRY SHEET

SG-ADV Version 3.1; 02/04

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	1.36E+06			Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Totals must add up to value of Ls (cell F24) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	152.4	19.4	152.4			L		

MORE ↓

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
L	1.59	0.399	0.148	L	1.59	0.399	0.148	L	1.59	0.399	0.148

MORE ↓

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
15	40	1000	1000	244	0.1	0.5	5

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure time ET (hrs/day)
70	30	30	350	24

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02

INTERMEDIATE CALCULATIONS SHEET

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
9.46E+08	137.4	0.251	0.251	0.251	0.257	1.88E-09	0.854	1.61E-09	4,000	1.36E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	9,458	1.35E-02	5.63E-01	1.78E-04	4.53E-03	0.00E+00	0.00E+00	4.53E-03	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
15	1.36E+06	0.10	8.33E+01	4.53E-03	4.00E+02	2.79E+299	6.97E-04	9.45E+02	5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.3E-03	2.6E+01

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

Formulas were altered to incorporate exposure time

SCROLL DOWN TO "END"

END

A-4.3 Soil Gas (5-6 ft bgs) to Indoor Air for Future Residential Exposure - Other Parcels

Appendix A4-3
Summary of Johnson and Ettinger Model Results for
Soil Gas to Indoor Air for Hypothetical Residential Exposure - Other Parcels

CAS #	Chemical	Soil Gas Concentration		EPC Cbuilding	Minimum Cbuilding	Unit risk factor, URF	CSF	Reference conc., RfC	RfD
		EPC	Minimum						
		ug/m^3	ug/m^3	ug/m^3	ug/m^3	$(\mu g/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/m^3)	(mg/kg/day)
71556	1,1,1-TRICHLOROETHANE	7,744	142	5.715411241	1.05E-01	0.00E+00	0.00E+00	1.00E+00	2.86E-01
76131	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3,447,000	1,838	2.54E+03	1.36E+00	0.00E+00	0.00E+00	3.01E+01	8.60E+00
75343	1,1-DICHLOROETHANE	1,053	1,053	7.50E-01	7.50E-01	1.60E-06	5.60E-03	5.00E-01	1.43E-01
75354	1,1-DICHLOROETHENE	729,033	83	5.93E+02	6.79E-02	0.00E+00	0.00E+00	7.00E-02	2.00E-02
354234	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	93,750	93,750						
540841	2,2,4-TRIMETHYLPENTANE	56	36						
67641	ACETONE	186	81	1.86E-01	8.13E-02	0.00E+00	0.00E+00	3.50E-01	1.00E-01
71432	BENZENE	16	8	1.30E-02	6.65E-03	2.90E-05	1.02E-01	3.00E-02	8.57E-03
67663	CHLOROFORM	1,757	73	1.57E+00	6.55E-02	5.30E-06	1.86E-02	3.00E-01	8.57E-02
75718	DICHLORODIFLUOROMETHANE	7,408	18	4.88E+00	1.21E-02	0.00E+00	0.00E+00	2.00E-01	5.71E-02
110543	HEXANE (N-HEXANE)	11	11	1.36E-02	1.36E-02	0.00E+00	0.00E+00	2.00E-01	5.71E-02
108383	M,P-XYLENES	30	14	2.08E-02	9.49E-03	0.00E+00	0.00E+00	1.00E-01	2.86E-02
127184	TETRACHLOROETHENE	2,101,800	949	1.47E+03	6.62E-01	5.90E-06	2.07E-02	3.50E-02	1.00E-02
108883	TOLUENE	2,601	29	2.07E+00	2.34E-02	0.00E+00	0.00E+00	3.00E-01	8.57E-02
156605	TRANS-1,2-DICHLOROETHENE	9,900	6,732	6.81E+00	4.63E+00	0.00E+00	0.00E+00	7.00E-02	2.00E-02
79016	TRICHLOROETHENE	393,490	328	2.93E+02	2.44E-01	2.00E-06	7.00E-03	6.00E-01	1.71E-01
75694	TRICHLOROFLUOROMETHANE (FREON 11)	1,011,600	551	8.05E+02	4.38E-01	0.00E+00	0.00E+00	7.00E-01	2.00E-01

(1) Assumed an average soil temperature of 19.4oC per Figure A-1 in DTSC Indoor Air Guidance (Feb. 2005)
(2) Assumed the soil was loam.
(3) Default exposure frequency and duration of 350 days per year and 30 years typical for a resident and exposure time of 24 hrs/day.
(4) Default building size of 10 meters length, 10 meters width, and 8-foot (244 cm) ceiling height was used.
(5) Building air exchange for resident home of 0.5 per hour.

SG-ADV
Version 3.1; 02/04

Reset to Defaults

Soil Gas Concentration Data

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
127184	2.10E+06			Tetrachloroethylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Totals must add up to value of Ls (cell F24) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	152.4	19.4	152.4			L		

MORE ↓

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)	ENTER Stratum C soil dry bulk density, ρ_b^C (g/cm^3)	ENTER Stratum C soil total porosity, n^C (unitless)	ENTER Stratum C soil water-filled porosity, θ_w^C (cm^3/cm^3)
L	1.59	0.399	0.148	L	1.59	0.399	0.148	L	1.59	0.399	0.148

MORE ↓

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
15	40	1000	1000	244	0.1	0.5	5

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure time ET (hrs/day)
70	30	30	350	24

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature, T_C (°K)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	165.83	5.9E-06	3.5E-02

INTERMEDIATE CALCULATIONS SHEET

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
9.46E+08	137.4	0.251	0.251	0.251	0.257	1.88E-09	0.854	1.61E-09	4,000	2.10E+06	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	9,458	1.35E-02	5.63E-01	1.78E-04	4.53E-03	0.00E+00	0.00E+00	4.53E-03	137.4

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
15	2.10E+06	0.10	8.33E+01	4.53E-03	4.00E+02	2.79E+299	6.97E-04	1.47E+03	5.9E-06	3.5E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.6E-03	4.0E+01

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

Formulas were altered to incorporate exposure time

SCROLL DOWN TO "END"

END

Appendix A-5
Ambient Air from Soil Gas Calculations

Appendix Table A5-1
Ambient Air - All Parcels, Chronic Exposure Scenario, Future Industrial Worker - Maximum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	3.53E+05	3.53E-04	7.80E-06	4.89E-07	1.13E-10	4.58E-07	1.30E-03	2.18E-09	2.18E+00
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.61E+06	1.61E-03	2.88E-06	1.80E-07	1.91E-10	7.72E-07	4.79E-04	3.68E-09	3.68E+00
1,1-DICHLOROETHANE	3.84E+04	3.84E-05	7.42E-06	4.65E-07	1.17E-11	4.74E-08	1.23E-03	2.26E-10	2.26E-01
1,1-DICHLOROETHENE	6.60E+05	6.60E-04	9.00E-06	5.64E-07	2.44E-10	9.88E-07	1.50E-03	4.71E-09	4.71E+00
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	9.38E+04	9.38E-05	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	2.25E+03	2.25E-06	1.04E-05	6.52E-07	9.63E-13	3.90E-09	1.73E-03	1.86E-11	1.86E-02
2,2,4-TRIMETHYLPENTANE	5.60E+01	5.60E-08	NA	NA	NA	NA	NA	NA	NA
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	2.01E-10	2.06E-03	9.55E-13	9.55E-04
ACETONE	5.97E+03	5.97E-06	1.24E-05	7.77E-07	3.04E-12	1.23E-08	2.06E-03	5.87E-11	5.87E-02
BENZENE	1.42E+03	1.42E-06	8.80E-06	5.51E-07	5.13E-13	2.08E-09	1.46E-03	9.89E-12	9.89E-03
CARBON DISULFIDE	5.13E+03	5.13E-06	1.04E-05	6.52E-07	2.19E-12	8.88E-09	1.73E-03	4.23E-11	4.23E-02
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	3.02E-10	1.30E-03	1.44E-12	1.44E-03
CHLOROFORM	5.73E+03	5.73E-06	1.04E-05	6.52E-07	2.45E-12	9.91E-09	1.73E-03	4.72E-11	4.72E-02
CIS-1,2-DICHLOROETHENE	1.80E+04	1.80E-05	7.36E-06	4.61E-07	5.43E-12	2.20E-08	1.22E-03	1.05E-10	1.05E-01
DICHLORODIFLUOROMETHANE	2.48E+03	2.48E-06	8.00E-06	5.01E-07	8.15E-13	3.30E-09	1.33E-03	1.57E-11	1.57E-02
M,P-XYLENES	6.08E+02	6.08E-07	7.00E-06	4.39E-07	1.75E-13	7.08E-10	1.16E-03	3.37E-12	3.37E-03
TETRACHLOROETHENE	1.23E+06	1.23E-03	7.20E-06	4.51E-07	3.63E-10	1.47E-06	1.20E-03	7.00E-09	7.00E+00
TOLUENE	1.59E+03	1.59E-06	8.70E-06	5.45E-07	5.67E-13	2.30E-09	1.45E-03	1.09E-11	1.09E-02
TRANS-1,2-DICHLOROETHENE	6.70E+03	6.70E-06	7.07E-06	4.43E-07	1.95E-12	7.89E-09	1.18E-03	3.76E-11	3.76E-02
TRICHLOROETHENE	1.84E+05	1.84E-04	7.90E-06	4.95E-07	5.99E-11	2.42E-07	1.31E-03	1.15E-09	1.15E+00
TRICHLOROFLUOROMETHANE (FREON 11)	4.85E+05	4.85E-04	8.70E-06	5.45E-07	1.74E-10	7.03E-07	1.45E-03	3.35E-09	3.35E+00

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: $Ds = Do (Pa^{10/3}/Pt^2)$
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: $E = J \times A_{site}$
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-2
Ambient Air - All Parcels, Chronic Exposure Scenario, Future Industrial Worker - Minimum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	1.42E+02	1.42E-07	7.80E-06	4.89E-07	4.55E-14	1.84E-10	1.30E-03	8.78E-13	8.78E-04
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.84E+03	1.84E-06	2.88E-06	1.80E-07	2.18E-13	8.81E-10	4.79E-04	4.20E-12	4.20E-03
1,1-DICHLOROETHANE	3.65E+01	3.65E-08	7.42E-06	4.65E-07	1.11E-14	4.50E-11	1.23E-03	2.14E-13	2.14E-04
1,1-DICHLOROETHENE	8.34E+01	8.34E-08	9.00E-06	5.64E-07	3.08E-14	1.25E-10	1.50E-03	5.95E-13	5.95E-04
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4.81E+03	4.81E-06	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	9.32E+01	9.32E-08	1.04E-05	6.52E-07	3.98E-14	1.61E-10	1.73E-03	7.68E-13	7.68E-04
2,2,4-TRIMETHYLPENTANE	3.64E+01	3.64E-08	NA	NA	NA	NA	NA	NA	NA
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	2.01E-10	2.06E-03	9.55E-13	9.55E-04
ACETONE	8.09E+01	8.09E-08	1.24E-05	7.77E-07	4.13E-14	1.67E-10	2.06E-03	7.95E-13	7.95E-04
BENZENE	8.29E+00	8.29E-09	8.80E-06	5.51E-07	3.00E-15	1.21E-11	1.46E-03	5.79E-14	5.79E-05
CARBON DISULFIDE	3.73E+02	3.73E-07	1.04E-05	6.52E-07	1.60E-13	6.46E-10	1.73E-03	3.08E-12	3.08E-03
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	3.02E-10	1.30E-03	1.44E-12	1.44E-03
CHLOROFORM	7.32E+01	7.32E-08	1.04E-05	6.52E-07	3.13E-14	1.27E-10	1.73E-03	6.03E-13	6.03E-04
CIS-1,2-DICHLOROETHENE	2.85E+02	2.85E-07	7.36E-06	4.61E-07	8.63E-14	3.49E-10	1.22E-03	1.66E-12	1.66E-03
DICHLORODIFLUOROMETHANE	1.83E+01	1.83E-08	8.00E-06	5.01E-07	6.02E-15	2.44E-11	1.33E-03	1.16E-13	1.16E-04
M,P-XYLENES	1.39E+01	1.39E-08	7.00E-06	4.39E-07	4.00E-15	1.62E-11	1.16E-03	7.71E-14	7.71E-05
TETRACHLOROETHENE	9.49E+02	9.49E-07	7.20E-06	4.51E-07	2.81E-13	1.14E-09	1.20E-03	5.42E-12	5.42E-03
TOLUENE	2.94E+01	2.94E-08	8.70E-06	5.45E-07	1.05E-14	4.26E-11	1.45E-03	2.03E-13	2.03E-04
TRANS-1,2-DICHLOROETHENE	5.54E+01	5.54E-08	7.07E-06	4.43E-07	1.61E-14	6.52E-11	1.18E-03	3.11E-13	3.11E-04
TRICHLOROETHENE	3.28E+02	3.28E-07	7.90E-06	4.95E-07	1.06E-13	4.31E-10	1.31E-03	2.05E-12	2.05E-03
TRICHLOROFLUOROMETHANE (FREON 11)	5.51E+02	5.51E-07	8.70E-06	5.45E-07	1.97E-13	7.97E-10	1.45E-03	3.80E-12	3.80E-03

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do ($Pa^{10/3}/Pt^2$)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-3
Ambient Air - Site Parcel, Chronic Exposure Scenario, Future Resident - Maximum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	5.53E+05	5.53E-04	7.80E-06	4.89E-07	1.77E-10	7.18E-07	1.30E-03	3.42E-09	3.42E+00
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.10E+06	1.10E-03	2.88E-06	1.80E-07	1.30E-10	5.27E-07	4.79E-04	2.51E-09	2.51E+00
1,1-DICHLOROETHANE	1.97E+04	1.97E-05	7.42E-06	4.65E-07	6.00E-12	2.43E-08	1.23E-03	1.16E-10	1.16E-01
1,1-DICHLOROETHENE	6.27E+05	6.27E-04	9.00E-06	5.64E-07	2.32E-10	9.39E-07	1.50E-03	4.47E-09	4.47E+00
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	8.13E+04	8.13E-05	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	2.50E+03	2.50E-06	1.04E-05	6.52E-07	1.07E-12	4.32E-09	1.73E-03	2.06E-11	2.06E-02
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	2.01E-10	2.06E-03	9.55E-13	9.55E-04
ACETONE	7.00E+03	7.00E-06	1.24E-05	7.77E-07	3.57E-12	1.44E-08	2.06E-03	6.88E-11	6.88E-02
BENZENE	1.36E+03	1.36E-06	8.80E-06	5.51E-07	4.93E-13	1.99E-09	1.46E-03	9.50E-12	9.50E-03
CARBON DISULFIDE	7.01E+03	7.01E-06	1.04E-05	6.52E-07	3.00E-12	1.21E-08	1.73E-03	5.78E-11	5.78E-02
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	3.02E-10	1.30E-03	1.44E-12	1.44E-03
CHLOROFORM	7.48E+03	7.48E-06	1.04E-05	6.52E-07	3.20E-12	1.29E-08	1.73E-03	6.17E-11	6.17E-02
CIS-1,2-DICHLOROETHENE	1.43E+04	1.43E-05	7.36E-06	4.61E-07	4.33E-12	1.75E-08	1.22E-03	8.36E-11	8.36E-02
DICHLORODIFLUOROMETHANE	9.41E+02	9.41E-07	8.00E-06	5.01E-07	3.09E-13	1.25E-09	1.33E-03	5.96E-12	5.96E-03
TETRACHLOROETHENE	1.36E+06	1.36E-03	7.20E-06	4.51E-07	4.01E-10	1.62E-06	1.20E-03	7.74E-09	7.74E+00
TOLUENE	1.17E+03	1.17E-06	8.70E-06	5.45E-07	4.18E-13	1.69E-09	1.45E-03	8.06E-12	8.06E-03
TRANS-1,2-DICHLOROETHENE	8.06E+03	8.06E-06	7.07E-06	4.43E-07	2.34E-12	9.49E-09	1.18E-03	4.52E-11	4.52E-02
TRICHLOROETHENE	1.90E+05	1.90E-04	7.90E-06	4.95E-07	6.17E-11	2.50E-07	1.31E-03	1.19E-09	1.19E+00
TRICHLOROFLUOROMETHANE (FREON 11)	4.30E+05	4.30E-04	8.70E-06	5.45E-07	1.54E-10	6.23E-07	1.45E-03	2.97E-09	2.97E+00

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.

(2) Apparent diffusion coefficient calculated from the following equation: $Ds = Do\ (Pa^{10/3}/Pt^2)$

(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)

(4) Emission rate calculated from the following equation: $E = J \times A_{site}$

(5) Flow estimate calculated from the following equation:F=E/Cs

(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-4
Ambient Air - Site Parcel, Chronic Exposure Scenario, Future Resident - Minimum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	1.53E+03	1.53E-06	7.80E-06	4.89E-07	4.90E-13	1.98E-09	1.30E-03	9.45E-12	9.45E-03
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4.98E+03	4.98E-06	2.88E-06	1.80E-07	5.90E-13	2.39E-09	4.79E-04	1.14E-11	1.14E-02
1,1-DICHLOROETHANE	3.65E+01	3.65E-08	7.42E-06	4.65E-07	1.11E-14	4.50E-11	1.23E-03	2.14E-13	2.14E-04
1,1-DICHLOROETHENE	6.75E+03	6.75E-06	9.00E-06	5.64E-07	2.50E-12	1.01E-08	1.50E-03	4.81E-11	4.81E-02
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	4.81E+03	4.81E-06	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	9.32E+01	9.32E-08	1.04E-05	6.52E-07	3.98E-14	1.61E-10	1.73E-03	7.68E-13	7.68E-04
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	2.01E-10	2.06E-03	9.55E-13	9.55E-04
ACETONE	1.05E+02	1.05E-07	1.24E-05	7.77E-07	5.34E-14	2.16E-10	2.06E-03	1.03E-12	1.03E-03
BENZENE	4.47E+01	4.47E-08	8.80E-06	5.51E-07	1.62E-14	6.54E-11	1.46E-03	3.12E-13	3.12E-04
CARBON DISULFIDE	3.73E+02	3.73E-07	1.04E-05	6.52E-07	1.60E-13	6.46E-10	1.73E-03	3.08E-12	3.08E-03
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	3.02E-10	1.30E-03	1.44E-12	1.44E-03
CHLOROFORM	9.27E+01	9.27E-08	1.04E-05	6.52E-07	3.96E-14	1.60E-10	1.73E-03	7.64E-13	7.64E-04
CIS-1,2-DICHLOROETHENE	2.85E+02	2.85E-07	7.36E-06	4.61E-07	8.63E-14	3.49E-10	1.22E-03	1.66E-12	1.66E-03
DICHLORODIFLUOROMETHANE	6.44E+01	6.44E-08	8.00E-06	5.01E-07	2.12E-14	8.57E-11	1.33E-03	4.08E-13	4.08E-04
TETRACHLOROETHENE	1.63E+04	1.63E-05	7.20E-06	4.51E-07	4.82E-12	1.95E-08	1.20E-03	9.29E-11	9.29E-02
TOLUENE	7.54E+01	7.54E-08	8.70E-06	5.45E-07	2.70E-14	1.09E-10	1.45E-03	5.20E-13	5.20E-04
TRANS-1,2-DICHLOROETHENE	5.54E+01	5.54E-08	7.07E-06	4.43E-07	1.61E-14	6.52E-11	1.18E-03	3.11E-13	3.11E-04
TRICHLOROETHENE	3.06E+03	3.06E-06	7.90E-06	4.95E-07	9.94E-13	4.02E-09	1.31E-03	1.92E-11	1.92E-02
TRICHLOROFLUOROMETHANE (FREON 11)	4.27E+03	4.27E-06	8.70E-06	5.45E-07	1.53E-12	6.18E-09	1.45E-03	2.95E-11	2.95E-02

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do ($Pa^{10/3}/Pt^2$)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-5
Ambient Air - Other Parcels, Chronic Exposure Scenario, Future Resident - Maximum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	7.74E+03	7.74E-06	7.80E-06	4.89E-07	2.48E-12	1.01E-08	1.30E-03	4.79E-11	4.79E-02
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.45E+06	3.45E-03	2.88E-06	1.80E-07	4.08E-10	1.65E-06	4.79E-04	7.87E-09	7.87E+00
1,1-DICHLOROETHANE	1.05E+03	1.05E-06	7.42E-06	4.65E-07	3.21E-13	1.30E-09	1.23E-03	6.19E-12	6.19E-03
1,1-DICHLOROETHENE	7.29E+05	7.29E-04	9.00E-06	5.64E-07	2.70E-10	1.09E-06	1.50E-03	5.20E-09	5.20E+00
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	9.38E+04	9.38E-05	NA	NA	NA	NA	NA	NA	NA
2,2,4-TRIMETHYLPENTANE	5.60E+01	5.60E-08	NA	NA	NA	NA	NA	NA	NA
ACETONE	1.86E+02	1.86E-07	1.24E-05	7.77E-07	9.46E-14	3.83E-10	2.06E-03	1.82E-12	1.82E-03
BENZENE	1.63E+01	1.63E-08	8.80E-06	5.51E-07	5.89E-15	2.38E-11	1.46E-03	1.13E-13	1.13E-04
CHLOROFORM	1.76E+03	1.76E-06	1.04E-05	6.52E-07	7.51E-13	3.04E-09	1.73E-03	1.45E-11	1.45E-02
DICHLORODIFLUOROMETHANE	7.41E+03	7.41E-06	8.00E-06	5.01E-07	2.44E-12	9.86E-09	1.33E-03	4.70E-11	4.70E-02
HEXANE (N-HEXANE)	1.06E+01	1.06E-08	2.00E-05	1.25E-06	8.68E-15	3.51E-11	3.33E-03	1.67E-13	1.67E-04
M,P-XYLENES	3.04E+01	3.04E-08	7.00E-06	4.39E-07	8.74E-15	3.54E-11	1.16E-03	1.69E-13	1.69E-04
TETRACHLOROETHENE	2.10E+06	2.10E-03	7.20E-06	4.51E-07	6.22E-10	2.52E-06	1.20E-03	1.20E-08	1.20E+01
TOLUENE	2.60E+03	2.60E-06	8.70E-06	5.45E-07	9.30E-13	3.77E-09	1.45E-03	1.79E-11	1.79E-02
TRANS-1,2-DICHLOROETHENE	9.90E+03	9.90E-06	7.07E-06	4.43E-07	2.88E-12	1.16E-08	1.18E-03	5.55E-11	5.55E-02
TRICHLOROETHENE	3.93E+05	3.93E-04	7.90E-06	4.95E-07	1.28E-10	5.17E-07	1.31E-03	2.46E-09	2.46E+00
TRICHLOROFLUOROMETHANE (FREON 11)	1.01E+06	1.01E-03	8.70E-06	5.45E-07	3.62E-10	1.46E-06	1.45E-03	6.98E-09	6.98E+00

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: $Ds = Do\ (Pa^{10/3}/Pt^2)$
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: $E = J \times A_{site}$
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-6
Ambient Air - Other Parcels, Chronic Exposure Scenario, Future Resident - Minimum

