5. Nature and Extent of Contamination

This section presents the vertical and lateral distribution of COPCs beneath OU2, as well as the results of the field activities and records searches to identify sources of these COPCs. The field results of the HydroPunch® sampling for monitoring well placement and residential area investigation results are also presented. The identification of the COPCs and the historical and current contaminant sources are important components of the development of the contamination conceptual site model. The relationship between the potential contaminant sources identified in this section and the lateral and vertical extents of the COPCs in OU2 groundwater are discussed.

Section 5 is organized as follows:

- **Section 5.1**: Omega Contaminants—Discusses the groundwater contaminants beneath the former Omega facility.
- **Section 5.2**: OU2 Groundwater Quality—Summarizes the results of the routine groundwater monitoring and discusses the COPCs for OU2.
- **Section 5.3**: HydroPunch® Sampling for Well Placement—Presents the HydroPunch® groundwater data used to site Wells MW27, MW28, MW29, and MW30.
- **Section 5.4**: Source Area Investigation Results—Presents the HydroPunch® data used to identify sources of groundwater contamination other than the former Omega facility.
- **Section 5.5**: Other Sources of Contamination—Discusses other known sources of VOC contamination in OU2.
- **Section 5.6**: Residential Area Investigation—Presents the results of the CPT, HydroPunch®, soil gas, and soil data at the Whispering Fountains apartments.
- **Section 5.7**: Distribution of Contamination—Discusses the vertical and lateral extent of groundwater contamination beneath OU2.
- **Section 5.8:** Changes in VOC and Emergent Concentrations over Time—Evaluates time-series plots and discusses any present trends.

5.1 Omega Contaminants

Efforts were made to identify the contaminants that are linked to the historical operations at the former Omega facility. Analytical results for samples from all media (e.g., soil, soil gas, and groundwater) collected at or near the former Omega facility were reviewed. The soil and soil gas samples were collected within the OU1 area since 1999 and are included in Appendix F.1. For groundwater at OU1, only samples collected from OPOG Monitoring Wells OW1A, OW1B, OW2, OW3A, OW3B, OW8A, and OW8B between June 1996 and August 2007 were included in the review.

By definition (Section 1.1.1), Omega Contaminants are chemicals found at concentrations exceeding their screening levels at OU1 Wells OW1A, OW1B, OW2, OW3A, OW3B, OW8A, and OW8B. These compounds are believed to have been introduced to groundwater as a result of the release of hazardous substances at the former Omega facility. They also include the degradation products of those chemicals.

Tables 5-1 to 5-4 present a summary of groundwater analytical data for samples collected from OU1 Wells OW1A, OW1B, OW2, OW3A, OW3B, OW8A, and OW8B. The analytes are grouped into four categories, which include VOCs, SVOCs, metals, and emergent compounds; each table summarizes one type of analyte. The summary tables contain lists of contaminants with detectable concentrations in any of the previous samples. For each contaminant, the observed maximum and minimum concentrations in groundwater are listed together with their regulatory criteria. The latest available concentrations from samples collected in August 2007 are listed for VOCs and emergent compounds. SVOCs and metals were not analyzed in the August 2007 sampling event for the OU1 wells. The statistical summary tables (Tables 5-1 to 5-4) present ranges of measured concentrations that include duplicate sample results; the number of detects excludes the sample duplicates.

Screening levels for groundwater include drinking water regulatory limits such as State of California and Federal Primary and Secondary MCLs, Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA) Public Health Goals (PHGs), CDPHS NLs, and California Proposition 65 values. The screening levels for waters in the State of California and have been summarized by Cal-EPA, Regional Water Quality Control Board (RWQCB), Central Valley Region in a compilation of water quality goals published in August 2007 (Cal-EPA, 2007).

For any chemical regulated under more than one regulation, the most protective level (i.e., the lowest concentration value) was applied as a screening criterion. Groundwater concentrations of hexavalent chromium were compared to the California Toxics Rule for Aquatic Life Protection (11 µg/L) because no hexavalent chromium drinking water standard exists and the Toxic Rule value is lower than the MCL for total chromium (50 µg/L); the Toxic Rule would also apply to a potential discharge of treated groundwater to surface water. Currently, California regulates total chromium, representing the combined trivalent chromium and hexavalent chromium concentrations, with an MCL of 50 µg/L.

Examination of Tables 5-1 to 5-4 indicates that groundwater within the OU1 area has been impacted primarily by VOCs including chlorinated hydrocarbons and Freons and some emergent compounds. A majority of these chemicals are also present in soil and soil gas (Appendix F.1) in OU1, indicating the release of these chemicals from the former Omega facility.

A summary of Omega Contaminants and their maximum detections reported in groundwater at OU1 follows (a detailed summary of detections is provided in Tables 5-1 to 5-4).

Omega Contaminants – VOCs

- 1,1,1-TCA – 14,000 µg/L
- 1,1,2-trichloroethane (1,1,2-TCA) – 2,000 µg/L
- 1,1-dichloroethane (1,1-DCA) – 150 µg/L

- 1,1-dichloroethene (1,1-DCE) – 5,100 µg/L
- 1,2-dichloroethane (1,2-DCA) – 2,600 µg/L
- Benzene – 180 µg/L
- Carbon disulfide – 240 µg/L
- Carbon tetrachloride – 3.6 µg/L
- Chlorobenzene – 500 µg/L
- Chloroform – 3,200 µg/L
- cis-1,2-dichloroethene (cis-1,2-DCE) – 25 µg/L
- Trichlorofluoromethane (Freon 11) – 1,000 µg/L
- 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113) – 2,800 µg/L
- Methylene chloride – 20,000 µg/L
- PCE – 210,000 µg/L
- Toluene – 1,300 µg/L
- trans-1,2-dichloroethene (trans-1,2-DCE) – 160 µg/L
- TCE – 10,000 µg/L
- Vinyl chloride – 2.1 µg/L

Omega Contaminants – Emergent Compounds

- 1,4-dioxane – 72,000 µg/L
- NDMA – 0.9 µg/L
- 1,2,3-TCP – 0.087 µg/L

Among the previously listed compounds, PCE, TCE, 1,1,1-TCA, 1,1-DCE, methylene chloride, and 1,4-dioxane generally showed the highest concentrations (greater than 5,000 µg/L) in OU1 groundwater samples. PCE, TCE, 1,1,1-TCA, and methylene chloride were also detected with high concentrations in soil and soil gas samples (Appendix F.1). Freons (Freon 11, dichlorodifluoromethane [Freon 12], and Freon 113) were detected with relatively high concentrations in both groundwater and soil gas samples.

Other VOCs that are present at high concentrations but do not have an established groundwater screening criteria include 2-hexanone (10,000J µg/L) and acetone (11,000 µg/L). Of these, acetone was also detected in soil gas at OU1 above its preliminary remediation goal (PRG) for ambient air of 3,285 micrograms per cubic meter (µg/m^3) (CDM, 2007a).

Groundwater contamination by SVOCs and dissolved metals is generally not an issue in OU1. Among the entire family of SVOCs, none of the compounds are reported above their screening level with the exception of bis(2-ethylhexyl)phthalate (DEHP), a chemical that is present in the well casing material (Section 5.2.3). Several dissolved metals, including aluminum, antimony, arsenic, chromium, iron, manganese, selenium, thallium, and vanadium are detected at concentrations exceeding their respective screening levels. Most of these dissolved metals occur naturally in groundwater at varying concentrations; however, the nature of past operations at the former Omega facility could suggest that they are Omega-related contaminants.

5.2 OU2 Groundwater Quality

This subsection discusses the compounds detected in OU2 groundwater samples collected during EPA's routine groundwater monitoring and HydroPunch® investigations as discussed in Sections 2.1 and 2.3.

Routine groundwater sampling of EPA and OPOG monitoring wells has been conducted by various parties (e.g., CDM, Weston, ARCADIS, and CH2M HILL) since June 1996. The number of sampling events for individual wells varied and was dependent on its date of construction and frequency of monitoring. Table 5-5 summarizes the analytical compounds detected in groundwater samples from EPA and OPOG wells between June 1996 and August 2007. Table 5-6 summarizes the compounds detected in groundwater samples from the sampling event conducted in July through August 2007. The July through August 2007 data are the most comprehensive and recent sampling event available at the time of the preparation of the Draft RI Report and, therefore, were used for the development of contaminant plume maps presented in Section 5. The July through August 2007 sampling event represents the cutoff for data used in this report; the only exceptions are samples collected at the TCE source on Whittier Boulevard and sample from the GSWC wells.

For each of the detected compounds shown in Tables 5-5 and 5-6, the following data are presented:

- Range of detections and associated collection dates
- Location of maximum detection and associated collection date
- Screening level and screening level type
- Number of well locations with detections above screening levels

The purpose of showing the number of well locations with detections above screening levels is to show the spatial distribution of each contaminant. Tables 5-5 and 5-6 present ranges of measured concentrations that include duplicate sample results; the number of detects excludes the sample duplicates.

5.2.1 Determination of COPCs

By definition (Section 1.1.1), COPCs are all chemicals found at concentrations exceeding their screening levels (e.g., California or Federal Primary MCL, CDPHS NL, etc.) in OU1 and OU2. They may have originated from releases at the former Omega property or from other known and unknown sources. The treatment of these chemicals will potentially be needed for the OU2 groundwater remedy. Depending on the future selected remedy for groundwater at OU1 and OU2, additional COPCs may be identified based on the requirements for discharge and pre-treatment.

5.2.2 VOCs

A list of COPCs and their maximum concentration levels detected in OU1 and OU2 monitoring wells is provided as follows:

- 1,1,1-TCA – 14,000 µg/L
- 1,1,2,2-tetrachloroethane – 5.6J µg/L (the qualifier J means the concentration value is estimated; see Section 3.4 for further description of data qualifiers)

- 1,1,2-TCA – 2,000 µg/L
- 1,1-DCA – 200 µg/L
- 1,1-DCE – 5,100 µg/L
- 1,2-dibromo-3-chloropropane – 5.5 µg/L
- 1,2-dibromoethane – 3.4J µg/L
- 1,2-DCA – 1,300 µg/L
- Benzene – 180J µg/L
- Carbon disulfide – 240J µg/L
- Carbon tetrachloride – 180 µg/L
- Chlorobenzene – 500J µg/L
- Chloroform – 2,800 µg/L
- cis-1,2-DCE – 370J µg/L
- cis-1,3-dichloropropene (cis-1,3-DCP) – 3.8J µg/L
- Freon 11 – 1,000 µg/L
- Freon 113 – 2,800 µg/L
- Methyl-tert-butyl-ether (MTBE) – 34J µg/L
- Methylene chloride – 11,000 µg/L
- PCE – 210,000 µg/L
- Toluene – 1,300 µg/L
- trans-1,2-DCE – 130J µg/L
- trans-1,3-dichloropropene (trans-1,3-DCP) – 4.6J µg/L
- TCE – 10,000 µg/L
- Vinyl chloride – 4J µg/L

Chemical uses for the previously listed COPCs are described in detail in Table 5-7. The chemicals fall into five major categories—solvents, refrigerants, degreasers, chemical intermediates in the making of other chemicals, and the degradation products of these industrial chemicals (or primary contaminants). The descriptions of usages are from the EPA Technical Factsheets (EPA, 1995a), the Hazardous Substances Data Bank (HSDB, 2007) and U.S. Occupational Safety and Health Administration (OSHA) Web site (OSHA, 2007).

5.2.3 SVOCs

Among the entire family of SVOCs, DEHP is the only SVOC reported above its screening level (California Primary MCL of 4 µg/L) (Table 5-5). DEHP is a plasticizer and is typically found in a PVC well casing and plastic tubing. It is suspected that the detections are due to sampling activities and are not representative of groundwater conditions in OU2. However, since DEHP was detected above its screening level, this analyte is still considered a COPC for OU2.

5.2.4 Emergent Compounds

Emergent compounds (1,4-dioxane, 1,2,3-TCP, NDMA, perchlorate, and hexavalent chromium) were detected at concentrations exceeding their respective screening levels (Table 5-5). Therefore, each of these emergent compounds is considered a COPC for OU2. The compounds 1,4-dioxane, 1,2,3-TCP, and NDMA are suspected to be related to former operations at the Omega facility. The remaining two emergents—perchlorate and hexavalent chromium—are suspected to be related to sources other than the former Omega facility.

A summary of chemical uses for emergent compound COPCs is presented in Table 5-7.

5.2.5 Dissolved Metals

Aluminum, antimony, arsenic, chromium, manganese, mercury, nickel, selenium, thallium, and vanadium were detected at concentrations exceeding their respective screening levels (Table 5-5), and are therefore considered COPCs for OU2. Arsenic was detected above its screening level of 10 µg/L at several locations, which include Wells MW3, MW8B, MW8C, MW8D, MW20, OW1B, and OW8A. The maximum arsenic concentration of 64.7 µg/L was reported at Well OW8A in June 2004. Arsenic and the other detected metals may be naturally occurring and could be unrelated to past operations at the former Omega facility. It is unknown if other industrial sources located within OU2 may have contributed to these metals exceedances.

5.2.6 General Chemistry

No general chemistry parameter was detected in exceedance of its respective screening level (Table 5-5) except TDS with a maximum detection at OW1A of 5,900 milligrams per liter (mg/L; secondary MCL is 500 mg/L). Only nitrate and nitrite have established Primary MCLs (10 and 1 mg/L, respectively), but no exceedances were reported in Omega wells. Secondary MCLs for chloride (250 mg/L), sulfate (250 mg/L), and pH (6.5 to 8.5) were not exceeded. The majority of the general chemistry parameter detections represent background (or natural) conditions in groundwater. These data will eventually be used for the development and evaluation of alternatives in the FS.

5.3 HydroPunch® Sampling for Well Placement

HydroPunch® groundwater sampling was conducted in the cities of Santa Fe Springs and Norwalk to assist with the placement of nested Well MW27 in a zone of high VOC concentrations, and single-screen Wells MW28, MW29, and MW30 near the leading edge of the VOC plume and MW31, near a suspected source of TCE contamination at Whittier

Boulevard. The location of these wells can be found on Figures 2-1 and 5-8. The HydroPunch® sampling was also used to characterize the VOC distribution in more detail than what is allowed by sampling monitoring wells. A discussion of the analytical results and rationale for well placement is presented below.

5.3.1 Well MW27

Well MW27 was constructed to confirm the presence of moderate to high VOCs (100 µg/L TCE or PCE) in shallow groundwater and to monitor the vertical extent of contamination further downgradient of the former Omega property. Two areas were proposed for siting Well MW27—a residential area near the intersection of Lakeland Road and Norwalk Boulevard and an industrial area near the intersection of Clark Street and Norwalk Boulevard. Contaminant concentrations in groundwater and logistical constraints determined the final well placement.

Figure 5-1 presents a site location map of Borings HP27-2 to HP27-9, with posted concentrations of VOCs and 1,4-dioxane. Table 5-8 presents a summary of detections in samples collected at the site. The maximum TCE and PCE detections reported along Lakeland Boulevard were 89J µg/L at HP27-2B and 200 µg/L at HP27-4B, respectively. These data confirmed that the axis of the VOCs plume lies between Kalnor Avenue and Norwalk Boulevard. This area of groundwater contamination lies beneath a residential community consisting of single and multiple family homes. The analytical data indicated that this area was an adequate location for Well MW27; however, due to logistical constraints (e.g., limited access, permitting issues, noise, and traffic control), the alternate MW27 well location along Clark Street was investigated.

HydroPunch® borings HP27-6 to HP27-9 were positioned along Clark Street (Figure 5-1) to identify an alternate location for Well MW27. Historical groundwater data from nearby OFRP monitoring wells indicated that this is an area of relatively high concentrations of VOCs, with concentrations of PCE and TCE greater than 100 µg/L (McLaren/Hart, 1996). The highest concentration of total chlorinated hydrocarbons was reported in Boring HP27-7 (616 µg/L), where PCE and TCE concentrations were 260 and 100 µg/L, respectively. Based on these results, it was decided to site Well MW27 immediately adjacent to Boring HP27-7. Total VOCs were highest in Boring HP27-6 (1,082 µg/L), primarily due to the presence of cyclohexane (600 µg/L) and methylcyclohexane (280 µg/L). PCE and TCE were non-detectable in this boring. It is likely that cyclohexane and methylcyclohexane detections in this area are related to oil production and refining.

5.3.2 Well MW28

Figure 5-2 presents a site location map of Borings HP28-1 to HP28-5, with VOCs and 1,4-dioxane concentrations posted. Borings were generally positioned in an east-west direction, parallel with Lakeland Boulevard. The purpose of Well MW28 is to monitor the western extent of PCE and TCE contamination further downgradient of the former Omega property. Based on the HydroPunch® investigation, the western extent of the plume along Lakeland Boulevard was interpreted to be between Borings HP28-3 and HP28-4, where TCE and PCE concentrations ranged between non-detectable and approximately 2 µg/L. As a result, Well MW28 was installed immediately adjacent to Boring HP28-4 near the southwest corner of the Little Lake Park recreational field, owned by the City of Santa Fe Springs.

Tabulated analytical data used to site Well MW28 is presented in Table 5-9.

5.3.3 Wells MW29 and MW30

Figures 5-3 a, b, and c present site location maps of Borings HP29-1 to HP29-46, with VOCs and 1,4-dioxane concentrations posted. Table 5-10 presents a summary of detections in samples collected at the site. The objective of the HydroPunch® investigation of Wells MW29 and MW30 was to identify the southern extent of contamination, where TCE and PCE concentrations are close to the Primary MCL of 5 µg/L.

The HydroPunch® investigation found two apparent, distinct lobes of contamination—one in a north-south direction along Norwalk Boulevard, and another that extends in a southeast direction from southeast of Norwalk Boulevard near Allard Street toward the intersection of Dune Street and Volunteer Avenue. The southern lobe of contamination does not extend far beyond HP29-16 (near the intersection of Norwalk Boulevard and Gettysburg Drive), where TCE and PCE concentrations were 8.2J µg/L and 1.8J µg/L, respectively. The southeastern lobe of contamination extends to HP29-30 (at the Civic Center Drive cul-de-sac), where trace detections of TCE (1.1J µg/L) and 1,1-DCA (0.15J µg/L) were reported. Based on these data, Well MW29 was installed adjacent to Boring HP29-16 and Well MW30 adjacent to Boring HP29-30. This apparent distribution of VOCs could have resulted from local preferential transport pathways in more permeable aquifer zones or could be a sampling artifact resulting from the contamination being missed by the discrete samples; for example, the VOCs could be present at somewhat greater depth at the locations with non-detect results.

5.3.4 Well MW31

Figure 5-8 presents the location map of samples collected in the vicinity of the TCE source on Whittier Boulevard. A TCE concentration of 1,000 µg/L was detected in a groundwater sample collected in September 2009 from MW31. Toluene at 2.3J µg/L, 1,1-DCE at 14 µg/L, PCE at 1.6J µg/L, and chloroform at 3.5J µg/L were the only other VOCs detected in the sample. The results are further discussed in the context of the source area investigation in Section 5.4.5.

5.4 Source Area Investigation Results

The objective of the source area investigation was to verify suspected sources of VOC contamination in groundwater. The investigation initially included four suspected sources located in the city of Santa Fe Springs at 8421 Chetle Avenue, 12200 Los Nietos Road, 11862 Burke Street, and 8623 Dice Road, and one suspected source located in the city of Whittier in the vicinity of the intersection of Whittier Boulevard and Mar Vista Street. Discrete (HydroPunch®) groundwater sampling was conducted to investigate whether these locations are contributors to groundwater contamination in OU2.

5.4.1 Site D, 8421 Chetle Avenue, Santa Fe Springs, California

Figure 5-4 presents a site location map of Site D, located at 8421 Chetle Avenue, and Borings HPT-1 to HPT-5, with posted concentrations of several analytes that exceed their screening levels. Table 5-11 presents a summary of detections for samples collected in Borings HPT-1

to HPT-5. The analytical results for Well MW5, located directly upgradient of Site D, are provided in Appendix F.

Analytes in exceedance of their screening levels include TCE, PCE, cis-1,2-DCE, 1,2-DCA, 1,1-DCE, chloroform, Freon 11, 1,1,2-TCA, and 1,4-dioxane. These analytes were detected at similar concentrations in upgradient and downgradient samples. Freon 113 was also detected in upgradient and downgradient samples, although at concentrations below the screening level. In downgradient borings (HPT-2 to HPT-5), VOC concentrations in the deeper samples were significantly higher than the shallow sample concentrations, which were close to non-detectable. It is unknown whether the difference in VOC concentrations between shallow and deep samples is representative, or if the low concentrations in shallow samples are a result of other artifacts noted during sampling (e.g., high sediment content and turbidity in sample water).

TCE, PCE, and 1,1-DCE appear to be the predominant contaminants beneath Site D. No trend in contaminant concentrations was apparent between upgradient and downgradient sample locations. Site D is located in a zone of high VOC concentrations extending southwest from the Omega property. The sampling results do not indicate that the property is a source of groundwater contamination, nor do they rule it out.

5.4.2 Site E, 12200 Los Nietos Road, Santa Fe Springs, California

Figure 5-5 presents a site location map of Site E, located at 12200 Los Nietos Road and Borings HPF-1 to HPF-6, with posted concentrations of several analytes that exceed their screening levels. Table 5-12 presents a summary of detections for samples collected in Borings HPF-1 to HPF-6.

TCE, PCE, cis-1,2-DCE, and 1,1-DCE appear to be the predominant VOC contaminants beneath Site E, as these analytes were detected in all samples at concentrations in exceedance of their respective screening levels. The contaminant 1,4-dioxane also was present in all samples at concentrations in exceedance of its California NL (3 µg/L). The 1,4-dioxane concentrations in downgradient samples were three to four times higher than upgradient concentrations. Freon 11 and Freon 113 also were detected in all groundwater samples, but at concentrations below their California Primary MCLs (150 and 1,200 µg/L, respectively). The contaminant 1,1,1-TCA is present at concentrations of 1 µg/L or less in upgradient samples and at concentrations up to 38 µg/L downgradient. These concentrations are all less than the California and EPA Primary MCL of 200 µg/L.

The net increase in 1,1,1-TCA and 1,4-dioxane in downgradient samples indicates that Site E is a possible source of these contaminants. As noted in Table 5-7, both of these compounds are/were used in synthetic resin-based paint products. In addition, 1,4-dioxane is commonly added to 1,1,1-TCA as a solvent stabilizer, so these chemicals are often found together (TOXNET). All of these reasons support the conclusion that this facility is a possible source of contamination by these compounds. The concentrations of other compounds such as PCE, TCE, Freon 11, and Freon 113 in upgradient samples and downgradient samples do not substantially differ. The Hydropunch® results are inconclusive regarding these compounds; they do not indicate that Site E is a source of groundwater contamination by PCE, TCE, Freon 11, and Freon 113, nor do they rule it out.

The investigation conducted to date has not determined that Site E is a source of groundwater contamination.

5.4.3 Earl Manufacturing, 11862 Burke Street, Santa Fe Springs, California

Figure 5-6 presents a site location map of the former Earl Manufacturing facility located at 11862 Burke Street and Borings HPE-1 to HPE-7, with posted concentrations of several analytes that exceeded their screening level. Table 5-13 presents a summary of detections for samples collected in Borings HPE-1 to HPE-7.

TCE and PCE were detected in upgradient samples at concentrations in exceedance of their California Primary MCLs. TCE concentrations ranged between 5.7 and 41 µg/L, and PCE concentrations ranged between 24 and 420 µg/L. TCE and PCE were detected in all downgradient samples except HPE-7A, where concentrations for both analytes were non-detectable. The maximum TCE and PCE concentrations in downgradient samples were 1,700 and 13,000 µg/L, respectively. Both maximum detections were reported in sample HPE-5A. The concentrations of 1,1-DCA and 1,1-DCE were also higher in the downgradient samples; most of the results were estimated or non-detect because of the high concentrations of PCE and TCE.

TCE and PCE appear to be the predominant contaminants beneath the Earl Manufacturing site. Downgradient TCE and PCE concentrations were significantly higher than upgradient concentrations. This trend was most evident in Borings HPE-3, HPE-4, and HPE-5 where TCE and PCE concentrations were 30 to 40 times greater than concentrations reported in upgradient Borings HPE-1 and HPE-2. Based on this increase in concentrations downgradient of the site, it is concluded that the site of the former Earl Manufacturing facility is a source of TCE and PCE, and also of 1,1-DCA and 1,1-DCE contamination in OU2.

5.4.4 Site F, 8623 Dice Road, Santa Fe Springs, California

Figure 5-7 presents a site location map of Site F, located at 8623 Dice Road and Borings HPW-1 to HPW-10, with posted concentrations of several analytes that exceeded their MCLs. Table 5-14 presents a summary of detections for samples collected in Borings HPW-1 to HPW-10.

5.4.4.1 VOCs and 1,4-Dioxane

For upgradient samples (HPW-1, HPW-2, and HPW-10), either PCE or TCE were detected at concentrations that slightly exceeded their California Primary MCL. The maximum TCE and PCE detections in upgradient samples were 23J and 6.4 µg/L, respectively. An isolated exceedance of the California Primary MCL for 1,1-DCE (6 µg/L) was reported in HPW-2A (21J µg/L). There is only one detection of 1,4-dioxane (1.7J µg/L) in upgradient samples.

With the exception of Sample HPW-3A, all downgradient PCE concentrations exceeded the California Primary MCL of 5 µg/L. PCE concentrations ranged between 11J µg/L in Sample HPW-3B and 120J µg/L in HPW-4B and HPW-6B. TCE was detected in all downgradient samples; however, concentrations exceeded the California Primary MCL only in Samples HPW-4B (9.8J µg/L) and HPW-8B (8.8J µg/L). Downgradient samples of 1,4-dioxane were detected up to 45 µg/L. The detection of carbon tetrachloride in downgradient samples

ranged from 0.25 to 15 µg/L, exceeding the California Primary MCL of 0.5 µg/L. Carbon tetrachloride was not detected in the upgradient samples.

A net increase of PCE, carbon tetrachloride, and 1,4-dioxane in the downgradient samples indicates that Site F is a possible source of PCE, carbon tetrachloride, and 1,4-dioxane contamination at OU2. The investigation conducted to date has not determined that Site D is a source of groundwater contamination.

5.4.4.2 Dissolved Metals

Dissolved metals in exceedance of their screening levels include aluminum, arsenic, manganese, and vanadium. The MCLs for aluminum, arsenic, manganese, and vanadium are each 50 µg/L. Maximum concentrations of aluminum, arsenic, manganese, and vanadium in downgradient samples were 16,600, 37.6J, 830, and 75 µg/L, respectively. Maximum concentrations of these analytes in upgradient samples were 8,170, 1,330, 9.9, and 51.9 µg/L, respectively. On average, aluminum concentrations were greater in downgradient samples. The average downgradient aluminum concentration was 2,534 µg/L; whereas, the average upgradient concentration was 1,694 µg/L. This trend is also evident in samples analyzed for manganese, although to a lesser degree. The average downgradient manganese concentration was 521 µg/L; whereas, the average upgradient concentration was 406 µg/L.

Both exceedances of the arsenic MCL were reported in downgradient Samples HPW-3B (11.8J µg/L) and HPW-4B (37.6J µg/L). No exceedances of the arsenic MCL was reported in upgradient samples. Vanadium was detected in upgradient Sample HPW-1B (51.9 µg/L) and downgradient Sample HPW-4B (75 µg/L) at concentrations in exceedance of its MCL (50 µg/L). No general trends were noted with vanadium, as detections were present in similar concentrations in both upgradient and downgradient samples.