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 6 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	1.42E+02	1.42E-07	7.80E-06	4.89E-07	4.55E-14	1.84E-10	1.30E-03	8.78E-13	8.78E-04
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.84E+03	1.84E-06	2.88E-06	1.80E-07	2.18E-13	8.81E-10	4.79E-04	4.20E-12	4.20E-03
1,1-DICHLOROETHANE	1.05E+03	1.05E-06	7.42E-06	4.65E-07	3.21E-13	1.30E-09	1.23E-03	6.19E-12	6.19E-03
1,1-DICHLOROETHENE	8.34E+01	8.34E-08	9.00E-06	5.64E-07	3.08E-14	1.25E-10	1.50E-03	5.95E-13	5.95E-04
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	9.38E+04	9.38E-05	NA	NA	NA	NA	NA	NA	NA
2,2,4-TRIMETHYLPENTANE	3.64E+01	3.64E-08	NA	NA	NA	NA	NA	NA	NA
ACETONE	8.09E+01	8.09E-08	1.24E-05	7.77E-07	4.13E-14	1.67E-10	2.06E-03	7.95E-13	7.95E-04
BENZENE	8.29E+00	8.29E-09	8.80E-06	5.51E-07	3.00E-15	1.21E-11	1.46E-03	5.79E-14	5.79E-05
CHLOROFORM	7.32E+01	7.32E-08	1.04E-05	6.52E-07	3.13E-14	1.27E-10	1.73E-03	6.03E-13	6.03E-04
DICHLORODIFLUOROMETHANE	1.83E+01	1.83E-08	8.00E-06	5.01E-07	6.02E-15	2.44E-11	1.33E-03	1.16E-13	1.16E-04
HEXANE (N-HEXANE)	1.06E+01	1.06E-08	2.00E-05	1.25E-06	8.68E-15	3.51E-11	3.33E-03	1.67E-13	1.67E-04
M,P-XYLENES	1.39E+01	1.39E-08	7.00E-06	4.39E-07	4.00E-15	1.62E-11	1.16E-03	7.71E-14	7.71E-05
TETRACHLOROETHENE	9.49E+02	9.49E-07	7.20E-06	4.51E-07	2.81E-13	1.14E-09	1.20E-03	5.42E-12	5.42E-03
TOLUENE	2.94E+01	2.94E-08	8.70E-06	5.45E-07	1.05E-14	4.26E-11	1.45E-03	2.03E-13	2.03E-04
TRANS-1,2-DICHLOROETHENE	6.73E+03	6.73E-06	7.07E-06	4.43E-07	1.96E-12	7.92E-09	1.18E-03	3.77E-11	3.77E-02
TRICHLOROETHENE	3.28E+02	3.28E-07	7.90E-06	4.95E-07	1.06E-13	4.31E-10	1.31E-03	2.05E-12	2.05E-03
TRICHLOROFLUOROMETHANE (FREON 11)	5.51E+02	5.51E-07	8.70E-06	5.45E-07	1.97E-13	7.97E-10	1.45E-03	3.80E-12	3.80E-03

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do ($Pa^{10/3}/Pt^2$)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: $E = J \times A_{site}$
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	63.60817558	m	Square root of 1-acre site
Width (wind speed of 1.65 m/s)	V	1.65	m/s	http://www.whittier-weather.com/ reports the average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	4046	m^2	1 acre site

Appendix Table A5-7
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Maximum Soil Gas - All Parcels

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium:	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	4.23E+05	4.23E-04	7.80E-06	4.89E-07	1.36E-10	1.36E-08	3.21E-05	4.11E-09	4.11E+00
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.02E+05	9.02E-04	2.88E-06	1.80E-07	1.07E-10	1.07E-08	1.18E-05	3.24E-09	3.24E+00
1,1,2-TRICHLOROETHANE	1.34E+03	1.34E-06	7.80E-06	4.89E-07	4.29E-13	4.29E-11	3.21E-05	1.30E-11	1.30E-02
1,1-DICHLOROETHANE	1.89E+04	1.89E-05	7.42E-06	4.65E-07	5.76E-12	5.76E-10	3.05E-05	1.74E-10	1.74E-01
1,1-DICHLOROETHENE	4.40E+05	4.40E-04	9.00E-06	5.64E-07	1.63E-10	1.63E-08	3.70E-05	4.93E-09	4.93E+00
1,2,4-TRIMETHYLBENZENE	3.35E+01	3.35E-08	7.50E-06	4.70E-07	1.03E-14	1.03E-12	3.08E-05	3.13E-13	3.13E-04
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	7.65E+04	7.65E-05	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	1.80E+03	1.80E-06	1.04E-05	6.52E-07	7.71E-13	7.71E-11	4.28E-05	2.34E-11	2.34E-02
1,3-BUTADIENE	1.39E+02	1.39E-07	9.80E-06	6.14E-07	5.61E-14	5.61E-12	4.03E-05	1.70E-12	1.70E-03
2,2,4-TRIMETHYLPENTANE	1.41E+03	1.41E-06	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	1.74E+02	1.74E-07	8.95E-06	5.61E-07	6.41E-14	6.41E-12	3.68E-05	1.94E-12	1.94E-03
2-PROPANOL	4.68E+03	4.68E-06	NA	NA	NA	NA	NA	NA	NA
ACETALDEHYDE	1.12E+02	1.12E-07	1.24E-05	7.77E-07	5.69E-14	5.69E-12	5.10E-05	1.72E-12	1.72E-03
ACETONE	4.79E+03	4.79E-06	1.24E-05	7.77E-07	2.44E-12	2.44E-10	5.10E-05	7.40E-11	7.40E-02
BENZENE	1.23E+03	1.23E-06	8.80E-06	5.51E-07	4.46E-13	4.46E-11	3.62E-05	1.35E-11	1.35E-02
BROMODICHLOROMETHANE	2.41E+01	2.41E-08	2.98E-06	1.87E-07	2.96E-15	2.96E-13	1.23E-05	8.95E-14	8.95E-05
BROMOFORM	1.34E+01	1.34E-08	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	2.88E+03	2.88E-06	1.04E-05	6.52E-07	1.23E-12	1.23E-10	4.28E-05	3.73E-11	3.73E-02
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	7.46E-12	3.21E-05	2.26E-12	2.26E-03
CHLOROFORM	5.99E+03	5.99E-06	1.04E-05	6.52E-07	2.56E-12	2.56E-10	4.28E-05	7.76E-11	7.76E-02
CIS-1,2-DICHLOROETHENE	8.82E+03	8.82E-06	7.36E-06	4.61E-07	2.67E-12	2.67E-10	3.03E-05	8.09E-11	8.09E-02
CYCLOHEXANE	9.63E+02	9.63E-07	8.00E-06	5.01E-07	3.17E-13	3.17E-11	3.29E-05	9.60E-12	9.60E-03
DIBROMOCHLOROMETHANE	1.36E+01	1.36E-08	9.60E-06	6.02E-07	5.38E-15	5.38E-13	3.95E-05	1.63E-13	1.63E-04
DICHLORODIFLUOROMETHANE	1.39E+03	1.39E-06	8.00E-06	5.01E-07	4.58E-13	4.58E-11	3.29E-05	1.39E-11	1.39E-02
ETHANOL	2.54E+02	2.54E-07	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	3.04E+01	3.04E-08	7.50E-06	4.70E-07	9.37E-15	9.37E-13	3.08E-05	2.84E-13	2.84E-04
HEPTANE	1.27E+02	1.27E-07	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	1.14E+03	1.14E-06	2.00E-05	1.25E-06	9.40E-13	9.40E-11	8.22E-05	2.85E-11	2.85E-02
M,P-XYLENES	6.08E+02	6.08E-07	7.00E-06	4.39E-07	1.75E-13	1.75E-11	2.88E-05	5.30E-12	5.30E-03
METHYL TERT-BUTYL ETHER	2.09E+01	2.09E-08	8.00E-06	5.01E-07	6.89E-15	6.89E-13	3.29E-05	2.09E-13	2.09E-04
METHYLENE CHLORIDE	1.45E+03	1.45E-06	1.01E-05	6.33E-07	6.03E-13	6.03E-11	4.15E-05	1.83E-11	1.83E-02
O-XYLENE	1.52E+03	1.52E-06	7.00E-06	4.39E-07	4.38E-13	4.38E-11	2.88E-05	1.33E-11	1.33E-02
PENTANE	2.15E+04	2.15E-05	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	5.75E+05	5.75E-04	7.20E-06	4.51E-07	1.70E-10	1.70E-08	2.96E-05	5.16E-09	5.16E+00
TETRAHYDROFURAN	1.04E+03	1.04E-06	9.80E-06	6.14E-07	4.18E-13	4.18E-11	4.03E-05	1.27E-11	1.27E-02
TOLUENE	1.36E+03	1.36E-06	8.70E-06	5.45E-07	4.87E-13	4.87E-11	3.58E-05	1.48E-11	1.48E-02
TRANS-1,2-DICHLOROETHENE	4.40E+03	4.40E-06	7.07E-06	4.43E-07	1.28E-12	1.28E-10	2.91E-05	3.88E-11	3.88E-02
TRICHLOROETHENE	8.71E+04	8.71E-05	7.90E-06	4.95E-07	2.83E-11	2.83E-09	3.25E-05	8.58E-10	8.58E-01
TRICHLOROFLUOROMETHANE (FREON 11)	2.69E+05	2.69E-04	8.70E-06	5.45E-07	9.62E-11	9.62E-09	3.58E-05	2.92E-09	2.92E+00
VINYL CHLORIDE	7.94E+01	7.94E-08	1.06E-05	6.64E-07	3.46E-14	3.46E-12	4.36E-05	1.05E-12	1.05E-03

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do ($Pa^{10/3}/Pt^2$)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http://www.whittier-weather.com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m^2	10 m by 10 m subsurface foundation area excavation

Appendix Table A5-8
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Minimum Soil Gas - All Parcels

Scenario Timeframe:	Future
Medium:	Soil Gas 5 to 30 feet bgs
Exposure Medium	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m³	kg/m³	m²/s	m²/s	kg/m²/s	kg/s	m³/s	kg/m³	ug/m³
1,1,1-TRICHLOROETHANE	1.42E+02	1.42E-07	7.80E-06	4.89E-07	4.55E-14	4.55E-12	3.21E-05	1.38E-12	1.38E-03
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.30E+01	1.30E-08	2.88E-06	1.80E-07	1.54E-15	1.54E-13	1.18E-05	4.67E-14	4.67E-05
1,1,2-TRICHLOROETHANE	3.28E+02	3.28E-07	7.80E-06	4.89E-07	1.05E-13	1.05E-11	3.21E-05	3.18E-12	3.18E-03
1,1-DICHLOROETHANE	2.43E+01	2.43E-08	7.42E-06	4.65E-07	7.41E-15	7.41E-13	3.05E-05	2.25E-13	2.25E-04
1,1-DICHLOROETHENE	8.34E+01	8.34E-08	9.00E-06	5.64E-07	3.08E-14	3.08E-12	3.70E-05	9.35E-13	9.35E-04
1,2,4-TRIMETHYLBENZENE	8.86E+00	8.86E-09	7.50E-06	4.70E-07	2.73E-15	2.73E-13	3.08E-05	8.27E-14	8.27E-05
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3.00E+03	3.00E-06	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	3.16E+01	3.16E-08	1.04E-05	6.52E-07	1.35E-14	1.35E-12	4.28E-05	4.09E-13	4.09E-04
1,3-BUTADIENE	2.87E+00	2.87E-09	9.80E-06	6.14E-07	1.16E-15	1.16E-13	4.03E-05	3.51E-14	3.51E-05
2,2,4-TRIMETHYLPENTANE	4.67E+00	4.67E-09	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	4.43E+00	4.43E-09	8.95E-06	5.61E-07	1.63E-15	1.63E-13	3.68E-05	4.93E-14	4.93E-05
2-PROPANOL	9.84E+03	9.84E-06	NA	NA	NA	NA	NA	NA	NA
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	4.96E-12	5.10E-05	1.50E-12	1.50E-03
ACETONE	1.55E+01	1.55E-08	1.24E-05	7.77E-07	7.89E-15	7.89E-13	5.10E-05	2.39E-13	2.39E-04
BENZENE	2.87E+00	2.87E-09	8.80E-06	5.51E-07	1.04E-15	1.04E-13	3.62E-05	3.15E-14	3.15E-05
BROMODICHLOROMETHANE	9.38E+00	9.38E-09	2.98E-06	1.87E-07	1.15E-15	1.15E-13	1.23E-05	3.48E-14	3.48E-05
BROMOFORM	1.34E+01	1.34E-08	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	3.11E+00	3.11E-09	1.04E-05	6.52E-07	1.33E-15	1.33E-13	4.28E-05	4.03E-14	4.03E-05
CARBON TETRACHLORIDE	1.26E+02	1.26E-07	7.80E-06	4.89E-07	4.03E-14	4.03E-12	3.21E-05	1.22E-12	1.22E-03
CHLOROFORM	7.32E+00	7.32E-09	1.04E-05	6.52E-07	3.13E-15	3.13E-13	4.28E-05	9.48E-14	9.48E-05
CIS-1,2-DICHLOROETHENE	5.15E+01	5.15E-08	7.36E-06	4.61E-07	1.56E-14	1.56E-12	3.03E-05	4.72E-13	4.72E-04
CYCLOHEXANE	4.13E+00	4.13E-09	8.00E-06	5.01E-07	1.36E-15	1.36E-13	3.29E-05	4.11E-14	4.11E-05
DIBROMOCHLOROMETHANE	9.37E+00	9.37E-09	9.60E-06	6.02E-07	3.70E-15	3.70E-13	3.95E-05	1.12E-13	1.12E-04
DICHLORODIFLUOROMETHANE	1.14E+01	1.14E-08	8.00E-06	5.01E-07	3.74E-15	3.74E-13	3.29E-05	1.13E-13	1.13E-04
ETHANOL	1.33E+01	1.33E-08	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5.64E+00	5.64E-09	7.50E-06	4.70E-07	1.74E-15	1.74E-13	3.08E-05	5.27E-14	5.27E-05
HEPTANE	4.92E+00	4.92E-09	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	3.87E+00	3.87E-09	2.00E-05	1.25E-06	3.18E-15	3.18E-13	8.22E-05	9.65E-14	9.65E-05
M,P-XYLENES	9.98E+00	9.98E-09	7.00E-06	4.39E-07	2.87E-15	2.87E-13	2.88E-05	8.71E-14	8.71E-05
METHYL TERT-BUTYL ETHER	1.91E+01	1.91E-08	8.00E-06	5.01E-07	6.29E-15	6.29E-13	3.29E-05	1.91E-13	1.91E-04
METHYLENE CHLORIDE	8.33E+00	8.33E-09	1.01E-05	6.33E-07	3.46E-15	3.46E-13	4.15E-05	1.05E-13	1.05E-04
O-XYLENE	4.77E+00	4.77E-09	7.00E-06	4.39E-07	1.37E-15	1.37E-13	2.88E-05	4.16E-14	4.16E-05
PENTANE	2.15E+04	2.15E-05	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	1.22E+01	1.22E-08	7.20E-06	4.51E-07	3.61E-15	3.61E-13	2.96E-05	1.09E-13	1.09E-04
TETRAHYDROFURAN	2.95E+00	2.95E-09	9.80E-06	6.14E-07	1.19E-15	1.19E-13	4.03E-05	3.60E-14	3.60E-05
TOLUENE	7.54E+00	7.54E-09	8.70E-06	5.45E-07	2.70E-15	2.70E-13	3.58E-05	8.17E-14	8.17E-05
TRANS-1,2-DICHLOROETHENE	3.52E+01	3.52E-08	7.07E-06	4.43E-07	1.02E-14	1.02E-12	2.91E-05	3.10E-13	3.10E-04
TRICHLOROETHENE	5.37E+01	5.37E-08	7.90E-06	4.95E-07	1.74E-14	1.74E-12	3.25E-05	5.29E-13	5.29E-04
TRICHLOROFLUOROMETHANE (FREON 11)	5.62E+00	5.62E-09	8.70E-06	5.45E-07	2.01E-15	2.01E-13	3.58E-05	6.09E-14	6.09E-05
VINYL CHLORIDE	3.33E+01	3.33E-08	1.06E-05	6.64E-07	1.45E-14	1.45E-12	4.36E-05	4.39E-13	4.39E-04

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: $Ds = Do\ (Pa^{10/3}/Pt^2)$
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: $E = J \times A_{site}$
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m³ = micrograms per cubic meter
kg/m³ = kilograms per cubic meter
kg/m²/s = kilograms per square meter per second
m²/s = square meters per second
m³/s = cubic meters per second
m² = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_s	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http //www.whittier-weather.com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m²	10 m by 10 m subsurface foundation area excavation

Appendix Table A5-9
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Maximum Soil Gas - Site Parcel

Scenario Timeframe:	Future
Medium	Soil Gas 5 to 30 feet bgs
Exposure Medium	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	2.85E+05	2.85E-04	7.80E-06	4.89E-07	9.15E-11	9.15E-09	3.21E-05	2.77E-09	2.77E+00
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.00E+06	1.00E-03	2.88E-06	1.80E-07	1.19E-10	1.19E-08	1.18E-05	3.60E-09	3.60E+00
1,1,2-TRICHLOROETHANE	1.38E+03	1.38E-06	7.80E-06	4.89E-07	4.44E-13	4.44E-11	3.21E-05	1.34E-11	1.34E-02
1,1-DICHLOROETHANE	2.42E+04	2.42E-05	7.42E-06	4.65E-07	7.37E-12	7.37E-10	3.05E-05	2.23E-10	2.23E-01
1,1-DICHLOROETHENE	5.38E+05	5.38E-04	9.00E-06	5.64E-07	1.99E-10	1.99E-08	3.70E-05	6.04E-09	6.04E+00
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	5.41E+04	5.41E-05	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	5.10E+03	5.10E-06	1.04E-05	6.52E-07	2.18E-12	2.18E-10	4.28E-05	6.61E-11	6.61E-02
1,3-BUTADIENE	1.13E+01	1.13E-08	9.80E-06	6.14E-07	4.54E-15	4.54E-13	4.03E-05	1.38E-13	1.38E-04
2,2,4-TRIMETHYLPENTANE	7.01E+02	7.01E-07	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	1.71E+02	1.71E-07	8.95E-06	5.61E-07	6.30E-14	6.30E-12	3.68E-05	1.91E-12	1.91E-03
ACETALDEHYDE	1.12E+02	1.12E-07	1.24E-05	7.77E-07	5.69E-14	5.69E-12	5.10E-05	1.72E-12	1.72E-03
ACETONE	6.47E+03	6.47E-06	1.24E-05	7.77E-07	3.30E-12	3.30E-10	5.10E-05	1.00E-10	1.00E-01
BENZENE	1.29E+03	1.29E-06	8.80E-06	5.51E-07	4.68E-13	4.68E-11	3.62E-05	1.42E-11	1.42E-02
CARBON DISULFIDE	4.42E+03	4.42E-06	1.04E-05	6.52E-07	1.89E-12	1.89E-10	4.28E-05	5.72E-11	5.72E-02
CARBON TETRACHLORIDE	2.33E+02	2.33E-07	7.80E-06	4.89E-07	7.46E-14	7.46E-12	3.21E-05	2.26E-12	2.26E-03
CHLOROFORM	6.98E+03	6.98E-06	1.04E-05	6.52E-07	2.98E-12	2.98E-10	4.28E-05	9.04E-11	9.04E-02
CIS-1,2-DICHLOROETHENE	9.82E+03	9.82E-06	7.36E-06	4.61E-07	2.97E-12	2.97E-10	3.03E-05	9.00E-11	9.00E-02
CYCLOHEXANE	2.41E+01	2.41E-08	8.00E-06	5.01E-07	7.92E-15	7.92E-13	3.29E-05	2.40E-13	2.40E-04
DICHLORODIFLUOROMETHANE	1.24E+03	1.24E-06	8.00E-06	5.01E-07	4.07E-13	4.07E-11	3.29E-05	1.23E-11	1.23E-02
ETHYLBENZENE	3.04E+01	3.04E-08	7.50E-06	4.70E-07	9.37E-15	9.37E-13	3.08E-05	2.84E-13	2.84E-04
HEPTANE	1.27E+02	1.27E-07	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	1.86E+03	1.86E-06	2.00E-05	1.25E-06	1.53E-12	1.53E-10	8.22E-05	4.63E-11	4.63E-02
M,P-XYLENES	6.08E+02	6.08E-07	7.00E-06	4.39E-07	1.75E-13	1.75E-11	2.88E-05	5.30E-12	5.30E-03
METHYLENE CHLORIDE	2.50E+03	2.50E-06	1.01E-05	6.33E-07	1.04E-12	1.04E-10	4.15E-05	3.15E-11	3.15E-02
O-XYLENE	1.83E+03	1.83E-06	7.00E-06	4.39E-07	5.26E-13	5.26E-11	2.88E-05	1.60E-11	1.60E-02
TETRACHLOROETHENE	7.20E+05	7.20E-04	7.20E-06	4.51E-07	2.13E-10	2.13E-08	2.96E-05	6.46E-09	6.46E+00
TETRAHYDROFURAN	1.69E+03	1.69E-06	9.80E-06	6.14E-07	6.82E-13	6.82E-11	4.03E-05	2.07E-11	2.07E-02
TOLUENE	1.19E+03	1.19E-06	8.70E-06	5.45E-07	4.26E-13	4.26E-11	3.58E-05	1.29E-11	1.29E-02
TRANS-1,2-DICHLOROETHENE	6.51E+03	6.51E-06	7.07E-06	4.43E-07	1.89E-12	1.89E-10	2.91E-05	5.74E-11	5.74E-02
TRICHLOROETHENE	1.08E+05	1.08E-04	7.90E-06	4.95E-07	3.52E-11	3.52E-09	3.25E-05	1.07E-09	1.07E+00
TRICHLOROFLUOROMETHANE (FREON 11)	3.25E+05	3.25E-04	8.70E-06	5.45E-07	1.16E-10	1.16E-08	3.58E-05	3.53E-09	3.53E+00
VINYL CHLORIDE	7.94E+01	7.94E-08	1.06E-05	6.64E-07	3.46E-14	3.46E-12	4.36E-05	1.05E-12	1.05E-03

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do (Pa $^{10/3}$/Pt^2)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http://www.whittier-weather.com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m^2	10 m by 10 m subsurface foundation area excavation

Appendix Table A5-10
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Minimum Soil Gas - Site Parcel