It is possible that Site F is a source of aluminum, manganese, arsenic, and vanadium, as downgradient concentrations are generally higher than upgradient concentrations. However, these metals may occur naturally at the site and may not be the result of operations at Site F.

5.4.4.3 Hexavalent Chromium

Hexavalent chromium was detected only in downgradient Sample HPW-3B (0.61 µg/L) at a concentration below the California Toxics Rule for Aquatic Life Protection level of 11 µg/L. The Site F location does not appear to be a source of hexavalent chromium contamination in groundwater.

5.4.5 TCE Source at Whittier Boulevard

Figure 5-8 presents a site location map of borings installed near the TCE Source at Whittier Boulevard. Posted concentrations of several analytes are also shown in the figure. Table 5-15 presents a summary of detections for samples collected at the site.

TCE and 1,1-DCE were detected in both upgradient and downgradient samples at concentrations in exceedance of their California Primary MCLs (5 and 6 µg/L, respectively). TCE was detected in upgradient and downgradient locations, but higher concentrations were generally reported in downgradient samples. A maximum TCE concentration of 2,700 µg/L was reported in downgradient Sample HPA-13. The maximum upgradient TCE

concentration was reported in Boring HPA-18 (770 µg/L). Benzene was reported in Sample HPA-16 (1.2J µg/L) and the HPA-16 field duplicate (1.2J µg/L) as slightly above the California Primary MCL for benzene (1 µg/L).

TCE was detected in four soil samples at concentrations between 9 and 170 µg/kg; TCE concentrations in SS4-3 (24 µg/kg) and SS4-4 (170 µg/kg) were substantially higher than in SS4-1 (11 µg/kg) and SS4-2 (9 µg/kg). No other VOCs were detected (Appendix F-2).

TCE at 1,000 µg/L was detected in a groundwater sample collected September 2009 from MW31. The sample also shows toluene at 2.3J µg/L, 1,1-DCE at 14 µg/L, PCE at 1.6J µg/L, and chloroform at 3.5J µg/L. No other VOCs were detected (Appendix F-2). Although 1,1-DCE and benzene were found at historical concentrations greater than their MCLs, TCE appears to be the predominant contaminant beneath the site. TCE concentrations are higher in downgradient samples. The maximum downgradient TCE concentration (2,700J µg/L) is approximately three times greater than the maximum upgradient TCE concentration (770 µg/L). The TCE distribution in groundwater and its presence in soil indicate that its source area is at or near the empty lot where Samples HPA-12 to HPA-15 were collected. The area where the TCE was likely released is marked by a yellow, dashed line in Figure 5-8. The results further indicate that a narrow plume of TCE extends from the TCE Source at Whittier Boulevard across Whittier Boulevard, continues on a southwesterly path, and eventually merges with the Omega plume. The high results in groundwater at MW31 indicate that this well was installed within the TCE transport pathway from its source north of Whittier Boulevard.

The TCE concentrations detected in the four soil samples are low relative to the concentrations detected in the groundwater samples; this is an indication that the location of the main TCE release may not have been identified. It is possible that a sustained leak of TCE or TCE contaminated water resulted in a narrow vertical pathway through the vadose zone and that the contamination had only spread laterally when it encountered a lithologic interface or the capillary fringe. Furthermore, past excavations could have removed the shallow contaminated soils.

5.5 Other Sources of Contamination

A discussion of several source areas of VOCs contamination in OU2 and vicinity follows. Based on a review of available information, source areas were classified as areas with primarily chlorinated VOCs contamination (e.g., PCE, TCE, 1,1,-DCE, etc.) or non-chlorinated VOCs (e.g., total petroleum hydrocarbons [TPH]; benzene, toluene, ethylbenzene, and xylene [BTEX] compounds) contamination. Source areas of primarily chlorinated VOCs contamination are discussed in detail in Section 5.5.1 and include sites where the following companies currently operate or operated: Foss Plating, Phibro-Tech, Techni-Braze, Pilot Chemical, Angeles Chemical, the former McKesson Corporation, and Site A. Source areas of primarily non-chlorinated VOC contamination are discussed in detail in Section 5.5.2 and include the former CENCO Refinery site, OFRP area, and the G&M Oil Company site. Section 5.5.3 discusses sites located within OU2 that are likely not sources of VOC contamination in groundwater (but historical groundwater analytical data for them are available), other sites at OU2 that may be sources of VOCs in groundwater, and sites

near OU2 that have groundwater contamination that appears to have not commingled (or where it is unknown whether it has commingled) with the OU2 contamination.

The file review summaries are based on results from CH2M HILL's file review and CH2M HILL's review of information and documents provided by EPA.

5.5.1 Chlorinated VOCs Source Areas

5.5.1.1 Foss Plating Co., Inc., 8140 Secura Way, Santa Fe Springs, California

The following site summary is based on information provided in Winefield and Associates, 2006; DTSC, 2003; Foss Plating, 2002; and Jack's Environmental Technology, 2003.

Foss Plating is located at 8140 Secura Way, Santa Fe Springs, California, and operated at the site from 1968 until 2005. Processes at this facility included metal polishing, nickel plating, and chrome plating, using both trivalent and hexavalent chromium. Hazardous wastes produced include spent rinses containing nickel and chromium and sludge-containing materials.

Chemicals used onsite included PCE; 1,1,1-TCA; methylene chloride; chromium; lead; nickel; arsenic; and cyanide. A total of 11 ASTs are located onsite, of which five are used for wastewater accumulation and treatment and six are used for chemical storage. Several concrete USTs were used for storage as part of a clarifier system that was later removed.

In 1995, a spill was documented in the vicinity of the UST area, and consisted of 10 to 15 gallons of 1,1,1-TCA. Soil samples from a 1999 investigation, indicated the presence of PCE, chromium, and nickel at concentrations of 0.048, 97, and 301 milligrams per kilogram (mg/kg), respectively.

Foss Plating completed soil and groundwater investigations in March 2006, which concluded that Foss Plating was a contributor to soil and groundwater contamination with zinc, chromium, and PCE. According to this groundwater investigation, the primary contaminants found in groundwater above their MCLs were total chromium, hexavalent chromium, PCE, TCE, and chloroform. Maximum concentrations for these analytes were 2,300, 910, 490, 6.5, and 28 µg/L, respectively. Elevated concentrations of PCE, TCE, and hexavalent chromium in downgradient Well MW6 (Figures 5-11, 5-12, and 5-17) are interpreted as an indication of the release of these compounds at Foss Plating.

5.5.1.2 Phibro-Tech, Inc., 8851 Dice Road, Santa Fe Springs, California

The site summary presented below is based on information provided in Cal-EPA and DTSC, 1996; Iris Environmental, 2006a, 2006b, 2007, 2008, and 2010; Kleinfelder, 1986; and CDM, 2001a, 2005a, and 2005b.

Phibro-Tech is located at 8851 Dice Road, Santa Fe Springs, California. The property was first a railroad switching station, then a foundry casting facility between the late 1940s and early 1950s; Best Fertilizer between 1949 and 1954; a chemical plant for Pacific Western Chemical Company from 1957 to 1960; and since 1960, was operated under various names including Southern California Chemical (SCC), CP Chemicals, Inc. and Phibro-Tech, Inc. SCC received liquid hazardous wastes for reprocessing.

Phibro-Tech has operated as an inorganic chemical manufacturing facility that receives liquid hazardous waste from the electronics and aerospace industries and produces a variety of chemicals including copper oxide, copper sulfate, ferric chloride, etchants, solder strippers, brighteners, and conditioners. Hazardous wastes generated include wastewaters contaminated with chromium and cadmium. Phibro-Tech operates a variety of waste management units with manufacturing and operational equipment including reactors, settling tanks, holding tanks, wastewater treatment tanks, filter presses, process and storm drain sumps, drum storage areas, and drum and truck washing areas.

Site investigations in 1985 reported elevated levels of several contaminants in soil, which include chromium (30,000 mg/kg), copper (26,000 mg/kg), TPH (33,500 µg/kg), TCE (110,000 µg/kg), PCE (1,200 µg/kg), 1,1,1-TCA (2,900 µg/kg), and PCBs (80,000 µg/kg).

Groundwater monitoring has been conducted at the site since 1985 and continues to the present (currently on a quarterly basis). During investigations, three contaminant plumes have been identified underlying the site. The plumes consist of hexavalent chromium, BTEX, and chlorinated solvents. The maximum hexavalent chromium detection (120 mg/L) was reported in 1989. Between 1989 and 2004, hexavalent chromium concentrations have declined through time (3.7 mg/L in 2004). TCE has been detected in all onsite monitoring wells and appears to be the primary VOC of concern. Between 1995 and 2004, the maximum TCE concentration was 1,300 µg/L. Sampling results from the October 2006 sampling event are as follows: 19,000 µg/L, hexavalent chromium; 1100 µg/L, TCE; 320 µg/L, 1,1-DCA; 270 µg/L, 1,2-DCA; 61 µg/L, 1,1-DCE; 75 µg/L, cis-1,2-DCE; 23 µg/L, PCE; and 74 µg/L, chloroform; 37 µg/L, carbon tetrachloride; and 79 µg/L, methylene chloride. The following contaminants were also present: 1,1,1-TCA, chlorobenzene, and Freon 11. No PCBs were detected. Data for the contaminant 1,4-dioxane, commonly associated with 1,1,1-TCA contamination, were unavailable for review, most likely because this contaminant was not analyzed during historical investigations.

To mitigate the groundwater contamination, DTSC initially selected a groundwater extraction and treatment remedy 1995. In 2006, Phibro-Tech proposed in-situ hexavalent chromium stabilization using calcium polysulfide combined with high-PH catalyzed persulfate for chlorinated volatile organic compound (CVOC) destruction as an alternative remedy to address groundwater contamination at the facility; a work plan for a proposed pilot test was submitted to the DTSC in 2008. In 2006, Phibro-Tech proposed SVE and bioventing to mitigate contamination in the vadose zone at the facility.

5.5.1.3 Techni-Braze, Inc., 11845 Burke Street, Santa Fe Springs, California

The following site summary is based on information provided in Levine-Fricke, Inc., 2006; Mabbett, Cappacio and Associates, Inc., 1991; and TerraVac, 1995.

Bodycote Thermal Processing Inc., formerly known as Techni-Braze, is located at 11845 Burke Street, Santa Fe Springs, California. This facility has been in operation since at least 1966 and continues to maintain operations. The facility conducts the following services: heat treating and brazing, metals testing, and metallurgical coatings. Hazardous wastes produced at the facility include acids, waste oil, PCE, and acetone.

Four site investigations conducted between 1991 and 2004, as well as onsite groundwater monitoring in 2005, have confirmed soil and groundwater contamination. A 1991 preliminary

site investigation concluded that shallow soil and underlying site contamination had occurred on the site and was likely related to spills or leaks from storage or of operations using PCE. The investigation revealed TPH and PCE contamination in soil, at maximum concentrations of 4,700 mg/kg and 92,000 µg/kg, respectively. A 1995 investigation found evidence of groundwater contaminated with VOCs, primarily PCE, which was detected at maximum concentrations of 14,000 and 11,000 µg/L in onsite monitoring wells. PCE extends offsite to the southeast, toward Burke Street, at decreasing concentrations. The contaminant 1,1-DCE was present at a maximum concentration of 91 µg/L; it is likely a degradation product of PCE. In 1995, the maximum concentration of TCE in groundwater was 52 µg/L; TCE at this site may be the degradation product of PCE. As of November 2006, a preliminary remediation plan was agreed upon, which includes SVE for removal of soil contamination and an oxidation process for in situ groundwater treatment. The site remedial activities are subject to oversight by the LARWQCB.

5.5.1.4 Pilot Chemical Corporation, 11756 Burke Street, Santa Fe Springs, California

The following site summary is based on information provided in CH2M HILL, 1986; Kleinfelder, 1991; McLaren/Hart, Inc., 1998; and LARWQCB, 2001.

Pilot Chemical Corporation is located at 11756 Burke Street, Santa Fe Springs, California. The facility began operations in 1952 and is currently active. Operations have included the manufacturing of detergents and emulsifiers. Chemicals used in the manufacturing process included long-chain sulfanated hydrocarbons such as linear alkyl benzene sulfonate and dixilyl-sulfone.

Fuel hydrocarbons (toluene, ethylbenzene, and xylenes) were found in soil during a 1991 investigation. Acetone and 1,2-DCA also were detected in soil at maximum concentrations of 140 and 1.0 mg/kg, respectively. A 1998 investigation revealed groundwater contamination of xylenes, toluene, ethylbenzene, and 1,2-DCA. Maximum concentrations were 38,000, 61,000, 9,000, and 7,000 µg/L, respectively.

Pilot Chemical is in the process of cleaning up the soil, and at a minimum, monitoring the groundwater. The case remains open as a leaking underground fuel tank (LUFT) site, as well as an open Spills, Leaks, Investigation, and Cleanup Cost Recovery (SLIC) site.

5.5.1.5 Angeles Chemical Co., Inc., 8915 Sorensen Avenue, Santa Fe Springs, California

The following site summary is based on information provided in Angeles Chemical Co., Inc., 2006; Blakely Environmental Investigations, 2004; and DTSC, 2007.

The former Angeles Chemical Company site (Angeles) is located at 8915 Sorensen Avenue, Santa Fe Springs, California, and consists of approximately 1.8 acres of land. Greve Financial Services, Inc. is the current owner of the Angeles site. It has not operated any business at the site and is currently leasing the property for use as a vehicle tow yard.

Angeles operated as a bulk chemical repackaging facility at the property from 1976 to 2000. Bulk items were stored in 34 USTs, which were later decommissioned and slurry-filled. Chemicals used and stored at the facility included the following: acetone, methylene chloride, 1,1,1-TCA, PCE, methyl ethyl ketone (MEK), toluene, xylene, kerosene, diesel, and unleaded gasoline.

Site investigations conducted from 1990 to 1997 revealed that VOCs were present in soil at detectable concentrations. These include acetone, benzene, 1,1-DCA, 1,1-DCE, MEK, methyl isobutyl ketone (MIBK), toluene, 1,1,1-TCA, PCE, and xylenes. Soil gas investigations conducted in 2000 confirmed the presence of VOCs in soil vapor beneath the site. Free product has been present at several onsite monitoring wells and was historically removed. The product is a light nonaqueous phase liquid (LNAPL) consisting of petroleum hydrocarbons with smaller concentrations of VOCs. In 2005, the maximum concentration of TPH in groundwater was 238,000 µg/L; 25,000 µg/L of BTEX; 1,080 µg/L of PCE; 4,710 µg/L of 1,1,1-TCA; 2,160 µg/L of TCE; 4,050 µg/L of vinyl chloride; 33,000 µg/L of 1,1-DCA; 9,200 µg/L of 1,1-DCE; 10,600 µg/L of cis-1,2-DCE; 24,100 µg/L of 1,4-dioxane; 10,000 µg/L of methylene chloride; 18,000 µg/L of MEK; and 9,440 µg/L of acetone. The final RI Report (DTSC, 2007) concluded that groundwater in the northern, central, and southern portions of the site have been impacted by identified onsite sources of VOCs and recommended further off-property investigation to determine the extent of groundwater impacts.

5.5.1.6 McKesson Corporation, 9005 Sorensen Avenue, Santa Fe Springs, California

The following site summary is based on information provided in Harding and Lawson Associates, 1992; Blakely Environmental Investigations, Inc., 2002; GeoSyntec, 2005, 2007, and 2009; and DTSC, 2007.

The former McKesson Corporation facility (McKesson) is located at 9005 Sorensen Avenue, Santa Fe Springs, California. The site consists of approximately 4.3 acres in a heavily industrialized area. To the north, the former Angeles facility is adjacent to the McKesson property. McKesson operated a bulk chemical repackaging facility at this site from 1976 to 1986. Operations ceased in 1986 and the site has remained inactive since that time. Twenty-one USTs were removed in 1996. Some structures still remain at the site. Chemicals historically used, stored, or mixed at the site include VOCs (PCE, TCE, 1,1,1-TCA, Methylene Chloride, and Freon 113), glycols, acids, and petroleum hydrocarbons. The solvents (PCE, TCE, 1,1,1-TCA, and methylene chloride) and Freon 113 were stored and mixed in a former AST area near the center of the property. No records of Freon 11 being stored or used on the property were found.

An SVE system has been in operation since 1994 to treat soils in the area of the former USTs. A conventional groundwater extraction system has been in operation since 1996 as an interim remedial measure. The interim measure was designed to capture contaminated groundwater at the site and prevent further downgradient migration of contaminants from the McKesson facility.

Analytical data from a 1990 investigation indicate the presence of VOCs and petroleum hydrocarbons beneath the McKesson site. Both soil and groundwater contained 1,1-DCA, methylene chloride, PCE, toluene, 1,1,1-TCA, TCE, acetone, MEK, 2-butoxyethanol (butyl cellosolve), and xylenes. In addition, soil samples contained 2-ethoxyethanol acetate (cellosolve acetate). Groundwater also contained 1,2-DCA, 1,1-DCE, and isopropanol. There were three detections of Freon 11, two detections of dichlorofluoromethane (Freon 21), and three detections of Freon 113 in a total of 12 groundwater samples. Freon 11 was reported in groundwater at concentrations of 24 to 100 µg/L. The concentrations beneath the property were up to 28 µg/L; the higher concentrations were found in off-property (outside of the

McKesson facility parcel) samples. Freon 113 was reported at concentrations between 9 and 260 µg/L and was found only in samples outside of the McKesson property. Freon 21 was reported at concentrations between 120 and 200 µg/L; Freon 21 was not analyzed after 1992.

EPA received comments on the Draft RI Report and inquiries regarding Freon use and detections at the McKesson facility from OPOG; in particular, OPOG alleged that Freons were released at the McKesson facility and that contamination from the former Omega facility could not have reached the McKesson facility by 2007. In response to these inquiries, the following discussion is a summary of findings regarding Freons at the McKesson facility.

The first Freon detection found in the reports prepared for the McKesson facility was in 1986. Subsequent sampling in 1990 and 1991 also detected Freons in groundwater, soil, and soil gas. However, the samples contained very high concentrations (hundreds of thousands to over a million µg/L) of 1,1,1-TCA, methylene chloride, MEK, and acetone, and also high concentrations of PCE, TCE, and their byproducts (tens of thousands µg/L). These high-concentration samples required high dilutions for purposes of laboratory analysis. Such highly diluted samples result in very high detection limits for all analytes, including Freons. High dilutions were also used for the groundwater, soil, and soil gas samples collected on the McKesson property after the 1992 investigation. The results are neither accurate nor precise and cannot be relied upon as quantitative. Additionally, Freons are known to be common lab contaminants and could be erroneously reported at high concentrations when using high dilution factors. The McKesson investigations focused on the compounds present at the highest concentrations; they did not focus on Freons. Analysis of undiluted or direct-inject samples would be necessary to reliably determine the concentrations of Freons (and other compounds present at similar concentrations) in groundwater, soil gas, and soil samples from the McKesson property.

The contribution of chlorinated compounds from the property to the groundwater was characterized in 2004, 2005, and 2007. The investigations consisted of discrete groundwater sampling upgradient of the McKesson and Angeles facilities and downgradient of the McKesson facility. Samples were collected from multiple depths within the shallow, unconfined aquifer. TCE concentrations upgradient and downgradient of the property are 10 to 170 and 46 to 660 µg/L, respectively. PCE concentrations upgradient and downgradient of the property are 17 to 160 and 43 to 2,300 µg/L, respectively. Concentrations of 1,1,1-TCA, vinyl chloride, cis-1,2-DCE, 1,1-DCE, and 1,1-DCA are also higher downgradient than upgradient. Discrete groundwater samples for Freon 113 and Freon 11 are shown on two figures (Figures 12 and 13 from Geosyntec, 2007) in Appendix N; the sampling results from OU2 Wells MW16 and MW25 are included in the figures to provide reference. The concentrations of Freons in upgradient and downgradient groundwater samples are similar. Freon concentrations in 2007 samples from Well MW25 located along the main contaminant transport pathway from the former Omega facility were higher than the discrete sample results collected in 2004 through 2007.

A summary of water quality results from the first quarter 2007 groundwater sampling event is as follows: 3.7 to 100,000 µg/L for PCE; 1 to 43,000 µg/L for TCE; 1 to 670,000 µg/L for 1,1,1-TCA; 0.53 to 19,000 µg/L for cis-1,2-DCE; and 1.6 to 130 µg/L for vinyl chloride.

VOC concentrations in Wells MW-01, MW-02, and MW-03 located cross-gradient and upgradient with respect to the former AST area (Figure 5 from Geosyntec, 2009 in Appendix N) show increasing VOC concentrations over time (Appendix J). A time series chart for PCE, TCE, 1,4-Dioxane, Freon 11, and Freon 113 prepared using the historical McKesson data for MW-02 (Appendix J) shows that Freons were detected consistently in this upgradient well since 1990 along with the other compounds. This finding indicates that an upgradient contaminant plume had reached the McKesson property by 1990.

The concentrations of PCE, TCE, 1,1,1-TCA, vinyl chloride, cis-1,2-DCE, 1,1-DCE, and 1,1-DCA are higher downgradient than upgradient of the property, which indicates McKesson property impacted groundwater with these solvents. Freon 11 and Freon 113 concentrations do not increase across the McKesson property, which indicates that the McKesson property did not impact groundwater with Freons. If Freons were part of the contamination released at the McKesson facility, their concentrations in groundwater downgradient of the property would be expected to be elevated relative to upgradient concentrations, similar to the concentration trend for PCE, TCE, 1,1,1-TCA, vinyl chloride, cis-1,2-DCE, 1,1-DCE, and 1,1-DCA.

If Freons were part of the release at the McKesson facility, there would also be high Freon concentrations at the former AST area or its vicinity, similar to the concentrations of the VOCs that were part of the release. Future groundwater samples from the high concentration area of the property would need to be analyzed with a special focus on Freons and other compounds previously reported at high detection limits to ascertain that a release of Freons had occurred. However, with the upgradient and downgradient sampling showing no net increase in Freon concentrations across the facility, it is unlikely that high Freon concentrations are present in the subsurface at the McKesson facility.

5.5.1.7 Site A (Chrysler), 12128 Burke Street, Santa Fe Springs, California

The following site summary is based on information provided in McLaren, 1990; Converse Environmental West, 1991; and Dames & Moore, 1992, 1995 and 1996.

Site A is located at 12128 Burke Street, Santa Fe Springs, California. Site A and several surrounding properties collectively comprised a 40-acre new car preparation facility from 1965 to 1988. At least five 10,000-gallon USTs, four 3,000-gallon USTs, two 550-gallon USTs, five 550-gallon waste oil tanks, seven concrete clarifiers ranging in size from 500 to 5,000 gallons, 17 hydraulic hoists, seven service pits, several fuel pump islands, three car washes, three spray booths, and a paint spill area were installed and operated at the 40-acre site, with four of the seven clarifiers located at Site A. The operator began removing these structures in 1985 and completed the removal of the last USTs in October 1988. Operations included painting, tune-up, cleaning and waxing, body work, and car washing.

This facility used PCE, TCE, MEK, acetone, and metals. Elevated concentrations of 1,1-DCE, PCE, TCE, and Freon 11 were discovered in most wells at the 40-acre site. Petroleum hydrocarbons, 1,1-DCE, PCE, and TCE were found in soil samples collected at the facility. Groundwater sampling at the 40-acre site conducted between November 1990 and January 1991 found 1,1-DCE, PCE, TCE, 1,1,1-TCA, and Freon 11 at maximum concentrations of 1,400, 520, 500, 14, and 370 µg/L, respectively. During 1990 and 1991 sampling, the concentrations of chlorinated hydrocarbons in groundwater samples taken from wells

downgradient of the former clarifiers at Site A were typically higher compared to the concentrations in samples collected upgradient. The contamination in soil and the elevated concentrations of PCE, TCE, and 1,1-DCE suggest that Site A is a source of groundwater contamination by these compounds.

5.5.1.8 Mission Linen Supply – 11904 – 11920 East Washington Boulevard, Whittier, California

The following site summary is based on information provided in Geotracker, 2010; CGC Environmental, 2009a and 2009b; City of Santa Fe Springs Fire Department, 1974; Metcalf & Eddy, 1994; and Dames & Moore, 2000.

Mission Linen Supply conducted dry cleaning and industrial laundry operations at 11920 East Washington Boulevard from 1973 to 1992. The facility included several USTs for storing gasoline and diesel fuel and sumps; sludge from the sumps contained 1,1,1-TCA, 1,1-DCE, trans-1,2-DCE, PCE, and metals (lead and zinc).

The facility is adjacent to the Foss Plating property near the estimated western boundary of the OU2 plume, and has impacted groundwater with PCE and TCE (Appendix N). Cis-1,2-DCE, 1,1-DCE, and 1,2-DCA have also been detected in groundwater at the property. PCE concentrations frequently exceeded 1,000 µg/L between 1996 and 2007; the concentrations of TCE, cis-1,2-DCE, 1,1-DCE, and 1,2-DCA during this period were generally much lower compared to the PCE concentrations. The site is currently under RWQCB oversight and, as of August 2009, has an active groundwater monitoring program. Mission Linen Supply is considered a source of contamination to the OU2 plume because of the site's location and its known impact to groundwater.

5.5.2 Non-Chlorinated VOCs Source Areas

5.5.2.1 Former CENCO Refinery, 12345 Lakeland Road, Santa Fe Springs, California

The following site summary is based on information provided in WRD, 2004.

The CENCO Refinery property is approximately 55 acres in size and is located at 12345 Lakeland Road, Santa Fe Springs, California. The site is bordered to the north by Florence Avenue, to the south by Lakeland Road, and to the east by Bloomfield Avenue. The site operated as an oil refinery from the 1930s until July 1995. Prior to the 1930s, the site was an oil field consisting of production wells and unlined sumps. The refinery is not currently operating; however, many of the structures related to the former oil refinery operations remain onsite.

Previous refining operations included processing crude oil into several grades of fuel including kerosene, leaded gas and aviation fuel, unleaded gas, jet fuel, high- and low-sulfur diesel, fuel oil, and petroleum coke. Soil and groundwater beneath and in proximity to the site have been impacted by past site operations.

Approximately 5,100 yd^3 of petroleum hydrocarbon saturated soils have been removed from the site. In 1997, the RWQCB issued a No Further Action letter regarding soil contamination. Free-product recovery began in 1990. As of March 1995, approximately 520 gallons of petroleum hydrocarbon had been removed from the shallow aquifer.

Groundwater monitoring has been conducted onsite since August 1986. Free product has been detected in several monitoring wells at the site. The product is an LNAPL consisting primarily of diesel fuel and gasoline range hydrocarbons. Contaminants of concern reported in groundwater include total petroleum hydrocarbons, TPH-g, diesel, BTEX compounds, and MTBE. Benzene, TPH-g, and MTBE have been detected as high as 12,000, 28,000, and 14,000 µg/L, respectively. Chlorinated VOCs, such as PCE, TCE, 1,1-DCA, 1,1-DCE, cis-1,2-DCE, and others, have been detected at concentrations in exceedance of their MCLs. In February 2007, the highest PCE and TCE concentrations were 92 and 140 µg/L, respectively. These maximum detections were reported in Well MW-603, which is located on the west side of the Metropolitan State Hospital, just east of Norwalk Boulevard. Historical records indicate that there are no known or suspected sources of halogenated VOCs to groundwater from refinery operations.

5.5.2.2 G&M Oil Company, 12559 Lambert Road, Whittier, California

The following site summary is based on information provided in Leighton Consulting, Inc., 2004.

The G&M Oil Company is located at 12559 Lambert Road, Whittier, California. The property has historically been used for retail gasoline sales since at least 1965; it is currently owned by G&M Oil Company and has an active Chevron gas station. A gasoline release was discovered in 1991. The site is in a State-lead quarterly monitoring program and has 16 wells. BTEX and MTBE contamination were the predominant contaminants detected in soil. MTBE and benzene were detected at elevated concentrations in groundwater. In 2004, MTBE concentrations ranged up to 39,000 µg/L and benzene concentrations up to 32,800 µg/L, and the size of the MTBE and benzene plume was approximately 80 by 100 feet.

The G&M Oil Company is a source of MTBE in groundwater. The MTBE plume is likely commingled with the OU2 plume. Based on the known historical and current commercial activities (i.e., gasoline retail) and no information suggesting the use of chlorinated compounds, the facility is likely not a source of groundwater contamination by chlorinated VOCs.

5.5.2.3 The Santa Fe Springs Oil Field, Santa Fe Springs, California

The extent of the Santa Fe Springs Oil Field and the locations of the oil production wells were obtained from the California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR) Web site.

OU2 extends into the Santa Fe Springs Oil Field (Figure 4-8). According to the DOGGR, more than 1,300 oil wells were drilled within the Santa Fe Springs Oil Field. Some of these wells were still producing as of March 2010. Before approximately 1965, non-productive oil wells were destroyed by sealing off the production zone only, while leaving the upper portion of the well casing intact. The details of the well destruction are not available from the DOGGR Web site; however, hardcopies are available for review in the DOGGR offices.

Contaminants from fuel hydrocarbons and oil recovery additives are likely present throughout the oil field in the shallow subsurface, but may also be present in deeper zones.

Further discussion of the likely fate and transport of these deeper contaminants is presented in Section 6.

5.5.2.4 The Oil Field Reclamation Project, Santa Fe Springs, California

The following Oil Field Reclamation Project (OFRP) site summary is based on information provided in McLaren/Hart, 1996 and 1998.

The OFRP site is a 272-acre former oil production well field located in Santa Fe Springs, California, and is part of the Santa Fe Springs Oil Field. The OFRP site has been in operations since the late 1920s but is currently under redevelopment. Some production wells still operate. The primary contaminant of interest is crude oil. The crude oil consisted of a variety of organic compounds, including TPH (gas and diesel range) and BTEX compounds. The major sources of crude oil in soil and groundwater at the OFRP site are ASTs and sumps that were used during historical oil field development and operation. Lesser amounts may be present from leaking pipelines, surface spills, or USTs.

McLaren/Hart conducted soil and groundwater investigations in 1994 and concluded that BTEX and TPH were the primary contaminants of concern at the site. Phenolic compounds such as creosote and pentachlorophenol also were found to be present in soil. These "wood treating chemicals" were purportedly a result of construction yard operations in an area that was subleased to a construction company named Ugalde.

Based on a 1998 groundwater investigation, benzene, TCE, and PCE were determined to be the most prevalent and highest concentration VOCs detected in groundwater. The main CVOC plume was parallel to Norwalk Boulevard at the western part of the property (this investigation confirmed the presence of high VOC concentrations in this area, see Figure 5-1). SVOCs, arsenic, and TPH also were detected, but to a lesser degree. McLaren/Hart reported that the TCE and PCE appeared to originate from an offsite upgradient source. This conclusion was supported by McLaren/Hart's solute transport model and the absence of known uses of TCE and PCE from former operations at the OFRP site. The OFRP well location map is included in Appendix N; most of the wells were destroyed.

TCE, PCE, and 1,1-DCE were also detected in OFRP Well MW-21 (still existing, see Figure 4-5). McLaren/Hart concluded that the contamination has migrated into this area from an unknown upgradient source.

McLaren/Hart concluded that benzene detected at OFRP Well MW-22 located south-southeast of the intersection of Telegraph Road and Santa Fe Springs Road (Appendix N) migrated into this area from the Ashland Chemical Company.

High concentrations of vinyl chloride were detected in two OFRP wells (MW-9, 150 µg/L; MW-10, 250 µg/L) located southwest of the intersection of Telegraph Road and Santa Fe Springs Road in 1994. Groundwater samples from two upgradient OFRP wells (MW-12 and MW-13) tested non-detect at high detection limits due to the presence of fuel hydrocarbons. Vinyl chloride was also detected in soil samples in this area of the OFRP site. McLaren/Hart concluded that the vinyl chloride contamination may have originated from an upgradient source or from the OFRP site activities.

Based on the historical information, the OFRP site is considered to be the source of fuel hydrocarbons and of vinyl chloride.

5.5.2.5 Former Unocal Corporation Facility, 9645 South Santa Fe Springs Road, Santa Fe Springs, California

The following site summary is from Environmental Equalizers, 1998.

The former Unocal Corporation District Office is located at 9645 South Santa Fe Springs Road, Santa Fe Springs, California. This facility is located within an area where oil production, storage, refining, and other chemical manufacturing have occurred for over 75 years. This facility contained a leaking underground gasoline storage tank, which contributed fuel hydrocarbons to soil and shallow groundwater beneath the site. An SVE system was installed in 1992 that processed over 90,000 pounds of fuel hydrocarbons. Post-sampling of soils indicated that at least 85 percent of the fuel was successfully removed. This report indicates the possibility of an offsite source upgradient from the property, which may be contributing to benzene concentrations at the site. Maximum concentrations from January 1998 are as follows: benzene, 74 µg/L; toluene, 2 µg/L; ethylbenzene, 5.4 µg/L; xylenes, 25 µg/L; and MTBE, 39 µg/L.

5.5.3 Other Sites

5.5.3.1 Site B, 8921 Dice Road, Santa Fe Springs, California

The following site summary is based on information provided in Kleinfelder, 1989; Thorne Environmental, Inc., 1989; BASF Wyandotte Corp., 1981; and Holland & Knight, 2009.

The facility located at 8921 Dice Road, Santa Fe Springs, California, has produced, stored, and shipped chemical specialties products since 1954. The chemical specialties were used for institutional, laundry, food processing, dairy, agriculture, metals, and pulp and paper industries.

From 1954 to 1974, sodium hydroxide, sodium carbonate, phosphoric acid, and small amounts of ethyl and isopropyl alcohol were disposed of by injection wells onsite at a volume of 200 gallons per day. It is estimated that more than 1 million gallons of hazardous waste was injected into the subsurface between 1954 and 1974. Methylene chloride was the only chlorinated hydrocarbon known to have been used at this facility. From 1975 to 1980, a wastewater neutralization system was built. Alkalis and non-chlorinated alkali cleaners were used to adjust the pH of wastewater; alkalinity was neutralized using sulfuric acid. From 1980 to 1984, waste was either neutralized onsite or shipped offsite for disposal. A hazardous waste storage permit was issued in 1984. From 1984 to 1989, all waste was shipped offsite for disposal.

Maximum concentrations measured in groundwater in December 1989 are as follows: chloroform of 5 µg/L; 1,1,-DCA of 46 µg/L; 1,1-DCE of 230 µg/L; cis-1,2-DCE of 58 µg/L, PCE of 130 µg/L; 1,1,1-TCA of 300 µg/L; 1,2-dichloropropane of 550 µg/L; TCE of 260 µg/L; and Freon 11 of 3 µg/L. The concentration of 1,2-dichloropropane is two orders of magnitude higher than the concentrations detected in samples from all Omega wells (Table 5-5). Although 1,4-dioxane data for this site are not available, the presence of 1,4-dioxane contamination is suspected due to the presence of high concentrations of

1,1,1-TCA. The 1,1,1-TCA contamination is commonly linked with 1,4-dioxane contamination since 1,4-dioxane is used as a stabilizer for 1,1,1-TCA. Site investigations concluded that chlorinated VOCs detected in groundwater samples beneath the property have originated from an upgradient source or sources and not from Site B. The RWQCB issued a No Further Action letter in 1998 and granted site closure in April 2000.

5.5.3.2 Site C, 9120–9160 Norwalk Boulevard and 11925–11933 Los Nietos Road (aka 9100 Norwalk Blvd.) in Santa Fe Springs, California

The following site summary is based on information provided in URS, 2003 and RWQCB, 1999a.

Site C is located at 9120–9160 Norwalk Boulevard and 11925–11933 Los Nietos Road in Santa Fe Springs, California. Analytical results from this location show VOCs and metals above their appropriate MCLs. This site is a SLIC Program site that has reported releases of metals and VOCs at unknown dates. This facility is voluntarily undergoing annual groundwater monitoring.

USTs were removed and soils contaminated with TPH, VOCs (PCE), and metals were excavated in 1988. The greater part of VOC contamination in groundwater beneath the site was found to have originated offsite. Site C is a possible source of chromium contamination in groundwater because chromium was present in the excavated soils.

In 2003, the maximum VOC detections included PCE at 41 µg/L, TCE at 73 µg/L, 1,1,1-TCA at 27 µg/L, 1,1-DCA at 180 µg/L, and 1,1-DCE at 330 µg/L. Historically, 1,1-DCE concentrations ranged up to 1,030 µg/L. The highest VOC concentrations in groundwater are found in an upgradient monitoring well in the eastern portion of the property, indicating the contamination may be migrating to Site C from offsite sources. Phibro-Tech and Site B are located upgradient of Site C; Pilot Chemical Company and Site F are located farther upgradient.

5.5.3.3 Site H – 9101 S. Sorensen Avenue, Santa Fe Springs, California

The following site summary is based on information provided in Karagamis, White & Magel, LDT., 2007.

A company manufactured and packaged aerosol and liquid household products at 9101 S. Sorensen Avenue from 1971 to 1985.

Eleven 6,000- to 7,000-gallon USTs containing PCE, 1,1,1-TCA, methylene chloride, ethanol, isopropanol, and hydrocarbon solvents were installed at the property between 1966 and 1972. The USTs were removed in 1985. The highest concentrations of VOCs detected during the UST and soil removal included methylene chloride (39,000 g/kg), 1,1-DCA (4,800 g/kg), trans-1,2-DCE (7,500 g/kg), 1,1,1-TCA (17,000 g/kg), TCE (11,000 g/kg), and PCE (3,400 g/kg). There is currently no active soil or groundwater remediation at the property.

Because of the historical high VOC concentrations detected in soil prior to the UST and soil removal, it is likely that the facility has also impacted groundwater. However, no groundwater sampling has been conducted at the facility.

5.5.3.4 Modine Manufacturing Company, 12252 East Whittier Boulevard, Whittier, California

The following site summary is based on information provided in The Earth Technology Corp., 1990 and Weston, 2003.

Modine Manufacturing Company (Modine) is located at 12252 Whittier Boulevard, Whittier, California, and has manufactured and painted automotive radiators since 1950. Modine is a hazardous waste generator of waste oil, lead-contaminated water and soil, and paint chips.

An Environmental Closure Audit dated May 1987 stated that trichloroethane (TCA) was among chemicals used at the facility. The audit also stated that a 7,500-gallon UST, formerly used to store solvents for paint dilution, was removed in 1985 and no soil contamination was identified. However, the documents reviewed indicated that soil samples were not analyzed for VOCs, only for SVOCs; soil contamination by VOCs is unknown.

Paint waste was stored in an onsite "landfill" between 1950 and 1960. The waste was excavated in 1989. Closure was approved by the LACDHS in January 1991.

Soil contaminated by metals and oil was excavated. TCE and PCE detections in groundwater ranged from 13 to 42 µg/L, respectively, in 1989. Trace amounts of Freon 11 and toluene were also detected. The Modine facility is located cross-gradient to the northwest of OU2. Because of the relatively low concentrations found, this contamination likely does not extend far from the Modine site, and based on the earlier (2001 through 2002) HydroPunch® investigations at OU2, it does not merge with the OU2 plume.

5.5.3.5 Lincoln Distribution Center, 12500 Slauson Avenue, Santa Fe Springs, California

The following site summary is based on information provided in SCS Engineers, 1995.

The Lincoln Distribution Center is located at 12500 Slauson Avenue, Santa Fe Springs, California where the facility had six USTs that held motor oil, diesel, and waste oil. These USTs were removed in June 1986. Chlorinated hydrocarbons are not known to have been used at the site.

The soil is contaminated with petroleum hydrocarbons. The groundwater has diesel fuel as LNAPL in a limited area. TCE and PCE were found at concentrations up to 31 and 233 µg/L, respectively, in upgradient and downgradient wells along the northwestern boundary of the Lincoln Distribution Center. SCS Engineers (1995) determined that these compounds originated offsite. This facility is likely not a source of groundwater contamination by VOCs.

5.5.3.6 Valvoline Oil, 9520 John Street, Santa Fe Springs, California

The following site summary is based on information provided in Delta Environmental Consultants, Inc., 1997 and Cal-EPA, LARWQCB, 1997.

Valvoline Oil is located at 9520 John Street, Santa Fe Springs, California, and is a former UST site. There is soil contamination by petroleum hydrocarbons. The groundwater has minor BTEX concentrations. TCE and PCE were historically detected at concentrations between non-detect and 98 µg/L and between non-detect and 130 µg/L, respectively. The above referenced reports determined that both compounds have originated offsite. The facility is likely not a source of groundwater contamination by VOCs.

5.5.3.7 WDI Superfund Site, Santa Fe Springs, California

The following site summary is based on information provided in EPA, 1999 and 2002; Nunez Engineering, 1997; and Project Navigator, 2008.

The WDI site is located in Santa Fe Springs, California, on Los Nietos Road at Greenleaf Avenue and Santa Fe Springs Road. The WDI site comprises 43 acres, divided into 22 parcels of land owned by 17 individual landowners. A buried 42-million-gallon, concrete-lined reservoir, constructed prior to 1924, is located in the middle of the property. Between the 1920s and mid-1960s, the reservoir and surrounding areas served as a disposal site for liquid and solid wastes, both permitted and unpermitted. During the 1950s, some of the areas outside the reservoir were developed for commercial and industrial use. The reservoir was covered with fill in 1963.

EPA added the WDI site to the NPL on July 22, 1987, and commenced work on the RI in 1988. EPA issued a Record of Decision in 1993, but subsequently determined that a supplemental FS would be necessary. By the mid-1990s, nearly all of the generator PRPs gathered to form a workgroup, the WDI Group (WDIG), which completed the Supplemental FS in May 2001.

Soil investigations conducted during the RI and remedial design phases detected VOCs, primarily BTEX, SVOCs, and heavy metals including arsenic, chromium, copper, and lead. Subsequent investigations also indicated the presence of perched liquids and leachate containing VOCs, SVOCs, PCBs, and metals. The remedial design investigations suggested that infiltration of rainwater was responsible for the presence of liquids.

A Groundwater Data Evaluation conducted in 2000 found PCE and TCE at concentrations generally less than 20 µg/L; no LNAPL or dense nonaqueous phase liquid (DNAPL) sources beneath the site; elevated concentrations of aluminum, iron, manganese, and selenium above Primary and Secondary MCLs. EPA determined that the PCE and TCE contamination in groundwater under the WDI site appeared to be from releases at upgradient sites.

In 2002, EPA issued an Amended ROD for the WDI site, selecting a remedy that includes an engineered cap, landfill gas and leachate collection, institutional controls, and long-term operations, maintenance, and monitoring (OM&M). The containment remedy at the WDI site focused on VOC and heavy metal contamination in soils. As set forth in the Amended ROD, EPA found no evidence that the WDI site contributed to the exceedance of any groundwater standards; the remedy, therefore, did not address groundwater as a contaminated media. Freons were not identified as COPCs in the 2002 Amended ROD. Pursuant to a 2003 Consent Decree, the WDIG conducted the selected remedy, and EPA approved the Remedial Action Completion Report in September 2006. The WDI site is now in the OM&M phase of the remedy.

5.5.3.1 Site L, 9620 Santa Fe Springs Rd., Santa Fe Springs, California

The following site summary is based on information provided in Westlaw, 2010 and Project Navigator, 2008 and 2009.

Two companies are identified as being located and operating at this address, which is located in the northwestern portion of the WDI Superfund site, and is also known as

Parcel 21 of that site (Los Angeles County Parcel 8167-002-021). A map in Appendix N shows the location of this property.

One company is believed to provide services related to demolition; rigging; relocation; anchoring; storage; refrigeration evacuation; and heating, ventilating, and air conditioning (HVAC) equipment. The other company is an "EPA-Certified Refrigerant Reclaimer," certified for the first time in 2009. The date that each company began operations at the address is not certain, but it is believed that at least one of the companies began operating at the facility address in 1998.

As part of post-remedial OM&M at the WDI site, indoor air is monitored in one building at Site L and soil vapor sampling is conducted at several locations in the vicinity. Prior to July 2008, the maximum Freon 11 detection in indoor air was 1.2 parts per billion by volume (ppbv). However, starting in July 2008, a notable increase occurred in Freon 11 with a detection of 110 ppbv. The Freon 11 concentrations remained ranged up to 51 ppbv in January 2009 and then a sharp increase was occurred in March 2009, when Freon 11 was detected at 500J and 690J ppbv in the primary and duplicate samples, respectively. Freon 113 (referred to as trichlorotrifluoroethane in the tables in Appendix N) was undetected until March 2009, when it was detected at 14 and 16 ppbv in the primary and duplicate samples, respectively. Other VOCs detected in indoor air at Site L included methylene chloride, MEK, 1,1,1-TCA, benzene, and methane.

The vapor monitoring wells closest to Site L include VW37 (located approximately 300 feet southwest), VW38 (located on the southwest edge of Parcel 21), VW39 (located approximately 150 feet north), and VW46 (located immediately to the east). Well locations are shown in Appendix N.

These vapor monitoring wells were sampled quarterly from 1998 to 2007 and then sampled semiannually starting in 2008. Aromatic VOCs and CVOCs are present in generally low concentrations. Freon 113 was detected at several wells at low concentrations. Freon 11 was detected at concentrations substantially greater than the detection limit (which was less than 1 ppbv for most samples) in three vapor monitoring wells (VW37, VW38, and VW46):

- Between 1999 and 2000, Freon 11 concentrations at VW37 rose from non-detect to 540 ppbv at 10 feet bgs and from 3.4 to 1,700 ppbv at 30 feet bgs. Freon 113 concentrations increased from non-detect to 3.5 ppbv at 10 feet bgs and from non-detect to 2 ppbv over the same time period. Historically, VW37 had high concentrations of 1,1,1-TCA in late 1990s with a maximum of 2,900 ppbv in 1998. Other VOCs detected included benzene, MEK, trichloro-trifluoroethane, 1,1-DCE, and acetone. The 1,1,1-TCA concentrations had decreased to below 1 ppbv at the time that Freon 11 was first detected in 1999.

- Between 2002 and 2003, Freon 11 concentrations at VW46 increased from 150 to 1,400 ppbv at 15 feet bgs and from 130 to 1,200 ppbv at 27 feet bgs. Freon 113 concentrations increased from 1.5 to 6.5 ppbv at 15 feet bgs and from about 2 to 6.8 ppbv over the same time period. Other VOCs detected include benzene, chloroform, MTBE, vinyl acetate, MEK, trichloro-trifluoroethane, and acetone. Historically, the concentrations of 1,1,1-TCA at 15 feet bgs decreased in this well from 99 ppbv in 1998 to

about 8 ppbv; at 30 feet bgs, the concentrations of 1,1,1-TCA have since remained below 10 ppbv.

- Between 1998 and 2005, there was a comparatively smaller rise in Freon 11 concentrations at VW38, from non-detect to 36 ppbv. Freon 113 concentrations increased from non-detect to 0.39 ppbv over the same time period. Historically, the concentrations of 1,1,1-TCA decreased in this well from 220 ppbv in 1998 to below detection limit in 2000 and has remained undetected

As part of the remedial investigation and actions at the WDI site, groundwater monitoring wells are located near Site L. The well locations are indicated in Appendix N. As part of the Omega RI, CH2M HILL collected split samples from GW-01, GW-11, and GW-22 in December 2006. VOCs such as PCE, TCE, chloroform, acetone, and 1,4-dioxane were detected at low concentrations. Freon 113 was detected at 0.2J in GW-01. All other Freons were non-detect. Additional groundwater sampling from multiple wells would be necessary to determine whether or not Freons handled by the companies operating at this address may have impacted groundwater in this area.

5.5.3.2 Ashland Chemical, 10505 South Painter Avenue, Santa Fe Springs, California

The following site summary is based on information provided in WRD, 2004 and URS, 2008.

Ashland Chemical owned the property at 10505 South Painter Avenue, Santa Fe Springs, California, outside of OU2, and operated as a chemical blending, packaging, and distribution center at this location from the 1960s through January 2002 when it sold the property. The facility used 46 USTs and 61 ASTs. In 2003, the RWQCB and the City of Santa Fe Springs Fire Department have determined that no further soil remediation is required. Ashland Chemical has performed groundwater remediation at the Ashland Chemical since 1990; the system is still active and Ashland Chemical conducts quarterly groundwater monitoring.

Soil and groundwater investigation and remediation has been performed by Ashland Chemical since 1984. VOCs found in both soil and groundwater include BTEX; 1,2-DCE; TCE; and vinyl chloride. Groundwater monitoring in February 2002 found the following maximum concentrations: benzene of 120 µg/L; ethylbenzene of 7,000 µg/L; xylenes of 24,600 µg/L; 1,2-DCE of 12,000 µg/L; vinyl chloride of 690 µg/L; and TCE of 760 µg/L. In August 2007 the maximum concentrations were: benzene of 180 µg/L; ethylbenzene of 1,800 µg/L; toluene of 2,600 µg/L; xylenes of 3,760 µg/L; 1,1-DCE of 460 µg/L; 1,2-DCE of 8,379 µg/L; vinyl chloride of 1,100 µg/L; chlorobenzene of 1,000 µg/L; 1,4-dioxane of 26 µg/L, TCE of 250 µg/L; and PCE of 20 µg/L (Appendix J). The well (MW21, Appendix N) with the highest vinyl chloride concentrations is located downgradient of the facility. Ashland Chemical is located about 0.75 mile east of OU2 but it is upgradient of the leading edge of the OU2 plume. The facility is a source of VOC contamination in groundwater, including primarily vinyl chloride, 1,2-DCE, TCE, and BTEX. The extent of the groundwater contamination at Ashland Chemical was not known at the time of preparation of this RI. As of 2009, there were no field sampling data available that would indicate whether hazardous substances from Ashland Chemical have or have not commingled with the Omega plume.

5.5.3.3 Site G – 9128 and 9132 Dice Road, Santa Fe Springs, California

The following site summary is based on information provided in Electronic Chrome & Grinding, 2010 and County of Los Angeles Department of Health Services, 1986.

Uses of the property at 9128 and 9132 Dice Road, Santa Fe Springs, California include the operation of a company that provides chrome plating and grinding services.

Hazardous chemicals generated in this process include chrome rinse water and chrome wastes. A 1986 soil sample from a dike leading outside the property contained chromium at 22,500 mg/kg and hexavalent chromium at 15.9 mg/kg. Because of its chemical use and the contamination in soil, the facility is considered a potential source of hexavalent chromium in groundwater. No groundwater samples have been collected at the property.

5.5.3.4 Site J – 10607 Norwalk Blvd., Santa Fe Springs, California

The following site summary is based on information provided in ATC Associates, 2000a and 2000b; McLarren/Hart, 1994a and 1994b; RWQCB, 1997 and 2001; Kleinfelder, 2008; and Alton Geoscience, 1998.

This property was used for oil exploration from the 1920s to approximately 2003. Operations at the property included former aboveground piping areas, bioremediation cells, two AST farms, a trucking operations area including an area where trucks reportedly dumped materials on a vacant unpaved lot, use of unspecified solvents during an unspecific period of time, and an area used for stockpiling metal.

Soil contamination was found on site with PCE concentrations up to 55,000,000 µg/kg and TCE up to 2,700,000 µg/kg. Shallow contaminated soil was removed and remediated to a maximum depth of 24 feet bgs between the mid-1990s and early 2000s. There is no indication that deep soils were remediated.

On March 5, 2001, a joint letter from the DTSC and RWQCB stated that No Further Action was required with respect to chlorinated and petroleum hydrocarbon contaminated soils at the facility. The letter stated that, because groundwater at the facility was impacted, continued groundwater monitoring was required.

Recent groundwater concentrations indicate there were still substantial groundwater impacts with PCE detected at 510 µg/L and TCE at 100 µg/L in 2008. In 1995, PCE and TCE were detected up to 2,200 µg/L and 240J µg/L, respectively. These high concentrations are outside (west of) the 100 µg/L contours for both the PCE and TCE plumes (Figures 5-11 and 5-12, respectively).

The concentrations of PCE and TCE in soil and groundwater indicate that the property is a source of PCE, TCE, and their degradation products in groundwater at OU2.

5.5.3.5 Site I – 10643 Norwalk Blvd, Santa Fe Springs, California

The following site summary is based on information provided in DTSC, 2001; Environmental Support Technologies, 1997; Ferro Engineering, 2004; and Green Environmental, 1995.

Operations at the property included processing metal parts to perform carbon nitriding on the surface of the metal at 10643 Norwalk Blvd, Santa Fe Springs, California.

Heat treating operations have been conducted at the facility since 1969. The facility used PCE, TCE, and 1,1-DCE. A vapor degreaser was used until its removal in 1995. The company operated a vapor extraction system that was reported to not be very efficient at removing chlorinated solvents due to petroleum contamination. The highest reported PCE and TCE concentrations in soil were 7,514 parts per billion (ppb) and 4,759 ppb, respectively. There is documented soil contamination with PCE at 130 micrograms per kilogram (µg/kg) and TCE at 7.7 µg/kg at 60 feet bgs. Groundwater was reported at 68 feet bgs. There has not been any groundwater sampling at the site but samples from the closest known groundwater wells are on the adjacent upgradient property (see previous section) that show that groundwater has been impacted. Both Site I and Site J have documented PCE and TCE in the soil near the common boundary. There has not been a clear determination whether groundwater impacts are attributable to releases at both facilities or one of the facilities. The site is currently under RWQCB oversight.

Because of its chemical use and contamination in soil, this facility is a potential source of PCE, TCE, and their degradation products in groundwater.

5.5.3.6 Site K – 12080 and 12100 Rivera Road, and 8550 Chetle Avenue, Whittier, California

The site summary presented below is based on information provided in Geologica, 2009; NPEC, 2009; and DTSC, 1984 –1990.

A company has operated at 12100 Rivera Road, Whittier, California, as a regional distribution facility since 1958. Prior to 1998, the facility was also used for photo-process training. The facility reportedly handled primarily dry finished products. Liquid materials handled at the facility include photo-processing chemicals stored in 55-gallon drums and smaller containers. Prior to the mid-1980s, bulk chemicals were stored in two USTs; one contained waste photoprocessing chemicals, the other contained waste oil. Spent photo-processing chemicals were generally transported offsite for disposal or routed through a clarifier and discharged to the facility sanitary sewer as permitted.