Scenario Timeframe	Future
Medium	Soil Gas 5 to 30 feet bgs
Exposure Medium	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	1.97E+02	1.97E-07	7.80E-06	4.89E-07	6.30E-14	6.30E-12	3.21E-05	1.91E-12	1.91E-03
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.60E+03	2.60E-06	2.88E-06	1.80E-07	3.08E-13	3.08E-11	1.18E-05	9.34E-12	9.34E-03
1,1,2-TRICHLOROETHANE	3.28E+02	3.28E-07	7.80E-06	4.89E-07	1.05E-13	1.05E-11	3.21E-05	3.18E-12	3.18E-03
1,1-DICHLOROETHANE	2.43E+01	2.43E-08	7.42E-06	4.65E-07	7.41E-15	7.41E-13	3.05E-05	2.25E-13	2.25E-04
1,1-DICHLOROETHENE	1.53E+03	1.53E-06	9.00E-06	5.64E-07	5.66E-13	5.66E-11	3.70E-05	1.71E-11	1.71E-02
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	3.00E+03	3.00E-06	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROETHANE	3.16E+01	3.16E-08	1.04E-05	6.52E-07	1.35E-14	1.35E-12	4.28E-05	4.09E-13	4.09E-04
1,3-BUTADIENE	1.13E+01	1.13E-08	9.80E-06	6.14E-07	4.54E-15	4.54E-13	4.03E-05	1.38E-13	1.38E-04
2,2,4-TRIMETHYLPENTANE	4.58E+02	4.58E-07	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	1.03E+02	1.03E-07	8.95E-06	5.61E-07	3.80E-14	3.80E-12	3.68E-05	1.15E-12	1.15E-03
ACETALDEHYDE	9.72E+01	9.72E-08	1.24E-05	7.77E-07	4.96E-14	4.96E-12	5.10E-05	1.50E-12	1.50E-03
ACETONE	1.05E+02	1.05E-07	1.24E-05	7.77E-07	5.34E-14	5.34E-12	5.10E-05	1.62E-12	1.62E-03
BENZENE	3.13E+01	3.13E-08	8.80E-06	5.51E-07	1.13E-14	1.13E-12	3.62E-05	3.43E-13	3.43E-04
CARBON DISULFIDE	2.49E+02	2.49E-07	1.04E-05	6.52E-07	1.06E-13	1.06E-11	4.28E-05	3.22E-12	3.22E-03
CARBON TETRACHLORIDE	1.26E+02	1.26E-07	7.80E-06	4.89E-07	4.03E-14	4.03E-12	3.21E-05	1.22E-12	1.22E-03
CHLOROFORM	4.88E+01	4.88E-08	1.04E-05	6.52E-07	2.09E-14	2.09E-12	4.28E-05	6.32E-13	6.32E-04
CIS-1,2-DICHLOROETHENE	5.15E+01	5.15E-08	7.36E-06	4.61E-07	1.56E-14	1.56E-12	3.03E-05	4.72E-13	4.72E-04
CYCLOHEXANE	1.72E+01	1.72E-08	8.00E-06	5.01E-07	5.66E-15	5.66E-13	3.29E-05	1.71E-13	1.71E-04
DICHLORODIFLUOROMETHANE	5.94E+01	5.94E-08	8.00E-06	5.01E-07	1.95E-14	1.95E-12	3.29E-05	5.92E-13	5.92E-04
ETHYLBENZENE	1.74E+01	1.74E-08	7.50E-06	4.70E-07	5.35E-15	5.35E-13	3.08E-05	1.62E-13	1.62E-04
HEPTANE	1.15E+02	1.15E-07	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	1.97E+02	1.97E-07	2.00E-05	1.25E-06	1.62E-13	1.62E-11	8.22E-05	4.91E-12	4.91E-03
M,P-XYLENES	6.08E+01	6.08E-08	7.00E-06	4.39E-07	1.75E-14	1.75E-12	2.88E-05	5.30E-13	5.30E-04
METHYLENE CHLORIDE	5.55E+02	5.55E-07	1.01E-05	6.33E-07	2.31E-13	2.31E-11	4.15E-05	6.99E-12	6.99E-03
O-XYLENE	2.86E+01	2.86E-08	7.00E-06	4.39E-07	8.24E-15	8.24E-13	2.88E-05	2.50E-13	2.50E-04
TETRACHLOROETHENE	4.88E+02	4.88E-07	7.20E-06	4.51E-07	1.45E-13	1.45E-11	2.96E-05	4.38E-12	4.38E-03
TETRAHYDROFURAN	3.84E+03	3.84E-06	9.80E-06	6.14E-07	1.55E-12	1.55E-10	4.03E-05	4.68E-11	4.68E-02
TOLUENE	6.03E+01	6.03E-08	8.70E-06	5.45E-07	2.16E-14	2.16E-12	3.58E-05	6.54E-13	6.54E-04
TRANS-1,2-DICHLOROETHENE	3.52E+01	3.52E-08	7.07E-06	4.43E-07	1.02E-14	1.02E-12	2.91E-05	3.10E-13	3.10E-04
TRICHLOROETHENE	1.99E+02	1.99E-07	7.90E-06	4.95E-07	6.45E-14	6.45E-12	3.25E-05	1.96E-12	1.96E-03
TRICHLOROFLUOROMETHANE (FREON 11)	1.07E+03	1.07E-06	8.70E-06	5.45E-07	3.82E-13	3.82E-11	3.58E-05	1.16E-11	1.16E-02
VINYL CHLORIDE	3.33E+01	3.33E-08	1.06E-05	6.64E-07	1.45E-14	1.45E-12	4.36E-05	4.39E-13	4.39E-04

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do ($Pa^{10/3}/Pt^2$)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http://www.whittier-weather.com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m^2	10 m by 10 m subsurface foundation area excavation

Appendix Table A5-11
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Maximum Soil Gas - Other Parcels

Scenario Timeframe:	Future
Medium	Soil Gas 5 to 30 feet bgs
Exposure Medium	Ambient Air

Chemical	Soil Gas Concentration EPC Maximum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	6.45E+04	6.45E-05	7.80E-06	4.89E-07	2.07E-11	2.07E-09	3.21E-05	6.27E-10	6.27E-01
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.50E+05	9.50E-04	2.88E-06	1.80E-07	1.13E-10	1.13E-08	1.18E-05	3.41E-09	3.41E+00
1,1-DICHLOROETHANE	1.87E+03	1.87E-06	7.42E-06	4.65E-07	5.71E-13	5.71E-11	3.05E-05	1.73E-11	1.73E-02
1,1-DICHLOROETHENE	3.80E+05	3.80E-04	9.00E-06	5.64E-07	1.41E-10	1.41E-08	3.70E-05	4.27E-09	4.27E+00
1,2,4-TRIMETHYLBENZENE	1.57E+01	1.57E-08	7.50E-06	4.70E-07	4.85E-15	4.85E-13	3.08E-05	1.47E-13	1.47E-04
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	9.38E+04	9.38E-05	NA	NA	NA	NA	NA	NA	NA
1,3-BUTADIENE	1.39E+02	1.39E-07	9.80E-06	6.14E-07	5.61E-14	5.61E-12	4.03E-05	1.70E-12	1.70E-03
2,2,4-TRIMETHYLPENTANE	1.27E+03	1.27E-06	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	1.74E+02	1.74E-07	8.95E-06	5.61E-07	6.41E-14	6.41E-12	3.68E-05	1.94E-12	1.94E-03
2-PROPANOL	5.08E+03	5.08E-06	NA	NA	NA	NA	NA	NA	NA
4-ETHYLTOLUENE	1.67E+01	1.67E-08	NA	NA	NA	NA	NA	NA	NA
ACETONE	5.00E+02	5.00E-07	1.24E-05	7.77E-07	2.55E-13	2.55E-11	5.10E-05	7.72E-12	7.72E-03
BENZENE	8.93E+01	8.93E-08	8.80E-06	5.51E-07	3.23E-14	3.23E-12	3.62E-05	9.79E-13	9.79E-04
BROMODICHLOROMETHANE	2.41E+01	2.41E-08	2.98E-06	1.87E-07	2.96E-15	2.96E-13	1.23E-05	8.95E-14	8.95E-05
BROMOFORM	1.34E+01	1.34E-08	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	2.64E+01	2.64E-08	1.04E-05	6.52E-07	1.13E-14	1.13E-12	4.28E-05	3.43E-13	3.43E-04
CHLOROFORM	1.25E+04	1.25E-05	1.04E-05	6.52E-07	5.35E-12	5.35E-10	4.28E-05	1.62E-10	1.62E-01
CIS-1,2-DICHLOROETHENE	1.64E+03	1.64E-06	7.36E-06	4.61E-07	4.98E-13	4.98E-11	3.03E-05	1.51E-11	1.51E-02
CYCLOHEXANE	9.63E+02	9.63E-07	8.00E-06	5.01E-07	3.17E-13	3.17E-11	3.29E-05	9.60E-12	9.60E-03
DIBROMOCHLOROMETHANE	1.36E+01	1.36E-08	9.60E-06	6.02E-07	5.38E-15	5.38E-13	3.95E-05	1.63E-13	1.63E-04
DICHLORODIFLUOROMETHANE	2.03E+03	2.03E-06	8.00E-06	5.01E-07	6.69E-13	6.69E-11	3.29E-05	2.03E-11	2.03E-02
ETHANOL	2.54E+02	2.54E-07	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	2.04E+01	2.04E-08	7.50E-06	4.70E-07	6.29E-15	6.29E-13	3.08E-05	1.91E-13	1.91E-04
HEPTANE	9.84E+01	9.84E-08	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	1.00E+03	1.00E-06	2.00E-05	1.25E-06	8.23E-13	8.23E-11	8.22E-05	2.49E-11	2.49E-02
M,P-XYLENES	1.26E+02	1.26E-07	7.00E-06	4.39E-07	3.62E-14	3.62E-12	2.88E-05	1.10E-12	1.10E-03
METHYL TERT-BUTYL ETHER	2.09E+01	2.09E-08	8.00E-06	5.01E-07	6.89E-15	6.89E-13	3.29E-05	2.09E-13	2.09E-04
METHYLENE CHLORIDE	2.98E+02	2.98E-07	1.01E-05	6.33E-07	1.24E-13	1.24E-11	4.15E-05	3.76E-12	3.76E-03
O-XYLENE	2.39E+01	2.39E-08	7.00E-06	4.39E-07	6.87E-15	6.87E-13	2.88E-05	2.08E-13	2.08E-04
PENTANE	2.15E+04	2.15E-05	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	7.06E+05	7.06E-04	7.20E-06	4.51E-07	2.09E-10	2.09E-08	2.96E-05	6.33E-09	6.33E+00
TETRAHYDROFURAN	4.13E+00	4.13E-09	9.80E-06	6.14E-07	1.66E-15	1.66E-13	4.03E-05	5.04E-14	5.04E-05
TOLUENE	2.46E+03	2.46E-06	8.70E-06	5.45E-07	8.81E-13	8.81E-11	3.58E-05	2.67E-11	2.67E-02
TRANS-1,2-DICHLOROETHENE	1.60E+03	1.60E-06	7.07E-06	4.43E-07	4.64E-13	4.64E-11	2.91E-05	1.41E-11	1.41E-02
TRICHLOROETHENE	1.23E+05	1.23E-04	7.90E-06	4.95E-07	4.01E-11	4.01E-09	3.25E-05	1.21E-09	1.21E+00
TRICHLOROFLUOROMETHANE (FREON 11)	2.37E+05	2.37E-04	8.70E-06	5.45E-07	8.49E-11	8.49E-09	3.58E-05	2.57E-09	2.57E+00

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: Ds = Do (Pa $^{10/3}$/Pt^2)
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: E= J x A_{site}
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: Cair = E/(L_s x W x D_H)

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http://www.whittier-weather.com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m^2	10 m by 10 m subsurface foundation area excavation

Appendix Table A5-12
Ambient Air - All Parcels, Subchronic Exposure Scenario, Future Construction Worker, from Minimum Soil Gas - Other Parcels

Scenario Timeframe	Future
Medium	Soil Gas 5 to 30 feet bgs
Exposure Medium	Ambient Air

Chemical	Soil Gas Concentration EPC Minimum (Cs)		Vapor Diffusion Coefficient[1] (Do)	Apparent Diffusion Coefficient[2] (Ds)	Flux[3] (J)	Emission Rate[4] (E)	Flow Estimate from Emission Rate[5] (F)	Air concentration (Box model)[6] (Cair)	
	ug/m^3	kg/m^3	m^2/s	m^2/s	kg/m^2/s	kg/s	m^3/s	kg/m^3	ug/m^3
1,1,1-TRICHLOROETHANE	1.42E+02	1.42E-07	7.80E-06	4.89E-07	4.55E-14	4.55E-12	3.21E-05	1.38E-12	1.38E-03
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.30E+01	1.30E-08	2.88E-06	1.80E-07	1.54E-15	1.54E-13	1.18E-05	4.67E-14	4.67E-05
1,1-DICHLOROETHANE	4.86E+02	4.86E-07	7.42E-06	4.65E-07	1.48E-13	1.48E-11	3.05E-05	4.49E-12	4.49E-03
1,1-DICHLOROETHENE	8.34E+01	8.34E-08	9.00E-06	5.64E-07	3.08E-14	3.08E-12	3.70E-05	9.35E-13	9.35E-04
1,2,4-TRIMETHYLBENZENE	8.86E+00	8.86E-09	7.50E-06	4.70E-07	2.73E-15	2.73E-13	3.08E-05	8.27E-14	8.27E-05
1,2-DICHLORO-1,1,2-TRIFLUOROETHANE	8.13E+04	8.13E-05	NA	NA	NA	NA	NA	NA	NA
1,3-BUTADIENE	2.87E+00	2.87E-09	9.80E-06	6.14E-07	1.16E-15	1.16E-13	4.03E-05	3.51E-14	3.51E-05
2,2,4-TRIMETHYLPENTANE	4.67E+00	4.67E-09	NA	NA	NA	NA	NA	NA	NA
2-BUTANONE	4.43E+00	4.43E-09	8.95E-06	5.61E-07	1.63E-15	1.63E-13	3.68E-05	4.93E-14	4.93E-05
2-PROPANOL	9.84E+03	9.84E-06	NA	NA	NA	NA	NA	NA	NA
4-ETHYLTOLUENE	7.38E+00	7.38E-09	NA	NA	NA	NA	NA	NA	NA
ACETONE	1.55E+01	1.55E-08	1.24E-05	7.77E-07	7.89E-15	7.89E-13	5.10E-05	2.39E-13	2.39E-04
BENZENE	2.87E+00	2.87E-09	8.80E-06	5.51E-07	1.04E-15	1.04E-13	3.62E-05	3.15E-14	3.15E-05
BROMODICHLOROMETHANE	9.38E+00	9.38E-09	2.98E-06	1.87E-07	1.15E-15	1.15E-13	1.23E-05	3.48E-14	3.48E-05
BROMOFORM	1.34E+01	1.34E-08	NA	NA	NA	NA	NA	NA	NA
CARBON DISULFIDE	3.11E+00	3.11E-09	1.04E-05	6.52E-07	1.33E-15	1.33E-13	4.28E-05	4.03E-14	4.03E-05
CHLOROFORM	7.32E+00	7.32E-09	1.04E-05	6.52E-07	3.13E-15	3.13E-13	4.28E-05	9.48E-14	9.48E-05
CIS-1,2-DICHLOROETHENE	7.13E+02	7.13E-07	7.36E-06	4.61E-07	2.16E-13	2.16E-11	3.03E-05	6.54E-12	6.54E-03
CYCLOHEXANE	4.13E+00	4.13E-09	8.00E-06	5.01E-07	1.36E-15	1.36E-13	3.29E-05	4.11E-14	4.11E-05
DIBROMOCHLOROMETHANE	9.37E+00	9.37E-09	9.60E-06	6.02E-07	3.70E-15	3.70E-13	3.95E-05	1.12E-13	1.12E-04
DICHLORODIFLUOROMETHANE	1.14E+01	1.14E-08	8.00E-06	5.01E-07	3.74E-15	3.74E-13	3.29E-05	1.13E-13	1.13E-04
ETHANOL	1.33E+01	1.33E-08	NA	NA	NA	NA	NA	NA	NA
ETHYLBENZENE	5.64E+00	5.64E-09	7.50E-06	4.70E-07	1.74E-15	1.74E-13	3.08E-05	5.27E-14	5.27E-05
HEPTANE	4.92E+00	4.92E-09	NA	NA	NA	NA	NA	NA	NA
HEXANE (N-HEXANE)	3.87E+00	3.87E-09	2.00E-05	1.25E-06	3.18E-15	3.18E-13	8.22E-05	9.65E-14	9.65E-05
M,P-XYLENES	9.98E+00	9.98E-09	7.00E-06	4.39E-07	2.87E-15	2.87E-13	2.88E-05	8.71E-14	8.71E-05
METHYL TERT-BUTYL ETHER	1.91E+01	1.91E-08	8.00E-06	5.01E-07	6.29E-15	6.29E-13	3.29E-05	1.91E-13	1.91E-04
METHYLENE CHLORIDE	8.33E+00	8.33E-09	1.01E-05	6.33E-07	3.46E-15	3.46E-13	4.15E-05	1.05E-13	1.05E-04
O-XYLENE	4.77E+00	4.77E-09	7.00E-06	4.39E-07	1.37E-15	1.37E-13	2.88E-05	4.16E-14	4.16E-05
PENTANE	2.15E+04	2.15E-05	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	1.22E+01	1.22E-08	7.20E-06	4.51E-07	3.61E-15	3.61E-13	2.96E-05	1.09E-13	1.09E-04
TETRAHYDROFURAN	2.95E+00	2.95E-09	9.80E-06	6.14E-07	1.19E-15	1.19E-13	4.03E-05	3.60E-14	3.60E-05
TOLUENE	7.54E+00	7.54E-09	8.70E-06	5.45E-07	2.70E-15	2.70E-13	3.58E-05	8.17E-14	8.17E-05
TRANS-1,2-DICHLOROETHENE	6.73E+02	6.73E-07	7.07E-06	4.43E-07	1.96E-13	1.96E-11	2.91E-05	5.93E-12	5.93E-03
TRICHLOROETHENE	5.37E+01	5.37E-08	7.90E-06	4.95E-07	1.74E-14	1.74E-12	3.25E-05	5.29E-13	5.29E-04
TRICHLOROFLUOROMETHANE (FREON 11)	5.62E+00	5.62E-09	8.70E-06	5.45E-07	2.01E-15	2.01E-13	3.58E-05	6.09E-14	6.09E-05

(1) Vapor diffusion coefficients from PRG physical Chemical parameters page - Di values.
(2) Apparent diffusion coefficient calculated from the following equation: $Ds = Do\ (Pa^{10/3}/Pt^2)$
(3) Flux calculated from the following equation from Karami, et al. (1987): J = -Ds *-Cs/L (Assumes Cair to be very small)
(4) Emission rate calculated from the following equation: $E = J \times A_{site}$
(5) Flow estimate calculated from the following equation:F=E/Cs
(6) Ambient air concentration calculated from the following box equation: $Cair = E/(L_s \times W \times D_H)$

ug/m^3 = micrograms per cubic meter
kg/m^3 = kilograms per cubic meter
kg/m^2/s = kilograms per square meter per second
m^2/s = square meters per second
m^3/s = cubic meters per second
m^2 = square meters

Parameter	Symbol	Value	Units	Comment
Air Filled Porosity	Pa	0.251		calculated from Equation in SSL Guidance: Pa = Pt - Ps
Water Filled Porosity	Ps	0.148		J&E model value for loam
Total Porosity	Pt	0.399		J&E model value for loam
Depth of Soil Layer	L	1.524	m	5 feet
Length of Side	L_S	10	m	10 m by 10 m subsurface foundation area excavation
Width (wind speed of 1.65 m/s)	V	0.165	m/s	Assume 1/10th the surface wind speed from http //www.whittier-weather com/ (average wind speed of Whitter as 3.7 mi/hr = 1.65 m/s)
Diffusion Height	D_H	2	m	Breathing zone
Site Area	A_{site}	100	m^2	10 m by 10 m subsurface foundation area excavation

Appendix B

Appendix B
Arsenic Statistical Evaluation

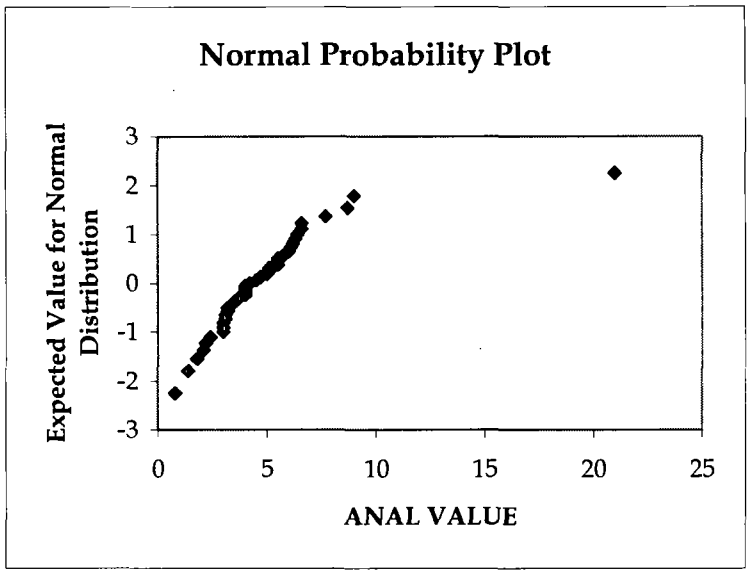
PARAM_NAME	SAMPLE_ID	FROM_DEPTH	UNITS	VALUE	ANAL VALUE
ARSENIC	RT2526-110803		mg/kg	2.40	2.40
ARSENIC	SB-1-3.0-SOIL-12/12/1995	3	ug/Kg	3200.00	3.20
ARSENIC	SB-2-1.8-SOIL-12/11/1995	1.8	ug/Kg	3700.00	3.70
ARSENIC	SB-3-1.7-SOIL-12/12/1995	1.7	ug/Kg	3400.00	3.40
ARSENIC	SB-4-1.6-SOIL-12/11/1995	1.6	ug/Kg	4000.00	4.00
ARSENIC	SB-5-1.8-SOIL-12/11/1995	1.8	ug/Kg	4700.00	4.70
ARSENIC	SB-6-2.1-SOIL-12/12/1995	2.1	ug/Kg	4500.00	4.50
ARSENIC	SB-7-1.7-SOIL-12/11/1995	1.7	ug/Kg	4200.00	4.20
ARSENIC	SB-8-2.1-SOIL-12/12/1995	2.1	ug/Kg	3100.00	3.10
ARSENIC	SB-9-1.8-SOIL-12/13/1995	1.8	ug/Kg	1800.00	1.80
ARSENIC	SB-9-5.9-SOIL-12/13/1995	5.9	ug/Kg	810.00	0.81
ARSENIC	12/14/1995	2.2	ug/Kg	1400.00	1.40
ARSENIC	12/14/1995	1.8	ug/Kg	2100.00	2.10
ARSENIC	12/14/1995	6.5	ug/Kg	2200.00	2.20
ARSENIC	12/11/1995	1.7	ug/Kg	9000.00	9.00
ARSENIC	12/11/1995	6.5	ug/Kg	3100.00	3.10
ARSENIC	12/12/1995	1.8	ug/Kg	3500.00	3.50
ARSENIC	12/11/1995	1.8	ug/Kg	6600.00	6.60
ARSENIC	12/11/1995	1.7	ug/Kg	3200.00	3.20
ARSENIC	OCSS-000-01-040504	0	mg/kg	21.00	21.00
ARSENIC	OCSS-000-02-040504	0	mg/kg	6.00	6.00
ARSENIC	OCSS-000-03-040504	0	mg/kg	3.00	3.00
ARSENIC	OC1-000-04-S-0-5	0.5	mg/Kg	5.50	5.50
ARSENIC	OC-SS-000-04-040504	0	mg/kg	3.00	3.00
ARSENIC	OCSS-000-05-040504	0	mg/kg	3.00	3.00
ARSENIC	OCSS-000-06-040504	0	mg/kg	8.70	8.70
ARSENIC	OCSS-000-07-040504	0	mg/kg	6.60	6.60
ARSENIC	OCSS-000-08-040504	0	mg/kg	6.40	6.40
ARSENIC	OC-SS-000-09-040504	0	mg/kg	5.50	5.50
ARSENIC	OC-SS-000-10-040504	0	mg/kg	4.00	4.00
ARSENIC	OC-SS-000-11-040504	0	mg/kg	6.20	6.20
ARSENIC	OC1-000-12-S-0-7	0.5	mg/Kg	6.30	6.30
ARSENIC	OC-SS-000-12-040504	0	mg/kg	5.00	5.00
ARSENIC	OC-SS-000-13-040504	0	mg/kg	7.70	7.70
ARSENIC	OC-SS-000-14-040504	0	mg/kg	5.80	5.80
ARSENIC	OC-SS-000-15-040504	0	mg/kg	4.00	4.00
ARSENIC	OC-SS-000-16-040504	0	mg/kg	6.10	6.10
ARSENIC	OC-SS-000-17-040604	0	mg/kg	5.10	5.10
ARSENIC	OC-SS-000-18-040604	0	mg/kg	5.50	5.50
ARSENIC	OC-SS-000-19-040604	0	mg/kg	5.10	5.10
ARSENIC	OC-SS-000-20-040604	0	mg/kg	4.00	4.00