The facility used some chemicals containing chlorinated organic compounds for cleaning and maintenance purposes. The facility also stores and distributes 1-gallon containers of 1,4-dioxane, which is a component in a film adhesive product which is part of the distribution inventory. The facility formerly maintained a 55-gallon drum of 1,1,1-TCA, which was a degreasing agent for parts cleaning for approximately 15 years. Waste TCA was reportedly transported offsite for disposal. In addition, chromium is a common chemical used in photo-processing.

Starting in 1958, the facility used Freon 11 in two chillers containing 2,000 and 650 pounds of Freon 11. The larger chiller was replaced in 1998 with a unit using Freon 22. Annual refrigerant audits show Freon 11 losses of 150 and 400 pounds in 1997 and 2003. Hazardous waste manifests show that the facility disposed of 5,250 pounds (32 drums) of Freon 11 at the former Omega Chemical facility in 1984, 1985, and 1990. Note that some manifest entries conflict and show the same substance as both Freon 11 and Freon 113; however, the company stated that no Freon 113 has been used at the facility.

Soil sampling data indicate that soils at the facility contained chromium. Groundwater sampling data from 1984 and 2008 indicate that groundwater at the facility contains chromium (1,400 µg/L). Because of its chemical use and total chromium contamination in

soil and groundwater, the facility is a potential source of hexavalent chromium in groundwater. The company plans to perform voluntary soil and groundwater sampling in 2010.

5.6 Residential Area Investigation Results

Figure 5-9 presents a site location map of Whispering Fountains apartment complex, the residential area investigated as part the OU2 RI, along with posted concentrations of VOCs detected in groundwater. Posted concentrations of VOCs detected in soil gas are shown in Figure 5-10. The results are discussed in the following subsections.

5.6.1 CPT

CPT borings installed at RA-1, RA-2, and RA-4 were advanced to 60 feet bgs. The CPT termination depth at RA-3 was 46 feet bgs. Pore pressure dissipation tests were conducted at RA-2 and RA-3 to confirm the static depth to water, which was determined to be approximately 35 feet bgs. A copy of the CPT logs is presented in Appendix A.6.

Soil behavior type (SBT) logs are included as part of the CPT log presentation. SBT logs provide a lithological interpretation based on the correlations of cone bearing, sleeve friction, and pore water pressure (Robertson, 1990). A summary of the lithologic interpretation for each soil boring follows.

- **RA-1**: Clays and silty clays are present from land surface to approximately 40 feet bgs. Sands, silty sands, and gravelly sands are present from 40 to 52 feet bgs. Silty sands, sandy silts, clays, and silty clays are present from 52 feet bgs to total depth.
- **RA-2**: Clays and silty clays are present from land surface to 30 feet bgs. Sands, silty sands, and gravelly sands are present from 30 to 51 feet bgs. Silty sands and sandy silts are present from 51 to 59 feet bgs. Courser-grained sand is present from 59 feet bgs to total depth.
- **RA-3**: Clays and silty clays are present from land surface to approximately 30 feet bgs. Very stiff fine-grained sands with interbedded clays and silty clays are present between 30 and 33 feet bgs. Silty sands are present from 33 feet bgs to 42.5 feet bgs. Very stiff fine-grained sand is present from 42.5 feet bgs to total depth.
- **RA-4**: Clays, silty clays, and very dense/cemented clays and silts are present from land surface to 51 feet bgs. A two-foot layer of silty sand and sandy silt is present between 32.5 and 34.5 feet bgs. Sands, silty sands, and gravelly sands are present from 51 feet bgs to total depth.

5.6.2 HydroPunch®

Table 5-16 presents a summary of VOCs and 1,4-dioxane detections in groundwater samples collected at Whispering Fountains. Although PCE and 1,1-DCE concentrations were reported at concentrations in exceedance of their screening levels, TCE appears to be the primary contaminant at Whispering Fountains. TCE was detected in all groundwater samples at concentrations ranging from 0.48J to 330 µg/L. TCE concentrations were generally higher in the deeper discrete samples. The average TCE concentration in deeper

samples is 240 µg/L, which is 36 times greater than the average TCE concentration in shallow groundwater samples (6.7 µg/L). Similar concentration trends were reported for PCE and 1,1-DCE detections. An isolated detection of 1,4-dioxane was reported in sample HPRA-4B (1.4J µg/L), which was below its screening level of 3 µg/L.

The Whispering Fountains apartment complex is located approximately 2,700 feet downgradient of the TCE Source area at Whittier Boulevard. TCE and 1,1-DCE also were detected at the TCE Source area at Whittier Boulevard, although at much greater concentrations. PCE, however, was not reported in samples at the TCE Source area. The presence of TCE, PCE, and 1,1-DCE at the Whispering Fountains apartments suggests that TCE and 1,1-DCE contamination from the TCE Source area at Whittier Boulevard extends downgradient and are commingled with PCE, 1,4-dioxane, and other VOC contamination from the former Omega facility.

5.6.3 Soil Gas

Table 5-17 presents a summary of detections in soil gas samples collected from nested probes SGRA-1, SGRA-2, SGRA-3, and SGRA-4. VOCs are presented in units of µg/m^3.

PCE was detected in all samples with the highest concentrations reported in the deepest probes. TCE was only detected in Samples SGRA-1C (150 µg/m^3), SGRA-4A (12.32 µg/m^3), SGRA-4A field duplicate (8.034J µg/m^3), and SGRA-4C (64.27J µg/m^3). An isolated detection of Freon 11 was reported in Sample SGRA-4A (6.741J µg/m^3). Freon 113 was reported in four samples that include SGRA-1C (63.58 µg/m^3), SGRA-4A (46.73 µg/m^3), SGRA-4A field duplicate (36.77 µg/m^3), and SGRA-4C (360.1 µg/m^3).

A leak test conducted as part of the sampling showed that the equipment seals and sampling point construction were adequate. Butane, the leak-test compound, was detected in all soil gas samples at concentrations ranging from 28.51 µg/m^3 in Sample SGRA-4A (field duplicate) to 5,227J µg/m^3 in Sample SGRA-1A. Several butane-related compounds (e.g., butene, pentene, hexane, etc.) and unknown fluorocarbons were reported as tentatively identified compounds (TICs) and are likely attributed to impurities from the commercial-grade butane that was used for leak testing. A TIC is defined by EPA as a non-targeted compound detected in a sample using a gas chromatograph/mass spectrometer (GC/MS) analytical method which has been tentatively identified using a mass spectral library search.

Although butane was present in soil gas samples, the maximum butane concentration of 5,227J µg/m^3 was well below the DTSC's maximum allowable limit for a leak-test compound (10 µg/L or 10,000 µg/m^3). Furthermore, the maximum butane concentration (5,227J µg/m^3) plus its estimated butane-related TICs (3,220.54 µg/m^3) totals 8,447.54 µg/m^3, which is still below the DTSC's limit of 10,000 µg/m^3.

In summary, soil gas results did not reveal conclusive spatial and vertical trends in soil gas contamination. One vertical trend that was noted was that PCE contamination is present at higher concentrations deeper into the vadose zone, closer to the water table. It is also noteworthy that PCE is present in soil gas at a greater frequency than TCE, even though TCE is the dominant contaminant in groundwater for this area. However, this is likely because the Henry's coefficient for PCE is nearly twice as high as that for TCE, indicating that for the same concentrations in groundwater, PCE vapor concentration would be about

twice that of TCE. Further discussion of the soil gas results as they relate to the human health risk assessment is presented in Section 7.

5.6.4 Soil

A summary of results for the soil geotechnical data is included in the PTS laboratory reports provided in Appendix D. Soil sample depths ranged between 7 and 32.5 feet bgs, which generally represents the vadose zone in this area. The depth to water during soil sampling was approximately 35 feet bgs.

Of the 12 soil samples collected, 11 samples were classified as lean clays or lean clays with sand. The SSRA-4A sample, collected between 32 and 32.5 feet bgs was the only sample classified as sandy silt. Overall, the lithologic descriptions provided by PTS are consistent with the CPT log interpretations for the vadose zone. This data confirms that the vadose zone beneath the Whispering Fountains area primarily consists of fine-grained silts and clays.

5.7 Distribution of Contamination

The concentrations of selected compounds are shown on maps to help characterize the extent of groundwater contamination and the distribution of the concentrations of the contaminants in OU2, and to show the known and suspected sources of contamination. Tables 5-5 and 5-6 show statistical summaries of all historical data and of the July through August 2007 sampling event, respectively. Only compounds that are widely distributed at OU2 and at concentrations above their screening levels are shown on the maps. Only primary sample results are displayed on the maps (duplicate samples were not shown).

Concentration contour maps were prepared for PCE, TCE, Freon 11, Freon 113, 1,4-dioxane, hexavalent chromium, perchlorate, 1,1-DCE, cis-1,2-DCE, and chloroform using July through August 2007 and historical data; they are presented in Figures 5-11 through 5-14, and Figures 5-16 through 5-21.

The July through August 2007 groundwater sampling event was chosen because it is the most recent and comprehensive sampling event conducted to date. The HydroPunch® data from the source area investigations and new monitoring well siting are not shown on the maps; they are presented in more detail in Figures 5-1 through 5-9. Typically, one concentration contour was chosen to correspond with the screening level concentration; the other contours were chosen to help distinguish zones of relatively high and low concentrations in groundwater.

In addition to the July through August 2007 groundwater samples collected from Omega wells, concentration contours for the OU2 plumes maps also accounted for the 2007 HydroPunch® samples, groundwater sampling results from other sites, and historical HydroPunch® samples collected by Weston (2003). The distribution of concentrations of contaminants was derived from multiple sources and multiple time frames and cannot be adequately interpolated through automated algorithms. Therefore, professional judgment was used to produce generalized contours showing the approximate distribution of contaminant concentrations at OU2.

Because OU2 extends about 4.5 miles from the former Omega property and the known depth extent of contamination is limited to about 200 feet bgs, one set of contaminant distribution maps was constructed for all sample depths. The maximum concentration measured was used for the multiple screen well locations. Figure 4-7 shows the vertical distribution of PCE, TCE, Freon 11, and Freon 113 along their cross-sections along with contours to display the vertical distribution of PCE. Concentrations measured in recent groundwater samples from wells were given more weight than concentrations measured in historical HydroPunch® samples in the development of the contours. The HP results were mainly used to constrain the edges of the plumes in the northeastern part of OU2. Because many of the data points that have been used to define the VOC plumes are discrete groundwater samples collected from direct-push soundings from a relatively small depth interval (compared to samples from monitoring wells that represent a concentration approximately averaged over a larger screen interval depth), it is possible that some of the lateral variation in concentrations is an artifact of this sampling technique. HydroPunch® samples with measurable concentrations were given more weight than non-detectable results because discrete sampling may miss contaminants in groundwater.

Groundwater monitoring results from other facilities at OU2 were also used in the preparation of the maps. The latest available data were used. For sites that cover small areas relative to the extent of OU2, only the maximum measured concentrations were displayed.

5.7.1 PCE

Figure 5-11 shows the concentration distribution of PCE. The PCE plume with concentrations greater than 5 µg/L extends approximately 4.5 miles downgradient west-southwest of the former Omega Chemical property to between EPA Wells MW29 and MW30. PCE concentrations exceeding 100 µg/L form a relatively narrow zone that extends from the Omega property to between CENCO Refinery Wells MW-603 and MW-605. Within this narrow concentration zone, two distinct zones of concentrations exceeding 500 µg/L are associated with the Omega property and with another source area identified as the former Angeles Chemical Company and the former McKesson Chemical properties (referred to collectively as AMK). The high-concentration zone (greater than 500 µg/L) downgradient of the Omega property extends into a deeper aquifer zone at Well MW23. The contamination found at MW23C may be laterally limited, but it may also extend to Production Well 2S/11W-30R3.

Upgradient sampling at the former McKesson facility showed concentrations between 16 and 160 µg/L in shallow groundwater, which are significantly lower than PCE concentrations measured in samples from Wells MW4A, MW5, and MW15 located further upgradient of McKesson (GeoSyntec, 2005).

Another separate zone of high PCE concentrations (exceeding 500 µg/L) is present near Well MW9A surrounding Techni-Braze, Inc. and Earl Manufacturing. This zone is an indication of sources of PCE contamination in this area.

A separate zone of intermediate PCE concentrations (exceeding 100 µg/L) is present near Well MW6. This well is directly downgradient from the Foss Plating facility, which is an indication that this facility is a source of shallow groundwater contamination.

A second separate zone of intermediate PCE concentrations is present near Site F. This zone is based on PCE concentrations collected from HydroPunch® samples during the source area investigation and is outlined in detail in Figure 5-7 (discussed in Section 5.4.4).

PCE was detected at deeper wells at the WDI site. These wells are directly downgradient of Well MW18, which intercepted PCE concentrations at 9.2 µg/L. The two wells at WDI that exceed the MCL for PCE are GW11 and GW24. This zone of PCE contamination appears to be separate from the OU2 plume. There may be a local source in this area, but it may also be a continuation of the contamination found at Well MW18.

The PCE plume is constrained by measured concentrations between the detection limit and MCL along the southwest and southeast, and by non-detect sample results at the plume leading edge extending to the south.

The PCE concentrations found in the GSWC wells in the 2010 samples ranged from 0.6 to 20 µg/L (Table 5-18). The PCE plume likely extends to a depth of about 200 feet bgs in the area of the Pioneer wells (west of the downgradient portion of the OU2 plume) where the contaminated groundwater is extracted via the upper screen intervals of the wells. The PCE concentration in the wellhead sample from Dace #1 (south of the leading edge of the OU2 plume) was 0.6 µg/L. This well has two screened sections and it is likely the sample represents a mixture of groundwater from these two screens. The upper screen at Dace #1 is 40 feet long and the lower screen is 136 feet long. It is likely that there is substantial dilution of the contaminated groundwater inside the well; groundwater with VOCs likely enters the well via the upper screen while the groundwater extracted from the lower screen may not contain VOCs. Therefore, it is not known whether the PCE plume (defined by concentrations greater than the MCL of 5 µg/L) has reached this area.

5.7.2 Trichloroethene

The TCE plume (Figure 5-12) is similar in extent to the PCE plume including the extent of the high concentration zones associated with the Omega property, and AMK. There is a separate zone of intermediate TCE concentrations near Well MW9A collocated with the zone of PCE concentrations. The extent of this zone is based on HydroPunch® results collected near the former Earl Manufacturing facility, which indicate a source of TCE as well as PCE contamination in this area.

High TCE concentrations measured in samples from wells at Phibro-Tech, Inc. (at a maximum of 1,100 µg/L) indicate that this site is a source of TCE.

A separate source of TCE contamination is present to the northwest of and cross-gradient relative to the Omega property. Results from the HydroPunch® investigation revealed high concentrations of TCE (maximum of 2,700 µg/L) immediately downgradient from the TCE Source at Whittier Boulevard signifying that there is a source of TCE contamination in the vicinity. HydroPunch® results from this facility were discussed in detail in Section 5.4.5.

There appears to be an isolated zone of TCE in deeper groundwater at WDI, collocated with the PCE contamination in that area, which may indicate a local source. This contamination may also extend to this area from the vicinity of Well MW18.

Similarly to the PCE plume, the TCE plume is constrained by measured concentrations between the detection limit and MCL along the southwest and southeast, and by non-detect sample results at the plume leading edge extending to the south.

Low concentrations of VOCs, mainly TCE, were detected in samples from Production Well SFS No. 1 (2S/11W-30R3). The well is located northwest of the anticipated flow path from the Omega property, indicating that it may have been impacted by contamination from other sites. The USGS flow-logging investigation concluded that 50 percent of groundwater extracted from SFS No. 1 comes from depths greater than 300 feet. Discrete sampling found no traces of TCE below 300 feet (measured from the ground surface). In a mass balance analysis of the TCE concentrations at the wellhead (1.3 µg/L), and a total extraction rate of 1,400 gpm, the flow log results predicted the TCE concentration of 3.9 µg/L in the shallow groundwater (USGS presentation in May 25, 2006; meeting at WRD). This result is in agreement with the TCE plume extent shown in Figure 5-12.

The TCE concentrations found in the GSWC wells in the 2010 samples ranged from 2.1 to 22 µg/L (Table 5-18). The TCE plume likely extends to a depth of about 200 feet bgs in the area of the Pioneer wells where the contaminated groundwater is extracted via the upper screen intervals of the wells. The TCE concentration in the sample from Dace #1 was 2.1 µg/L. Because the sample represents a mixture of groundwater extracted from the well's two screens, it is not known whether the TCE plume (defined by concentrations greater than the MCL of 5 µg/L) has reached this area (see also the discussion in Section 5.7.1).

5.7.3 Freons

The extent of Freon 11 (Figure 5-13) is somewhat smaller compared to the extents of PCE and TCE (based on the comparison of the 5 µg/L contours for the three compounds). The Freon 11 plume is narrower and does not extend as far downgradient as the PCE and TCE plumes. The Freon 11 concentrations are also lower than the PCE and TCE concentrations over OU2 and in the source area at the Omega property. The downgradient extent of Freon 11 is more uncertain than the extent of PCE and TCE because many samples from the CENCO wells yielded non-detectable results with a reporting limit of 5 µg/L. Only the sample from CENCO Well MW606 had Freon 11 results above the reporting limit (6.6 µg/L).

Freon 113 (Figure 5-14) has a similar extent in groundwater at OU2 as Freon 11. Similarly to Freon 11, Freon 113 detections are also more uncertain in the CENCO area. The 5 µg/L contour ends between CENCO Wells MW-603 and MW-605.

High concentration zones of both Freon 11 and Freon 113 are associated with the Omega property; there is no increase in Freon concentrations in the AMK area. No sources of groundwater contamination by Freons other than from the former Omega facility have been identified. For this reason, Freon 11 and Freon 113 are considered tracer compounds and are used to help map the extent of VOCs in groundwater that have migrated from the Omega property.

Freons were not found in any of the samples from SFS No. 1 at detection limits of 0.1 and 0.05 µg/L for Freon 11 and Freon 113, respectively (USGS presentation in May 25, 2006; meeting at WRD).

Both Freon 11 and Freon 113 were found at low concentrations (0.5J and 1.2 µg/L, respectively) in the 2010 sample from GSWC Well Pioneer #1 (Table 5-18). The Freons likely extend to a depth of about 200 feet bgs in this area where the contaminated groundwater is extracted by Pioneer #1, although at lower concentrations than PCE and TCE.

Because the GSWC Well Dace #1 sample represents a mixture of groundwater extracted from the well's two screens, it is not known whether the Freon plume has reached this area (see also the discussion in Section 5.7.1).

5.7.4 1,4-Dioxane

The extent of 1,4-dioxane (Figure 5-16) is similar to the extent of PCE and TCE except that it is wider between Wells MW21 and MW28. Although Well MW28 results are below the 3 µg/L contour (1.7J µg/L), all the surrounding HydroPunch® results are above it. Therefore, Well MW28 was incorporated within the zone of low concentrations (up to 3 µg/L). This area is downgradient relative to Site B and Phibro-Tech facilities. Groundwater analytical results for 1,4-dioxane from the Phibro-Tech and Site B facilities were not available; however, 1,4-dioxane is commonly found at sites with 1,1,1-TCA, and its presence at these sites is suspected.

The 1,4-dioxane concentrations decrease rapidly downgradient from the Omega property as indicated by the very narrow zone of intermediate contamination (100 µg/L).

A separate zone of high 1,4-dioxane concentrations extends from the AMK area to the southwest, indicating that this is a source area. The 1,4-dioxane concentrations in this area are the highest reported concentrations in OU2.

The 1,4-dioxane concentrations found in the GSWC wells in the 2010 samples ranged from 1J to 4.7 µg/L (Table 5-18). The 1,4-dioxane plume likely extends to a depth of about 200 feet bgs in the area of the Pioneer and the Dace wells where the contaminated groundwater is extracted via the upper screen intervals of the wells (see also the discussion in Section 5.7.1).

5.7.5 Relative VOC Composition

Figure 5-15 presents the relative composition of VOCs and 1,4-dioxane. The relative composition is broken down into eight categories—PCE; TCE; Freon 11; Freon 113; dichloroethenes, which include the sum of concentrations of 1,1-DCE, cis-1,2-DCE, and trans-1,2-DCE; ethanes, which include the sum of concentrations of 1,1,1-TCA, 1,1,2-TCA, 1,1-DCA, 1,2-DCA, and chloroethane; 1,4-dioxane; and other, which is the sum of concentrations of all other VOCs included in the analysis.

The contamination in the immediate vicinity of the former Omega facility is dominated by PCE. Freons appear to increase relatively downgradient from the Omega facility. Freons may have been masked, however, in the samples from OU1 wells by high total VOC concentrations requiring multiple dilutions of samples for laboratory analysis. Also, PCE and TCE are likely to degrade in groundwater more readily than Freons, resulting in the relative increase of Freon concentrations.

TCE concentrations are relatively high along the northwestern margin of the former Omega facility. This is likely the effect of mixing contaminant releases from the Omega property and from the TCE Source at Whittier Boulevard. The relative increase of PCE and

1,4-dioxane in well MW6 may be an indication of a source of VOC contamination in that area identified as the Foss Plating facility.

At the Angeles Chemical property, a relative increase of ethanes (i.e., TCAs and DCAs) over PCE, TCE, and Freon concentrations indicates a source of contamination with composition distinct from that present in the groundwater between Angeles and the Omega property.

At the former McKesson Chemical property, the relative increase of ethane concentrations together with an absolute increase of PCE and TCE concentrations (as well as concentrations of other VOCs) shows that McKesson is a separate source of VOC contamination in groundwater. Ethanes detected at relatively high concentrations in samples from Well MW16 (A and C) indicate that this well intercepted contamination from the AMK area.

The source of groundwater contamination at Phibro-Tech, Inc. is characterized by a relative increase in ethanes and TCE concentrations. Ethanes can be used as indicators of contamination from AMK and Phibro-Tech, Inc.

Forms of dichloroethene (DCEs) can be the products of reductive dechlorination of PCE and TCE. Their relative increase downgradient of the Omega property indicates that some degradation of PCE and TCE may be occurring.

Ethanes in samples from the CENCO wells may indicate the presence of contamination that originated in the AMK area. The relatively low Freon 11 and Freon 113 concentrations do not show on the map. Freon concentrations are expected to be low in this area, and the plume composition is dominated by aromatic hydrocarbons associated with OFRP and refinery (CENCO) activities. The relative plume composition around the margins of the plume is difficult to interpret because of low total VOC concentrations. Detections below or above the detection limit can alter the relative composition, and the interpretation of these results could be misleading.

Vinyl chloride is present at high relative concentrations only at the downgradient wells at the Ashland Chemical facility. Although higher concentrations of vinyl chloride are found at Angeles Chemical (Section 5.7.11.6), they represent only a fraction of total VOCs at that location. The Ashland Chemical plume composition downgradient of the Ashland facility (Ashland Well MW21A) has a high proportion of vinyl chloride and ethanes; it differs from the contaminant composition found throughout OU2.

5.7.6 Hexavalent Chromium

The extent of hexavalent chromium (Figure 5-17) does not follow a pattern similar to the VOC plumes. The hexavalent chromium plume extends from Well MW1A to the southwest. Hexavalent chromium concentrations were historically below 10 µg/L in samples from OU1 wells, indicating that the former Omega facility is not a source of contamination by hexavalent chromium (Cr[VI]).

A zone of intermediate hexavalent chromium concentrations (50 µg/L) extends from the Foss Plating facility, which has a maximum result of 910 µg/L to Well MW8. Wells MW6 and MW8 are immediately downgradient from the Foss Plating facility and have historically had high hexavalent chromium concentrations.

A separate zone of high concentration is at the Phibro-Tech facility. Maximum concentrations at the Phibro-Tech facility were 19,000 µg/L in October 2006 and historically ranged up to 29,000 µg/L (Iris Environmental, 2007) indicating that it is a source of hexavalent chromium. These hexavalent chromium concentrations are the highest known at OU2.

Two isolated zones of increased hexavalent chromium concentrations were reported near Wells MW1 and MW26. Concentrations at Wells MW1A and MW1B were 140 µg/L and 94 µg/L, respectively. A hexavalent chromium concentration of 52 µg/L was reported in Well MW26B. Wells that are upgradient and downgradient from Wells MW1 and MW26 have lower concentrations indicating that there may be sources of hexavalent chromium contamination near wells MW1 and MW26.

5.7.7 Perchlorate

The extent of contamination of perchlorate (Figure 5-18) does not follow a simple pattern, indicating the possibility of multiple sources. There are three zones of contamination above the MCL for perchlorate (6 µg/L). The largest of the three zones lies to the east near Wells MW7 to MW10. A second zone of contamination above MCL is near Well MW6; the third zone is near Well MW16.

A second contour of 3 µg/L has been added to Figure 5-18 to show the overall extent of perchlorate at OU2. The perchlorate extent is similar to that of PCE and TCE, extending nearly to Well MW30 which was non-detect for perchlorate in July 2007.

5.7.8 1,1-DCE

The 1,1-DCE detections (Figure 5-19) are similar in extent to the PCE and TCE plumes including the extent of the higher concentration zones associated with the Omega property, and the AMK area. The downgradient edge is among the well-siting HydroPunch® locations, which are detailed on Figure 5-3. The intermediate zone (100 µg/L) of contamination begins from the Omega property and extends to between Wells MW23 and MW25. The second intermediate zone of contamination begins at the AMK area and extends nearly to CENCO Well MW-603. Three separate zones of low contamination are near the TCE Source at Whittier Boulevard, near the Techni-Braze and Earl Manufacturing facilities, and near Site F. These HydroPunch® results are detailed in Figures 5-8, 5-6, and 5-7, respectively.

A 1,1-DCE concentration of 9.3 µg/L was found in the 2010 sample from GSWC Well Pioneer #1, indicating that the 1,1-DCE plume likely extends to a depth of about 200 feet bgs in the area of the Pioneer wells where the contaminated groundwater is extracted via the upper screen intervals of the wells. The TCE concentration in the sample from Dace #1 was 1.4 µg/L. Because the Dace #1 sample represents a mixture of groundwater extracted from the well's two screens, it is not known whether the 1,1-DCE plume has reached this area because 1,1-DCE concentrations in groundwater near the top of the shallow screen could be diluted inside the well (see also the discussion in Section 5.7.1).

5.7.9 cis-1,2-DCE

Three separate zones of cis-1,2-DCE contamination above MCL (6 µg/L) were identified (Figure 5-20), indicating the possibility of multiple potential sources. The first zone starts upgradient of Wells OW5 and MW2 and extends to nearly Well MW25. The second zone

begins at the AMK area, which extends to nearly CENCO Well MW-603. This zone includes concentrations above 100 µg/L that extend from the AMK area to beyond Well MW27. The concentrations measured in groundwater at the AMK area, 10,600 and 19,000 µg/L, respectively, are the highest at OU2. The third zone was found among HydroPunch® samples collected for the siting of Well MW29 (Figure 5-3). Only low concentrations of cis-1,2-DCE are present at the Omega property and in the area between Omega and Well MW2.

5.7.10 Chloroform

Chloroform is present at low concentrations, generally less than 1 µg/L, throughout OU2. The extent of chloroform concentrations (Figure 5-21) above its MCL (80 µg/L) from Wells MW24 to MW23 is relatively small in comparison to the concentrations of other contaminants. Well MW14, located a short distance upgradient from Well MW24, has a concentration of 19 µg/L. The source of the chloroform in this area is not known.

Increased chloroform concentrations, but below the MCL, are present at the Earl Manufacturing, McKesson, and Phibro-Tech facilities. The increased concentrations are indications that these facilities are sources of chloroform.

5.7.11 Other

5.7.11.1 Acetone

Detections for acetone (Figure 5-22) extend from Wells MW24 to MW27 indicating a possible source upgradient of Well MW24. Historically, there have been high detections of acetone (up to 8,000 µg/L in 2003) in wells located near the former Omega Chemical property. It is possible that the detections reported at Wells MW24 to MW27 in 2007 are a result of past operations at the former Omega facility.

There are very high concentrations at the former Angeles Chemical (9,440 µg/L) and former McKesson Chemical (710,000 µg/L) properties indicating they are sources of acetone contamination.

5.7.11.2 Carbon Tetrachloride

Detections for carbon tetrachloride (Figure 5-23) extend from the Omega property to Well MW20. Concentrations decrease quickly downgradient of the Omega property. The Omega property is a source of carbon tetrachloride. Results from the former McKesson Chemical facility have a very high reporting limit, but are reported as non-detectable. It is, therefore, uncertain if the former McKesson Chemical facility is a source of carbon tetrachloride. The Phibro-Tech, Inc. facility has detections with a maximum of 37 µg/L, which indicate that it is a source of carbon tetrachloride contamination. Site F is a source of carbon tetrachloride with concentrations up to 15 µg/L in groundwater samples downgradient and no detections in samples upgradient of the facility.

5.7.11.3 1,1-DCA

Detections for 1,1-DCA (Figure 5-24) extend from the Omega property to Well MW27. Concentrations decrease quickly downgradient of the Omega property. Much higher concentrations at the former Angeles Chemical (34,100 µg/L) and former McKesson

Chemical (6,600 µg/L) facilities indicate they are sources of 1,1-DCA contamination. At Site C the concentrations are up to 180 µg/L. This facility is directly downgradient of the Phibro-Tech, Inc. facility, which reports results of up to 320 µg/L indicating that it is a source of 1,1-DCA contamination. The Earl Manufacturing facility is also a source of 1,1-DCA with concentrations of up to 180 µg/L.

5.7.11.4 Freon 12

Detections of Freon 12 (Figure 5-25) extend from Wells MW14 to MW29. Detected concentrations in EPA wells are all below 3 µg/L. Results from the former McKesson Chemical facility are reported as non-detectable, but at a very high reporting limit.

5.7.11.5 1,1,1-TCA

Detections of 1,1,1-TCA (Figure 5-26) extend from the Omega property to Well MW21. The concentrations are high at the Omega property (2,200 µg/L) and decrease rapidly with distance downgradient of the Omega source area. Much higher concentrations at the former Angeles Chemical (4,710 µg/L) and McKesson Chemical (670,000 µg/L) facilities indicate they are sources of 1,1,1-TCA. The 1,1,1-TCA concentrations increase from the Phibro-Tech, Inc. (2.2 µg/L) property to Site C (27 µg/L) property located directly downgradient of Phibro-Tech and Site B, indicating that Site B is a possible source of 1,1,1-TCA in this area; it has concentrations of up to 300 µg/L in groundwater. This contamination was intercepted at Well MW17A which has a detected concentration of 17 µg/L.

5.7.11.6 Vinyl Chloride

Vinyl chloride is present in groundwater in several areas at and near OU2 (Figure 5-27). There were only seven detections of vinyl chloride in the Omega wells during the July through August 2007 sampling. Only two of the detections exceeded the MCL for vinyl chloride of 0.5 µg/L—0.72 µg/L at MW27B and 0.58 µg/L at MW17A. Historically, there were a total of 12 detections of vinyl chloride in the Omega wells with the highest concentration of 4 µg/L found at MW9A. The highest concentration detected at OU1 was 2.1 µg/L at OW1A (Table 5-1). The vinyl chloride present in groundwater at OU1 is likely a degradation product. The Omega property is not a significant source of vinyl chloride. However, there are several sources of vinyl chloride at and near OU2.

The Angeles Chemical Co. and McKesson Corporation facilities reported the maximum concentrations of 4,050 µg/L (in 2005) and 130 µg/L (in 2007), respectively. Vinyl chloride is found downgradient of this source area at MW17, MW26, and MW27, but the continuity of the plume is uncertain.

The OFRP site is a source of vinyl chloride with concentrations up to 250 µg/L in 1994. The historical OFRP vinyl chloride plume was outside OU2. The current extent of this plume is not known.

Vinyl chloride was also detected in CENCO Refinery Wells MW-106 and MW-203 at concentrations of 10 µg/L and 11 µg/L, respectively (Figure 5-27). These wells are not directly downgradient of the historical extent of vinyl chloride at the OFRP site. The source of the vinyl chloride found at CENCO Refinery is not known.

Ashland Chemical is a source of vinyl chloride with the maximum concentrations in groundwater of 1,100 µg/L in August 2007. The extent of vinyl chloride downgradient from the Ashland Chemical facility is not known.

5.7.11.7 Fuel Hydrocarbons

The extent of fuel hydrocarbons (Figure 5-28) does not follow a simple pattern. The largest plumes are from benzene contamination beneath the CENCO (TRC, 2002) and OFRP (McLaren/Hart, Inc., 1996) sites. There is also a small plume beneath the former Unocal Corporation (Environmental Equalizers, Inc., 1998) facility. A small MTBE plume is present at the G&M Oil Company, Inc. facility (Leighton Consulting, 2004). A toluene plume is present at the Pilot Chemical facility (Kleinfelder, Inc., 1991). BTEX contamination is present at the Phibro-Tech, Inc. facility (CDM, 2005a). Xylenes are present in groundwater at the former Angeles (Shaw, 2004) and former McKesson facilities (Geosyntec, 2005a and 2005b). The full extent of the fuel hydrocarbons at OU2 is not known. Given the history of many facilities in the OU2 area (e.g., associated with the Santa Fe Springs oil field), the fuel hydrocarbon contamination may be more widespread than is currently known.

5.7.12 MCL Exceedances

To show the zones of the highest groundwater contamination at OU2, Figure 5-29 presents the extent of MCL exceedances. Screening levels other than Primary MCLs were not considered in this evaluation, and the map is based on VOCs only. For each monitoring well, the MCL exceedances were calculated for all compounds using all historical data available. The MCL exceedance is defined as the concentration divided by the analyte's federal or state Primary MCL. The maximum MCL exceedance is the highest exceedance among all compounds analyzed.

The maximum MCL exceedance for each Omega OU1 and OU2 well was posted on a map. The highest value was posted for wells with multiple screens. The same approach was adopted for data from other sites.

The contours of the maximum MCL exceedances (Figure 5-29) are approximate and the contour intervals are logarithmic. The analytes with the maximum values are listed in Table 5-18.

The one times (1 X) MCL exceedance contour extends from the Omega property and the TCE Source at Whittier Boulevard, to just beyond MW30. The 10 times (10 X) MCL exceedance contour extends from the Omega property and the TCE Source at Whittier Boulevard almost to Well MW30. Areas of high exceedances (over 1,000 times [1,000 X] MCL) occur at the Omega property (from Wells OW1 to OW8), the former McKesson and Angeles facilities, former OFRP facility, former CENCO facility, and from the Techni-Braze and former Earl Manufacturing facilities to the Phibro-Tech facility. These zones of high exceedances are collocated with known sources of contamination.

High concentrations of hexavalent chromium (maximum concentration of 19,000 µg/L) are present in groundwater at the Phibro-Tech, Inc. facility. However, there is no federal or state MCL for hexavalent chromium at the present time; therefore, the state MCL of 50 µg/L for total chromium was used for this facility (an exceedance factor of 380 is shown in Figure 5-29).

The extent of OU2 is also shown in Figure 5-29. Between the former Omega facility and Los Nietos Road, the OU2 extent is equal to the approximate extent of exceedances of 1x MCL. Downgradient of Los Nietos Road, the OU2 extent to the east is smaller than the extent of the 1x MCL exceedance; this is due to the presence of the fuel hydrocarbon plumes associated mainly with the OFRP and CENCO sites. The western extent of OU2 downgradient of Los Nietos Road is larger than the 1x MCL exceedance extent because the OU2 boundary was determined by the concentrations of 1,4-dioxane in this area; this compound does not have a MCL.

5.7.13 Production Wells

Among production wells within and near OU2, five wells are known to extract contaminated groundwater and are equipped with wellhead treatment systems—Pioneer #1, Pioneer #2, Pioneer #3, Dace #1, and SFS No. 1. These wells are discussed in the following paragraphs. EPA continues gathering information on other production wells located in the OU2 area.

In several years of monitoring production Well SFS No. 1, low concentrations of chlorinated hydrocarbons (including TCE, chloroform, and PCE) have occasionally been detected. Most recently (in February 2003), only TCE at a concentration of 0.64 µg/L was reported above the detection limit. Hexavalent chromium was reported at a concentration of 2.6 µg/L. The production rate of SFS No. 1 ranges up to approximately 1,250 gpm (England and Hargis, 1996). It has not been established what effect well SFS No. 1 has on local groundwater flow direction and contaminant migration; shallow groundwater in the vicinity of the well appears to flow toward the south, unaffected by pumping from SFS No. 1 (Figure 4-5; Weston, 2003).

The USGS performed flow logging and discrete groundwater sampling at SFS No. 1 in 2006 to investigate the distribution of inflow with depth and to find the contaminant pathway into the well. About 50 percent of the water production is from below 300 feet and 10 percent from below 500 feet. The bulk of the water is over 25 years old based on tritium/helium ratios. All TCE enters the well above the depth of 200 feet. The TCE concentration in the extracted water was 1.3 µg/L; the corresponding calculated TCE concentration in the shallow groundwater (above the depth of 200 feet) is 3.9 µg/L (based on the flow and TCE distribution in the well). Freons were not detected in any of the samples above the detection limits of 0.1 and 0.05 µg/L for Freon 11 and Freon 113, respectively (the USGS presentation in the May 25, 2006 meeting at the WRD of Southern California in Cerritos).

The four remaining wells—Pioneer #1, Pioneer #2, Pioneer #3 (located near the western limit of the OU2 plume), and Dace #1 (located south of the plume leading edge)—are also active production wells. CH2M HILL collected samples of the untreated extracted groundwater from three of these wells in February 2010; the results are shown in Table 5-18.

Pioneer #1 is screened from 193 feet to 216 feet bgs and currently operates at about 540 gpm. PCE, TCE, 1,2-DCA, 1,1-DCA, 1,1-DCE, Freon 11, Freon 113, chloroform, cis-1,2-DCE, and 1,4-dioxane were detected in the 2010 sample. In routine sampling by GSWC, TCE, PCE, and 1,1-DCE were first detected in 1985 and 1,4-Dioxane in 2003 (Moore, 2009).

Pioneer #2 is screened in two depth intervals, from 196 to 206 feet bgs and from 460 to 472 feet bgs, and currently operates at about 388 gpm. A sample could not be collected. In routine sampling by GSWC, TCE, PCE, 1,1-DCE, 1,1,1-TCA, and 1,4-Dioxane were first detected in 1980, 1990, 1994, 1994, and 2004, respectively (Moore, 2009).

GSWC Pioneer #3 is screened from 194 to 218 feet bgs and currently operates at about 520 gpm. PCE, TCE, 1,1-DCE, and 1,4-dioxane were detected in the 2010 sample. PCE, TCE, 1,1-DCA, and 1,1-DCE have been detected in routine sampling by GSWC (Moore, 2009).

Dace #1 is screened in two depth intervals, from 200 to 260 feet bgs and from 266 to 402 feet bgs, and currently operates at about 310 gpm. PCE, TCE, 1,1-DCE, cis-1,2-DCE, and 1,4-dioxane were detected in the 2010 sample. In routine sampling by GSWC, TCE, PCE, and 1,1-DCE were first detected in 1985 (Moore, 2009).

At both Pioneer #2 and Dace #1, it is possible that the contaminated groundwater enters the upper screen and the contaminant concentrations are diluted within the well by clean groundwater extracted from the lower screen. Discreet sampling would be necessary to determine the depth (or screen interval) at which the contamination enters the wells.

5.8 Changes in VOC and Emergent Concentrations Over Time

Concentration time-series for selected VOCs and emergent compounds are presented in Appendix J. Changes in chemical concentrations over time were evaluated visually. No statistical trend analysis was performed.

5.8.1 VOCs

In most cases, the concentrations of individual VOCs shown appear to increase or decrease with time in a similar fashion, indicating that the relative composition of the VOCs did not change much over time. The variability in the measured concentrations can be due to many factors, including (but not limited to) the different migration rates of individual VOCs, degradation of some compounds, different release times of some VOCs into groundwater, locally changing groundwater flow patterns, fluctuation of the water table and resulting dissolution or absorption of VOCs in the vadose zone, sampling procedures, and different analytical methods. The variability in VOC concentrations over time is a reminder that the relative plume composition shown in Figure 5-15 and the other plume maps for July through August 2007 are snapshots in time.

None of the time-series charts shows rapidly changing VOC concentrations that would indicate the passing of a contaminant plume at the well location. Rather, the charts show that contaminant transport within most of OU2 reached a nearly steady state. This, in turn, indicates that sources of contamination still contribute VOCs to the groundwater in OU2.

5.8.1.1 Omega Wells

Most Omega wells do not exhibit an apparent trend in VOC concentrations. A generally decreasing trend can be seen in Wells MW2, MW7, MW8A, OW6, and OW7, and an increasing trend in Wells MW8B and MW9A. These wells, with the exception of MW2, are near the margins of the OU2 plume; wells with high concentrations do not show an obvious trend.

The contaminant concentrations in Well MW2 show a generally decreasing trend over time. This well has been sampled since February 2002. The chemical with the highest concentration in this well is PCE; it has decreased from 4,600 µg/L in February 2002 to approximately 1,100 µg/L in July 2007. This well is the only one showing a trend among wells that are located within the zone of high concentrations (above 500 µg/L). The trend follows a pattern similar to the hydrograph, indicating that the contaminant concentrations depend on the water table elevation at this location.

Well MW7 shows a general decreasing trend over time. This well has been sampled since February 2002. The chemical with the most decreasing concentrations in this well is TCE. It has decreased from 24 µg/L in February 2002 to 1.3 µg/L in July 2007.

Well MW8A shows a generally decreasing trend over time since February 2002. PCE has decreased from 540 µg/L in February 2002 to 68 µg/L in July 2007.

Well OW6 shows a generally decreasing trend over time since May 2001. Freon 113 and Freon 11 have decreased from 160 µg/L and 96 µg/L, respectively, in May 2001 to 15 µg/L and 8.4 µg/L, respectively, in August 2007. The contaminant 1,1-DCE has decreased from 39 µg/L in May 2001 to 2.2 µg/L in August 2007; the maximum 1,1-DCE measured in this well was 240 µg/L in May 2002.

Upgradient Well OW7 shows a generally decreasing trend over time since March 2002. Freon 113 and Freon 11 have decreased from 62 µg/L and 36 µg/L, respectively, in March 2002 to 8.3 µg/L and 9.1 µg/L, respectively, in August 2007. However, this well has shown an increasing trend in PCE from 5.6 µg/L in March 2002 to 41 µg/L in August 2007. The decreasing trend in this well is consistent with a release that occurred years ago and from which contamination is no longer spreading laterally in the vadose zone.

Well MW8B shows a general increasing trend over time. This well has been sampled since February 2002. The chemical with the highest concentration is PCE, which has increased from 14 µg/L in February 2002 to 60 µg/L in July 2007. This increase may be an indication that contamination is still moving through the fine-grained soils beneath the former Omega property and that the contaminant mass flux into the deeper sandy zone is increasing.

Well MW9A shows a generally increasing trend over time. This well has been sampled since February 2002. The chemical with the highest concentration is PCE which has increased from 70 µg/L in February 2002 to 550 µg/L in July 2007.

Wells OW1A and OW1B have been sampled since April 1996. Well OW1A is the well with the highest concentrations of contaminants in the study area as it is located at the former Omega property. The high concentrations found in this well require very high dilutions for the laboratory analysis, which can lead to a high variability in the analytical results. A closer examination of the time series for Well OW1A reveals many smaller increases and decreases, but generally, the contaminant concentrations in this well remain relatively unchanged. Examples of this are the concentrations of PCE and TCE, which changed from 81,000 µg/L and 3,400 µg/L, respectively, in April 1996 to 90,000 µg/L and 2,500 µg/L, respectively, in August 2007. Concentrations measured in this well are independent of the water level, and the stability of the VOCs in this well indicates that the contaminant mass flux into groundwater from the source area is steady.

5.8.1.2 Other Facilities

Time series are shown for several selected wells at other facilities, based on the availability of data and well location with respect to the OU2 plume. Both decreasing and increasing trends in VOC concentrations are apparent in two selected wells at Phibro-Tech, Inc. No trend is apparent in VOC concentrations from selected OFRP and CENCO wells. McKesson Well MW7 exhibits a generally decreasing trend for VOC concentrations. No trend is apparent in Angeles Well MW10.

5.8.2 Emergent Compounds

Similarly to VOCs, most emergent compounds (e.g., NDMA, 1,2,3-TCP, perchlorate, and hexavalent chromium) do not exhibit any trend with time. However, a noticeable decrease in 1,4-dioxane is apparent at Well OW1A. Initial sampling for this 1,4-dioxane began in November 2001 when the concentration was 3,600 µg/L. The concentration of 1,4-dioxane peaked at 72,000 µg/L in November 2002, then gradually decreased beyond this time. In August 2007, the 1,4-dioxane concentration at Well OW1A was 290 µg/L.

With the exception of 1,4-dioxane in Well OW1A, the emergent compound detections generally do not show increasing or decreasing trends, which may indicate that the sources are still contributing to groundwater contamination.

Table 5-1
Summary of OU1 VOC Detections
Omega Chemical Superfund Site

Maximum and Minimum Values for VOCs Detected in Groundwater					
Parameter	**Maximum Result from August 2007 (µg/L)**	**Max (µg/L)** from June 1996-Aug 2007	**Min (µg/L)** from June 1996-Aug 2007	***Screening Level (µg/L) as of 2/07***	****Note: SOURCE OF SCREENING LEVEL DATA***
1,1,1,2-Tetrachloroethane	0.46J	32	0.42	NE	
1,1,1-Trichloroethane	**2200**	**14000**	0.055J	200	CA/USEPA PRIMARY MCL [A,C]
1,1,2,2-Tetrachloroethane	8.3U	0.67J	0.67J	1	CA PRIMARY MCL [A]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	**730**	**2800**	0.14J	1200	CA/USEPA PRIMARY MCL [A,C]
1,1,2-Trichloroethane	**6.2**	**2000**	0.35J	5	CA/USEPA PRIMARY MCL [A,C]
1,1-Dichloroethane	**13**	**150J**	0.2J	5	CA PRIMARY MCL [A]
1,1-Dichloroethene	**710**	**5100**	0.2J	6	CA PRIMARY MCL [A]
1,2,4-Trimethylbenzene	0.23J	52J	0.23J	330	CA DHS STATE NOTIFICATION LEVEL [D]
1,2-Dichloro-1,1,2-trifluoroethane	NS	88	51	NE	
1,2-Dichlorobenzene	2U	39	0.78J	600	CA DHS STATE NOTIFICATION LEVEL [D]
1,2-Dichloroethane (EDC)	**39**	**2600**	0.29J	0.5	CA PRIMARY MCL [A]
1,3-Dichlorobenzene	2U	1.4	0.3J	600	CA/USEPA PRIMARY MCL [A,C]
1,3-Dichloropropane	2U	0.5J	0.2J	NE	
1,3,5-Trimethylbenzene	2U	13	0.67J	330	CA DHS STATE NOTIFICATION LEVEL [D]
1,4-Dichlorobenzene	2U	3.6	0.6J	5	CA PRIMARY MCL [A]
2-Butanone	NS	1700J	1.4J	NE	
2-Chlorotoluene	2U	0.6J	0.2J	140	CA DHS STATE NOTIFICATION LEVEL [D]
2-Hexanone	NS	10000J	5J	NE	
4-Chlorotoluene	200U	0.46J	0.46J	NE	
Acetone	2000U	11000	2J	NE	
Benzene	**1.6**	**180J**	0.2J	1	CA PRIMARY MCL [A]
Bromochloromethane	200U	12J	0.89J	NE	
Bromodichloromethane	200U	1.4	0.43J	80	CA/USEPA PRIMARY MCL [A,C]
Bromoform	200U	18	0.2J	80	USEPA PRIMARY MCL [C]
Bromomethane	200U	180J	0.062J	500	CA PROPOSITION 65 REGULATORY LEVEL [E]
Carbon disulfide	NS	**240J**	0.28J	160	CA DHS STATE NOTIFICATION LEVEL [D]
Carbon tetrachloride	100U	**3.6**	0.2J	0.5	CA PRIMARY MCL [A]
Chlorobenzene	0.47J	**500J**	0.2J	70	CA PRIMARY MCL [A]
Chloroethane	200U	0.9J	0.2J	16	OTHER TASTE AND ODOR
Chloroform	**130J**	**3200**	0.3J	80	CA/USEPA PRIMARY MCL [A,C]
Chloromethane	200U	2.6J	0.3J	NE	
cis-1,2-Dichloroethene	2.3	**25J**	0.21J	6	CA PRIMARY MCL [A]
cis-1,3-Dichloropropene	100U	2J	2J	NE	
Dibromochloromethane	200U	0.99J	0.6J	80	CA/USEPA PRIMARY MCL [A,C]
Dichlorodifluoromethane (Freon 12)	1000U	2.3J	0.5	1000	CA DHS STATE NOTIFICATION LEVEL [D]
Ethylbenzene	0.33J	41	0.33J	300	CA PRIMARY MCL [A]
Isopropanol	NS	140	140	N/A	
Isopropylbenzene	200U	6.7	0.37J	770	CA DHS STATE NOTIFICATION LEVEL [D]
m + p Xylene	0.73J	130J	0.3J	1750	CA PRIMARY MCL [A]
Methyl acetate	NS	1300	1300	NE	
Methyl isobutyl ketone	NS	78J	78J	120	CA DHS STATE NOTIFICATION LEVEL [D]
Methylene chloride	**110**	**20000**	0.25J	5	CA/USEPA PRIMARY MCL [A,C]
MTBE	200U	1.3	0.3J	13	CA SECONDARY MCL [B]
Naphthalene	200U	1.6	0.45J	17	CA DHS STATE NOTIFICATION LEVEL [D]
n-Propylbenzene	200U	5.7	0.27J	260	CA DHS STATE NOTIFICATION LEVEL [D]
o-Xylene	0.43J	81	0.25J	1750	CA PRIMARY MCL [A]
p-Cymene	200U	0.86J	0.29J	NE	
sec-Butylbenzene	200U	0.39J	0.26J	260	CA DHS STATE NOTIFICATION LEVEL [D]
Tetrachloroethene	**90000**	**210000J**	1.8	5	CA/USEPA PRIMARY MCL [A,C]
Tetrahydrofuran	NS	650	520	NE	
Toluene	1.2	**1300**	0.4J	150	CA PRIMARY MCL/CA PHG [A,F]

Table 5-1
Summary of OU1 VOC Detections
Omega Chemical Superfund Site

Maximum and Minimum Values for VOCs Detected in Groundwater					
Parameter	**Maximum Result from August 2007 (µg/L)**	**Max (µg/L)** from June 1996-Aug 2007	**Min (µg/L)** from June 1996-Aug 2007	***Screening Level (µg/L) as of 2/07***	****Note: SOURCE OF SCREENING LEVEL DATA***
trans-1,2-Dichloroethene	**14**	**160**	0.2J	10	CA PRIMARY MCL [(A)]
Trichloroethene (TCE)	**2600**	**10000**	0.16J	5	CA/USEPA PRIMARY MCL [(A,C)]
Trichlorofluoromethane (Freon 11)	**180**	**1000**	0.4J	150	CA PRIMARY MCL [(A)]
Vinyl chloride	100U	**2.1**	0.3J	0.5	CA PRIMARY MCL [(A)]
Xylene, Total	NS	75	0.055J	1750	CA PRIMARY MCL [(A)]

Notes:
Maximum and Minimum concentration values are based on analyses of field samples collected through August 2007
Screening levels based on smallest regulatory standard
NE = Not Established
VOC = volatile organic compounds
µg/L = micrograms per liter
U = Non Detected, value is the detection limit
J = estimated value
NS = Not included in sample analysis
MCL = Maximum Contaminant Levels

1000	= Analyte detected at concentrations that meet or exceed appropriate screening level.