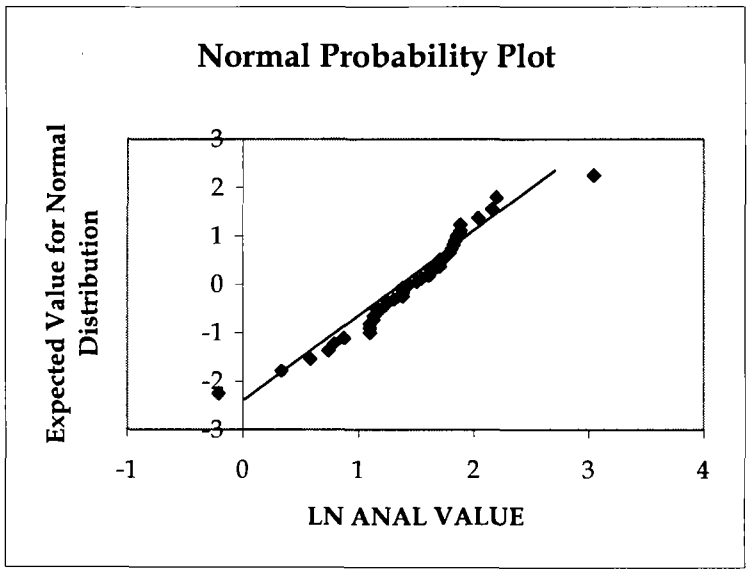
LN ANAL VALUE
0.88
1.16
1.31
1.22
1.39
1.55
1.50
1.44
1.13
0.59
-0.21
0.34
0.74
0.79
2.20
1.13
1.25
1.89
1.16
3.04
1.79
1.10
1.70
1.10
1.10
2.16
1.89
1.86
1.70
1.39
1.82
1.84
1.61
2.04
1.76
1.39
1.81
1.63
1.70
1.63
1.39

BINS	FREQ
1	1
2	2
4	17
6	11
8	7
10	2
15	0
20	0
>20	1

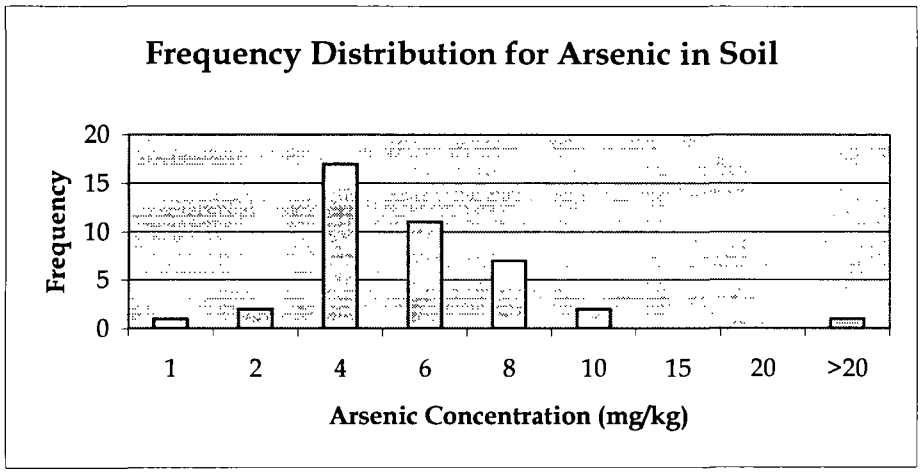
ANAL VAL	*Expected*
0.81	-2.250926
1.4	-1.791764
1.8	-1.546635
2.1	-1.369856
2.2	-1.227826
2.4	-1.107003
3	-1.000491
3	-0.904267
3	-0.815766
3.1	-0.733236
3.1	-0.655424
3.2	-0.581393
3.2	-0.510422
3.4	-0.441935
3.5	-0.375462
3.7	-0.310609
4	-0.247039
4	-0.184452
4	-0.122581
4	-0.061175
4.2	-1.39E-16
4.5	0.061175
4.7	0.122581
5	0.184452
5.1	0.247039
5.1	0.310609
5.5	0.375462
5.5	0.441935
5.5	0.510422
5.8	0.581393
6	0.655424
6.1	0.733236
6.2	0.815766
6.3	0.904267
6.4	1.000491
6.6	1.107003
6.6	1.227826
7.7	1.369856
8.7	1.546635
9	1.791764
21	2.250926

LN ANAL	*Expected*
-0.210721	-2.250926
0.336472	-1.791764
0.587787	-1.546635
0.741937	-1.369856
0.788457	-1.227826
0.875469	-1.107003
1.098612	-1.000491
1.098612	-0.904267
1.098612	-0.815766
1.131402	-0.733236
1.131402	-0.655424
1.163151	-0.581393
1.163151	-0.510422
1.223775	-0.441935
1.252763	-0.375462
1.308333	-0.310609
1.386294	-0.247039
1.386294	-0.184452
1.386294	-0.122581
1.386294	-0.061175
1.435085	-1.39E-16
1.504077	0.061175
1.547562	0.122581
1.609438	0.184452
1.629241	0.247039
1.629241	0.310609
1.704748	0.375462
1.704748	0.441935
1.704748	0.510422
1.757858	0.581393
1.791759	0.655424
1.808289	0.733236
1.824549	0.815766
1.84055	0.904267
1.856298	1.000491
1.88707	1.107003
1.88707	1.227826
2.04122	1.369856
2.163323	1.546635
2.197225	1.791764
3.044523	2.250926


Normal Probability Plot
Expected Value for Normal Distribution
3
2
1
0
-1
-2
-3
0
5
10
15
20
25
ANAL VALUE


Normal Probability Plot
Expected Value for Normal Distribution
3
2
1
0
-1
-2
-3
-1
0
1
2
3
4
LN ANAL VALUE

ANAL VALUE	
Mean	4.888049
Standard Error	0.498316
Median	4.2
Mode	4
Standard Deviation	3.190777
Sample Variance	10.18106
CV	0.652771
Kurtosis	16.02464
Skewness	3.320813
Range	20.19
Minimum	0.81
Maximum	21
Sum	200.41
Count	41
Confidence Level(95.0%)	1.007133



Outliers (k)	Samples (n)	Mean (n-k-1)	StDev (n-k-1)	ANAL VALUE (k-1)	Rosner R Stat	Rosner p-value
1	41	4.888048649	3.190776587	21	5.049539089	0.000473251
2	40	4.485249996	1.902477145	9	2.373090267	0.098661259
3	39	4.369487286	1.778909683	8.7	2.434363365	0.087795831
4	38	4.255526543	1.652229071	0.81	2.085380793	0.11661306
5	37	4.348649025	1.57067132	7.7	2.133706093	0.105576366

Appendix C

Appendix C
City of Whittier Reference – Adams, 2007

From: jadams@cityofwhittier.org
Sent: Tuesday, April 10, 2007 3:47 PM
To: Wallin, Sharon
Subject: Omega Chemical site - Future Land Uses

Hi Sharon,
Dave forwarded your email to me regarding the Omega site. Based on your question (see below) I would generally agree. I might change it to just "unlikely" since Live/Work units and multi-family residential are allowed uses within the Whittier Blvd. Specific Plan – Workplace District. However, based on information from the Director of Community Development we are looking for white collar, technical jobs in this area, such as office, biotech and medical uses. Hopefully this helps. Please call me at (562) 464-3580 if you have any questions.
Regards,
Jeff Adams
Planning Services Manager
City of Whittier

"we have stated that it is highly unlikely that the City would allow the property to be redeveloped for residential uses."

Appendix D

Appendix D
Site-Specific PRG Calculations

The results of the risk assessment calculations can be used to develop a series of preliminary remediation goals (PRGs) that can assist in managing site-related risks. PRGs are concentrations of chemicals of concern (COCs) in various media that, if achieved, would reduce site-related risks to acceptable levels. A series of site-specific PRGs were calculated for each set of receptors, pathways and chemicals where cancer risks exceeded 1E-07 and/or HQs exceeded 0.1. These targets were selected to account for potential exposure to multiple chemicals, even though the results of the risk assessment indicate that nearly all of the unacceptable risk is accounted for through exposure to PCE.

No attempt was made to determine which combinations of receptors, pathways and chemicals would be most useful. Thus, PRGs are presented for construction workers, even though the risks from exposure of workers indoors are much higher and seem likely to form the basis for risk management. Generic PRGs (e.g. EPA Region 9 PRG tables) were not considered because they do not include values for soil gas, the only major contributor to site-related risks for the Omega site.

Health based risk goals (site-specific PRGs) can be used as guidelines to screen chemical concentrations in media for potential risks. Site-specific PRGs conform to EPA Risk Assessment Guidance for Superfund Volume 1, Part B (1991a). They do not automatically represent remediation levels nor do they establish that cleanup action to meet these site-specific PRGs is warranted (EPA 1991). Remediation levels to be used in cleanup activities are selected by the remedial project manager (RPM) following review of site-specific and other considerations, such as availability of data, regional information, uncertainties, and future site use. Action levels may reasonably be selected from the ranges of site-specific PRGs presented in this report.

The City intends to allow redevelopment that consists of commercial and retail uses with the construction of multi-level buildings. City representatives have stated that it is unlikely that the Omega property will be redeveloped for residential uses (Adams, 2007), although the zoning of the site as the Whittier Boulevard Specific Plan-Workplace District allows for Live/Work units and multi-family housing. Therefore, site-specific PRGs are developed for carcinogenic and noncarcinogenic risks for both residential and industrial receptors.

Site-specific PRGs were calculated only for those COPCs that had individual cancer risks above 10^{-7} or a hazard quotient above 0.1. This subset of COPCs are termed COCs and are likely most important for risk management. Results of the risk assessment, however, show that addressing PCE alone will address most site-related risk. Site-specific PRGs were calculated for soil, indoor air, ambient air, and soil gas.

To calculate site-specific PRGs, target cancer risks or HIs are input to the equations for back calculation to a media concentration. Thus, development of site-specific PRGs is basically the reverse of risk calculation. These calculations use a selected acceptable risk (i.e., a cancer risk of one in one million, 10^{-6}, and a hazard index of 1), exposure variables, and chemical toxicity factors to determine medium-specific chemical concentration instead of starting with measured concentrations and estimating risks. Exposure variables used in the calculations are the same as those presented in Table 4-2 and toxicity values are the same as those presented in Section 5. Media of concern, COPCs, receptor populations, potential exposure pathways and exposure assumptions for receptors were defined in Section 4. Site-specific PRG equations were modified from PRG equations in USEPA Region 9 PRG Guidance (USEPA 2004) and are provided below.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$C_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right) + \left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right) + \left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$C_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$C_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000 ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$C_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000 ug/mg}{EF \times ED \times IhR \times ET}$$

Where

TR = Target Risk (a cancer risk of one in one million, 10^{-6})

THQ = Target Hazard Quotient (a hazard index of 1)

C_S = Chemical Concentration in Soil or Dust (mg/kg)

C_a = Chemical Concentration in Air (mg/m^3)

IR = Ingestion Rate (mg/day)

IhR = Inhalation Rate (m^3/hour)

PEF = Particulate Emission Factor (m^3/kg)

SA = Skin surface area exposed (cm^2)

AF = Soil to skin adherence factor (mg/cm^2)

ABS = Absorption fraction of chemical from soil

ET = Exposure Time (hrs/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT_c = Averaging Time - carcinogenic (days)

AT_n = Averaging Time - noncarcinogenic (days)

For the adult+child scenario, the ingestion rate, skin contact and inhalation rates are time-weighted averages to account for different exposure assumptions used for adult and child receptors using the following equations:

Adjusted Ingestion Rate for Adult+Child

$$IR_{adj}(mg-yr/kg-d) = \frac{ED_c \, x \, IR_c}{BW_c} + \frac{ED_a \, x \, IR_a}{BW_a}$$

Adjusted Skin Contact Rate for Adult+Child

$$SA_{adj}(mg-yr/kg-d) = \frac{ED_c \, x \, AF \, x \, SA_c}{BW_c} + \frac{ED_a \, x \, AF \, x \, SA_a}{BW_a}$$

Adjusted Inhalation Rate for Adult+Child

$$IhR_{adj}(mg-yr/kg-d)=\frac{ED_c \, x \, ET \, x \, IhR_c}{BW_c}+\frac{ED_a \, x \, ET \, x \, IhR_a}{BW_a}$$

These equations were used to calculate exposure concentrations in primary exposure media. A target cancer risk of one in one million (10^{-6}) and target hazard index of 1 were used for the calculation of site-specific PRGs as these threshold values were identified as the point of departure in the risk calculations. Site-specific PRGs for soil do not include inhalation of volatile compounds measured in soil which then partition to soil gas and are subsequently released to air. Inhalation of VOCs is captured primarily through exposure to soil gas, which is evaluated separately below. Should site-specific PRGs for soil be needed, they can be calculated during preparation of the FS using the methods used in the forward risk assessment.

For inhalation of VOCs in indoor and ambient air the primary exposure medium is soil gas. Exposure is assumed to occur after release of VOCs from this medium to indoor and ambient air. Remediation, if necessary for the site, would address soil gas (e.g. via soil vapor extraction). Thus, PRGs based on soil gas are necessary.

Site-specific risks for VOCs were calculated using a series of steps to estimate indoor or ambient air concentrations starting with soil gas concentrations, then using standard equations to estimate exposure and risk. Site-specific PRGs for soil gas were estimated by using the same attenuation factors that were used in the site-specific Johnson and Ettinger modeling. (Also, note that the advanced Johnson and Ettinger model for soil gas does not provide the option for calculating a PRG -- this feature is only available in the Johnson and Ettinger models for soil and groundwater.) Thus, site-specific PRGs for soil gas were calculated using the following equations.

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air from Soil Gas

$$C_a\,(ug/m^3)=\frac{TR \, x \, BW \, x \, AT_c \, x 1000 ug/mg}{EF \, x \, ED \, x \, IhR \, x \, ET \, x \, CSF \, x \, ATF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air from Soil Gas

$$C_a\,(ug/m^3)=\frac{THQ \, x \, RfD \, x \, BW \, x \, AT_n \, x 1000 ug/mg}{EF \, x \, ED \, x \, IhR \, x \, ET \, x \, ATF}$$

Where all variables are the same as listed previously, except:

ATF = Chemical-specific soil-gas-to-indoor or-outdoor-air attenuation factor, which

= Calculated indoor or outdoor air concentration/measured soil gas concentration

The calculation of soil gas site-specific PRGs is provided in Tables D-3.1 through D-3.6. As indicated above, corresponding bulk soil concentrations from the site-specific PRGs for soil gas were not calculated. These may be calculated in the feasibility study if later deemed necessary.

Site-specific PRGs calculated for the site are summarized in Tables D-4.1 and D-4.2 with full calculations provided in the earlier Tables D-1.1 through D-1.9 and D-2.1 through D-2.9.

Exposure assumptions and calculations did not vary among parcels, thus site-specific PRGs for indoor air are applicable for all buildings at the site currently, and for any buildings that may be constructed in the future. Likewise, although soil data were limited to the Omega site and its boundaries, exposure assumptions and calculations would be the same for surrounding parcels. Thus, site-specific PRGs for soil are also applicable to all parcels. A comparison of site-specific PRGs to maximum detections at each building is provided in Table D-5.

TABLE D-1.1 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Indoor Industrial Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors - RME
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	1,4-DIOXANE	1.0E-06	---	1.0E+01	2.7E-02	mg/kg/day^{-1}	6.4E+01	1.0E+01	NA	mg/kg/day	---
				BENZO(A)ANTHRACENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	1.3E+00	7.7E+00	NA	mg/kg/day	---
				BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	mg/kg/day^{-1}	1.3E-01	7.7E+00	NA	mg/kg/day	---
				BENZO(B)FLUORANTHENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	1.3E+00	7.7E+00	NA	mg/kg/day	---
				BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-06	1	1.0E+01	1.4E-02	mg/kg/day^{-1}	1.2E+02	1.0E+01	2.0E-02	mg/kg/day	1.2E+04
				CHRYSENE	1.0E-06	---	7.7E+00	1.2E-01	mg/kg/day^{-1}	1.3E+01	7.7E+00	NA	mg/kg/day	---
				DIELDRIN	1.0E-06	1	1.0E+01	1.6E+01	mg/kg/day^{-1}	1.1E-01	1.0E+01	5.0E-05	mg/kg/day	3.1E+01
				LEAD	1.0E-06	---	NA	8.5E-03	mg/kg/day^{-1}	3.4E+02	NA	NA	mg/kg/day	---
				PCB-1254 (AROCLOR 1254)	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	3.0E-01	7.1E+00	2.0E-05	mg/kg/day	1.1E+01
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	3.0E-01	7.1E+00	7.0E-05	mg/kg/day	3.7E+01
				TETRACHLOROETHENE	1.0E-06	1	NA	5.4E-01	mg/kg/day^{-1}	5.3E+00	NA	1.0E-02	mg/kg/day	1.0E+04
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1-DICHLOROETHANE	1.0E-06	1	NA	5.7E-03	mg/kg/day^{-1}	3.3E+00	NA	1.4E-01	mg/kg/day	9.6E+02
				1,1-DICHLOROETHENE	---	1	NA	NA	mg/kg/day^{-1}	---	NA	5.7E-02	mg/kg/day	3.8E+02
				1,2-DICHLOROETHANE	1.0E-06	1	NA	9.1E-02	mg/kg/day^{-1}	2.1E-01	NA	1.4E-03	mg/kg/day	9.4E+00
				BENZENE	1.0E-06	1	NA	1.0E-01	mg/kg/day^{-1}	1.9E-01	NA	8.6E-03	mg/kg/day	5.8E+01
				CARBON TETRACHLORIDE	1.0E-06	1	NA	1.5E-01	mg/kg/day^{-1}	1.3E-01	NA	1.1E-02	mg/kg/day	7.7E+01
				CHLOROFORM	1.0E-06	1	NA	8.1E-02	mg/kg/day^{-1}	2.3E-01	NA	8.6E-02	mg/kg/day	5.8E+02
				TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	mg/kg/day^{-1}	9.1E-01	NA	1.0E-02	mg/kg/day	6.7E+01
				TRICHLOROETHENE	1.0E-06	1	NA	7.0E-03	mg/kg/day^{-1}	2.7E+00	NA	1.7E-01	mg/kg/day	1.1E+03
				TRICHLOROFLUOROMETHANE (FREON 11)	---	1	NA	NA	mg/kg/day^{-1}	---	NA	2.0E-01	mg/kg/day	1.3E+03

TABLE D-1.1 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Indoor Industrial Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoors - RME
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
										Site-specific PRG (ug/m^3)				Site-specific PRG (ug/m^3)
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	$mg/kg/day^{-1}$	7.3E+00	NA	1.0E-02	mg/kg/day	5.4E+02

Notes:

NA: Not applicable.

PRG: Preliminary remediation goal

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR	Ingestion Rate of Soil	100	mg/day	EPA 2002a
SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a
AF	Adherence Factor	0.2	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR	Inhalation Rate of Air	1.9	m^3/hr	EPA 1997
ET_i	Exposure Time - Indoors	8	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors	1	hrs/day	professional judgment
EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a
ED	Exposure Duration	25	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1 Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right)+\left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right)+\left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000 ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000\ ug/mg}{EF \times ED \times IhR \times ET}$$

TABLE D-1.2 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Outdoor Industrial Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors - RME
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	1,4-DIOXANE	1.0E-06	---	1.0E+01	2.7E-02	mg/kg/day^{-1}	5.5E+01	1.0E+01	NA	mg/kg/day	---
				BENZO(A)ANTHRACENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	1.1E+00	7.7E+00	NA	mg/kg/day	---
				BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	mg/kg/day^{-1}	1.1E-01	7.7E+00	NA	mg/kg/day	---
				BENZO(B)FLUORANTHENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	1.1E+00	7.7E+00	NA	mg/kg/day	---
				BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-06	1	1.0E+01	1.4E-02	mg/kg/day^{-1}	1.1E+02	1.0E+01	2.0E-02	mg/kg/day	1.1E+04
				CHRYSENE	1.0E-06	---	7.7E+00	1.2E-01	mg/kg/day^{-1}	1.1E+01	7.7E+00	NA	mg/kg/day	---
				DIELDRIN	1.0E-06	1	1.0E+01	1.6E+01	mg/kg/day^{-1}	9.2E-02	1.0E+01	5.0E-05	mg/kg/day	2.6E+01
				LEAD	1.0E-06	---	NA	8.5E-03	mg/kg/day^{-1}	2.5E+02	NA	NA	mg/kg/day	---
				PCB-1254 (AROCLOR 1254)	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	2.6E-01	7.1E+00	2.0E-05	mg/kg/day	9.4E+00
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	2.6E-01	7.1E+00	7.0E-05	mg/kg/day	3.3E+01
				TETRACHLOROETHENE	1.0E-06	1	NA	5.4E-01	mg/kg/day^{-1}	3.9E+00	NA	1.0E-02	mg/kg/day	7.6E+03

TABLE D-1.2 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Outdoor Industrial Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoors - RME
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	1,2-DICHLOROETHANE	1.0E-06	1	NA	9.1E-02	$mg/kg/day^{-1}$	1.7E-01	NA	1.4E-03	mg/kg/day	7.9E+00
				TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	$mg/kg/day^{-1}$	7.7E-01	NA	1.0E-02	mg/kg/day	5.7E+01
				TRICHLOROETHENE	1.0E-06	1	NA	7.0E-03	$mg/kg/day^{-1}$	2.3E+00	NA	1.7E-01	mg/kg/day	9.7E+02

Notes:

NA: Not applicable.

PRG: Preliminary remediation goal

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR	Ingestion Rate of Soil	150	mg/day	EPA 2002a
SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a
AF	Adherence Factor	0.2	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR	Inhalation Rate of Air	2.5	m^3/hr	EPA 1997
ET_o	Exposure Time - Outdoors	8	hrs/day	professional judgment
EF	Exposure Frequency	225	days/year	EPA 1991b, 2002a
ED	Exposure Duration	25	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
AT-N	Averaging Time (Noncancer)	9,125	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997 Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right)+\left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right)+\left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000 ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000 ug/mg}{EF \times ED \times IhR \times ET}$$

TABLE D-1.3 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Construction Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	mg/kg/day^{-1}	8.9E-01	7.7E+00	NA	mg/kg/day	---
				IRON	---	1.0	NA	NA	mg/kg/day^{-1}	---	NA	3.0E-01	mg/kg/day	9.3E+04
				PCB-1254 (AROCLOR 1254)	1.0E-06	1.0	7.1E+00	5.0E+00	mg/kg/day^{-1}	2.0E+00	7.1E+00	2.0E-05	mg/kg/day	2.9E+00
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1.0	7.1E+00	5.0E+00	mg/kg/day^{-1}	2.0E+00	7.1E+00	7.0E-05	mg/kg/day	1.0E+01
				TETRACHLOROETHENE	1.0E-06	1.0	NA	5.4E-01	mg/kg/day^{-1}	4.0E+01	NA	1.0E-02	mg/kg/day	3.1E+03
				VANADIUM	---	1.0	NA	NA	mg/kg/day^{-1}	---	NA	1.0E-03	mg/kg/day	3.1E+02
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Outdoor Air	Outdoor Air	Outdoor Air	Inhalation	TETRACHLOROETHENE	1.0E-06	1.0	NA	2.1E-02	mg/kg/day^{-1}	7.2E+00	NA	1.0E-02	mg/kg/day	2.1E+01

NA: Not applicable.

PRG: Preliminary remediation goal

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR	Ingestion Rate of Soil	330	mg/day	EPA 2002a
SA	Skin Surface Area Available for Contact	3,300	cm^2	EPA 2002a
AF	Adherence Factor	0.8	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR	Inhalation Rate of Air	4.8	m^3/hr	EPA 1997
ET_o	Exposure Time - Outdoors	10	hrs/day	professional judgment
EF	Exposure Frequency	250	days/year	EPA 1991b, 2002a
ED	Exposure Duration	1	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
AT-N	Averaging Time (Noncancer)	365	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right)+\left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right)+\left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right)+\left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000ug/mg}{EF \times ED \times IhR \times ET}$$

TABLE D-1.4 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Adult - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	1,4-DIOXANE	1.0E-06	---	1.0E+01	2.7E-02	$mg/kg/day^{-1}$	4.5E+01	1.0E+01	NA	mg/kg/day	---
				BENZO(A)ANTHRACENE	1.0E-06	---	7.7E+00	1.2E+00	$mg/kg/day^{-1}$	9.3E-01	7.7E+00	NA	mg/kg/day	---
				BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	$mg/kg/day^{-1}$	9.3E-02	7.7E+00	NA	mg/kg/day	---
				BENZO(B)FLUORANTHENE	1.0E-06	---	7.7E+00	1.2E+00	$mg/kg/day^{-1}$	9.3E-01	7.7E+00	NA	mg/kg/day	---
				BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-06	1	1.0E+01	1.4E-02	$mg/kg/day^{-1}$	8.7E+01	1.0E+01	2.0E-02	mg/kg/day	1.0E+04
				CHRYSENE	1.0E-06	---	7.7E+00	1.2E-01	$mg/kg/day^{-1}$	9.3E+00	7.7E+00	NA	mg/kg/day	---
				DIELDRIN	1.0E-06	1	1.0E+01	1.6E+01	$mg/kg/day^{-1}$	7.6E-02	1.0E+01	5.0E-05	mg/kg/day	2.6E+01
				IRON	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	3.0E-01	mg/kg/day	2.2E+05
				LEAD	1.0E-06	---	NA	8.5E-03	$mg/kg/day^{-1}$	2.0E+02	NA	NA	mg/kg/day	---
				PCB-1254 (AROCLOR 1254)	1.0E-06	1	7.1E+00	5.0E+00	$mg/kg/day^{-1}$	2.2E-01	7.1E+00	2.0E-05	mg/kg/day	9.4E+00
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1	7.1E+00	5.0E+00	$mg/kg/day^{-1}$	2.2E-01	7.1E+00	7.0E-05	mg/kg/day	3.3E+01
				TETRACHLOROETHENE	1.0E-06	1	NA	5.4E-01	$mg/kg/day^{-1}$	3.2E+00	NA	1.0E-02	mg/kg/day	7.3E+03
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	6.3E-01	mg/kg/day	2.3E+03
				1,1-DICHLOROETHANE	1.0E-06	1	NA	5.7E-03	$mg/kg/day^{-1}$	1.5E+00	NA	1.4E-01	mg/kg/day	5.2E+02
				1,1-DICHLOROETHENE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	5.7E-02	mg/kg/day	2.1E+02
				1,2-DICHLOROETHANE	1.0E-06	1	NA	9.1E-02	$mg/kg/day^{-1}$	9.4E-02	NA	1.4E-03	mg/kg/day	5 1E+00
				ACETALDEHYDE	1.0E-06	1	NA	1.0E-02	$mg/kg/day^{-1}$	8.6E-01	NA	2.6E-03	mg/kg/day	9.4E+00
				BENZENE	1.0E-06	1	NA	1.0E-01	$mg/kg/day^{-1}$	8.6E-02	NA	8.6E-03	mg/kg/day	3 1E+01
				CARBON TETRACHLORIDE	1.0E-06	1	NA	1.5E-01	$mg/kg/day^{-1}$	5.7E-02	NA	1.1E-02	mg/kg/day	4.2E+01
				CHLOROFORM	1.0E-06	1	NA	8.1E-02	$mg/kg/day^{-1}$	1.1E-01	NA	8.6E-02	mg/kg/day	3 1E+02
				CIS-1,2-DICHLOROETHENE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	1.0E-02	mg/kg/day	3.7E+01

TABLE D-1 4 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Adult - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
				TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	$mg/kg/day^{-1}$	4.1E-01	NA	1.0E-02	mg/kg/day	3.7E+01
				TRICHLOROETHENE	1.0E-06	1	NA	7.0E-03	$mg/kg/day^{-1}$	1.2E+00	NA	1.7E-01	mg/kg/day	6.3E+02
				TRICHLOROFLUOROMETHANE (FREON 11)	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	2.0E-01	mg/kg/day	7.3E+02

Notes:

NA: Not applicable.

PRG: Preliminary remediation goal

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR	Ingestion Rate of Soil	100	mg/day	EPA 2002a
SA	Skin Surface Area Available for Contact	5,700	cm^2	EPA 2002a
AF	Adherence Factor	0.07	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR	Inhalation Rate of Air	0.83	m^3/hr	EPA 1997
ET_i	Exposure Time - Indoors	24	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors	2	hrs/day	professional judgment
EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a
ED	Exposure Duration	30	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
AT-N	Averaging Time (Noncancer)	10,950	days	EPA 1989

Reference Notes

EPA 1989. Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right) + \left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right) + \left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000ug/mg}{EF \times ED \times IhR \times ET}$$

TABLE D-1.5 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Adult+Child - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult+Child

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	1,4-DIOXANE	1.0E-06	---	1.0E+01	2.7E-02	mg/kg/day^{-1}	1.8E+01	1.0E+01	NA	mg/kg/day	---
				ANTIMONY	---	1	NA	NA	mg/kg/day^{-1}	---	NA	4.0E-04	mg/kg/day	1.1E+02
				BENZO(A)ANTHRACENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	3.7E-01	7.7E+00	NA	mg/kg/day	---
				BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	mg/kg/day^{-1}	3.7E-02	7.7E+00	NA	mg/kg/day	---
				BENZO(B)FLUORANTHENE	1.0E-06	---	7.7E+00	1.2E+00	mg/kg/day^{-1}	3.7E-01	7.7E+00	NA	mg/kg/day	---
				BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-06	1	1.0E+01	1.4E-02	mg/kg/day^{-1}	3.4E+01	1.0E+01	2.0E-02	mg/kg/day	5.4E+03
				CHRYSENE	1.0E-06	---	7.7E+00	1.2E-01	mg/kg/day^{-1}	3.7E+00	7.7E+00	NA	mg/kg/day	---
				DIELDRIN	1.0E-06	1	1.0E+01	1.6E+01	mg/kg/day^{-1}	3.0E-02	1.0E+01	5.0E-05	mg/kg/day	1.3E+01
				IRON	---	1	NA	NA	mg/kg/day^{-1}	---	NA	3.0E-01	mg/kg/day	8.2E+04
				LEAD	1.0E-06	---	NA	8.5E-03	mg/kg/day^{-1}	7.5E+01	NA	NA	mg/kg/day	---
				PCB-1254 (AROCLOR 1254)	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	8.8E-02	7.1E+00	2.0E-05	mg/kg/day	5.3E+00
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1	7.1E+00	5.0E+00	mg/kg/day^{-1}	8.8E-02	7.1E+00	7.0E-05	mg/kg/day	1.9E+01
				TETRACHLOROETHENE	1.0E-06	1	NA	5.4E-01	mg/kg/day^{-1}	1.2E+00	NA	1.0E-02	mg/kg/day	2.7E+03
				THALLIUM	---	1	NA	NA	mg/kg/day^{-1}	---	NA	6.6E-05	mg/kg/day	1.8E+01
				VANADIUM	---	1	NA	NA	mg/kg/day^{-1}	---	NA	1.0E-03	mg/kg/day	2.7E+02
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	---	1	NA	NA	mg/kg/day^{-1}	---	NA	6.3E-01	mg/kg/day	1.8E+03
				1,1-DICHLOROETHANE	1.0E-06	1	NA	5.7E-03	mg/kg/day^{-1}	1.2E+00	NA	1.4E-01	mg/kg/day	4.1E+02
				1,1-DICHLOROETHENE	---	1	NA	NA	mg/kg/day^{-1}	---	NA	5.7E-02	mg/kg/day	1.6E+02
				1,2-DICHLOROETHANE	1.0E-06	1	NA	9.1E-02	mg/kg/day^{-1}	7.4E-02	NA	1.4E-03	mg/kg/day	4.0E+00
				ACETALDEHYDE	1.0E-06	1	NA	1.0E-02	mg/kg/day^{-1}	6.7E-01	NA	2.6E-03	mg/kg/day	7.4E+00
				BENZENE	1.0E-06	1	NA	1.0E-01	mg/kg/day^{-1}	6.7E-02	NA	8.6E-03	mg/kg/day	2.5E+01
				CARBON TETRACHLORIDE	1.0E-06	1	NA	1.5E-01	mg/kg/day^{-1}	4.5E-02	NA	1.1E-02	mg/kg/day	3.3E+01
				CHLOROFORM	1.0E-06	1	NA	8.1E-02	mg/kg/day^{-1}	8.3E-02	NA	8.6E-02	mg/kg/day	2.5E+02
				CIS-1,2-DICHLOROETHENE	---	1	NA	NA	mg/kg/day^{-1}	---	NA	1.0E-02	mg/kg/day	2.9E+01

TABLE D-1.5 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Adult+Child - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Adult+Child

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
				TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	mg/kg/day^{-1}	3.3E-01	NA	1.0E-02	mg/kg/day	2.9E+01
				TRANS-1,2-DICHLOROETHENE	---	1	NA	NA	mg/kg/day^{-1}	---	NA	2.0E-02	mg/kg/day	5.8E+01
				TRICHLOROETHENE	1.0E-06	1	NA	7.0E-03	mg/kg/day^{-1}	9.6E-01	NA	1.7E-01	mg/kg/day	4.9E+02
				TRICHLOROFLUOROMETHANE (FREON 11)	---	1	NA	NA	mg/kg/day^{-1}	---	NA	2.0E-01	mg/kg/day	5.8E+02

Notes:

NA: Not applicable.

PRG Preliminary remediation goal

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

mg/kg/day^{-1}: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR_{adj}	Ingestion Rate of Soil - adult+child	114.3	mg-yr/kg-d	EPA 2004a
IR_c	Ingestion Rate of Soil - child	200	mg/day	EPA 2002a
IR_a	Ingestion Rate of Soil - adult	100	mg/day	EPA 2002a
SA_{adj}	Skin Surface Area Avail. for Contact - adult+child	369	mg-yr/kg-d	EPA 2004a
SA_c	Skin Surface Area Avail. for Contact - child	2,900	cm^2	EPA 2002a
SA_a	Skin Surface Area Avail. for Contact - adult	5,700	cm^2	EPA 2002a
AF_a	Adherence Factor - adult	0.07	mg/cm^2	EPA 2002a
AF_c	Adherence Factor - child	0.2	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR_{adj}	Inhalation Rate of Air - adult+child	10.86	mg-yr/kg-d	EPA 2004a
IhR_c	Inhalation Rate of Air - child	0.42	m^3/hr	EPA 1997
IhR_a	Inhalation Rate of Air - adult	0.83	m^3/hr	EPA 1997
ET_i	Exposure Time - Indoors	24	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors	2	hrs/day	professional judgment
EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a
ED_a	Exposure Duration - adult	24	years	EPA 1991b, 2002
ED_c	Exposure Duration - child	6	years	EPA 1991b, 2002
BW_a	Body Weight - adult	70	kg	EPA 1991b, 2002
BW_c	Body Weight - child	15	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
$AT\text{-}N_a$	Averaging Time (Noncancer) - adult	8,760	days	EPA 1989
$AT\text{-}N_c$	Averaging Time (Noncancer) - child	2,190	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors Interim Final. OSWER Directive 9285.6-03.

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Adjusted Ingestion Rate for Adult+Child

$$IR_{adj}\,(mg\text{-}yr/kg\text{-}d) = \frac{ED_c \times IR_c}{BW_c} + \frac{ED_a \times IR_a}{BW_a}$$

Adjusted Skin Contact Rate for Adult+Child

$$SA_{adj}(mg\text{-}yr/kg\text{-}d) = \frac{ED_c \times AF \times SA_c}{BW_c} + \frac{ED_a \times AF \times SA_a}{BW_a}$$

Adjusted Inhalation Rate for Adult+Child

$$IhR_{adj}(mg\text{-}yr/kg\text{-}d) = \frac{ED_c \times ET \times IhR_c}{BW_c} + \frac{ED_a \times ET \times IhR_a}{BW_a}$$

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\,(mg/kg) = \frac{TR \times AT_c}{EF \times \left[\left(\frac{IR_{adj} \times CSF}{10^6\ mg/kg}\right) + \left(\frac{SA_{adj} \times ABS \times CSF}{10^6\ mg/kg}\right) + \left(\frac{IhR_{adj} \times CSF}{PEF}\right)\right]}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\,(mg/kg) = \frac{THQ \times AT_n}{EF \times \left[\left(\frac{1}{RfD} \times \frac{IR_{adj}}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{SA_{adj} \times ABS}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{IhR_{adj}}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\,(ug/m^3) = \frac{TR \times AT_c \times 1000\ ug/mg}{EF \times IhR_{adj} \times CSF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\,(ug/m^3) = \frac{THQ \times RfD \times AT_n \times 1000\ ug/mg}{EF \times IhR_{adj}}$$

TABLE D-1.6 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Child - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age:	Child

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	Ingestion, Dermal Contact, and Inhalation	1,4-DIOXANE	1.0E-06	---	1.0E+01	2.7E-02	$mg/kg/day^{-1}$	2.6E+01	1.0E+01	NA	mg/kg/day	---
				ALUMINUM	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	1.0E+00	mg/kg/day	7.8E+04
				ANTIMONY	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	4.0E-04	mg/kg/day	3.1E+01
				BENZO(A)ANTHRACENE	1 0E-06	---	7.7E+00	1.2E+00	$mg/kg/day^{-1}$	5.5E-01	7.7E+00	NA	mg/kg/day	---
				BENZO(A)PYRENE	1.0E-06	---	7.7E+00	1.2E+01	$mg/kg/day^{-1}$	5.5E-02	7.7E+00	NA	mg/kg/day	---
				BENZO(B)FLUORANTHENE	1.0E-06	---	7 7E+00	1.2E+00	$mg/kg/day^{-1}$	5.5E-01	7.7E+00	NA	mg/kg/day	---
				BIS(2-ETHYLHEXYL)PHTHALATE	1.0E-06	1	1.0E+01	1.4E-02	$mg/kg/day^{-1}$	5.1E+01	1.0E+01	2.0E-02	mg/kg/day	1.2E+03
				CHRYSENE	1.0E-06	---	7.7E+00	1.2E-01	$mg/kg/day^{-1}$	5.5E+00	7.7E+00	NA	mg/kg/day	---
				DIELDRIN	1.0E-06	1	1.0E+01	1.6E+01	$mg/kg/day^{-1}$	4.4E-02	1.0E+01	5.0E-05	mg/kg/day	3.0E+00
				IRON	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	3.0E-01	mg/kg/day	2.3E+04
				LEAD	1.0E-06	---	NA	8.5E-03	$mg/kg/day^{-1}$	1.1E+02	NA	NA	mg/kg/day	---
				PCB-1254 (AROCLOR 1254)	1.0E-06	1	7.1E+00	5.0E+00	$mg/kg/day^{-1}$	1.3E-01	7.1E+00	2.0E-05	mg/kg/day	1.1E+00
				POLYCHLORINATED BI PHENYLS, TOTAL	1.0E-06	1	7.1E+00	5.0E+00	$mg/kg/day^{-1}$	1.3E-01	7.1E+00	7.0E-05	mg/kg/day	3.9E+00
				TETRACHLOROETHENE	1.0E-06	1	NA	5.4E-01	$mg/kg/day^{-1}$	1.7E+00	NA	1.0E-02	mg/kg/day	7.8E+02
				THALLIUM	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	6.6E-05	mg/kg/day	5.2E+00
				VANADIUM	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	1.0E-03	mg/kg/day	7.8E+01
								Inhalation Cancer Slope Factor (CSF)		Site-specific PRG (ug/m^3)		Inhalation Reference Dose (RfD)		Site-specific PRG (ug/m^3)
Indoor Air	Indoor Air	Indoor Air	Inhalation	1,1,1-TRICHLOROETHANE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	6.3E-01	mg/kg/day	9.8E+02
				1,1-DICHLOROETHANE	1.0E-06	1	NA	5.7E-03	$mg/kg/day^{-1}$	3.2E+00	NA	1.4E-01	mg/kg/day	2.2E+02
				1,1-DICHLOROETHENE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	5.7E-02	mg/kg/day	8.8E+01
				1,2-DICHLOROETHANE	1.0E-06	1	NA	9.1E-02	$mg/kg/day^{-1}$	2.0E-01	NA	1.4E-03	mg/kg/day	2.2E+00
				BENZENE	1.0E-06	1	NA	1.0E-01	$mg/kg/day^{-1}$	1.8E-01	NA	8.6E-03	mg/kg/day	1.3E+01
				CARBON TETRACHLORIDE	1.0E-06	1	NA	1.5E-01	$mg/kg/day^{-1}$	1.2E-01	NA	1.1E-02	mg/kg/day	1.8E+01
				CHLOROFORM	1.0E-06	1	NA	8.1E-02	$mg/kg/day^{-1}$	2.2E-01	NA	8.6E-02	mg/kg/day	1.3E+02
				CIS-1,2-DICHLOROETHENE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	1.0E-02	mg/kg/day	1.6E+01

TABLE D-1.6 RME

CALCULATION OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs

Resident Child - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor Age	Child

Medium	Exposure Medium	Exposure Point	Exposure Routes	Chemical of Concern	Target		Cancer Risk Calculations				Non-Cancer Hazard Calculations			
							Chemical-Specific Variables	Cancer Slope Factor (CSF)		Cancer Site-specific PRG (mg/kg)	Chemical-Specific Variables	Reference Dose (RfD)		Hazard Site-specific PRG (mg/kg)
					Risk	Hazard	ABS	Value	Units		ABS	Value	Units	
				TETRACHLOROETHENE	1.0E-06	1	NA	2.1E-02	$mg/kg/day^{-1}$	8.8E-01	NA	1.0E-02	mg/kg/day	1.6E+01
				TRANS-1,2-DICHLOROETHENE	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	2.0E-02	mg/kg/day	3.1E+01
				TRICHLOROETHENE	1.0E-06	1	NA	7.0E-03	$mg/kg/day^{-1}$	2.6E+00	NA	1.7E-01	mg/kg/day	2.7E+02
				TRICHLOROFLUOROMETHANE (FREON 11)	---	1	NA	NA	$mg/kg/day^{-1}$	---	NA	2.0E-01	mg/kg/day	3.1E+02

Notes:

NA: Not applicable.

PRG Preliminary remediation goal

---. Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

mg/kg/day: milligram per kilogram per day.

$mg/kg/day^{-1}$: milligram per kilogram-day.

(1) Intake factor for inhalation of soil vapor includes volatilization factor from Table 1.0

Parameter Code	Parameter Definition	RME Value	Units	Reference
IR	Ingestion Rate of Soil	200	mg/day	EPA 2002a
SA	Skin Surface Area Available for Contact	2,900	cm^2	EPA 2002a
AF	Adherence Factor	0.2	mg/cm^2	EPA 2002a
ABS_d	Absorption Factor	Chemical Specific	unitless	EPA 2004a
IhR	Inhalation Rate of Air	0 42	m^3/hr	EPA 1997
ET_I	Exposure Time - Indoors	24	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors	2	hrs/day	professional judgment
EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a
ED	Exposure Duration	6	years	EPA 1991b, 2002
BW	Body Weight	15	kg	EPA 1991b, 2002
PEF	Particulate Emission Factor	1.36E+09	m^3/kg	EPA 2002
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989
AT-N	Averaging Time (Noncancer)	2,190	days	EPA 1989

Reference Notes

EPA 1989 Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1. Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997 Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

Equation for Exposure to Carcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{TR \times BW \times AT_c}{EF \times ED\left[\left(\frac{IR \times CSF}{10^6\ mg/kg}\right) + \left(\frac{SA \times AF \times ABS \times CSF}{10^6\ mg/kg}\right) + \left(\frac{ET \times IhR \times CSF}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{TR \times BW \times AT_c \times 1000ug/mg}{EF \times ED \times IhR \times ET \times CSF}$$

Equation for Exposure to Noncarcinogenic Contaminants in Industrial Soil through Ingestion, Dermal Contact, and Inhalation of Fugitive Dust

$$PRG_s\ (mg/kg) = \frac{THQ \times BW \times AT_n}{EF \times ED\left[\left(\frac{1}{RfD} \times \frac{IR}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{SA \times AF \times ABS}{10^6\ mg/kg}\right) + \left(\frac{1}{RfD} \times \frac{ET \times IhR}{PEF}\right)\right]}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Outdoor Air

$$PRG_a\ (ug/m^3) = \frac{THQ \times RfD \times BW \times AT_n \times 1000ug/mg}{EF \times ED \times IhR \times ET}$$

TABLE D-2.1 RME

SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY

Indoor Industrial Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Indoor - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Carcinogenic	Non-Carcinogenic Hazard		Minimum Site-specific PRG
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	1,4-DIOXANE	mg/kg	6.4E+01		---	6.4E+01
			BENZO(A)ANTHRACENE	mg/kg	1.3E+00		---	1.3E+00
			BENZO(A)PYRENE	mg/kg	1.3E-01		---	1.3E-01
			BENZO(B)FLUORANTHENE	mg/kg	1.3E+00		---	1.3E+00
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	1.2E+02	Inc. liver weight	1.2E+04	1.2E+02
			CHRYSENE	mg/kg	1.3E+01		---	1.3E+01
			DIELDRIN	mg/kg	1.1E-01	Liver	3.1E+01	1.1E-01
			LEAD	mg/kg	3.4E+02		---	3.4E+02
			PCB-1254 (AROCLOR 1254)	mg/kg	3.0E-01	Ocular exudate	1.1E+01	3.0E-01
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	3.0E-01		3.7E+01	3.0E-01
			TETRACHLOROETHENE	mg/kg	5.3E+00	Liver toxicity in mice	1.0E+04	5.3E+00
Indoor Air	Indoor Air	Indoor Air	1,1-DICHLOROETHANE	ug/m^3	3.3E+00		9.6E+02	3.3E+00
			1,1-DICHLOROETHENE	ug/m^3	---	Liver toxicity	3.8E+02	3.8E+02
			1,2-DICHLOROETHANE	ug/m^3	2.1E-01		9.4E+00	2.1E-01
			BENZENE	ug/m^3	1.9E-01	Dec. lymphocyte count	5.8E+01	1.9E-01
			CARBON TETRACHLORIDE	ug/m^3	1.3E-01	Liver lesions	7.7E+01	1.3E-01
			CHLOROFORM	ug/m^3	2.3E-01	Liver	5.8E+02	2.3E-01
			TETRACHLOROETHENE	ug/m^3	9.1E-01	Liver toxicity in mice	6.7E+01	9.1E-01
			TRICHLOROETHENE	ug/m^3	2.7E+00		1.1E+03	2.7E+00
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	---	Survival and histopathology	1.3E+03	1.3E+03
Outdoor Air	Outdoor Air	Outdoor Air	TETRACHLOROETHENE	ug/m^3	7.3E+00	Liver toxicity in mice	5.4E+02	7.3E+00

PRG: Preliminary remediation goal

NA: Not applicable

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

ug/m^3: microgram per cubic meter.