[A] CA Department of Health Services Primary MCL for drinking water; updated 02/26/2007
[B] CA Department of Health Services Secondary MCL for drinking water; updated 02/26/2007
[C] EPA Primary MCL for drinking water; updated 02/26/2007
[D] CA Department of Health Services State notification level for toxicity; updated 05/9/2007
[E] CA Proposition 65 Regulatory level for drinking water; updated 6/1/2007
[F] CA Office of Environmental Health Hazard Assessment Public Health Goal for drinking water; updated 12/22/2006

Table 5-2
Summary of OU1 Emergent Compounds and Pesticide Detections
Omega Chemical Superfund Site

Maximum and Minimum Values for Emergent Compounds and Pesticides Detected in Groundwater					
Parameter	Maximum Result from August 2007 (µg/L)	**Max (µg/L)** from June 1996-Aug 2007	**Min (µg/L)** from June 1996-Aug 2007	*Screening Level (µg/L) as of 2/07*	**Note: SOURCE OF SCREENING LEVEL DATA*
Emergent Compounds					
1,4-Dioxane	290	**72000**	0.5J	3	CA DHS STATE NOTIFICATION LEVEL [C]
1,2,3-Trichloropropane	NS	**0.087**	0.014	0.005	CA DHS STATE NOTIFICATION LEVEL [C]
Hexavalent chromium	NS	5.4	0.86	11	CA Toxics Rule [E]
Perchlorate	NS	4	1J	6	CA PRIMARY MCL [A]
N-Nitrosodimethylamine	NS	**0.9**	0.0049	0.01	CA DHS STATE NOTIFICATION LEVEL [D]
Pesticides					
alpha-Chlordane	NS	0.015	0.015	0.1	CA PRIMARY MCL [A]
gamma-Chlordane	NS	0.043	0.043	0.1	CA PRIMARY MCL [A]
HCH (gamma) Lindane gamma-BHC (Lindane)	NS	0.019	0.019	0.2	CA/USEPA PRIMARY MCL [A,B]

Notes:
Maximum and Minimum concentration values are based on analyses of field samples collected through August 2007
Screening levels based on smallest regulatory standard
µg/L = micrograms per liter
U = Non Detect
J = estimated value
NE = Not Established
NS = Not included in sample analysis
MCL = Maximum Contaminant Levels
PRG = Preliminary Remediation Goals as of 2004
72000 = Analyte detected at concentrations that meet or exceed appropriate screening level.
[A] CA Department of Health Services Primary MCL for drinking water; updated 2/26/2007
[B] EPA Primary MCL for drinking water; updated 2/26/2007
[C] CA Department of Health Services State notification level for toxicity; updated 5/9/2007
[D] EPA Region 9 PRG for tap water
[E] California Toxics Rule for Aquatic Life Protection; updated 2/24/2005

Table 5-3
Summary of OU1 SVOC Detections
Omega Chemical Superfund Site

Maximum and Minimum Values for SVOCs Detected in Groundwater				
Parameter	**Max (µg/L)** from June 1996-Aug 2007	**Min (µg/L)** from June 1996-Aug 2007	*Screening Level (µg/L) as of 2/07*	**Note: SOURCE OF SCREENING LEVEL DATA*
2-Methylnaphthalene	0.3J	0.3J	NE	
Acetophenone	6.9	2.2J	NE	
Benzaldehyde	1.7J	1J	NE	
Bis(2-chloroethyl)ether	0.2J	0.2J	NE	
Bis(2-ethylhexyl)phthalate (DEHP)	2.5J	0.45J	4	CA PRIMARY MCL [(A)]
Caprolactam	28	4.2J	NE	
Chrysene	5J	0.69J	NE	
Dimethylphthalate	0.68J	0.68J	NE	
Di-n-butyl phthalate	1.1J	0.5J	NE	
Isophorone	4.9J	0.1J	NE	
Methoxychlor	0.056J	0.056J	NE	
Pentachlorophenol	0.3J	0.3J	1	CA/USEPA PRIMARY MCL [(A,B)]
Phenanthrene	0.069J	0.069J	NE	
Phenol	38	2J	4200	CA DHS STATE NOTIFICATION LEVEL [(C)]

Notes:
Maximum and Minimum concentration values are based on analyses of field samples collected through August 2007
Screening levels based on smallest regulatory standard
SVOC = semi-volatile organic compounds
NE = Not Established
µg/L = micrograms per liter
U = Non Detect
J = estimated value
MCL = Maximum Contaminant Levels
[A] CA Department of Health Services Primary MCL for drinking water; updated 2/26/2007
[B] EPA Primary MCL for drinking water; updated 2/26/2007
[C] CA Department of Health Services State notification level for toxicity; updated 5/9/2007

Table 5-4
Summary of OU1 Metals Detections
Omega Chemical Superfund Site

Maximum and Minimum Values for Metals Detected in Groundwater				
Parameter	**Max (µg/L)** from June 1996-Aug 2007	**Min (µg/L)** from June 1996-Aug 2007	*Screening Level (ug/L) as of 2/07*	**Note: SOURCE OF SCREENING LEVEL DATA*
Aluminum	**29800**	26J	50	USEPA SECONDARY MCL [D]
Antimony	**19.6**	1.7J	6	CA/USEPA PRIMARY MCL [A,C]
Arsenic	**64.7**	0.45J	10	USEPA PRIMARY MCL [C]
Barium	434J	10.2J	1000	CA PRIMARY MCL [A]
Beryllium	0.83	0.11J	4	CA/USEPA PRIMARY MCL [A,C]
Boron	410	290	1000	CA DHS STATE ACTION LEVEL [E]
Cadmium	1.6	0.07J	5	CA/USEPA PRIMARY MCL [A,C]
Calcium	1100000	33500	NE	
Chromium	**79.4**	0.28J	50	CA PRIMARY MCL [A]
Cobalt	22.6	0.12J	NE	
Copper	390	0.41J	1000	CA SECONDARY MCL [B]
Cyanide (total)	7.2J	0.45J	150	CA PRIMARY MCL [A]
Iron	**173000**	8.6J	300	CA/USEPA SECONDARY MCL [B,D]
Lead	12.5	0.02J	15	CA DHS STATE ACTION LEVEL [E]
Magnesium	130000	34500	NE	
Manganese	**4400**	0.53J	50	USEPA SECONDARY MCL [D]
Mercury	0.24	0.02J	2	CA/USEPA PRIMARY MCL [A,C]
Molybdenum	73	21	NE	
Nickel	86.4	1	100	CA PRIMARY MCL [A]
Potassium	14000	1860J	NE	
Selenium	**227**	1J	50	CA/USEPA PRIMARY MCL [A,C]
Silver	2.9	0.92J	NE	
Sodium	3220000	62600	NE	
Thallium	**28**	**3.9**	2	CA/USEPA PRIMARY MCL [A,C]
Vanadium	**128**	0.35J	50	CA DHS STATE NOTIFICATION LEVEL [E]
Zinc	2140	1.5J	NE	
Dissolved Aluminum	1060	19J	NE	
Dissolved Antimony	8.3J	1.6	NE	
Dissolved Arsenic	17.1	2.1	NE	
Dissolved Barium	434J	17.3	NE	
Dissolved Cadmium	0.69J	0.44	NE	
Dissolved Calcium	368000	89600	NE	
Dissolved Chromium	152	0.4	NE	
Dissolved Cobalt	7J	0.7J	NE	
Dissolved Copper	8.4	0.6J	NE	
Dissolved Iron	1620	18.1	NE	
Dissolved Magnesium	103000	36800	NE	
Dissolved Manganese	1320	0.2J	NE	
Dissolved Nickel	127	0.65	NE	
Dissolved Potassium	17000	2170J	NE	
Dissolved Selenium	88.4	1.9	NE	
Dissolved Sodium	238000J	60100J	NE	
Dissolved Vanadium	14.8J	0.52J	NE	
Dissolved Zinc	160	1.5J	NE	

Notes:
Maximum and Minimum concentration values are based on analyses of field samples collected through August 2007
Screening levels based on smallest regulatory standard
NE = Not Established
NS = Not included in sample analysis
µg/L = micrograms per liter
U = Non Detect
J = Estimated Value
MCL = Maximum Contaminant Levels
29800 = Analyte detected at concentrations that meet or exceed appropriate screening level.
[A] CA Department of Health Services Primary MCL for drinking water; updated 02/26/2007
[B] CA Department of Health Services Secondary MCL for drinking water; updated 02/26/2007
[C] EPA Primary MCL for drinking water; updated 02/26/2007
[D] EPA Secondary MCL for drinking water; updated 2/26/2007
[E] CA Department of Health Services State notification level for toxicity; updated 05/9/2007

Table 5-5
Summary of Detections
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Collection Dates	Range of Reporting Limits of NonDetects	Range of Detected Concentrations	Location of Maximum Detect	Date of Maximum Detect	Screening Level	Number of Locations >Screening Level	Screening Level Source
Emergents µg/L									
1,2,3-Trichloropropane	18	7/2/1999-8/23/2007	0.002 to 8.30	0.0024 J to 0.087	OW8A	6/16/2004	0.005	6	CA Department of Health Services State notification
1,4-Dioxane (p-dioxane)	56	11/15/2001-8/23/2007	0.00 to 2.00	0.26 J to 72000	OW1A	11/22/2002	3	34	CA Department of Health Services State notification
Chromium VI	56	2/19/2003-7/26/2007	0.20 to 1.00	0.34 to 206	MW8A	3/1/2005	11	22	CA Toxics Rule for Aquatic Life Protection
Cyanide	28	5/16/2001-7/16/2007	0.00 to 25.0	0.45 J to 7.2 J	OW1A	5/13/2003	150	0	CA Primary MCL
Methyl ethyl ketone	1	3/13/2006-3/28/2006	130 to 630	180 to 220	OW8A	3/15/2006	NE	NA	
N-Nitrosodimethylamine	32	3/2/2004-7/26/2007	0.0019 to 9.70	0.0004 J to 0.9	OW8A	6/16/2004	0.01	6	CA Department of Health Services State notification
Perchlorate	61	5/16/2001-7/26/2007	0.00 to 5.00	1 J to 10 J	MW7	3/5/2004	6	9	CA Primary MCL
General Chemistry Parameters mg/L									
Alkalinity	49	6/6/1996-7/16/2007	1.00 to 2.00	130 to 690	MW30	7/16/2007	NE	NA	
Alkalinity bicarbonate	49	6/6/1996-7/16/2007	NA	130 to 690	MW30	7/16/2007	NE	NA	
Ammonia (Nitrogen)	2	3/2/2004-7/16/2007	0.30	0.23 J to 0.29 J	OW1A	6/17/2004	NE	NA	
Biological oxygen demand	44	3/2/2004-7/16/2007	2.00	2 to 77 J	OW8A	6/16/2004	NE	NA	
Biological oxygen demand (5 day)	1	5/24/2006-5/24/2006	2.00	9.8 to 23	OW8A	5/24/2006	NE	NA	
Bromide	68	3/2/2004-7/16/2007	1.00	0.1 to 70	OW8A	6/16/2004	NE	NA	
Chemical oxygen demand	29	3/2/2004-7/16/2007	10.0 to 5.00	3.6 J to 301	OW8A	6/16/2004	NE	NA	
Chloride	71	6/6/1996-7/16/2007	110 to 140	20 to 2500	OW1A	6/6/1996	250	4	CA/USEPA Secondary MCL
CONDUCITIVITY	1	6/6/1996-6/6/1996	NA	6900 N	OW1A	6/6/1996	NE	A	
DISSOLVED ORGANIC CARBON	7	2/19/2003-2/20/2003	NA	1.1 to 52	OW1A	2/19/2003	NE	NA	
Electrical conductance	2	6/6/1996-8/24/2005	NA	1800 to 6900	OW1A	6/6/1996	NE	NA	
Ethane	3	2/19/2003-2/20/2003	NA	36 to 3200	OW1A	2/19/2003	NE	NA	
Ethene	3	2/19/2003-2/20/2003	NA	1000 to 1500	OW1B	2/19/2003	NE	NA	
Fluoride	70	6/6/1996-7/16/2007	3.00	0.14 to 0.715	MW13B	7/6/2006	NE	NA	
Hardness	2	8/24/2005-3/28/2006	NA	560 to 920	OW8A	3/28/2006	NE	NA	
Ion Balance	1	6/6/1996-6/6/1996	NA	2.7 NA	OW1A	6/6/1996	NE		
Methane	15	2/20/2002-3/3/2003	0.00	0.00042 J to 7.4	OW4B	2/20/2003	NE	NA	
Methylene Blue Acting Substances	2	6/6/1996-8/24/2005	NA	0.36 to 0.37	OW1A	6/6/1996	NE	NA	
Nitrate (as Nitrogen)	65	2/19/2003-7/16/2007	0.10 to 0.11	0.17 to 21	MW5	12/6/2004	10000	0	USEPA Primary MCL
Nitrate Nitrite	28	2/13/2002-3/3/2003	0.00 to 0.15	1.9 to 50	MW4A	2/18/2002	NE	NA	
Nitrite (as Nitrogen)	8	6/6/1996-7/16/2007	0.10 to 5.00	0.06 J to 1	OW1B	2/19/2003	1000	0	CA/USEPA Primary MCL
Ortho Phosphate	4	3/2/2004-7/16/2007	1.00 to 2.00	0.257 J to 0.306 J	MW15	7/10/2006	NE	NA	
pH	2	6/6/1996-3/28/2006	NA	6.57 to 7.4	OW1A	6/6/1996	6.5-8.5	2	USEPA Secondary MCL
Sulfate	71	6/6/1996-7/16/2007	NA	9.2 to 1350	MW16A	7/11/2006	250	50	CA Secondary MCL
Sulfide	1	2/15/2002-3/13/2006	0.00 to 0.04	2 NA	MW4C	2/19/2002	NE		
SURFACTANTS	1	6/6/1996-6/6/1996	NA	0.37 NA	OW1A	6/6/1996	NE		
Total Dissolved Solids	52	6/6/1996-7/12/2006	NA	430 to 5900	OW1A	6/6/1996	500	51	CA/USEPA Secondary MCL

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Total kjeldahl nitrogen	40	3/2/2004-7/16/2007	0.30	0.0906 J to 1	OW8A	12/3/2004	NE	NA	
Total Organic Carbon	68	2/13/2002-7/16/2007	0.00 to 2.00	0.28 J to 75	OW3A	2/20/2003	NE	NA	
Total Phosphorus	3	3/2/2004-7/16/2007	0.30	0.16 J to 0.32	OW1B	12/1/2004	NE	NA	
Metals µg/L									
Aluminum	30	6/6/1996-7/16/2007	0.00 to 200	13.1 to 29800	OW1B	5/29/2002	50	28	USEPA Secondary MCL
Antimony	36	5/16/2001-7/16/2007	0.00 to 60.0	0.253 J to 25.5 J	MW7	8/21/2003	6	9	CA/USEPA Primary MCL
Arsenic	64	5/16/2001-7/16/2007	0.00 to 5.00	0.44 J- to 64.7 J	OW8A	6/16/2004	10	7	USEPA Primary MCL
Barium	72	5/16/2001-7/16/2007	2.00	10.2 J to 467	MW30	7/16/2007	1000	0	CA Primary MCL
Beryllium	10	5/16/2001-7/16/2007	0.00 to 5.00	0.1 J to 0.95	MW7	5/21/2002	4	0	CA/USEPA Primary MCL
Boron	43	3/2/2004-7/16/2007	NA	78 to 680	MW7	3/5/2004	1000	0	CA Department of Health Services State notification
Cadmium	14	5/16/2001-7/16/2007	0.00 to 5.00	0.01 J to 1.6	OW1A	8/17/2001	5	0	CA/USEPA Primary MCL
Calcium	53	6/6/1996-7/16/2007	NA	33500 to 1100000	OW1A	6/6/1996	NE	NA	
Chromium	59	5/16/2001-7/16/2007	0.00 to 2.00	0.28 J to 174	MW8A	6/23/2004	50	9	CA Primary MCL
Cobalt	49	5/16/2001-7/16/2007	0.00 to 50.0	0.08 J to 22.6	OW1B	5/29/2002	NE	NA	
Copper	70	6/6/1996-7/16/2007	0.00 to 4.00	0.2 J to 390	OW8A	3/28/2006	1300	0	CA/USEPA Regulatory Action Level
Iron	30	6/6/1996-7/16/2007	0.00 to 40.0	8.6 J to 173000	OW1B	5/29/2002	NE	NA	
Lead	29	5/16/2001-7/16/2007	0.00 to 5.00	0.02 J to 12.5	OW1B	5/29/2002	15	0	CA Department of Health Services State notification
Magnesium	53	6/6/1996-7/16/2007	49000	15400 to 130000	OW1A	6/6/1996	NE	NA	
Manganese	69	6/6/1996-7/16/2007	0.00 to 2.00	0.26 J to 4400	OW8A	3/28/2006	50	32	USEPA Secondary MCL
Mercury	13	5/16/2001-7/13/2006	0.00 to 0.50	0.02 J to 7.3	OW6	5/15/2003	2	1	CA/USEPA Primary MCL
Molybdenum	41	5/16/2001-7/13/2006	1.00 to 20.0	1.2 J to 115	MW12	7/6/2006	NE	NA	
Nickel	69	5/16/2001-7/16/2007	0.00 to 40.0	0.26 J to 127	OW5	5/14/2003	100	1	CA Primary MCL
Potassium	52	6/6/1996-7/16/2007	0.00 to 5000	1860 J to 17000	MW9A	2/26/2002	NE	NA	
Scandium	1	8/24/2005-8/24/2005	NA	1800 N	OW8A	8/24/2005	NE	A	
Selenium	62	5/16/2001-7/16/2007	0.00 to 5.00	1 J to 227 J	OW8A	6/16/2004	50	4	CA/USEPA Primary MCL
Silica	39	3/2/2004-7/13/2006	NA	19700 to 50000	MW13B, MW14	7/7/2006	NE	NA	
Silicon	2	7/16/2007-7/16/2007	NA	12922 to 15344	MW30	7/16/2007	NE	NA	
Silver	17	5/16/2001-7/16/2007	0.00 to 5.00	0.015 J to 2.9	OW1B	5/29/2002	NE	NA	
Sodium	53	6/6/1996-7/16/2007	10000 to 16000	40400 to 3590000 J	OW5	8/28/2003	NE	NA	
Thallium	21	5/16/2001-7/16/2007	0.00 to 5.00	0.012 J to 28	OW8A	8/24/2005	2	15	CA/USEPA Primary MCL
Vanadium	67	5/16/2001-7/16/2007	0.00 to 50.0	0.35 J to 128	OW1B	5/29/2002	50	1	CA Department of Health Services State notification
Zinc	67	6/6/1996-7/16/2007	0.00 to 60.0	0.45 J to 2140	OW1B	5/29/2002	NE	NA	
Semi-Volatile Organics µg/L									
1,2-Dichlorobenzene	1	5/16/2001-5/24/2006	0.00 to 9.70	0.3 J	MW2	2/26/2002	600	0	CA/USEPA Primary MCL
2,6-Dinitrotoluene	1	5/16/2001-7/16/2007	0.00 to 9.70	0.18 J	MW1A	6/23/2004	NE	NA	
2-Methylnaphthalene	5	5/16/2001-7/16/2007	0.00 to 9.70	0.3 J to 16 J	OW7	11/30/2004	NE	NA	

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4-Chloroaniline	1	5/16/2001-7/16/2007	0.00 to 9.70	1.4 J	MW11	8/23/2002	NE	NA	
Acenaphthylene	1	5/16/2001-7/16/2007	0.00 to 9.70	0.0032 J	MW24A	7/9/2007	NE	NA	
Acetophenone	1	2/13/2002-7/16/2007	0.00 to 9.40	2.2 J to 6.9	OW8A	6/16/2004	NE	NA	
alpha-Chlordane	1	2/18/2002-11/26/2002	0.00	0.015 NA	OW1A	8/20/2002	NE		
Anthracene	1	5/16/2001-7/16/2007	0.00 to 9.70	0.014 J	MW25A	7/10/2007	NE	NA	
Benzaldehyde	5	2/13/2002-7/16/2007	0.00 to 9.40	0.6 J to 1.7 J	OW8A	5/30/2002	NE	NA	
Benzo(a)anthracene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.007 J to 0.034 J	MW26B	7/11/2007	NE	NA	
Benzo(a)pyrene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.013 J to 0.049 J	MW26B	7/11/2007	0.2	0	CA/USEPA Primary MCL
Benzo(b)fluoranthene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.05 J to 0.13 J	MW7	9/16/2004	NE	NA	
Benzo(g,h,i)perylene	12	5/16/2001-7/16/2007	0.00 to 9.70	0.0083 J to 0.051 J	MW26B	7/11/2007	NE	NA	
Benzo(k)fluoranthene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.043 J to 0.55 J	MW4C	6/21/2004	NE	NA	
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1	5/16/2001-11/26/2002	0.00 to 0.10	0.0064 J to 0.0084 J	OW6	5/31/2002	NE	NA	
Biphenyl	3	2/13/2002-7/16/2007	0.00 to 9.40	0.8 J to 4 J	OW7	11/30/2004	NE	NA	
bis(2-Chloroethyl)ether	1	5/16/2001-7/16/2007	0.00 to 9.70	0.2 J	OW1A	11/22/2002	NE	NA	
bis(2-Ethylhexyl)phthalate	47	5/16/2001-7/16/2007	0.00 to 9.70	0.45 J to 80	MW5	6/22/2004	4	18	CA Primary MCL
Caprolactam	6	2/13/2002-7/16/2007	0.00 to 9.40	0.15 J to 28	OW1A	6/17/2004	NE	NA	
Chrysene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.033 J to 0.69 J	MW4C	6/21/2004	NE	NA	
Dibenz(a,h)anthracene	12	5/16/2001-7/16/2007	0.00 to 9.70	0.0077 J to 0.047 J	MW26B	7/11/2007	NE	NA	
Diethylphthalate	1	5/16/2001-7/16/2007	0.00 to 9.70	0.1 J	OW1A	11/22/2002	NE	NA	
Dimethylphthalate	1	5/16/2001-7/16/2007	0.00 to 9.70	0.68 J	OW8A	12/3/2004	NE	NA	
Di-n-butyl phthalate	17	5/16/2001-7/16/2007	0.00 to 9.70	0.5 J to 4.3 J	MW27B	7/12/2007	NE	NA	
Endrin aldehyde	1	5/16/2001-11/26/2002	0.00 to 0.10	0.033 J	OW1A	11/22/2002	NE	NA	
Fluoranthene	3	5/16/2001-7/16/2007	0.00 to 9.70	0.044 J to 0.11	MW25B	7/10/2007	NE	NA	
Fluorene	3	6/6/1996-7/16/2007	0.00 to 9.70	0.045 J to 0.86 J	OW7	11/30/2004	NE	NA	
gamma-1,2,3,4,5,6-Hexachlorocyclohexane	2	5/16/2001-11/26/2002	0.00 to 0.10	0.011 to 0.019	OW1A	8/20/2002	NE	NA	
gamma-Chlordane	1	2/18/2002-11/26/2002	0.00	0.043 NA	OW1A	8/20/2002	NE		
Heptachlor epoxide	1	5/16/2001-11/26/2002	0.00 to 0.10	0.021 J	OW1A	11/22/2002	NE	NA	
Indeno(1,2,3-c,d)pyrene	12	5/16/2001-7/16/2007	0.00 to 9.70	0.0076 J to 0.052 J	MW26B	7/11/2007	NE	NA	
Isophorone	1	5/16/2001-7/16/2007	0.00 to 9.70	0.1 J to 4.9 J	OW8A	6/16/2004	NE	NA	
Methoxychlor	1	5/16/2001-11/26/2002	0.00 to 0.10	0.056 J	OW1A	5/29/2002	NE	NA	
Naphthalene	9	5/16/2001-7/16/2007	0.00 to 9.70	0.011 J to 9.6 J	OW7	11/30/2004	17	0	CA Department of Health Services State notification
Nitrate	1	6/6/1996-6/6/1996	NA	36000 NA	OW1A	6/6/1996	NE		
NITRATE-NITRITE AS NITROGEN	6	2/19/2003-2/20/2003	150	3700 to 11000	OW1A, OW4A	2/20/2003	NE	NA	
Pentachlorophenol	10	5/16/2001-7/16/2007	0.00 to 60.0	0.021 J to 0.3 J	OW8A	12/3/2004	1	0	CA/USEPA Primary MCL

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Phenanthrene	2	5/16/2001-7/16/2007	0.00 to 9.70	0.069 J to 0.15 J	OW7	11/30/2004	NE	NA	
Phenol	2	5/16/2001-7/16/2007	0.00 to 9.70	2 J to 38	OW8A	8/22/2002	4200	0	CA Department of Health Services State notification
Pyrene	1	5/16/2001-7/16/2007	0.00 to 9.70	1.3 J	OW4A	5/30/2002	NE	NA	
Volatile Organics µg/L									
1,1,1,2-Tetrachloroethane	2	7/2/1999-8/23/2007	0.50 to 8.30	0.42 J to 32	OW1A	2/19/2003	NE	NA	
1,1,1-Trichloroethane	32	6/6/1996-8/23/2007	0.00 to 8.30	0.055 J to 14000	OW1A	8/24/2005	200	2	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	4	6/6/1996-8/23/2007	0.00 to 8.30	0.067 J to 5.6 J	MW9A	5/21/2003	1	1	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	54	6/6/1996-8/23/2007	0.00 to 83.0	0.14 J to 2800	OW8A	6/16/2004	1200	7	CA/USEPA Primary MCL
1,1,2-Trichloroethane	28	6/6/1996-8/23/2007	0.00 to 8.30	0.081 J to 2000	OW1A	12/8/2004	5	5	CA/USEPA Primary MCL
1,1-Dichloroethane	40	6/6/1996-8/23/2007	0.00 to 8.30	0.047 J to 200	MW17A	3/5/2007	5	12	CA Primary MCL
1,1-Dichloroethene	60	6/6/1996-8/23/2007	0.00 to 8.30	0.11 J to 5100	OW1A	8/24/2005	6	39	CA Primary MCL
1,2,4-Trichlorobenzene	3	7/2/1999-8/23/2007	0.00 to 8.30	0.5 to 3.6 J	MW9A	5/21/2003	5	0	CA Primary MCL
1,2,4-Trimethylbenzene	7	7/2/1999-8/23/2007	0.50 to 8.30	0.2 J to 52 J	OW8A	2/23/2005	330	0	CA Department of Health Services State notification
1,2-Dibromo-3-chloropropane	4	7/2/1999-8/23/2007	0.00 to 8.30	0.72 to 8.5	OW1A	5/24/2006	0.2	4	CA/USEPA Primary MCL
1,2-Dibromoethane	6	7/2/1999-8/23/2007	0.00 to 8.30	0.003 J to 3.4 J	MW9A	5/21/2003	0.05	2	CA/USEPA Primary MCL
1,2-Dichloro-1,1,2-trifluoroethane	2	8/22/2002-8/25/2004	NA	50 to 88	OW8A	8/22/2002	NE	NA	
1,2-Dichlorobenzene	11	6/6/1996-8/23/2007	0.00 to 8.30	0.019 J to 39	OW8A	2/23/2005	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	39	6/6/1996-8/23/2007	0.00 to 8.30	0.05 J to 2600	OW1A	6/6/1996	0.5	31	CA Primary MCL
1,2-Dichloropropane	6	6/6/1996-8/23/2007	0.00 to 8.30	0.2 J to 1.6 J	OW4A	6/15/2004	5	0	CA/USEPA Primary MCL
1,3,5-Trimethylbenzene	2	7/2/1999-8/23/2007	0.50 to 8.30	0.67 J to 13	OW8A	2/23/2005	330	0	CA Department of Health Services State notification
1,3-Dichlorobenzene	6	6/6/1996-8/23/2007	0.00 to 8.30	0.026 J to 4.2 J	MW9A	5/21/2003	600	0	CA Department of Health Services State notification
1,4-Dichlorobenzene	6	6/6/1996-8/23/2007	0.00 to 8.30	0.089 J to 4.6 J	MW9A	5/21/2003	5	0	CA Primary MCL
2-Chlorotoluene	2	7/2/1999-8/23/2007	0.50 to 8.30	0.2 J to 0.6 J	OW1A	2/24/2004	140	0	CA Department of Health Services State notification
2-Hexanone	2	6/6/1996-7/26/2007	0.00 to 83.0	0.51 J to 3.1 J	MW8B	7/17/2007	NE	NA	
4-Chlorotoluene	1	7/2/1999-8/23/2007	0.50 to 8.30	0.46 J	OW1A	8/24/2006	140	0	CA Department of Health Services State notification
Acetone	50	6/6/1996-8/23/2007	0.00 to 83.0	0.58 J to 12000 J	MW8D	2/21/2002	NE	NA	
Benzene	45	6/6/1996-8/23/2007	0.00 to 8.30	0.051 J to 180 J	OW1A	12/8/2004	1	14	CA Primary MCL
Bromochloromethane	1	7/2/1999-8/23/2007	0.00 to 8.30	0.89 J to 12 J	OW8A	2/21/2006	NE	NA	
Bromodichloromethane	18	6/6/1996-8/23/2007	0.00 to 8.30	0.03 J to 4.4 J	MW9A	5/21/2003	80	0	CA/USEPA Primary MCL
Bromoform	16	6/6/1996-8/23/2007	0.00 to 8.30	0.3 J to 44 J	OW4A	5/14/2003	80	0	CA/USEPA Primary MCL
Bromomethane	9	6/6/1996-8/23/2007	0.00 to 8.30	0.062 J to 180 J	OW1A	12/8/2004	NE	NA	
Carbon disulfide	18	6/6/1996-7/26/2007	0.00 to 8.30	0.02 J to 240 J	OW1A	6/17/2004	160	1	CA Department of Health Services State notification
Carbon tetrachloride	35	6/6/1996-8/23/2007	0.00 to 8.30	0.048 J to 180	MW5	5/28/2002	0.5	10	CA Primary MCL
Chlorobenzene	13	6/6/1996-8/23/2007	0.00 to 8.30	0.053 J to 500 J	OW1A	6/17/2004	70	1	CA Primary MCL
Chloroethane	9	6/6/1996-8/23/2007	0.00 to 8.30	0.17 J to 7.4 J	MW9A	5/21/2003	16	0	Other taste and Odor