TABLE D-2.2 RME
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY
Outdoor Industrial Worker - Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker - Outdoor - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Carcinogenic	Non-Carcinogenic Hazard		Minimum Site-specific PRG
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	1,4-DIOXANE	mg/kg	5.5E+01		---	5.5E+01
			BENZO(A)ANTHRACENE	mg/kg	1.1E+00		---	1.1E+00
			BENZO(A)PYRENE	mg/kg	1.1E-01		---	1.1E-01
			BENZO(B)FLUORANTHENE	mg/kg	1.1E+00		---	1.1E+00
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	1.1E+02	Inc. liver weight	1.1E+04	1.1E+02
			CHRYSENE	mg/kg	1.1E+01		---	1.1E+01
			DIELDRIN	*mg/kg*	*9.2E-02*	*Liver*	*2.6E+01*	9.2E-02
			LEAD	mg/kg	2.5E+02		---	2.5E+02
			PCB-1254 (AROCLOR 1254)	mg/kg	2.6E-01	Ocular exudate	9.4E+00	2.6E-01
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	2.6E-01		3.3E+01	2.6E-01
			TETRACHLOROETHENE	mg/kg	3.9E+00	Liver toxicity in mice	7.6E+03	3.9E+00
Outdoor Air	Outdoor Air	Outdoor Air	1,2-DICHLOROETHANE	ug/m^3	1.7E-01		7.9E+00	1.7E-01
			TETRACHLOROETHENE	ug/m^3	7.7E-01	Liver toxicity in mice	5.7E+01	7.7E-01
			TRICHLOROETHENE	ug/m^3	2.3E+00		9.7E+02	2.3E+00

PRG: Preliminary remediation goal
NA: Not applicable.
---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.
ug/m^3: microgram per cubic meter.

TABLE D-2.3 RME

SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY

Construction Worker - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Construction Worker - RME
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Carcinogenic	Non-Carcinogenic Hazard		Minimum Site-specific PRG
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	BENZO(A)PYRENE	mg/kg	8.9E-01		---	8.9E-01
			IRON	mg/kg	---		9.3E+04	9.3E+04
			PCB-1254 (AROCLOR 1254)	mg/kg	2.0E+00	Ocular exudate	2.9E+00	2.0E+00
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	2.0E+00		1.0E+01	2.0E+00
			TETRACHLOROETHENE	mg/kg	4.0E+01	Liver toxicity in mice	3.1E+03	4.0E+01
			VANADIUM	mg/kg	---		3.1E+02	3.1E+02
Outdoor Air	Outdoor Air	Outdoor Air	TETRACHLOROETHENE	ug/m^3	7.2E+00	Liver toxicity in mice	2.1E+01	7.2E+00

PRG: Preliminary remediation goal

NA: Not applicable.

---: Risk was not calculated for chemical.

TABLE D-2.4 CTE
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY
Resident Adult - Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Carcinogenic	Non-Carcinogenic Hazard		Minimum Site-specific PRG
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	1,4-DIOXANE	mg/kg	4.5E+01		---	4.5E+01
			BENZO(A)ANTHRACENE	mg/kg	9.3E-01		---	9.3E-01
			BENZO(A)PYRENE	mg/kg	9.3E-02		---	9.3E-02
			BENZO(B)FLUORANTHENE	mg/kg	9.3E-01		---	9.3E-01
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	8.7E+01	Inc. liver weight	1.0E+04	8.7E+01
			CHRYSENE	mg/kg	9.3E+00		---	9.3E+00
			DIELDRIN	mg/kg	7.6E-02	Liver	2.6E+01	7.6E-02
			IRON	mg/kg	---		2.2E+05	2.2E+05
			LEAD	mg/kg	2.0E+02		---	2.0E+02
			PCB-1254 (AROCLOR 1254)	mg/kg	2.2E-01	Ocular exudate	9.4E+00	2.2E-01
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	2.2E-01		3.3E+01	2.2E-01
			TETRACHLOROETHENE	mg/kg	3.2E+00	Liver toxicity in mice	7.3E+03	3.2E+00
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	ug/m^3	---		2.3E+03	2.3E+03
			1,1-DICHLOROETHANE	ug/m^3	1.5E+00		5.2E+02	1.5E+00
			1,1-DICHLOROETHENE	ug/m^3	---	Liver toxicity	2.1E+02	2.1E+02
			1,2-DICHLOROETHANE	ug/m^3	9.4E-02		5.1E+00	9.4E-02
			ACETALDEHYDE	ug/m^3	8.6E-01		9.4E+00	8.6E-01
			BENZENE	ug/m^3	8.6E-02	Dec. lymphocyte count	3.1E+01	8.6E-02
			CARBON TETRACHLORIDE	ug/m^3	5.7E-02	Liver lesions	4.2E+01	5.7E-02
			CHLOROFORM	ug/m^3	1.1E-01	Liver	3.1E+02	1.1E-01
			CIS-1,2-DICHLOROETHENE	ug/m^3	---		3.7E+01	3.7E+01
			TETRACHLOROETHENE	ug/m^3	4.1E-01	Liver toxicity in mice	3.7E+01	4.1E-01
			TRICHLOROETHENE	ug/m^3	1.2E+00		6.3E+02	1.2E+00
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	---	Survival and histopathology	7.3E+02	7.3E+02

PRG: Preliminary remediation goal
NA: Not applicable.
---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.
ug/m^3: microgram per cubic meter.

TABLE D-2.5 RME

SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY

Resident Adult+Child - Reasonable Maximum Exposure

Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult+Child

Medium	*Exposure Medium*	*Exposure Point*	*Chemical of Concern*	Units	Carcinogenic	Non-Carcinogenic Hazard		*Minimum Site-specific PRG*
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	1,4-DIOXANE	mg/kg	1.8E+01		---	1.8E+01
			ANTIMONY	mg/kg	---	longevity, blood glucose and chloesterol	1.1E+02	1.1E+02
			BENZO(A)ANTHRACENE	mg/kg	3.7E-01		---	3.7E-01
			BENZO(A)PYRENE	mg/kg	3.7E-02		---	3.7E-02
			BENZO(B)FLUORANTHENE	mg/kg	3.7E-01		---	3.7E-01
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	3.4E+01	Inc. liver weight	5.4E+03	3.4E+01
			CHRYSENE	mg/kg	3.7E+00		---	3.7E+00
			DIELDRIN	mg/kg	3.0E-02	*Liver*	1.3E+01	3.0E-02
			IRON	mg/kg	---		8.2E+04	8.2E+04
			LEAD	mg/kg	7.5E+01		---	7.5E+01
			PCB-1254 (AROCLOR 1254)	mg/kg	8.8E-02	Ocular exudate	5.3E+00	8.8E-02
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	8.8E-02		1.9E+01	8.8E-02
			TETRACHLOROETHENE	mg/kg	1.2E+00	Liver toxicity in mice	2.7E+03	1.2E+00
			THALLIUM	mg/kg	---		1.8E+01	1.8E+01
			VANADIUM	mg/kg	---		2.7E+02	2.7E+02
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	ug/m^3	---		1.8E+03	1.8E+03
			1,1-DICHLOROETHANE	ug/m^3	1.2E+00		4.1E+02	1.2E+00
			1,1-DICHLOROETHENE	ug/m^3	---	Liver toxicity	1.6E+02	1.6E+02
			1,2-DICHLOROETHANE	ug/m^3	7.4E-02		4.0E+00	7.4E-02
			ACETALDEHYDE	ug/m^3	6.7E-01		7.4E+00	6.7E-01
			BENZENE	ug/m^3	6.7E-02	Dec. lymphocyte count	2.5E+01	6.7E-02
			CARBON TETRACHLORIDE	ug/m^3	4.5E-02	Liver lesions	3.3E+01	4.5E-02
			CHLOROFORM	ug/m^3	8.3E-02	Liver	2.5E+02	8.3E-02
			CIS-1,2-DICHLOROETHENE	ug/m^3	---		2.9E+01	2.9E+01
			TETRACHLOROETHENE	ug/m^3	3.3E-01	Liver toxicity in mice	2.9E+01	3.3E-01
			TRANS-1,2-DICHLOROETHENE	ug/m^3	---	Inc. serum alkaline phosphatase in male mice	5.8E+01	5.8E+01
			TRICHLOROETHENE	ug/m^3	9.6E-01		4.9E+02	9.6E-01
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	---	Survival and histopathology	5.8E+02	5.8E+02

PRG: Preliminary remediation goal

NA: Not applicable.

---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.

ug/m^3: microgram per cubic meter.

TABLE D-2.6 RME
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs BY EXPOSURE PATHWAY
Resident Child - Reasonable Maximum Exposure
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Carcinogenic	Non-Carcinogenic Hazard		Minimum Site-specific PRG
					Site-specific PRG	Primary Target Organ(s)	Site-specific PRG	
Soil	Surface and Subsurface Soil 0 to 12' bgs	Surface and Subsurface Soil	1,4-DIOXANE	mg/kg	2.6E+01		---	2.6E+01
			BENZO(A)ANTHRACENE	mg/kg	5.5E-01		---	5.5E-01
			BENZO(A)PYRENE	mg/kg	5.5E-02		---	5.5E-02
			BENZO(B)FLUORANTHENE	mg/kg	5.5E-01		---	5.5E-01
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	5.1E+01	Inc. liver weight	1.2E+03	5.1E+01
			CHRYSENE	mg/kg	5.5E+00		---	5.5E+00
			DIELDRIN	mg/kg	4.4E-02	Liver	3.0E+00	4.4E-02
			LEAD	mg/kg	1.1E+02		---	1.1E+02
			PCB-1254 (AROCLOR 1254)	mg/kg	1.3E-01	Ocular exudate	1.1E+00	1.3E-01
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	1.3E-01		3 9E+00	1.3E-01
			TETRACHLOROETHENE	mg/kg	1.7E+00	Liver toxicity in mice	7.8E+02	1.7E+00
Indoor Air	Indoor Air	Indoor Air	1,1-DICHLOROETHANE	ug/m^3	3.2E+00		2.2E+02	3.2E+00
			1,1-DICHLOROETHENE	ug/m^3	---	Liver toxicity	8.8E+01	8.8E+01
			1,2-DICHLOROETHANE	ug/m^3	2.0E-01		2.2E+00	2.0E-01
			BENZENE	ug/m^3	1.8E-01	Dec. lymphocyte count	1.3E+01	1.8E-01
			CARBON TETRACHLORIDE	ug/m^3	1.2E-01	Liver lesions	1.8E+01	1.2E-01
			CHLOROFORM	ug/m^3	2.2E-01	Liver	1.3E+02	2.2E-01
			TETRACHLOROETHENE	ug/m^3	8.8E-01	Liver toxicity in mice	1.6E+01	8.8E-01
			TRICHLOROETHENE	ug/m^3	2.6E+00		2.7E+02	2.6E+00
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	---	Survival and histopathology	3 1E+02	3.1E+02

PRG: Preliminary remediation goal
NA: Not applicable.
---: Risk was not calculated for chemical.

mg/kg: milligram per kilogram.
ug/m^3: microgram per cubic meter.

TABLE D-3 1
CALCULATION OF CARCINOGENIC SOIL GAS SITE-SPECIFIC PRGs BASED ON RISK RATIOS FOR COCs
Industrial Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker and Construction Worker
Receptor	*Adult*

Target Risk 1.0E-06

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Industrial Indoor: Soil Gas Exposure Concentration All Parcels (1) 5-6 ft bgs	Industrial Indoor: Building Indoor Air Concentration Site Parcel (1)	Industrial Indoor: Attenuation Factor (2) (ATF)	Industrial Outdoor: Soil Gas Exposure Concentration All Parcels (3) 5-6 ft bgs	Industrial Outdoor: Outdoor Air Concentration Site Parcel (3)	Industrial Outdoor: Attenuation Factor (2) (ATF)	Construction: Soil Gas Exposure Concentration All Parcels (4) 5-30 ft bgs	Construction: Outdoor Air Concentration Site Parcel (4)	Construction: Attenuation Factor (2) (ATF)
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1-DICHLOROETHANE	ug/m³	38,423	1.2E+01	3.1E-04	38,423	2 3E-01	5 9E-06	18,874	1 7E-01	9 2E-06
			1,1-DICHLOROETHENE	ug/m³	659,877	2 4E+02	3 6E-04	659,877	4 7E+00	7 1E-06	439,581	4 9E+00	1 1E-05
			1,2-DICHLOROETHANE	ug/m³	2,253	8 9E-01	4 0E-04	2,253	1 9E-02	8 2E-06	1,803	2 3E-02	1 3E-05
			BENZENE	ug/m³	1,418	5 0E-01	3.5E-04	1,418	9 9E-03	7 0E-06	1,232	1 4E-02	1.1E-05
			CARBON TETRACHLORIDE	ug/m³	233	7.6E-02	3.3E-04	233	1 4E-03	6 2E-06	233	2.3E-03	9 7E-06
			CHLOROFORM	ug/m³	5,726	2.3E+00	4 0E-04	5,726	4 7E-02	8 2E-06	5,987	7.8E-02	1 3E-05
			TETRACHLOROETHENE	ug/m³	1,225,830	3 8E+02	3 1E-04	1,225,830	7 0E+00	5.7E-06	574,757	5 2E+00	9 0E-06
			TRICHLOROETHENE.	ug/m³	184,300	6 1E+01	3 3E-04	184,300	1 2E+00	6 3E-06	87,149	8 6E-01	9.8E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m³	485,399	1 7E+02	3 5E-04	485,399	3 3E+00	6 9E-06	288,990	2 9E+00	1 1E-05

Medium	Exposure *Medium*	Exposure *Point*	Chemical *of Concern*	*Units*	Chemical-Specific *Value*: Inhalation Cancer Slope Factor (CSF) Value	Inhalation Cancer Slope Factor (CSF) Units	Site-specific PRG for Target Risk *(ug/m³)*: Industrial Indoor RME	Industrial Outdoor RME	Construction RME	Minimum Site-specific PRGca
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1-DICHLOROETHANE	ug/m³	5 7E-03	mg/kg/day⁻¹	**1.0E+04**	—	—	**1.0E+04**
			1,1-DICHLOROETHENE	ug/m³	NA	mg/kg/day⁻¹	—	—	—	—
			1,2-DICHLOROETHANE	ug/m³	9.1E-02	mg/kg/day⁻¹	**5.2E+02**	2 1E+04	1 3E+05	5 2E+02
			BENZENE	ug/m³	1.0E-01	mg/kg/day⁻¹	**5.3E+02**	—	—	5 3E+02
			CARBON TETRACHLORIDE	ug/m³	1 5E-01	mg/kg/day⁻¹	**3.6E+02**	—	—	3 6E+02
			CHLOROFORM	ug/m³	8 1E-02	mg/kg/day⁻¹	**5.9E+02**	—	—	5 9E+02
			TETRACHLOROETHENE	ug/m³	2.1E-02	mg/kg/day⁻¹	**3.0E+03**	1.3E+05	8 0E+05	3 0E+03
			TRICHLOROETHENE	ug/m³	7.0E-03	mg/kg/day⁻¹	**8.2E+03**	3 6E+05	2 2E+06	8 2E+03
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m³	NA	mg/kg/day⁻¹	—	—	—	—

Parameter Code	Parameter Definition	RME Value	Units	Reference
IhR	Inhalation Rate of Air - CTE Industrial Indoor	1.2	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air - RME Industrial Indoor	1.9	m^3/hr	EPA 1997
IhR	*Inhalation Rate of Air - CTE Industrial Outdoor*	1.9	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- RME Industrial Outdoor	2 5	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- CTE Construction	2 5	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- RME Construction	4 8	m^3/hr	EPA 1997
ET_i	Exposure Time - Indoors - Industrial Indoor	8	hrs/day	professional judgment
ET_o	*Exposure Time - Outdoors - Industrial Outdoor*	8	*hrs/day*	*professional judgment*
ET_o	Exposure Time - Outdoors - Construction	10	hrs/day	professional judgment
EF	Exposure Frequency - Industrial Indoor	250	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - Industrial Outdoor	225	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - CTE Construction	60	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - RME Construction	250	days/year	EPA 1991b, 2002a
ED	Exposure Duration - Industrial	25	years	EPA 1991b, 2002
ED	Exposure Duration - Construction	1	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
AT-C	*Averaging Time (Cancer)*	25,550	days	*EPA 1989*

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Ambient Air

$$PRG_a(ug/m^3) = \frac{TR \times BW \times AT_c \times 1000 ug/mg}{EF \times ED \times IhR \times ET \times CSF \times ATF}$$

Reference Notes
EPA 1989 Risk Assessment Guidance for Superfund Vol. 1: Human Health Evaluation Manual. Part A OERR EPA/540/1-89/002.
EPA 1991b Risk Assessment Guidance for Superfund, Vol 1 Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors Interim Final OSWER Directive 9285 6-03
EPA 1997: Exposure Factors Handbook Vol 1: General Factors ORD EPA/600/P-95/002Fa
EPA 2002a Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites OSWER 9355 4-24
EPA 2004a Risk Assessment Guidance for Superfund Vol. 1 Human Health Evaluation Manual, Part E. Supplemental Guidance for Dermal Risk Assessment *EPA/540/R/99/005*

NA Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10-7 or the hazard greater than 0 1
PRGca Preliminary remediation goal based on carcinogenic effects
ug/m^3: microgram per cubic meter
—: No risk calculated because COC is not carcinogenic
mg/kg/day: milligram per kilogram per day
$mg/kg/day^{-1}$ milligram per kilogram-day.
Bold value was selected for most stringent site-specific PRG
(1) Soil gas exposure concentration and indoor air building concentrations for Industrial Indoor from Table A4-1
(2) Attenuation Factor = Indoor Air Concentration / Soil gas Concentration
(3) Soil gas exposure concentration and outdoor air concentrations for Industrial Outdoor from Table A5-1
(4) Soil gas exposure concentration and outdoor air concentrations for Construction from Table A5-7

TABLE D-3 2
CALCULATION OF NON-CARCINOGENIC SOIL GAS SITE-SPECIFIC PRGs BASED ON HAZARD RATIOS FOR COCs
Industrial Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe	Future
Receptor Population	Industrial Worker and Construction Worker
Receptor	Adult

Target Hazard 1.0E+00

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Industrial Indoor: Soil Gas Exposure Concentration All Parcels (1) 5-6 ft bgs	Industrial Indoor: Building Indoor Air Concentration Site Parcel (1)	Industrial Indoor: Attenuation Factor (2) (ATF)	Industrial Outdoor: Soil Gas Exposure Concentration All Parcels (3) 5-6 ft bgs	Industrial Outdoor: Outdoor Air Concentration Site Parcel (3)	Industrial Outdoor: Attenuation Factor (2) (ATF)	Construction: Soil Gas Exposure Concentration All Parcels (4) 5-30 ft bgs	Construction: Outdoor Air Concentration Site Parcel (4)	Construction: Attenuation Factor (2) (ATF)
Soil gas 5 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1-DICHLOROETHANE	ug/m³	38,423	1 2E+01	3 1E-04	38,423	2 3E-01	5.9E-06	18,874	1 7E-01	9 2E-06
			1,1-DICHLOROETHENE	ug/m³	659,877	2 4E+02	3 6E-04	659,877	4 7E+00	7.1E-06	439,581	4 9E+00	1 1E-05
			1,2-DICHLOROETHANE	ug/m³	2 253	8 9E-01	4 0E-04	2,253	1 9E-02	8 2E-06	1,803	2.3E-02	1 3E-05
			BENZENE	ug/m³	1,418	5 0E-01	3 5E-04	1,418	9 9E-03	7 0E-06	1,232	1 4E-02	1 1E-05
			CARBON TETRACHLORIDE	ug/m³	233	7.6E-02	3 3E-04	233	1 4E-03	6 2E-06	233	2.3E-03	9 7E-06
			CHLOROFORM	ug/m³	5,726	2.3E+00	4.0E-04	5,726	4.7E-02	8.2E-06	5,987	7 8E-02	1.3E-05
			TETRACHLOROETHENE	ug/m³	1,225,830	3.8E+02	3 1E-04	1,225,830	7.0E+00	5 7E-06	574,757	5 2E+00	9 0E-06
			TRICHLOROETHENE	ug/m³	184,300	6 1E+01	3 3E-04	184,300	1 2E+00	6 3E-06	87,149	8 6E-01	9 8E-06
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m³	485,399	1 7E+02	3 5E-04	485,399	3.3E+00	6 9E-06	268,990	2 9E+00	1.1E-05

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Chemical-Specific Value: Inhalation Reference Dose (RfD) Value	Chemical-Specific Value: Inhalation Reference Dose (RfD) Units	Site-specific PRG for Target Risk (ug/m³): Industrial Indoor RME	Industrial Outdoor RME	Construction RME	Minimum Site-specific PRGca
Soil gas 5 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1-DICHLOROETHANE	ug/m³	1.4E-01	mg/kg/day	**3.0E+06**	---	---	3 0E+06
			1,1-DICHLOROETHENE	ug/m³	5 7E-02	mg/kg/day	**1.1E+06**	---	---	1 1E+06
			1,2-DICHLOROETHANE	ug/m³	1 4E-03	mg/kg/day	**2.4E+04**	9 6E+05	2 3E+05	2 4E+04
			BENZENE	ug/m³	8 8E-03	mg/kg/day	**1.6E+05**	---	---	1 6E+05
			CARBON TETRACHLORIDE	ug/m³	1 1E-02	mg/kg/day	**2.3E+05**	---	---	2.3E+05
			CHLOROFORM	ug/m³	8 6E-02	mg/kg/day	**1.5E+06**	---	---	1.5E+06
			TETRACHLOROETHENE	ug/m³	1 0E-02	mg/kg/day	**2.2E+05**	9 9E+06	2 4E+06	2 2E+05
			TRICHLOROETHENE	ug/m³	1.7E-01	mg/kg/day	**3.5E+06**	1 6E+08	3.7E+07	3 5E+06
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m³	2 0E-01	mg/kg/day	**3.8E+06**	---	---	3 8E+06

Parameter Code	Parameter Definition	RME Value	Units	Reference
IhR	Inhalation Rate of Air - CTE Industrial Indoor	1 2	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air - RME Industrial Indoor	1.8	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air - CTE Industrial Outdoor	1 9	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- RME Industrial Outdoor	2 5	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- CTE Construction	2.5	m^3/hr	EPA 1997
IhR	Inhalation Rate of Air- RME Construction	4 8	m^3/hr	EPA 1997
ET_i	Exposure Time - Indoors - Industrial Indoor	8	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors - Industrial Outdoor	8	hrs/day	professional judgment
ET_o	Exposure Time - Outdoors - Construction	10	hrs/day	professional judgment
EF	Exposure Frequency - Industrial Indoor	250	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - Industrial Outdoor	225	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - CTE Construction	60	days/year	EPA 1991b, 2002a
EF	Exposure Frequency - RME Construction	250	days/year	EPA 1991b, 2002a
ED	Exposure Duration - Industrial	25	years	EPA 1991b, 2002
ED	Exposure Duration - Construction	1	years	EPA 1991b, 2002
BW	Body Weight	70	kg	EPA 1991b, 2002
AT-N	Averaging Time (Noncancer) - Industrial	9,125	days	EPA 1989
AT-N	Averaging Time (Noncancer) - Constructon	365	days	EPA 1989

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Ambient Air

$$PRG_{a}\ (ug/m^3) = \frac{THQx\,RfDx\,BW\,x\,AT_{n}\,x1000ug/mg}{EF\,x\,EDx\,IhRx\,ETx\,ATF}$$

Reference Notes
EPA 1989 Risk Assessment Guidance for Superfund Vol 1. Human Health Evaluation Manual, Part A OERR EPA/540/1-89/002
EPA 1991b Risk Assessment Guidance for Superfund Vol 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors Interim Final OSWER Directive 9285 6-03
EPA 1997. Exposure Factors Handbook Vol 1: General Factors ORD EPA/600/P-95/002Fa.
EPA 2002a Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites OSWER 9355 4-24
EPA 2004a Risk Assessment Guidance for Superfund Vol 1 Human Health Evaluation Manual, Part E. Supplemental Guidance for Dermal Risk Assessment EPA/540/R/99/005

NA Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10-7 or the hazard greater than 0 1.
PRGca Preliminary remediation goal based on carcinogenic effects
ug/m³ microgram per cubic meter.
--- No risk calculated because COC is not carcinogenic
mg/kg/day milligram per kilogram per day
mg/kg/day⁻¹: milligram per kilogram-day
Bold value was selected for most stringent site-specific PRG

(1) Soil gas exposure concentration and indoor air building concentrations for Industrial Indoor from Table A4-1
(2) Attenuation Factor = Indoor Air Concentration / Soil gas Concentration
(3) Soil gas exposure concentration and outdoor air concentrations for Industrial Outdoor from Table A5-1
(4) Soil gas exposure concentration and outdoor air concentrations for Construction from Table A5-7

TABLE D-3.3
SUMMARY OF SOIL GAS SITE-SPECIFIC PRGs BASED ON RATIOS FOR COCs
Industrial Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Industrial Worker and Construction Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration All Parcels	Site-specific PRGca for Target Risk (ug/m^3)			Site-specific PRGnc for Target Hazard (ug/m^3)		
						Industrial Indoor RME	Industrial Outdoor RME	Construction RME	Industrial Indoor RME	Industrial Outdoor RME	Construction RME
Soil gas 5 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1-DICHLOROETHANE	ug/m^3	38,423	1.0E+04	---	---	3.0E+06	---	---
			1,1-DICHLOROETHENE	ug/m^3	659,877	---	---	---	1.1E+06	---	---
			1,2-DICHLOROETHANE	ug/m^3	2,253	5.2E+02	2.1E+04	1.3E+05	2.4E+04	9.6E+05	2.3E+05
			BENZENE	ug/m^3	1,418	5.3E+02	---	---	1.6E+05	---	---
			CARBON TETRACHLORIDE	ug/m^3	233	3.8E+02	---	---	2.3E+05	---	---
			CHLOROFORM	ug/m^3	5,726	5.9E+02	---	---	1.5E+06	---	---
			TETRACHLOROETHENE	ug/m^3	1,225,830	3.0E+03	1.3E+05	8.0E+05	2.2E+05	9.9E+06	2.4E+06
			TRICHLOROETHENE	ug/m^3	184,300	8.2E+03	3.6E+05	2.2E+06	3.5E+06	1.6E+08	3.7E+07
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	485,399	---	---	---	3.8E+06	---	---

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration All Parcels	Site-specific PRG (minimum of Site-specific PRGca and Site-specific PRGnc) (ug/m^3)		
						Industrial Indoor RME	Industrial Outdoor RME	Construction RME
Soil gas 5 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1-DICHLOROETHANE	ug/m^3	38,423	1.0E+04	---	---
			1,1-DICHLOROETHENE	ug/m^3	659,877	1.1E+06	---	---
			1,2-DICHLOROETHANE	ug/m^3	2,253	5.2E+02	2.1E+04	1.3E+05
			BENZENE	ug/m^3	1,418	5.3E+02	---	---
			CARBON TETRACHLORIDE	ug/m^3	233	3.8E+02	---	---
			CHLOROFORM	ug/m^3	5,726	5.9E+02	---	---
			TETRACHLOROETHENE	ug/m^3	1,225,830	3.0E+03	1.3E+05	8.0E+05
			TRICHLOROETHENE	ug/m^3	184,300	8.2E+03	3.6E+05	2.2E+06
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	485,399	3.8E+06	---	---

NA: Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-7} or the hazard greater than 0.1.
PRGca: Preliminary remediation goal based on carcinogenic effects
PRGnc: Preliminary remediation goal based on noncarcinogenic effects
ug/m^3: microgram per cubic meter.
---: No risk calculated because COC is not carcinogenic

TABLE D-3.4
CALCULATION OF CARCINOGENIC SOIL GAS SITE-SPECIFIC PRGs BASED ON RISK RATIOS FOR COCs
Residential Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult, Adult+Child, and Child

Target Risk 1.0E-06

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration Site Parcel (1)	Building Indoor Air Concentration Site Parcel (1)	Attenuation Factor (2) (ATF)	Chemical-Specific Value: Inhalation Cancer Slope Factor (CSF) Value	CSF Units	Site-specific PRG for Target Risk (ug/m³): Resident Adult RME	Resident Adult+Child RME	Resident Child RME	Minimum Site-specific PRGca
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1,1-TRICHLOROETHANE	ug/m³	553.427	408.43	7.38E-04	NA	mg/kg/day⁻¹	—	—	—	—
			1,1-DICHLOROETHANE	ug/m³	19,662	14.01	7.13E-04	5.7E-03	mg/kg/day⁻¹	2.1E+03	**1.7E+03**	4.5E+03	1.7E+03
			1,1-DICHLOROETHENE	ug/m³	626.769	510.16	8.14E-04	NA	mg/kg/day⁻¹	—	—	—	—
			1,2-DICHLOROETHANE	ug/m³	2.496	2.23	8.95E-04	9.1E-02	mg/kg/day⁻¹	1.1E+02	**8.3E+01**	2.2E+02	8.3E+01
			ACETALDEHYDE	ug/m³	97	0.10	1.00E-03	1.0E-02	mg/kg/day⁻¹	8.5E+02	**6.7E+02**	1.8E+03	6.7E+02
			BENZENE	ug/m³	1,362	1.09	8.02E-04	1.0E-01	mg/kg/day⁻¹	1.1E+02	**8.4E+01**	2.3E+02	8.4E+01
			CARBON TETRACHLORIDE	ug/m³	233	0.17	7.38E-04	1.5E-01	mg/kg/day⁻¹	7.7E+01	**6.1E+01**	1.6E+02	6.1E+01
			CHLOROFORM	ug/m³	7,482	6.69	8.95E-04	8.1E-02	mg/kg/day⁻¹	1.2E+02	**9.3E+01**	2.5E+02	9.3E+01
			CIS-1,2-DICHLOROETHENE	ug/m³	14,326	10.15	7.08E-04	NA	mg/kg/day⁻¹	—	—	—	—
			TETRACHLOROETHENE	ug/m³	1,355,479	945.22	6.97E-04	2.1E-02	mg/kg/day⁻¹	5.9E+02	**4.7E+02**	1.3E+03	4.7E+02
			TRANS-1,2-DICHLOROETHENE	ug/m³	8,064	5.55	6.88E-04	NA	mg/kg/day⁻¹	—	—	—	—
			TRICHLOROETHENE	ug/m³	190,082	141.54	7.45E-04	7.0E-03	mg/kg/day⁻¹	1.6E+03	**1.3E+03**	3.5E+03	1.3E+03
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m³	430,192	342.26	7.96E-04	NA	mg/kg/day⁻¹	—	—	—	—

Parameter Code	Parameter Definition	RME Value	Units	Reference
IhR_{adj}	Inhalation Rate of Air - adult+child	10.86	mg-yr/kg-d	EPA 2004a
IhR_c	Inhalation Rate of Air - child	0.42	m³/hr	EPA 1997
IhR_a	Inhalation Rate of Air - adult	0.83	m³/hr	EPA 1997
ET_i	Exposure Time - Indoors	24	hrs/day	professional judgment
EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a
ED_a	Exposure Duration - adult	30	years	EPA 1991b, 2002a
ED_{ac}	Exposure Duration - adult (for adult+child)	24	years	EPA 1991b, 2002a
ED_c	Exposure Duration - child	6	years	EPA 1991b, 2002a
BW_a	Body Weight - adult	70	kg	EPA 1991b, 2002a
BW_c	Body Weight - child	15	kg	EPA 1991b, 2002a
AT-C	Averaging Time (Cancer)	25,550	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR. EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

NA: Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-7} or the hazard greater than 0.1.

PRGca: Preliminary remediation goal based on carcinogenic effects

ug/m³: microgram per cubic meter.

—: No risk calculated because COC is not carcinogenic

(1) Soil gas exposure concentration and calculated indoor air concentration for site parcel from Table A4-2

(2) Attenuation Factor = Indoor Air Concentration / Soil gas Concentration

Bold value was selected for most stringent site-specific PRG

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Ambient Air for Adult+Child

$$PRG_a\ (ug/m^3) = \frac{TR\ x\ AT_c\ x\ 1000\ ug/mg}{EF\ x\ IhR_{adj}\ x\ CSF\ x\ ATF}$$

Equation for Inhalation Exposure to Carcinogenic Contaminants in Indoor or Ambient Air

$$PRG_a\ (ug/m^3) = \frac{TR\ x\ BW\ x\ AT_c\ x\ 1000 ug/mg}{EF\ x\ ED\ x\ IhR\ x\ ET\ x\ CSF\ x\ ATF}$$

Adjusted Inhalation Rate for Adult+Child

$$IhR_{adj}(mg-yr/kg-d) = \frac{ED_c\ x\ ET\ x\ IhR_c}{BW_c} + \frac{ED_a\ x\ ET\ x\ IhR_a}{BW_a}$$

TABLE D-3 5
CALCULATION OF NON-CARCINOGENIC SOIL GAS SITE-SPECIFIC PRGs BASED ON HAZARD RATIOS FOR COCs
Residential Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult, Adult+Child, and Child

Target Hazard 1.0E+00

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration Site Parcel (1)	Building Indoor Air Concentration Site Parcel (1)	Attenuation Factor (2) (ATF)	Chemical-Specific Value: Inhalation Reference Dose (RfD) Value	RfD Units	Site-specific PRG for Target Risk (ug/m^3): Resident Adult RME	Resident Adult+Child RME	Resident Child RME	Minimum Site-specific PRGca
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1,1-TRICHLOROETHANE	ug/m^3	553,427	408.43	7.38E-04	6.3E-01	mg/kg/day	3.1E+06	2.5E+06	**1.3E+06**	1.3E+06
			1,1-DICHLOROETHANE	ug/m^3	19,662	14.01	7.13E-04	1.4E-01	mg/kg/day	7.3E+05	5.8E+05	**3.1E+05**	3.1E+05
			1,1-DICHLOROETHENE	ug/m^3	626,769	510.16	8.14E-04	5.7E-02	mg/kg/day	2.6E+05	2.0E+05	**1.1E+05**	1.1E+05
			1,2-DICHLOROETHANE	ug/m^3	2,496	2.23	8.95E-04	1.4E-03	mg/kg/day	5.7E+03	4.5E+03	**2.4E+03**	2.4E+03
			ACETALDEHYDE	ug/m^3	97	0.10	1.00E-03	2.6E-03	mg/kg/day	9.4E+03	7.4E+03	**4.0E+03**	4.0E+03
			BENZENE	ug/m^3	1,362	1.09	8.02E-04	8.6E-03	mg/kg/day	3.9E+04	3.1E+04	**1.7E+04**	1.7E+04
			CARBON TETRACHLORIDE	ug/m^3	233	0.17	7.38E-04	1.1E-02	mg/kg/day	5.7E+04	4.4E+04	**2.4E+04**	2.4E+04
			CHLOROFORM	ug/m^3	7,482	6.69	8.95E-04	8.6E-02	mg/kg/day	3.5E+05	2.8E+05	**1.5E+05**	1.5E+05
			CIS-1,2-DICHLOROETHENE	ug/m^3	14,326	10.15	7.08E-04	1.0E-02	mg/kg/day	5.2E+04	4.1E+04	**2.2E+04**	2.2E+04
			TETRACHLOROETHENE	ug/m^3	1,355,479	945.22	6.97E-04	1.0E-02	mg/kg/day	5.3E+04	4.1E+04	**2.2E+04**	2.2E+04
			TRANS-1,2-DICHLOROETHENE	ug/m^3	8,064	5.55	6.88E-04	2.0E-02	mg/kg/day	1.1E+05	8.4E+04	**4.5E+04**	4.5E+04
			TRICHLOROETHENE	ug/m^3	190,082	141.54	7.45E-04	1.7E-01	mg/kg/day	8.4E+05	6.6E+05	**3.6E+05**	3.6E+05
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	430,192	342.26	7.96E-04	2.0E-01	mg/kg/day	9.2E+05	7.2E+05	**3.9E+05**	3.9E+05

Parameter Code	Parameter Definition	RME Value	Units	Reference
IhR_{adj}	Inhalation Rate of Air - adult+child	10.86	mg-yr/kg-d	EPA 2004a
IhR_c	Inhalation Rate of Air - child	0.42	m^3/hr	EPA 1997
IhR_a	Inhalation Rate of Air - adult	0.83	m^3/hr	EPA 1997
ET	Exposure Time - Indoors	24	hrs/day	professional judgment
EF	Exposure Frequency	350	days/year	EPA 1991b, 2002a
ED_a	Exposure Duration - adult	30	years	EPA 1991b, 2002a
ED_{ac}	Exposure Duration - adult (for adult + child)	24	years	EPA 1991b, 2002a
ED_c	Exposure Duration - child	6	years	EPA 1991b, 2002a
BW_a	Body Weight - adult	70	kg	EPA 1991b, 2002a
BW_c	Body Weight - child	15	kg	EPA 1991b, 2002a
AT-N_a	Averaging Time (Noncancer) - adult	10,950	days	EPA 1989
AT-N_{ac}	Averaging Time (Noncancer) - adult (for adult+child)	8,760	days	EPA 1989
AT-N_c	Averaging Time (Noncancer) - child	2,190	days	EPA 1989

Reference Notes

EPA 1989: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part A. OERR, EPA/540/1-89/002.

EPA 1991b: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors. Interim Final. OSWER Directive 9285.6-03.

EPA 1997: Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.

EPA 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

EPA 2004a: Risk Assessment Guidance for Superfund. Vol. 1: Human Health Evaluation Manual, Part E, Supplemental Guidance for Dermal Risk Assessment. EPA/540/R/99/005.

NA Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-7} or the hazard greater than 0.1.

PRGca. Preliminary remediation goal based on carcinogenic effects

ug/m^3: microgram per cubic meter.

—: No risk calculated because COC is not carcinogenic

(1) Soil gas exposure concentration and calculated indoor air concentration for site parcel from Table A4-2

(2) Attenuation Factor = Indoor Air Concentration / Soil gas Concentration

Bold value was selected for most stringent site-specific PRG

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Ambient Air

$$PRG_a\ (ug/m^3) = \frac{THQx\ RfDx\ BW\ x\ AT_n\ x1000ug/mg}{EF\ x\ EDx\ IhRx\ ET\ x\ ATF}$$

Equation for Inhalation Exposure to Noncarcinogenic Contaminants in Indoor or Ambient Air for Adult+Child

$$PRG_a\ (ug/m^3) = \frac{THQ\ x\ RfDx\ AT_n\ x1000ug/mg}{EF\ x\ IhR_{adj}\ x\ ATF}$$

Adjusted Inhalation Rate for Adult+Child

$$IhR_{adj}(mg-yr/kg-d) = \frac{ED_c\ x\ ET\ x\ IhR_c}{BW_c} + \frac{ED_a\ x\ ET\ x\ IhR_a}{BW_a}$$

TABLE D-3.6
SUMMARY OF SOIL GAS SITE-SPECIFIC PRGs BASED ON RATIOS FOR COCs
Residential Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult, Adult+Child, and Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration All Parcels	Site-specific PRGca for Target Risk (ug/m^3)			Site-specific PRGnc for Target Hazard (ug/m^3)		
						Resident Adult RME	Resident Adult+Child RME	Resident Child RME	Resident Adult RME	Resident Adult+Child RME	Resident Child RME
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1,1-TRICHLOROETHANE	ug/m^3	352,624	—	—	—	3.1E+06	2.5E+06	1.3E+06
			1,1-DICHLOROETHANE	ug/m^3	38,423	2.1E+03	1.7E+03	4.5E+03	7.3E+05	5.8E+05	3.1E+05
			1,1-DICHLOROETHENE	ug/m^3	659,877	—	—	—	2.6E+05	2.0E+05	1.1E+05
			1,2-DICHLOROETHANE	ug/m^3	2,253	1.1E+02	8.3E+01	2.2E+02	5.7E+03	4.5E+03	2.4E+03
			ACETALDEHYDE	ug/m^3	97	8.5E+02	6.7E+02	1.8E+03	9.4E+03	7.4E+03	4.0E+03
			BENZENE	ug/m^3	1,418	1.1E+02	8.4E+01	2.3E+02	3.9E+04	3.1E+04	1.7E+04
			CARBON TETRACHLORIDE	ug/m^3	233	7.7E+01	6.1E+01	1.6E+02	5.7E+04	4.4E+04	2.4E+04
			CHLOROFORM	ug/m^3	5,726	1.2E+02	9.3E+01	2.5E+02	3.5E+05	2.8E+05	1.5E+05
			CIS-1,2-DICHLOROETHENE	ug/m^3	17,957	—	—	—	5.2E+04	4.1E+04	2.2E+04
			TETRACHLOROETHENE	ug/m^3	1,225,830	5.9E+02	4.7E+02	1.3E+03	5.3E+04	4.1E+04	2.2E+04
			TRANS-1,2-DICHLOROETHENE	ug/m^3	6,704	—	—	—	1.1E+05	8.4E+04	4.5E+04
			TRICHLOROETHENE	ug/m^3	184,300	1.6E+03	1.3E+03	3.5E+03	8.4E+05	6.6E+05	3.6E+05
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	485,399	—	—	—	9.2E+05	7.2E+05	3.9E+05

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	Soil Gas Exposure Concentration All Parcels	Site-specific PRG (minimum of Site-specific PRGca and Site-specific PRGnc) (ug/m^3)		
						Resident Adult RME	Resident Adult+Child RME	Resident Child RME
Soil gas 5 ft	Indoor Air and Ambient Air	Indoor Air and Ambient Air	1,1,1-TRICHLOROETHANE	ug/m^3	352,624	3.1E+06	2.5E+06	1.3E+06
			1,1-DICHLOROETHANE	ug/m^3	38,423	2.1E+03	1.7E+03	4.5E+03
			1,1-DICHLOROETHENE	ug/m^3	659,877	2.6E+05	2.0E+05	1.1E+05
			1,2-DICHLOROETHANE	ug/m^3	2,253	1.1E+02	8.3E+01	2.2E+02
			ACETALDEHYDE	ug/m^3	97	8.5E+02	6.7E+02	1.8E+03
			BENZENE	ug/m^3	1,418	1.1E+02	8.4E+01	2.3E+02
			CARBON TETRACHLORIDE	ug/m^3	233	7.7E+01	6.1E+01	1.6E+02
			CHLOROFORM	ug/m^3	5,726	1.2E+02	9.3E+01	2.5E+02
			CIS-1,2-DICHLOROETHENE	ug/m^3	17,957	5.2E+04	4.1E+04	2.2E+04
			TETRACHLOROETHENE	ug/m^3	1,225,830	5.9E+02	4.7E+02	1.3E+03
			TRANS-1,2-DICHLOROETHENE	ug/m^3	6,704	1.1E+05	8.4E+04	4.5E+04
			TRICHLOROETHENE	ug/m^3	184,300	1.6E+03	1.3E+03	3.5E+03
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	485,399	9.2E+05	7.2E+05	3.9E+05

NA: Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-7} or the hazard greater than 0.1.
PRGca: Preliminary remediation goal based on carcinogenic effects
PRGnc: Preliminary remediation goal based on noncarcinogenic effects
ug/m^3: microgram per cubic meter.
—: No risk calculated because COC is not carcinogenic

TABLE D-4.1
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs
Industrial Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future		
Receptor Population:	Industrial Worker and Construction Worker	Target Risk	1.0E-06
Receptor:	Adult	Target Hazard	1.0E+00