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Chloroform	59	6/6/1996-8/23/2007	0.00 to 630	0.046 J to 3200	OW1A	6/6/1996	80	12	CA/USEPA Primary MCL
Chloromethane	26	6/6/1996-8/23/2007	0.00 to 8.30	0.05 J to 11 J	MW1A	6/23/2004	NE	NA	
cis-1,2-Dichloroethene	52	6/6/1996-8/23/2007	0.00 to 8.30	0.064 J to 370 J	MW17A	3/5/2007	6	24	CA Primary MCL
cis-1,3-Dichloropropene	7	6/6/1996-8/23/2007	0.00 to 8.30	0.11 J to 3.8 J	MW9A	5/21/2003	0.5	3	CA Primary MCL for 1,3-dichloropropene
Cyclohexane	12	2/13/2002-7/26/2007	0.00 to 8.30	0.13 J to 8.3	OW7	11/30/2004	NE	NA	
Dibromochloromethane	16	6/6/1996-8/23/2007	0.00 to 8.30	0.2 J to 16	OW5	8/22/2005	80	0	CA/USEPA Primary MCL
Dibromomethane	2	7/2/1999-8/23/2007	0.50 to 8.30	0.2 J to 2.1	OW8A	5/24/2006	NE	NA	
Dichlorodifluoromethane (Freon 12)	31	7/2/1999-8/23/2007	0.00 to 8.30	0.1 J to 22 J	MW15	2/26/2007	1000	0	CA Department of Health Services State notification
Dichlorotrifluoroethane	1	8/22/2006-8/22/2006	NA	79 J	OW7	8/22/2006	NE	NA	
Endrin aldehyde	1	2/13/2002-11/26/2002	0.00	0.028 J	MW8B	11/15/2002	NE	NA	
Ethyl Acetate	2	3/13/2006-3/15/2006	NA	1.5 J to 2.3 J	MW16A	3/13/2006	NE	NA	
Ethylbenzene	15	6/6/1996-8/23/2007	0.00 to 8.30	0.051 J to 41	OW8A	2/23/2005	300	0	CA Primary MCL
Isopropanol	6	4/3/2001-3/9/2006	NA	1.6 J to 940	OW4B	5/16/2001	NE	NA	
Isopropylbenzene	11	7/2/1999-8/23/2007	0.00 to 8.30	0.095 J to 6.7	OW8A	2/23/2005	770	0	CA Department of Health Services State notification
m,p-Xylenes	14	6/6/1996-8/23/2007	0.50 to 8.30	0.018 J to 130 J	OW8A	2/23/2005	1750	0	CA Primary MCL
Methyl acetate	4	2/13/2002-7/26/2007	0.00 to 8.30	0.83 J to 1300	OW8A	12/3/2004	NE	NA	
Methyl cyclohexane	11	2/13/2002-7/26/2007	0.00 to 8.30	0.1 J to 8.6	OW7	11/30/2004	NE	NA	
Methyl ethyl ketone	8	6/6/1996-7/26/2007	0.00 to 83.0	0.64 J to 770	OW8A	6/16/2004	NE	NA	
Methyl isobutyl ketone	3	6/6/1996-7/26/2007	0.00 to 83.0	0.2 J to 78 J	OW8A	2/21/2006	120	0	CA Department of Health Services State notification
Methyl tert-butyl ether	45	5/15/2001-8/23/2007	0.00 to 8.30	0.05 J to 270	OW6	5/16/2001	13	5	CA Primary MCL
Methylene chloride	27	6/6/1996-8/23/2007	0.00 to 8.30	0.069 to 20000	OW1A	8/26/2003	5	12	CA/USEPA Primary MCL
Naphthalene	6	7/2/1999-8/23/2007	0.00 to 50.0	0.45 J to 1.6	OW8A	2/23/2005	17	0	CA Department of Health Services State notification
n-Propylbenzene	4	7/2/1999-8/23/2007	0.50 to 8.30	0.27 J to 5.7	OW8A	2/23/2005	260	0	CA Department of Health Services State notification
o-Xylene	10	6/6/1996-8/23/2007	0.50 to 8.30	0.016 J to 81	OW8A	2/23/2005	1750	0	CA Primary MCL
p-Isopropyltoluene	2	7/2/1999-8/23/2007	0.50 to 8.30	0.29 J to 0.86 J	OW8A	2/23/2005	NE	NA	
sec-Butylbenzene	3	7/2/1999-8/23/2007	0.50 to 8.30	0.26 J to 1.4	OW6	2/15/2002	260	0	CA Department of Health Services State notification
Styrene	5	6/6/1996-8/23/2007	0.00 to 8.30	0.034 J to 28 J	MW4B	8/19/2003	100	0	CA/USEPA Primary MCL
Tetrachloroethene	69	6/6/1996-8/23/2007	0.00 to 1.00	0.052 J to 210000 J	OW1A	8/27/2004	5	52	CA/USEPA Primary MCL
Tetrahydrofuran	1	2/23/2005-8/24/2005	NA	520 to 650	OW8A	2/23/2005	NE	NA	
Toluene	33	6/6/1996-8/23/2007	0.00 to 8.30	0.03 J to 1300	OW8A	2/23/2005	150	2	CA Primary MCL
trans-1,2-Dichloroethene	33	6/6/1996-8/23/2007	0.00 to 8.30	0.065 J to 160	OW1A	7/2/1999	10	2	CA Primary MCL
trans-1,3-Dichloropropene	4	6/6/1996-8/23/2007	0.00 to 8.30	0.42 J to 4.6 J	MW9A	5/21/2003	0.5	3	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	69	6/6/1996-8/23/2007	0.00 to 8.30	0.095 J to 10000	OW1A	8/24/2005	5	46	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	47	6/6/1996-8/23/2007	0.00 to 8.30	0.047 J to 1000	OW2, OW8A	2/22/2006	150	14	CA Primary MCL
Vinyl chloride	12	6/6/1996-8/23/2007	0.00 to 8.30	0.065 J to 4 J	MW9A	5/21/2003	0.5	7	CA Primary MCL

Table 5-5
Summary of Detections
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Collection Dates	Range of Reporting Limits of NonDetects	Range of Detected Concentrations	Location of Maximum Detect	Date of Maximum Detect	Screening Level	Number of Locations >Screening Level	Screening Level Source
Xylenes, total	10	6/6/1996-7/12/2006	0.00 to 8.30	0.055 J to 75	OW8A	6/16/2004	1750	0	CA Primary MCL

Notes:

J = Estimated value
ug/L = micrograms per Liter
NE = Not Established
NA = Not Applicable

Table 5-6
Summary of Detections from July-August 2007 Sampling
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits	Range of Detected Concentrations	Location of Maximum Detect	Screening Level	Number of Locations >Screening Level	Screening Level Source
Emergents µg/L							
1,4-Dioxane (p-dioxane)	33	0.47 to 2.00	0.53 J to 290	OW1A	3	22	CA Department of Health Services State notification
Chromium VI	48	0.30	0.34 to 200	MW8A	11	15	CA Toxics Rule for Aquatic Life Protection
N-Nitrosodimethylamine	11	0.0019 to 0.0023	0.002 to 0.0086	MW2	0.01	0	CA Department of Health Services State notification
Perchlorate	48	2.00	1.2 J to 7.5	MW16A	6	6	CA Primary MCL
Semi-Volatile Organics µg/L							
Acenaphthylene	1	0.10 to 5.10	0.0032 J	MW24A	NE	NA	
Anthracene	1	0.10 to 5.10	0.014 J	MW25A	NE	NA	
Benzo(a)anthracene	2	0.10 to 5.10	0.007 J to 0.034 J	MW26B	NE	NA	
Benzo(a)pyrene	2	0.10 to 5.10	0.013 J to 0.049 J	MW26B	0.2	0	CA/USEPA Primary MCL
Benzo(b)fluoranthene	1	0.10 to 5.10	0.05 J	MW26B	NE	NA	
Benzo(g,h,i)perylene	12	0.10 to 5.10	0.0083 J to 0.051 J	MW26B	NE	NA	
Benzo(k)fluoranthene	1	0.10 to 5.10	0.043 J	MW26B	NE	NA	
bis(2-Ethylhexyl)phthalate	5	5.00 to 5.10	0.51 J to 1.5 J	MW28	4	0	CA Primary MCL
Chrysene	1	0.10 to 5.10	0.033 J	MW26B	NE	NA	
Dibenz(a,h)anthracene	12	0.10 to 5.10	0.0077 J to 0.047 J	MW26B	NE	NA	
Di-n-butyl phthalate	8	5.00 to 5.10	0.58 J to 4.3 J	MW27B	NE	NA	
Fluoranthene	3	0.10 to 5.10	0.044 J to 0.11	MW25B	NE	NA	
Fluorene	1	0.10 to 5.10	0.045 J	MW30	NE	NA	
Indeno(1,2,3-c,d)pyrene	12	0.10 to 5.10	0.0076 J to 0.052 J	MW26B	NE	NA	
Naphthalene	2	0.10 to 5.10	0.011 J to 0.016 J	MW24A	17	0	CA Department of Health Services State notification
Pentachlorophenol	9	0.20 to 10.0	0.021 J to 0.13 J	MW26B	1	0	CA/USEPA Primary MCL
Volatile Organics µg/L							
1,1,1,2-Tetrachloroethane	1	1.00 to 200	0.46 J	OW8A	NE	NA	
1,1,1-Trichloroethane	17	0.50 to 2.50	0.12 J to 2200	OW1A	200	1	CA/USEPA Primary MCL
1,1,2,2-Tetrachloroethane	1	0.50 to 200	0.067 J	MW27B	1	0	CA Primary MCL
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	49	0.50 to 5.00	0.22 J to 730	OW8A	1200	0	CA/USEPA Primary MCL
1,1,2-Trichloroethane	20	0.50 to 200	0.081 J to 11	MW5	5	4	CA/USEPA Primary MCL
1,1-Dichloroethane	31	0.50 to 200	0.047 J to 170 J	MW17A	5	6	CA Primary MCL
1,1-Dichloroethene	47	0.50 to 1.00	0.11 J to 710	OW1A	6	31	CA Primary MCL
1,2,4-Trimethylbenzene	1	1.00 to 200	0.23 J	OW8A	330	0	CA Department of Health Services State notification
1,2-Dibromoethane	4	0.05 to 200	0.003 J to 0.018 J	MW27B	0.05	0	CA/USEPA Primary MCL
1,2-Dichlorobenzene	7	0.50 to 200	0.019 J to 0.43 J	MW6	600	0	CA/USEPA Primary MCL
1,2-Dichloroethane	24	0.50 to 2.00	0.33 J to 39	OW8A	0.5	22	CA Primary MCL
1,2-Dichloropropane	1	0.50 to 200	0.22 J	MW27B	5	0	CA/USEPA Primary MCL
1,3-Dichlorobenzene	2	0.50 to 200	0.026 J to 0.055 J	MW27B	600	0	CA Department of Health Services State notification

Table 5-6
Summary of Detections from July-August 2007 Sampling
Omega Chemical Superfund Site

Analyte	Number of Locations with Detects	Range of Reporting Limits	Range of Detected Concentrations	Location of Maximum Detect	Screening Level	Number of Locations >Screening Level	Screening Level Source
1,4-Dichlorobenzene	1	0.50 to 200	0.16 J	MW27D	5	0	CA Primary MCL
2-Hexanone	1	10.0 to 5.00	3.1 J	MW8B	NE	NA	
Acetone	12	10.0 to 5.00	0.75 J to 26	MW24A	NE	NA	
Benzene	26	0.50 to 2.50	0.052 J to 1.6	OW8A	1	1	CA Primary MCL
Bromodichloromethane	1	0.50 to 200	0.94 to 1.1	MW16A	80	0	CA/USEPA Primary MCL
Carbon disulfide	6	0.50 to 2.50	0.063 J to 3	MW27A	160	0	CA Department of Health Services State notification
Carbon tetrachloride	20	0.50 to 2.50	0.048 J to 4.7	MW2	0.5	1	CA Primary MCL
Chlorobenzene	4	0.50 to 200	0.053 J to 0.47 J	OW8A	70	0	CA Primary MCL
Chloroethane	2	0.50 to 200	0.17 J to 0.2 J	MW12, MW17A	16	0	Other taste and Odor
Chloroform	40	0.50 to 2.50	0.11 J to 170	OW5	80	8	CA/USEPA Primary MCL
Chloromethane	4	0.50 to 200	0.58 to 2.7	MW24A	NE	NA	
cis-1,2-Dichloroethene	48	0.50 to 200	0.064 J to 300 J	MW17A	6	11	CA Primary MCL
Cyclohexane	5	0.50 to 2.50	0.13 J to 1	MW30	NE	NA	
Dibromochloromethane	1	0.50 to 200	0.31 J to 0.33 J	MW16A	80	0	CA/USEPA Primary MCL
Dichlorodifluoromethane (Freon 12)	19	0.50 to 5.00	0.2 J to 3.6	MW15	1000	0	CA Department of Health Services State notification
Ethylbenzene	1	0.50 to 200	0.33 J	OW8A	300	0	CA Primary MCL
Isopropylbenzene	1	0.50 to 200	0.098 J	MW30	770	0	CA Department of Health Services State notification
m,p-Xylenes	10	0.50 to 200	0.018 J to 0.73 J	OW8A	1750	0	CA Primary MCL
Methyl cyclohexane	3	0.50 to 2.50	1.3 to 6.9	MW27B	NE	NA	
Methyl ethyl ketone	2	10.0 to 5.00	2.5 J to 3.8 J	MW27A	NE	NA	
Methyl tert-butyl ether	36	0.50 to 200	0.051 J to 4.8	MW30	13	0	CA Primary MCL
Methylene chloride	4	0.50 to 5.00	0.069 to 110	OW8A	5	2	CA/USEPA Primary MCL
o-Xylene	2	0.50 to 200	0.016 J to 0.43 J	OW8A	1750	0	CA Primary MCL
Styrene	2	0.50 to 200	0.034 J to 0.041 J	MW27C	100	0	CA/USEPA Primary MCL
Tetrachloroethene	66	0.50	0.052 J to 90000	OW1A	5	47	CA/USEPA Primary MCL
Toluene	4	0.50 to 200	0.06 J to 1.2	OW8A	150	0	CA Primary MCL
trans-1,2-Dichloroethene	27	0.50 to 200	0.065 J to 14	OW8A	10	1	CA Primary MCL
trans-1,3-Dichloropropene	2	0.50 to 2.50	0.42 J to 0.68 J	MW12	0.5	1	CA Primary MCL for 1,3-dichloropropene
Trichloroethene	64	0.50 to 1.00	0.095 J to 2600	OW1A	5	41	CA/USEPA Primary MCL
Trichlorofluoromethane (Freon 11)	42	0.50 to 200	0.047 J to 210	OW5	150	5	CA Primary MCL
Vinyl chloride	7	0.50 to 2.50	0.065 J to 0.72	MW27B	0.5	2	CA Primary MCL

Table 5-6
Summary of Detections from July-August 2007 Sampling
Omega Chemical Superfund Site

Notes:
Samples for wells MW1A-MW30 (60 wells) were collected in July 2007 by CH2M HILL and samples for wells OW1A-OW8B (12 wells) were collected in August 2007 by OPOG.
J = Estimated value
ug/L = micrograms per Liter
mg/L = milligrams per Liter
NE = Not Established
NA = Not Applicable

Table 5-7
OU2 COPCs - Summary of Chemical Uses
Omega Chemical Superfund Site

Compound	Molecular Formula	Industrial/Other Usage
VOCs		
1,1,1-Trichloroethane (1,1,1-TCA)	$C_2H_3Cl_3$	It is used as vapor degreasing from machined metal products; textile processing and dyeing; synthetic resins; and aerosols. Not registered for current use in the U.S., but approved pesticide uses may change periodically.
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	$C_2Cl_3F_3$	It is no longer manufactured in the U.S. It was used as a refrigerant, an aerosol propellant, a foaming agent, and a dry cleaning solvent.
1,1,2-Trichloroethane (1,1,2-TCA)	$C_2H_3Cl_3$	It is used to make vinylidene chloride which is used to make synthetic fibers and plastic wraps; adhesives and lacquer; and as a solvent for fats, oils and waxes.
1,1,2,2-Tetrachloroethane	$C_2H_2Cl_4$	It is used as intermediate in the synthesis of other chlorinated hydrocarbons.
1,1-Dichloroethane (1,1-DCA)	$C_2H_4Cl_2$	It is used as a solvent for plastics, oils and fats; degreaser; insecticides; and fire extinguishers.
1,1-Dichloroethene (1,1-DCE)	$C_2H_2Cl_2$	It is used in making adhesives, synthetic fibers, refrigerants, food packaging and coating resins. Not registered for current use in the U.S., but approved pesticide uses may change periodically.
1,2-Dibromo-3-chloropropane	$C_3H_5Br_2Cl$	It is no longer used except as a soil fumigant on pineapples in Hawaii. It was previously used as a nematocide and as an intermediate in the production of flame retardants.
1,2-Dibromoethane (Ethylene dibromide)	$C_2H_4Br_2$	It is currently not registered for use in the U.S. but former uses include as a solvent, as a chemical intermediate, in gauge fluids and as a fumigant.
1,2-Dichloroethane (1,2-DCA)	$C_2H_4Cl_2$	It is used in making chemicals involved in plastics, rubber and synthetic textile fibers; as a solvent for resins and fats, photography, photocopying, cosmetics, drugs; and as a fumigant for grains and orchards.
Benzene (Benzol)	C_6H_6	It is used in gasoline, in the making of plastics, rubber, resins, and synthetic fabrics, and as a solvent in printing, paints and dry cleaning.
Carbon disulfide	CS_2	It is used in the production of viscose fibers and cellophane
Carbon tetrachloride (Freon 10)	CCl_4	It is used to make chlorofluorocarbon propellants and refrigerants; as a dry cleaning agent and fire extinguisher; in making nylon; and as a solvent for rubber cement, soaps and insecticides. Not registered for current use in the U.S., but approved pesticide uses may change periodically.
Chlorobenzene	C_6H_5Cl	It is used in the textile industry, as a solvent, and as a chemical intermediate.
Chloroform (Freon 20)	$CHCl_3$	It is used as a chemical intermediate in the manufacturing of various medications, chemicals, dyes, and pesticides. Not registered for current use in the U.S., but approved pesticide uses may change periodically.
cis-1,2-Dichloroethene (cis-1,2-DCE)	$C_2H_2Cl_2$	It is used as a solvent for waxes and resins; to extract rubber and extracting oils and fats from fish and meat; as a refrigerant; manufacturing pharmaceuticals and artificial pearls; and making other chlorinated compounds.
cis-1,3-Dichloropropene	$C_3H_4Cl_2$	It is used as an insecticide and soil fumigant.
Methyl t-butyl ether (MTBE)	$C_5H_{12}O$	It is used as a Octane booster in gasoline, extraction solvent, and petrol blending component.
Methylene Chloride (DCM or Freon 30)	CH_2Cl_2	It is used as solvent in paint removers or degreasing and cleaning fluids.
Tetrachloroethene (PCE)	C_2Cl_4	It is used in dry cleaning, textile industries, degreasing metal parts, and as an ingredient in the manufacturing of various chemicals such as chlorofluorocarbons, lubricants solvents.
Toluene	C_7H_8	It is used in the production of gasoline, as a solvent, and as a chemical intermediate in the production of many organic compounds.
trans-1,2-Dichloroethene (trans-1,2-DCE)	$C_2H_2Cl_2$	It is used as a solvent for waxes, resins and acetylcellulose; in the extraction of rubber; as a refrigerant; in the manufacture of pharmaceuticals and artificial pearls; and in the extraction of oils and fats from fish and meat.
trans-1,3-Dichloropropene	$C_3H_4Cl_2$	It is used as an insecticide and soil fumigant.

Table 5-7
OU2 COPCs - Summary of Chemical Uses
Omega Chemical Superfund Site

Compound	Molecular Formula	Industrial/Other Usage
Trichloroethene (TCE)	C_2HCl_3	It is most commonly used as a metal degreaser; a dry cleaning solvent, and as a refrigeration/heat exchange liquid. Not registered for current use in the U.S., but approved pesticide uses may change periodically.
Trichlorofluoromethane (Freon 11)	CCl_3F	It was used as a refrigerant, an aerosol propellant and foaming agent. Although it is no longer manufactured in the U.S. it has moderate mobility in soils and is expected to volatilize from soils and waters. It is also naturally occurring as emissions from volcanoes.
Vinyl chloride (VC)	C_2CHCl	It is used in the manufacture of numerous products in building and construction, automotive industry, electrical wire insulation and cables, piping, industrial and household equipment, medical supplies, and is depended upon heavily by the rubber, paper, and glass industries.
Emergent Compounds		
1,2,3-Trichloropropane (1,2,3-TCP)	$C_3H_5Cl_3$	It is used as a paint remover, a solvent for oils, fats, waxes, chlorinated rubber and resins and also as a degreasing agent.
1,4-Dioxane (p-Dioxane)	$C_4H_8O_2$	It is used as a solvent for cellulose acetate, ethyl cellulose, benzyl cellulose, resins, oils, waxes, dyes, and as a stabilizer in chlorinated solvents; used in synthetic resin-based lacquers, varnishes and paints. It is commonly added to 1,1,1-TCA as a solvent stabilizer.
Chromium VI		It is used in chrome plating baths; as chromate pigment in dyes, paints, inks and plastics; and an anticorrosive agent in paints and primers.
N-Nitrosodimethylamine	$C_2H_6N_2O$	It was used as a solvent in industrial, fiber and plastic industries; lubricants; an antioxidant, a condenser; and rocket fuels. In the U.S., it is currently only used for research purposes.
Perchlorate		
Perchlorate - Ammonium	$ClHO_4H_3N$	It is commonly used in explosives and rocket propellants.
Perchlorate - Magnesium	$ClHO_4$1/2Mg	It is used as regenerable drying agent for gases.
Perchlorate - Potassium	$ClHO_4K$	It is used as Explosives, oxidizing agent, photography, pyrotechnics and flares, reagents, oxidizer in solid rocket propellants.
Perchlorate - Sodium	$ClHO_4Na$	It is used in explosives industry.

Table 5-8
Summary of Well Siting HydropunchÈ Results – MW27
Omega Chemical Superfund Site

		Sample ID	OC2-HP272A-W-0-339	OC2-HP272B-W-5-340	OC2-HP273A-W-0-330	OC2-HP273B-W-0-331	OC2-HP274A-W-0-332	OC2-HP274B-W-0-333	OC2-HP275A-W-0-337	OC2-HP275B-W-0-338	OC2-HP276A-W-5-398	OC2-HP277A-W-1-400	OC2-HP277A-W-0-399	OC2-HP278A-W-0-402	OC2-HP279A-W-0-403	OC2-HP279B-W-0-404	OC2-MW27A-W-0-594	OC2-MW27B-W-0-592	OC2-MW27C-W-0-591
		Sample Location	HP27-2A	HP27-2B	HP27-3A	HP27-3B	HP27-4A	HP27-4B	HP27-5A	HP27-5B	HP27-6A	HP27-7A	HP27-7A	HP27-8A	HP27-9A	HP27-9B	MW27A	MW27B	MW27C
		Sample Date	2/12/2007	2/12/2007	1/25/2007	1/25/2007	1/25/2007	1/25/2007	2/12/2007	2/12/2007	3/13/2007	3/13/2007	3/13/2007	3/13/2007	3/14/2007	3/14/2007	7/12/2007	7/12/2007	7/12/2007
		Sample Depth	92-95	102-105	87-90	97-100	87-90	97-100	87-90	97-100	86.5-89.5	84-87	87-90	86-89	86.5-89.5	95-98	90-110	144-164	180-190
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Emergents																			
1,4-Dioxane (p-dioxane)	3	µg/L	**5 J**	**15 J**	ND (2.00)	**3.6**	ND (2.00) J	**11**	**12 J**	**20 J**	**32 J**	**53 J**	**45 J**	**7 J**	**15 J**	**18 J**	**16**	**8.3**	ND (2.00)
General Chemistry Parameters																			
Alkalinity	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	400	350	240
Alkalinity bicarbonate	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	400	350	240
Biological oxygen demand	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2	2	3.4
Bromide	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.7	0.6	0.32
Chloride	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	130	100	71
Fluoride	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	0.22	0.33
Nitrate (as Nitrogen)	10000	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.54	ND (0.10)	ND (0.10)
Sulfate	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**380 360**		9.2
Total kjeldahl nitrogen	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.22 J	0.15 J	ND (0.30)
Total Organic Carbon	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.6	0.91	0.66
Metals																			
Antimony	6	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND (2.00) J	ND (2.00)	ND (2.00)
Arsenic	10	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.8	2.7	ND (1.00) J
Barium	1000	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	37.6	75.2	212
Copper	1300	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.42 J	0.29 J	0.33 J
Manganese	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**822 344**		48.6
Nickel	100	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3	2.2	0.37 J
Thallium	2	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND (1.00)	ND (1.00)	ND (1.00)
Vanadium	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.1 J	ND (1.00)	ND (1.00)
Zinc	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.8 J+	2.6 J+	3.9 J+
Semi-Volatile Organics																			
bis(2-Ethylhexyl)phthalate	4	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.57 J	ND (5.00)	ND (5.00)
Di-n-butyl phthalate	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.58 J	4.3 J	0.72 J
Volatile Organics																			
1,1,1-Trichloroethane	200	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	0.58 J	0.56 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50) J	ND (0.50)
1,1,2,2-Tetrachloroethane	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	0.067 J	ND (0.50)
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	ND (0.50)	9.5 J	ND (0.50)	ND (0.50)	ND (0.50)	0.67 J	ND (0.50)	1.8 J	ND (2.50)	0.59 J	1.2	2.6	3	28	41	ND (0.50) J	ND (0.50)
1,1,2-Trichloroethane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	0.57 J	0.43 J	ND (0.50)
1,1-Dichloroethane	5	µg/L	1.1	3.7 J	0.19 J	1.3	0.82	**5.6**	1.5 J	5 J	3.9	**18 17**		2	3.4	3.5	**46 16**		0.047 J
1,1-Dichloroethene	6	µg/L	5.6	**54**	0.59	**17**	**7.1**	**64**	**8.1 J**	**69 J**	**12 120**		**150**	**27**	**20**	**22 360**		**360 J**	ND (0.50) J
1,2-Dibromoethane	0.05	µg/L	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.25)	ND (0.10)	ND (0.10)	ND (0.05)	ND (0.05)	ND (0.05)	ND (2.50)	ND (0.50) J	ND (0.50)
1,2-Dichlorobenzene	600	µg/L	ND (0.50)	1.5 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	ND (0.50)
1,2-Dichloroethane	0.5	µg/L	ND (0.50)	ND (0.50)	**3.5 17**		0.25 J	**2.3**	ND (0.50)	ND (0.50)	**3.1 8.**	**9 8.**	**5**	**1.1**	ND (0.50)	ND (0.50)	**9.8 3.**	**9 J**	ND (0.50)
1,2-Dichloropropane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.39 J	0.21 J	1.3	1.4 J	2.9 J	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	0.22 J	ND (0.50)
1,3-Dichlorobenzene	600	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	0.055 J	ND (0.50)
1,4-Dichlorobenzene	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	ND (0.50)
Acetone	NE	µg/L	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (10.0)	ND (5.00)	ND (5.00)	ND (25.0)	ND (10.0)	ND (10.0)	ND (5.00)	ND (5.00)	ND (5.00)	ND (25.0)	7	0.87 J
Benzene	1	µg/L	ND (0.50)	0.28 J	ND (0.50)	ND (0.50)	0.13 J	0.26 J	ND (0.50)	ND (0.50)	**1.9 J**	ND (1.00)	ND (1.00)	0.39 J	0.6	0.33 J	0.43 J	0.27 J	0.056 J
Carbon disulfide	160	µg/L	0.2 J	ND (0.50)	0.11 J	ND (0.50)	0.15 J	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	3	ND (0.50)	0.16 J
Chloroform	80	µg/L	ND (0.50)	0.48 J	ND (0.50)	0.22 J	1	0.71 J	0.32 J	0.88 J	ND (2.50)	1.2	1.2	0.38 J	0.36 J	0.92	ND (2.50) J	ND (0.50)	0.24 J
cis-1,2-Dichloroethene	6	µg/L	2.8	**14 J**	1.1	**14 J**	**9.8 J**	**29**	1.3 J	**9.8 J**	**49**	**72 J**	**75 J**	**13 J**	**17 J**	**12 J**	**140 J**	**58 J**	0.33 J
Cyclohexane	NE	µg/L	ND (0.50)	0.76 J	ND (0.50)	0.15 J	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	600	ND (1.00)	ND (1.00)	1.8	1.9	2.4	ND (2.50)	ND (0.50)	0.16 J
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.65	1	0.9 J	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	0.3 J	ND (2.50)	1.2	ND (0.50)