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	HBRG for Exposure Point				Industrial HBRG For Original Medium		Comparison of Calculated HBRG to Existing Screening Level[1]	
					Industrial Indoor RME	Industrial Outdoor RME	Construction RME	Receptor Minimum	Value	Units	Screening Level	Notes
Soil	Soil	Soil	1,4-DIOXANE	mg/kg	6.4E+01	**5.5E+01**	NA	5.5E+01	5.5E+01	mg/kg	1.57E+02	PRG less stringent than HBRG
			BENZO(A)ANTHRACENE	mg/kg	1.3E+00	**1.1E+00**	NA	1.1E+00	1.1E+00	mg/kg	2.11E+00	PRG less stringent than HBRG
			BENZO(A)PYRENE	mg/kg	1.3E-01	**1.1E-01**	8.9E-01	1.1E-01	1.1E-01	mg/kg	2.11E-01	PRG less stringent than HBRG
			BENZO(B)FLUORANTHENE	mg/kg	1.3E+00	**1.1E+00**	NA	1.1E+00	1.1E+00	mg/kg	2.11E+00	PRG less stringent than HBRG
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	1.2E+02	**1.1E+02**	NA	1.1E+02	1.1E+02	mg/kg	1.23E+02	PRG less stringent than HBRG
			CHRYSENE	mg/kg	1.3E+01	**1.1E+01**	NA	1.1E+01	1.1E+01	mg/kg	2.11E+02	PRG less stringent than HBRG
			DIELDRIN	mg/kg	1.1E-01	**9.2E-02**	NA	9.2E-02	9.2E-02	mg/kg	1.08E-01	PRG less stringent than HBRG
			IRON	mg/kg	NA	NA	**9.3E+04**	9.3E+04	9.3E+04	mg/kg	1.00E+05	PRG less stringent than HBRG
			LEAD	mg/kg	3.4E+02	**2.5E+02**	NA	2.5E+02	2.5E+02	mg/kg	8.00E+02	PRG less stringent than HBRG
			PCB-1254 (AROCLOR 1254)	mg/kg	3.0E-01	**2.6E-01**	2.0E+00	2.6E-01	2.6E-01	mg/kg	7.44E-01	PRG less stringent than HBRG
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	*3.0E-01*	***2.6E-01***	*2.0E+00*	*2.6E-01*	*2.6E-01*	mg/kg	*2.12E+01*	PRG less stringent than HBRG
			TETRACHLOROETHENE	mg/kg	5.3E+00	**3.9E+00**	4.0E+01	3.9E+00	3.9E+00	mg/kg	1.31E+00	HBRG higher than PRG
			VANADIUM	mg/kg	NA	NA	**3.1E+02**	3.1E+02	3.1E+02	mg/kg	1.02E+03	PRG less stringent than HBRG
Indoor Air	Indoor Air	Indoor Air	1,1-DICHLOROETHANE	ug/m^3	**3.3E+00**	NA	NA	3.3E+00	3.3E+00	ug/m^3	---	No CHHSL
			1,1-DICHLOROETHENE	ug/m^3	**3.8E+02**	NA	NA	3.8E+02	3.8E+02	ug/m^3	---	No CHHSL
			1,2-DICHLOROETHANE	ug/m^3	**2.1E-01**	NA	NA	2.1E-01	2.1E-01	ug/m^3	1.95E-01	HBRG higher than CHHSL
			BENZENE	ug/m^3	**1.9E-01**	NA	NA	1.9E-01	1.9E-01	ug/m^3	1.41E-01	HBRG higher than CHHSL
			CARBON TETRACHLORIDE	ug/m^3	**1.3E-01**	NA	NA	1.3E-01	1.3E-01	ug/m^3	9.73E-02	HBRG higher than CHHSL
			CHLOROFORM	ug/m^3	**2.3E-01**	NA	NA	2.3E-01	2.3E-01	ug/m^3	---	No CHHSL
			TETRACHLOROETHENE	ug/m^3	**9.1E-01**	NA	NA	9.1E-01	9.1E-01	ug/m^3	6.93E-01	HBRG higher than CHHSL
			TRICHLOROETHENE	ug/m^3	**2.7E+00**	NA	NA	2.7E+00	2.7E+00	ug/m^3	2.04E+00	HBRG higher than CHHSL
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	**1.3E+03**	NA	NA	1.3E+03	1.3E+03	ug/m^3	---	No CHHSL
Outdoor Air	Outdoor Air	Outdoor Air	1,2-DICHLOROETHANE	ug/m^3	NA	**1.7E-01**	NA	1.7E-01	1.7E-01	ug/m^3	7.39E-02	HBRG higher than PRG
			TETRACHLOROETHENE	ug/m^3	7.3E+00	**7.7E-01**	7.2E+00	7.7E-01	7.7E-01	ug/m^3	3.20E-01	HBRG higher than PRG
			TRICHLOROETHENE	ug/m^3	NA	***2.3E+00***	NA	2.3E+00	2.3E+00	ug/m^3	9.61E-01	HBRG higher than PRG
Soil gas[2] 5-6 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1-DICHLOROETHANE	ug/m^3	**1.0E+04**	---	---	1.0E+04	1.0E+04	ug/m^3	---	No CHHSL
			1,1-DICHLOROETHENE	ug/m^3	**1.1E+06**	---	---	1.1E+06	1.1E+06	ug/m^3	---	No CHHSL
			1,2-DICHLOROETHANE	ug/m^3	**5.2E+02**	2.1E+04	1.3E+05	5.2E+02	5.2E+02	ug/m^3	1.67E+02	HBRG higher than CHHSL
			BENZENE	ug/m^3	**5.3E+02**	---	---	5.3E+02	5.3E+02	ug/m^3	1.22E+02	HBRG higher than CHHSL
			CARBON TETRACHLORIDE	ug/m^3	**3.8E+02**	---	---	3.8E+02	3.8E+02	ug/m^3	8.46E+01	HBRG higher than CHHSL
			CHLOROFORM	ug/m^3	**5.9E+02**	---	---	5.9E+02	5.9E+02	ug/m^3	---	No CHHSL
			TETRACHLOROETHENE	ug/m^3	**3.0E+03**	1.3E+05	8.0E+05	3.0E+03	3.0E+03	ug/m^3	6.03E+02	HBRG higher than CHHSL
			TRICHLOROETHENE	ug/m^3	**8.2E+03**	3.6E+05	2.2E+06	8.2E+03	8.2E+03	ug/m^3	1.77E+03	HBRG higher than CHHSL
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	**3.8E+06**	---	---	3.8E+06	3.8E+06	ug/m^3	---	No CHHSL

NA: Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-7} or the hazard greater than 0.1.

OK: indicates that HBRG is higher than screening level

CHHSL: California Human Health Screening Level

PRG: Preliminary Remediation Goal

ug/m^3: microgram per cubic meter.

Bold value was selected for most stringent site-specific PRG

(1) Screening Levels were as follows:
Indoor air screening levels are CalEPA CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005)
Soil screening levels are EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c)
Outdoor air screening levels are EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c)

(2) Soil Gas site-specific PRGs were calculated using ratios of soil gas concentrations to calculated risks and hazards. See Tables D-3.1 to 3.6.

TABLE D-4.2
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs
Residential Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult, Adult/Child, Child

Target Risk	1.0E-06
Target Hazard	1 0E+00

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	HBRG for Exposure Point				Residential HBRG For Original Medium		Comparison of Calculated HBRG to Existing Screening Level[1]	
					Resident Adult RME	Resident Adult+Child RME	Resident Child RME	Receptor Minimum	Value	Units	Screening Level	Notes
Soil	Soil	Soil	1,4-DIOXANE	mg/kg	4.5E+01	**1.8E+01**	2.6E+01	1.8E+01	1.8E+01	mg/kg	4.42E+01	PRG less stringent than HBRG
			ANTIMONY	mg/kg	NA	**1.1E+02**	NA	1.1E+02	1.1E+02	mg/kg	3.13E+01	HBRG higher than PRG
			BENZO(A)ANTHRACENE	mg/kg	9.3E-01	**3.7E-01**	5.5E-01	3.7E-01	3.7E-01	mg/kg	6.21E-01	PRG less stringent than HBRG
			BENZO(A)PYRENE	mg/kg	9.3E-02	**3.7E-02**	5.5E-02	3.7E-02	3.7E-02	mg/kg	6.21E-02	PRG less stringent than HBRG
			BENZO(B)FLUORANTHENE	mg/kg	9.3E-01	**3.7E-01**	5.5E-01	3.7E-01	3.7E-01	mg/kg	6.21E-01	PRG less stringent than HBRG
			BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg	8.7E+01	**3.4E+01**	5.1E+01	3.4E+01	3.4E+01	mg/kg	3.47E+01	PRG less stringent than HBRG
			CHRYSENE	mg/kg	9.3E+00	**3.7E+00**	5.5E+00	3.7E+00	3.7E+00	mg/kg	6.21E+01	PRG less stringent than HBRG
			DIELDRIN	mg/kg	7.6E-02	**3.0E-02**	4.4E-02	3.0E-02	3 0E-02	mg/kg	3.04E-02	PRG less stringent than HBRG
			IRON	mg/kg	2.2E+05	**8.2E+04**	NA	8.2E+04	8.2E+04	mg/kg	2.35E+04	HBRG higher than PRG
			LEAD	mg/kg	2.0E+02	**7.5E+01**	1.1E+02	7.5E+01	7.5E+01	mg/kg	4.00E+02	PRG less stringent than HBRG
			PCB-1254 (AROCLOR 1254)	mg/kg	2.2E-01	**8.8E-02**	1.3E-01	8.8E-02	8.8E-02	mg/kg	2.22E-01	PRG less stringent than HBRG
			POLYCHLORINATED BI PHENYLS, TOTAL	mg/kg	2.2E-01	**8.8E-02**	1.3E-01	8.8E-02	8.8E-02	mg/kg	3.93E+00	PRG less stringent than HBRG
			TETRACHLOROETHENE	mg/kg	3.2E+00	**1.2E+00**	1.7E+00	1.2E+00	1.2E+00	mg/kg	4.84E-01	HBRG higher than PRG
			THALLIUM	mg/kg	NA	**1.8E+01**	NA	1.8E+01	1.8E+01	mg/kg	5.16E+00	HBRG higher than PRG
			VANADIUM	mg/kg	NA	**2.7E+02**	NA	2.7E+02	2.7E+02	mg/kg	7.82E+01	HBRG higher than PRG
Indoor Air	Indoor Air	Indoor Air	1,1,1-TRICHLOROETHANE	ug/m^3	2.3E+03	**1.8E+03**	NA	1.8E+03	1.8E+03	ug/m^3	2.29E+03	CHHSL less stringent than HBRG
			1,1-DICHLOROETHANE	ug/m^3	1 5E+00	**1.2E+00**	3.2E+00	1.2E+00	1.2E+00	ug/m^3	---	No CHHSL
			1,1-DICHLOROETHENE	ug/m^3	2 1E+02	1.6E+02	**8.8E+01**	8.8E+01	8.8E+01	ug/m^3	---	No CHHSL
			1,2-DICHLOROETHANE	ug/m^3	9.4E-02	**7.4E-02**	2.0E-01	7.4E-02	7.4E-02	ug/m^3	1.16E-01	CHHSL less stringent than HBRG
			ACETALDEHYDE	ug/m^3	8.6E-01	**6.7E-01**	NA	6.7E-01	6.7E-01	ug/m^3	---	No CHHSL
			BENZENE	ug/m^3	8.6E-02	**6.7E-02**	1.8E-01	6.7E-02	6.7E-02	ug/m^3	8.40E-02	CHHSL less stringent than HBRG
			CARBON TETRACHLORIDE	ug/m^3	5 7E-02	**4.5E-02**	1.2E-01	4.5E-02	4.5E-02	ug/m^3	5 79E-02	CHHSL less stringent than HBRG
			CHLOROFORM	ug/m^3	1.1E-01	**8.3E-02**	2.2E-01	8.3E-02	8.3E-02	ug/m^3	---	No CHHSL
			CIS-1,2-DICHLOROETHENE	ug/m^3	3.7E+01	**2.9E+01**	NA	2.9E+01	2.9E+01	ug/m^3	3.65E+01	CHHSL less stringent than HBRG
			TETRACHLOROETHENE	ug/m^3	4.1E-01	**3.3E-01**	8.8E-01	3 3E-01	3.3E-01	ug/m^3	4.12E-01	CHHSL less stringent than HBRG
			TRANS-1,2-DICHLOROETHENE	ug/m^3	NA	**5.8E+01**	NA	5 8E+01	5.8E+01	ug/m^3	7.30E+01	CHHSL less stringent than HBRG
			TRICHLOROETHENE	ug/m^3	1.2E+00	**9.6E-01**	2.6E+00	9.6E-01	9.6E-01	ug/m^3	1.22E+00	CHHSL less stringent than HBRG
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	7.3E+02	5.8E+02	**3.1E+02**	3.1E+02	3.1E+02	ug/m^3	---	No CHHSL

TABLE D-4.2
SUMMARY OF CARCINOGENIC AND NON-CARCINOGENIC SITE-SPECIFIC PRGs FOR COCs
Residential Receptors
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Future
Receptor Population:	Resident
Receptor:	Adult, Adult/Child, Child

Target Risk	1.0E-06
Target Hazard	1.0E+00

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Units	HBRG for Exposure Point				Residential HBRG For Original Medium		Comparison of Calculated HBRG to Existing Screening Level[1]	
					Resident Adult RME	Resident Adult+Child RME	Resident Child RME	Receptor Minimum	Value	Units	Screening Level	Notes
Soil gas [2] 5-6 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	1,1,1-TRICHLOROETHANE	ug/m^3	3.1E+06	2.5E+06	**1.3E+06**	1.3E+06	1.3E+06	ug/m^3	9.91E+05	HBRG higher than CHHSL
			1,1-DICHLOROETHANE	ug/m^3	2.1E+03	**1.7E+03**	4.5E+03	1.7E+03	1.7E+03	ug/m^3	---	No CHHSL
			1,1-DICHLOROETHENE	ug/m^3	2.6E+05	2.0E+05	**1.1E+05**	1.1E+05	1.1E+05	ug/m^3	---	No CHHSL
			1,2-DICHLOROETHANE	ug/m^3	1.1E+02	**8.3E+01**	2.2E+02	8.3E+01	8.3E+01	ug/m^3	4.96E+01	HBRG higher than CHHSL
			ACETALDEHYDE	ug/m^3	8.5E+02	**6.7E+02**	1.8E+03	6.7E+02	6.7E+02	ug/m^3	---	No CHHSL
			BENZENE	ug/m^3	1.1E+02	**8.4E+01**	2.3E+02	8.4E+01	8.4E+01	ug/m^3	3.62E+01	HBRG higher than CHHSL
			CARBON TETRACHLORIDE	ug/m^3	7.7E+01	**6.1E+01**	1.6E+02	6.1E+01	6.1E+01	ug/m^3	2.51E+01	HBRG higher than CHHSL
			CHLOROFORM	ug/m^3	1.2E+02	**9.3E+01**	2.5E+02	9.3E+01	9.3E+01	ug/m^3	---	No CHHSL
			CIS-1,2-DICHLOROETHENE	ug/m^3	5.2E+04	4.1E+04	**2.2E+04**	2.2E+04	2.2E+04	ug/m^3	1.59E+04	HBRG higher than CHHSL
			TETRACHLOROETHENE	ug/m^3	5.9E+02	**4.7E+02**	1.3E+03	4.7E+02	4.7E+02	ug/m^3	1.80E+02	HBRG higher than CHHSL
			TRANS-1,2-DICHLOROETHENE	ug/m^3	1.1E+05	8.4E+04	**4.5E+04**	4.5E+04	4.5E+04	ug/m^3	3.19E+04	HBRG higher than CHHSL
			TRICHLOROETHENE	ug/m^3	1.6E+03	**1.3E+03**	3.5E+03	1.3E+03	1.3E+03	ug/m^3	5.28E+02	HBRG higher than CHHSL
			TRICHLOROFLUOROMETHANE (FREON 11)	ug/m^3	9.2E+05	7.2E+05	**3.9E+05**	3.9E+05	3.9E+05	ug/m^3	---	No CHHSL

NA: Not applicable, not a COC for the pathway or the receptor scenario, chemicals were selected as COCs for the receptor only if the individually calculated risks were greater than 10^{-5} or the hazard greater than 0.1.
OK: indicates that HBRG is higher than screening level
CHHSL: California Human Health Screening Level
PRG Preliminary Remediation Goal
ug/m^3: microgram per cubic meter.
Bold value was selected for most stringent site-specific PRG

(1) Screening Levels were as follows.
Indoor air screening levels are CalEPA CHHSLs Indoor Air Screening Levels for Human Health Commercial/Industrial Use (EPA 2005).
Soil screening levels are EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c)
Outdoor air screening levels are EPA's Region 9 Preliminary Remediation Goals (PRGs) for industrial soil (EPA 2004c)
(2) Soil Gas site-specific PRGs were calculated using ratios of soil gas concentrations to calculated risks and hazards. See Tables D-3.1 to 3.6.

Table D-5.1
Comparison of Carcinogenic and Non-Carcinogenic Site-specific PRGs for COCs to Building Maximum Detections
Omega Chemical Site - Whittier, California

Scenario Timeframe:	Current/Future
Receptor Population:	Industrial Worker and Construction Worker
Receptor:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Industrial HBRG For Original Medium Value	Industrial HBRG For Original Medium Units	Maximum Detections by Building[1]: Site Parcel 3 Kings	Site Parcel Star City	North Parcel Medlin & Sons 12484	North Parcel Medlin & Sons 12476	West Parcel Terrapave	South Parcel Bishop	South Parcel LA Carts	South Parcel Oncology Care
Soil	Soil	Soil	1,4-DIOXANE	5.5E+01	mg/kg	2.8E+01		NA	NA	NA	NA	NA	NA
			BENZO(A)ANTHRACENE	1.1E+00	mg/kg	2.4E+00		NA	NA	NA	NA	NA	NA
			BENZO(A)PYRENE	1.1E-01	mg/kg	**1.6E+00**		NA	NA	NA	NA	NA	NA
			BENZO(B)FLUORANTHENE	1.1E+00	mg/kg	9.1E-01		NA	NA	NA	NA	NA	NA
			BIS(2-ETHYLHEXYL)PHTHALATE	1.1E+02	mg/kg	5.1E+01		NA	NA	NA	NA	NA	NA
			CHRYSENE	1.1E+01	mg/kg	6.0E+00		NA	NA	NA	NA	NA	NA
			DIELDRIN	9.2E-02	mg/kg	5.0E-02		NA	NA	NA	NA	NA	NA
			IRON	9.3E+04	mg/kg	2.3E+04		NA	NA	NA	NA	NA	NA
			LEAD	2.5E+02	mg/kg	**8.9E+02**		NA	NA	NA	NA	NA	NA
			PCB-1254 (AROCLOR 1254)	2.6E-01	mg/kg	5.0E-01		NA	NA	NA	NA	NA	NA
			POLYCHLORINATED BI PHENYLS, TOTAL	2.6E-01	mg/kg	5.0E-01		NA	NA	NA	NA	NA	NA
			TETRACHLOROETHENE	3.9E+00	mg/kg	4.3E+00		NA	NA	NA	NA	NA	NA
			VANADIUM	3.1E+02	mg/kg	7.1E+01		NA	NA	NA	NA	NA	NA
Indoor Air	Indoor Air	Indoor Air	1,1-DICHLOROETHANE	3.3E+00	ug/m^3	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
			1,1-DICHLOROETHENE	3.8E+02	ug/m^3	9.2E+00	1.8E+01	1.0E+01	Not Detected	2.3E+01	1.4E+01	3.6E+00	2.3E-01
			1,2-DICHLOROETHANE	2.1E-01	ug/m^3	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	3.2E-01
			BENZENE	1.9E-01	ug/m^3	**1.1E+01**	**5.3E+00**	**1.1E+00**	Not Detected	**1.4E+00**	**1.2E+00**	**2.2E+00**	**1.2E+00**
			CARBON TETRACHLORIDE	1.3E-01	ug/m^3	**6.5E-01**	**6.7E-01**	**1.3E+00**	Not Detected	**6.7E-01**	**5.8E-01**	**5.2E-01**	**5.2E-01**
			CHLOROFORM	2.3E-01	ug/m^3	**2.5E-01**	1.9E-01	**3.2E-01**	Not Detected	**2.4E-01**	1.8E-01	**3.7E-01**	**6.6E-01**
			TETRACHLOROETHENE	9.1E-01	ug/m^3	**1.3E+01**	**3.4E+01**	**2.2E+01**	Not Detected	**1.1E+02**	**2.9E+01**	**1.6E+00**	4.4E-01
			TRICHLOROETHENE	2.7E+00	ug/m^3	**3.3E+00**	**6.5E+00**	**1.4E+01**	Not Detected	**4.4E+00**	1.5E+00	1.2E+00	Not Detected
			TRICHLOROFLUOROMETHANE (FREON 11)	1.3E+03	ug/m^3	5.9E+00	1.4E+01	1.2E+01	1.6E+00	7.0E+00	3.7E+00	3.2E+00	1.8E+00
Outdoor Air	Outdoor Air	Outdoor Air	1,2-DICHLOROETHANE	1.7E-01	ug/m^3	Not Detected		NA	NA	NA	NA	NA	NA
			TETRACHLOROETHENE	7.7E-01	ug/m^3	**1.8E+00**		NA	NA	NA	NA	NA	NA
			TRICHLOROETHENE	2.3E+00	ug/m^3	1.1E+00		NA	NA	NA	NA	NA	NA
Soil gas 5-6 ft	Indoor Air and Outdoor Air	Indoor Air and Outdoor Air	**1,1-DICHLOROETHANE**	1.0E+04	ug/m^3	**1.1E+05**		1.1E+03					
			1,1-DICHLOROETHENE	1.1E+06	ug/m^3	9.9E+05		**1.1E+06**					
			1,2-DICHLOROETHANE	5.2E+02	ug/m^3	**1.0E+04**		Not Detected					
			BENZENE	5.3E+02	ug/m^3	**2.1E+03**		1.6E+01					
			CARBON TETRACHLORIDE	3.8E+02	ug/m^3	2.3E+02		Not Detected					
			CHLOROFORM	5.9E+02	ug/m^3	**1.5E+04**		**1.8E+03**					
			TETRACHLOROETHENE	3.0E+03	ug/m^3	**3.4E+06**		**2.1E+06**					
			TRICHLOROETHENE	8.2E+03	ug/m^3	**4.5E+05**		**4.7E+05**					
			TRICHLOROFLUOROMETHANE (FREON 11)	3.8E+06	ug/m^3	7.9E+05		1.0E+06					

NA: Not applicable
PRG: Preliminary remediation goal
ug/m^3: microgram per cubic meter
mg/kg: milligram per kilogram

Values in **Bold** exceed their corresponding HBRG

(1) Maximum detections shown for soil are for 0-12 feet bgs. Soil concentrations are from Table 3-2 in text.
Indoor air concentrations are from Tables 3.10 through 3.17 in the text.
Outdoor air concentrations are from Table 3 18 in the text.
Soil gas concentrations are from Table 3.7b for site concentrations and 3.7c for other site concentrations in the text.

Appendix E

Appendix E
Emissions Uncertainties

Appendix E - Uncertainty Analysis for Releases to Ambient Air

Windfield Calculations			**Maximum Soil Gas Concentration**	1225830	ug/m3	
Length of Side	6.36	m	**Site-Specific PRG (Industrial Worker**	7.7	ug/m3	
Average Wind Spee	1.65	m/sec				
Diffusion Height	2	m	**Implied Emission Rate**	161.6	ug/sec	
Windfield	21	m3/sec	**Implied Volume Emission**	0.000132	m3/sec	
			Implied Soil Gas Volume Emission	0.00033	m3/sec	Assume 40% soil porosity

Total Volume Estimates by Time (m3 of soil)

All vapor in X amount of soil released

Week	Month	Year	25 -Year
199	797	5183	129568

All Soil Beneath X area of site

Square Meters

109	436	2832	70802

Acres

0.027	0.11	0.70	17

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