Table 5-8

Summary of Well Siting Hydropunch Results – MW27

Omega Chemical Superfund Site

		Sample ID	OC2-HP272A-W-0-339	OC2-HP272B-W-5-340	OC2-HP273A-W-0-330	OC2-HP273B-W-0-331	OC2-HP274A-W-0-332	OC2-HP274B-W-0-333	OC2-HP275A-W-0-337	OC2-HP275B-W-0-338	OC2-HP276A-W-5-398	OC2-HP277A-W-1-400	OC2-HP277A-W-0-399	OC2-HP278A-W-0-402	OC2-HP279A-W-0-403	OC2-HP279B-W-0-404	OC2-MW27A-W-0-594	OC2-MW27B-W-0-592	OC2-MW27C-W-0-591
		Sample Location	HP27-2A	HP27-2B	HP27-3A	HP27-3B	HP27-4A	HP27-4B	HP27-5A	HP27-5B	HP27-6A	HP27-7A	HP27-7A	HP27-8A	HP27-9A	HP27-9B	MW27A	MW27B	MW27C
		Sample Date	2/12/2007	2/12/2007	1/25/2007	1/25/2007	1/25/2007	1/25/2007	2/12/2007	2/12/2007	3/13/2007	3/13/2007	3/13/2007	3/13/2007	3/14/2007	3/14/2007	7/12/2007	7/12/2007	7/12/2007
		Sample Depth	92-95	102-105	87-90	97-100	87-90	97-100	87-90	97-100	86.5-89.5	84-87	87-90	86-89	86.5-89.5	95-98	90-110	144-164	180-190
Analyte	**Screening Level**	**Units**									**Analytical Results**								
Volatile Organics																			
Ethylbenzene	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	46	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	ND (0.50)
Isopropylbenzene	770	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	82	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	ND (0.50)
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	0.029 J
Methyl cyclohexane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	280	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	6.3	6.9	ND (0.50)
Methyl ethyl ketone	NE	µg/L	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (10.0)	ND (5.00)	ND (5.00)	ND (25.0)	ND (10.0)	ND (10.0)	ND (5.00)	ND (5.00)	ND (5.00)	3.8 J	2.5 J	ND (5.00)
Methyl tert-butyl ether	13	µg/L	ND (0.50)	ND (0.50)	3.2	**24**	ND (0.50) J	ND (1.00) J	3.5 J	8.9 J	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	0.33 J	0.18 J	ND (0.50)
o-Xylene	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	ND (0.50)
Styrene	100	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (2.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.50)	ND (0.50)	0.041 J
Tetrachloroethene	5	µg/L	**10 100**		ND (0.50) J	2.5	**52 200**		**27 J**	**72 J**	ND (2.50)	**210 260**		**51**	**55**	**88**	**280 220**		ND (0.50)
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)	2.2 J	ND (0.50)	0.44 J	0.32 J	0.97 J	ND (0.50)	ND (0.50)	2.8	0.53 J	0.93 J	6.4 J	2.2 J	0.59 J	0.78 J	0.73 J	ND (0.50)
Trichloroethene	5	µg/L	**16 89**		0.91	**13 79 84**			**44 J**	**42 J**	ND (2.50)	**91 100**		**74**	**68**	**79 200**		**220**	0.39 J
Trichlorofluoromethane (Freon 11)	150	µg/L	ND (0.50)	1.7 J	ND (0.50)	ND (0.50)	0.15 J	0.39 J	ND (0.50)	1.3 J	ND (2.50)	1.2	1.3	0.64	5	13	6.4	ND (0.50) J	ND (0.50)
Vinyl chloride	0.5	µg/L	ND (0.50)	**1.3 J**	ND (0.50)	0.32 J	ND (0.50)	0.29 J	ND (0.50)	ND (0.50)	**0.84 J**	0.3 J	0.46 J	**11 11**		**6.6**	0.47 J	**0.72**	ND (0.50)

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-8
Summary of Well Siting HydropunchÈ Results – MW27
Omega Chemical Superfund Site

		Sample ID	OC2-MW27D-W-0-590
		Sample Location	MW27D
		Sample Date	7/12/2007
		Sample Depth	200-210
Analyte	**Screening Level**	**Units**	**Analytical Results**
Emergents			
1,4-Dioxane (p-dioxane)	3	µg/L	ND (2.00)
General Chemistry Parameters			
Alkalinity	NE	mg/L	220
Alkalinity bicarbonate	NE	mg/L	220
Biological oxygen demand	NE	mg/L	2
Bromide	NE	mg/L	0.32
Chloride	250	mg/L	75
Fluoride	NE	mg/L	0.28
Nitrate (as Nitrogen)	10000	mg/L	ND (0.10)
Sulfate	250	mg/L	85
Total kjeldahl nitrogen	NE	mg/L	0.17 J
Total Organic Carbon	NE	mg/L	0.57
Metals			
Antimony	6	µg/L	0.29 J
Arsenic	10	µg/L	ND (1.00) J
Barium	1000	µg/L	138
Copper	1300	µg/L	0.2 J
Manganese	50	µg/L	**101**
Nickel	100	µg/L	0.32 J
Thallium	2	µg/L	0.022 J
Vanadium	50	µg/L	ND (1.00)
Zinc	NE	µg/L	ND (2.00) J
Semi-Volatile Organics			
bis(2-Ethylhexyl)phthalate	4	µg/L	0.75 J
Di-n-butyl phthalate	NE	µg/L	4 J
Volatile Organics			
1,1,1-Trichloroethane	200	µg/L	ND (0.50)
1,1,2,2-Tetrachloroethane	1	µg/L	ND (0.50)
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	ND (0.50)
1,1,2-Trichloroethane	5	µg/L	ND (0.50)
1,1-Dichloroethane	5	µg/L	0.12 J
1,1-Dichloroethene	6	µg/L	ND (0.50) J
1,2-Dibromoethane	0.05	µg/L	ND (0.50)
1,2-Dichlorobenzene	600	µg/L	ND (0.50)
1,2-Dichloroethane	0.5	µg/L	ND (0.50)
1,2-Dichloropropane	5	µg/L	ND (0.50)
1,3-Dichlorobenzene	600	µg/L	ND (0.50)
1,4-Dichlorobenzene	5	µg/L	0.16 J
Acetone	NE	µg/L	ND (5.00)
Benzene	1	µg/L	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)
Chloroform	80	µg/L	0.11 J
cis-1,2-Dichloroethene	6	µg/L	2
Cyclohexane	NE	µg/L	ND (0.50)
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (0.50)

Table 5-8

Summary of Well Siting Hydropunch Results – MW27

Omega Chemical Superfund Site

		Sample ID	OC2-MW27D-W-0-590
		Sample Location	MW27D
		Sample Date	7/12/2007
		Sample Depth	200-210
Analyte	**Screening Level**	**Units**	**Analytical Results**
Volatile Organics			
Ethylbenzene	300	µg/L	ND (0.50)
Isopropylbenzene	770	µg/L	ND (0.50)
m,p-Xylenes	1750	µg/L	0.044 J
Methyl cyclohexane	NE	µg/L	ND (0.50)
Methyl ethyl ketone	NE	µg/L	ND (5.00)
Methyl tert-butyl ether	13	µg/L	ND (0.50)
o-Xylene	1750	µg/L	0.016 J
Styrene	100	µg/L	0.034 J
Tetrachloroethene	5	µg/L	0.35 J
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)
Trichloroethene	5	µg/L	4.5
Trichlorofluoromethane (Freon 11)	150	µg/L	ND (0.50)
Vinyl chloride	0.5	µg/L	ND (0.50)

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-9
Summary of Well Siting HydropunchÈ Results – MW28
Omega Chemical Superfund Site

		Sample ID	OC2-HP281A-W-0-328	OC2-HP281B-W-0-329	OC2-HP282A-W-0-315	OC2-HP282B-W-0-316	OC2-HP283A-W-0-317	OC2-HP284A-W-0-318	OC2-HP284B-W-0-319	OC2-HP285A-W-1-325	OC2-HP285A-W-0-324	OC2-HP285B-W-0-326	OC2-MW28-W-0-601
		Sample Location	HP28-1A	HP28-1B	HP28-2A	HP28-2B	HP28-3A	HP28-4A	HP28-4B	HP28-5A	HP28-5A	HP28-5B	MW28
		Sample Date	1/25/2007	1/25/2007	1/22/2007	1/22/2007	1/22/2007	1/22/2007	1/22/2007	1/23/2007	1/23/2007	1/23/2007	7/16/2007
		Sample Depth	87-90	97-100	87-90	97-100	87-90	87-90	92-95	87-90	87-90	97-100	85-105
Analyte	**Screening Level**	**Units**	**Analytical Results**										
Emergents													
1,4-Dioxane (p-dioxane)	3	µg/L	2.5	**5.2**	2.4 J	3 J	**3.6 J**	2.8 J	**4.4 J**	**4.8 J**	**5.1 J**	2.9 J	1.7 J
General Chemistry Parameters													
Alkalinity	NE	mg/L	---	---	---	---	---	---	---	---	---	---	480
Alkalinity bicarbonate	NE	mg/L	---	---	---	---	---	---	---	---	---	---	480
Biological oxygen demand	NE	mg/L	---	---	---	---	---	---	---	---	---	---	2
Bromide	NE	mg/L	---	---	---	---	---	---	---	---	---	---	0.6
Chloride	250	mg/L	---	---	---	---	---	---	---	---	---	---	130
Fluoride	NE	mg/L	---	---	---	---	---	---	---	---	---	---	0.19
Nitrate (as Nitrogen)	10000	mg/L	---	---	---	---	---	---	---	---	---	---	1.5
Sulfate	250	mg/L	---	---	---	---	---	---	---	---	---	---	250
Total kjeldahl nitrogen	NE	mg/L	---	---	---	---	---	---	---	---	---	---	0.25 J
Total Organic Carbon	NE	mg/L	---	---	---	---	---	---	---	---	---	---	1.7
Metals													
Aluminum	50	µg/L	---	---	---	---	---	---	---	---	---	---	47.1 J
Barium	1000	µg/L	---	---	---	---	---	---	---	---	---	---	36.2
Boron	1000	µg/L	---	---	---	---	---	---	---	---	---	---	485
Calcium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	155,553
Copper	1300	µg/L	---	---	---	---	---	---	---	---	---	---	0.47 J
Iron	NE	µg/L	---	---	---	---	---	---	---	---	---	---	23.9 J
Lead	15	µg/L	---	---	---	---	---	---	---	---	---	---	0.29 J
Magnesium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	35,634
Manganese	50	µg/L	---	---	---	---	---	---	---	---	---	---	**192**
Nickel	100	µg/L	---	---	---	---	---	---	---	---	---	---	1.2
Potassium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	6,513 J
Silicon	NE	µg/L	---	---	---	---	---	---	---	---	---	---	12,922
Sodium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	157,944
Vanadium	50	µg/L	---	---	---	---	---	---	---	---	---	---	2 J
Zinc	NE	µg/L	---	---	---	---	---	---	---	---	---	---	3.9
Semi-Volatile Organics													
bis(2-Ethylhexyl)phthalate	4	µg/L	---	---	---	---	---	---	---	---	---	---	1.5 J
Di-n-butyl phthalate	NE	µg/L	---	---	---	---	---	---	---	---	---	---	1.2 J
Volatile Organics													
1,1,1-Trichloroethane	200	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.17 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethane	5	µg/L	0.62	1	ND (0.50)	0.12 J	0.29 J	ND (0.50)	ND (0.50)	0.3 J	0.39 J	0.42 J	ND (0.50)
1,1-Dichloroethene	6	µg/L	1.2	3.4	0.13 J	0.29 J	0.55	ND (0.50)	ND (0.50)	0.95	1.5	1.8	ND (0.50)
1,2-Dichloroethane	0.5	µg/L	0.46 J	**0.8**	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloropropane	5	µg/L	0.36 J	0.64	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Benzene	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.19 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromodichloromethane	80	µg/L	ND (0.50)	ND (0.50)	0.69	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon disulfide	160	µg/L	0.1 J	ND (0.50)	0.24 J	0.12 J	0.17 J	0.11 J	ND (0.50)	0.26 J	0.15 J	0.11 J	ND (0.50)
Chloroform	80	µg/L	ND (0.50)	ND (0.50)	2.4	1.4	0.11 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J
cis-1,2-Dichloroethene	6	µg/L	0.9	1.1	1.6	2.1	0.16 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	5	µg/L	2.7	3.4	**5.7 5.**	**6**	1.6	ND (0.50)	ND (0.50)	0.12 J	0.18 J	0.1 J	ND (0.50)
Toluene	150	µg/L	ND (0.50)	0.14 J	ND (0.50)	ND (0.50)	0.18 J	0.14 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)	ND (0.50)	0.39 J	0.6	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)

Table 5-9

Summary of Well Siting HydropunchÈ Results – MW28

Omega Chemical Superfund Site

		Sample ID	OC2-HP281A-W-0-328	OC2-HP281B-W-0-329	OC2-HP282A-W-0-315	OC2-HP282B-W-0-316	OC2-HP283A-W-0-317	OC2-HP284A-W-0-318	OC2-HP284B-W-0-319	OC2-HP285A-W-1-325	OC2-HP285A-W-0-324	OC2-HP285B-W-0-326	OC2-MW28-W-0-601
		Sample Location	HP28-1A	HP28-1B	HP28-2A	HP28-2B	HP28-3A	HP28-4A	HP28-4B	HP28-5A	HP28-5A	HP28-5B	MW28
		Sample Date	1/25/2007	1/25/2007	1/22/2007	1/22/2007	1/22/2007	1/22/2007	1/22/2007	1/23/2007	1/23/2007	1/23/2007	7/16/2007
		Sample Depth	87-90	97-100	87-90	97-100	87-90	87-90	92-95	87-90	87-90	97-100	85-105
Analyte	**Screening Level**	**Units**	**Analytical Results**										
Volatile Organics													
Trichloroethene	5	µg/L	**8.7**	**11 50 37**			2	ND (0.50)	0.11 J	0.17 J	0.22 J	0.25 J	ND (0.50) J
Vinyl chloride	0.5	µg/L	ND (0.50)	0.11 J	ND (0.50)	0.22 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-10

Summary of Well Siting HydropunchÈ Results - MW29 and MW30

Omega Chemical Superfund Site

		Sample ID	OC2-HP291A-W-0-344	OC2-HP292A-W-0-345	OC2-HP292A-W-1-346	OC2-HP293A-W-0-347	OC2-HP294A-W-0-348	OC2-HP297A-W-0-342	OC2-HP297B-W-0-344	OC2-HP298A-W-0-424	OC2-HP298A-W-1-425	OC2-HP298B-W-0-426	OC2-HP299A-W-0-423	OC2-HP2910A-W-0-405	OC2-HP2911A-W-0-406	OC2-HP2912A-W-0-408	OC2-HP2912B-W-0-409	OC2-HP2913A-W-0-410	OC2-HP2914A-W-0-411
		Sample Location	HP29-1A	HP29-2A	HP29-2A	HP29-3A	HP29-4A	HP29-7A	HP29-7B	HP29-8A	HP29-8A	HP29-8B	HP29-9A	HP29-10A	HP29-11A	HP29-12A	HP29-12B	HP29-13A	HP29-14A
		Sample Date	2/13/2007	2/13/2007	2/13/2007	2/13/2007	2/14/2007	2/12/2007	2/12/2007	3/19/2007	3/19/2007	3/19/2007	3/19/2007	3/14/2007	3/14/2007	3/15/2007	3/15/2007	3/15/2007	3/15/2007
		Sample Depth	94-97	94-97	94-97	94-97	94-97	87-90	97-100	97-100	97-100	106.5-109.5	97-100	102.1-105.1	100.5-103.5	96.7-99.7	107-110	95-98	97-100
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Emergents																			
1,4-Dioxane (p-dioxane)	3	µg/L	1.2 J	**5.6 J**	**4.1 J**	ND (2) R	ND (2) R	ND (2) R	ND (2) R	2.7	2.7	2.6	ND (2.00)	1.5 J	1.9 J	1.7 J	1.9 J	2.3 J	2 J
Perchlorate	6	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
General Chemistry Parameters																			
Alkalinity	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alkalinity bicarbonate	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Biological oxygen demand	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromide	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloride	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoride	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate (as Nitrogen)	10000	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfate	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total kjeldahl nitrogen	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metals																			
Aluminum	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arsenic	10	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	1000	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Boron	1000	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Calcium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Copper	1300	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Iron	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Magnesium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Manganese	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nickel	100	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Potassium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silicon	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sodium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Semi-Volatile Organics																			
bis(2-Ethylhexyl)phthalate	4	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butyl phthalate	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Volatile Organics																			
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	ND (0.50) J	ND (0.50)	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethane	5	µg/L	ND (0.50)	0.81 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.3 J	0.29 J	0.32 J	ND (0.50)	ND (0.50)	ND (0.50)	0.21 J	0.22 J	0.57	0.34 J
1,1-Dichloroethene	6	µg/L	ND (0.50) J	4.2 J	1.5 J	ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50) J	0.39 J	0.36 J	0.25 J	ND (0.50)	ND (0.50)	0.15 J	0.24 J	0.19 J	2.9	1.4
1,2-Dichloroethane	0.5	µg/L	ND (0.50) J	ND (0.50)	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50) J	ND (0.50)	ND (0.50)	0.31 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**1.9 1.**	**1**
1,2-Dichloropropane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.17 J	ND (0.50)
Benzene	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Bromodichloromethane	80	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.15 J	0.19 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)	0.38 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.14 J	0.12 J	ND (0.50)	ND (0.50)	0.18 J	ND (0.50)	0.14 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)

Table 5-10

Summary of Well Siting HydropunchÈ Results - MW29 and MW30

Omega Chemical Superfund Site

		Sample ID	OC2-HP291A-W-0-344	OC2-HP292A-W-0-345	OC2-HP292A-W-1-346	OC2-HP293A-W-0-347	OC2-HP294A-W-0-348	OC2-HP297A-W-0-342	OC2-HP297B-W-0-344	OC2-HP298A-W-0-424	OC2-HP298A-W-1-425	OC2-HP298B-W-0-426	OC2-HP299A-W-0-423	OC2-HP2910A-W-0-405	OC2-HP2911A-W-0-406	OC2-HP2912A-W-0-408	OC2-HP2912B-W-0-409	OC2-HP2913A-W-0-410	OC2-HP2914A-W-0-411
		Sample Location	HP29-1A	HP29-2A	HP29-2A	HP29-3A	HP29-4A	HP29-7A	HP29-7B	HP29-8A	HP29-8A	HP29-8B	HP29-9A	HP29-10A	HP29-11A	HP29-12A	HP29-12B	HP29-13A	HP29-14A
		Sample Date	2/13/2007	2/13/2007	2/13/2007	2/13/2007	2/14/2007	2/12/2007	2/12/2007	3/19/2007	3/19/2007	3/19/2007	3/19/2007	3/14/2007	3/14/2007	3/15/2007	3/15/2007	3/15/2007	3/15/2007
		Sample Depth	94-97	94-97	94-97	94-97	94-97	87-90	97-100	97-100	97-100	106.5-109.5	97-100	102.1-105.1	100.5-103.5	96.7-99.7	107-110	95-98	97-100
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Volatile Organics																			
Chloroform	80	µg/L	ND (0.50)	0.52 J	0.78 J	0.46 J	0.69 J	ND (0.50)	ND (0.50)	0.16 J	0.16 J	ND (0.50)	ND (0.50)	ND (0.50)	0.38 J	0.15 J	ND (0.50)	0.54	0.67
Chloromethane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,2-Dichloroethene	6	µg/L	ND (0.50)	**24 J**	**12 J**	0.25 J	ND (0.50)	ND (0.50)	ND (0.50)	0.56	0.54	0.98	ND (0.50)	ND (0.50)	ND (0.50)	0.28 J	0.49 J	**7.4**	0.82
Cyclohexane	NE	µg/L	ND (0.50)	2.5 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dibromochloromethane	80	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.15 J	0.22 J	ND (0.50)	ND (0.50)
Ethylbenzene	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Isopropylbenzene	770	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl cyclohexane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	13	µg/L	ND (0.50) J	1.4 J	0.86 J	ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.96	ND (0.50)
o-Xylene	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.42 J	0.3 J	ND (0.50)	4.1	3.7	2.3	ND (0.50)	ND (0.50)	0.51	3.6	4.6	**20**	3.5
Toluene	150	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)	6.2 J	2.8 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.15 J	ND (0.50)
Trichloroethene	5	µg/L	ND (0.50)	**8.9 J**	4.2 J	0.17 J	0.71 J	1.5 J	0.28 J	**11 9.**	**7**	**6.5**	ND (0.50)	ND (0.50)	2	**19 18 17**			**7.7**
Trichlorofluoromethane (Freon 11)	150	µg/L	ND (0.50) J	0.22 J	1.1 J	ND (0.50)	0.52 J	ND (0.50) J	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Vinyl chloride	0.5	µg/L	ND (0.50)	**2.3 J**	**0.86 J**	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-10
Summary of Well Siting HydropunchÈ Results - MW29 and MW30
Omega Chemical Superfund Site

		Sample ID	OC2-HP2914B-W-0-412	OC2-HP2915A-W-0-437	OC2-HP2916A-W-0-438	OC2-HP2917A-W-0-439	OC2-HP2920A-W-0-444	OC2-HP2921A-W-0-507	OC2-HP2921A-W-1-508	OC2-HP2922A-W-0-509	OC2-HP2923A-W-0-510	OC2-HP2924A-W-0-513	OC2-HP2925A-W-0-514	OC2-HP2926A-W-0-527	OC2-HP2927A-W-5-528	OC2-HP2928A-W-0-526	OC2-HP2930A-W-0-530	OC2-HP2931A-W-0-531	OC2-HP2932A-W-0-529
		Sample Location	HP29-14B	HP29-15A	HP29-16A	HP29-17A	HP29-20A	HP29-21A	HP29-21A	HP29-22A	HP29-23A	HP29-24A	HP29-25A	HP29-26A	HP29-27A	HP29-28A	HP29-30A	HP29-31A	HP29-32A
		Sample Date	3/15/2007	4/9/2007	4/9/2007	4/9/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/11/2007	4/11/2007	4/11/2007	5/3/2007	5/3/2007	5/2/2007	5/3/2007	5/4/2007	5/3/2007
		Sample Depth	107-110	105-110	115-120	115-120	114-120	117-120	117-120	113-116	117-120	104-107	117-120	113-116	113-116	113-116	113-116	107-110	110-113
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Emergents																			
1,4-Dioxane (p-dioxane)	3	µg/L	**9.9 J**	1 J	1.9 J	1.6 J	ND (2) R	**4.3 J**	**5.1 J**	**9.9 J**	**11 J**	ND (2) R	ND (2) R	ND (40) R	ND (10) R	2.8 J	**18 J**	ND (2) R	2.1 J
Perchlorate	6	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
General Chemistry Parameters																			
Alkalinity	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alkalinity bicarbonate	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Biological oxygen demand	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bromide	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chloride	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluoride	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate (as Nitrogen)	10000	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfate	250	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total kjeldahl nitrogen	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Organic Carbon	NE	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metals																			
Aluminum	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Arsenic	10	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	1000	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Boron	1000	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Calcium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Copper	1300	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Iron	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Magnesium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Manganese	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nickel	100	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Potassium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silicon	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sodium	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vanadium	50	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Semi-Volatile Organics																			
bis(2-Ethylhexyl)phthalate	4	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Di-n-butyl phthalate	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fluorene	NE	µg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Volatile Organics																			
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	0.35 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethane	5	µg/L	3.4	0.12 J	0.31 J	0.24 J	ND (0.50)	1.3	1.2	4.1	3.9	0.17 J	0.31 J	ND (10.0)	ND (2.50)	0.94 J	0.15 J	ND (0.50)	ND (0.50)
1,1-Dichloroethene	6	µg/L	**44**	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**9.5 8**	**.5**	**29**	**36**	0.54	0.73	ND (10.0)	ND (2.50)	0.76 J	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloroethane	0.5	µg/L	**2.1**	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**0.92 1**		**1.4**	**1.3**	0.47 J	0.48 J	ND (10.0)	ND (2.50)	**0.55 J**	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloropropane	5	µg/L	0.21 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Benzene	1	µg/L	0.43 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.25 J	ND (0.50)	0.49 J	0.56	ND (0.50)	ND (0.50)	**1,700 170**		0.49 J	0.68	ND (0.50)	ND (0.50)
Bromodichloromethane	80	µg/L	ND (0.50)	0.22 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.13 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)

Table 5-10

Summary of Well Siting HydropunchÈ Results - MW29 and MW30

Omega Chemical Superfund Site

		Sample ID	OC2-HP2914B-W-0-412	OC2-HP2915A-W-0-437	OC2-HP2916A-W-0-438	OC2-HP2917A-W-0-439	OC2-HP2920A-W-0-444	OC2-HP2921A-W-0-507	OC2-HP2921A-W-1-508	OC2-HP2922A-W-0-509	OC2-HP2923A-W-0-510	OC2-HP2924A-W-0-513	OC2-HP2925A-W-0-514	OC2-HP2926A-W-0-527	OC2-HP2927A-W-5-528	OC2-HP2928A-W-0-526	OC2-HP2930A-W-0-530	OC2-HP2931A-W-0-531	OC2-HP2932A-W-0-529
		Sample Location	HP29-14B	HP29-15A	HP29-16A	HP29-17A	HP29-20A	HP29-21A	HP29-21A	HP29-22A	HP29-23A	HP29-24A	HP29-25A	HP29-26A	HP29-27A	HP29-28A	HP29-30A	HP29-31A	HP29-32A
		Sample Date	3/15/2007	4/9/2007	4/9/2007	4/9/2007	4/10/2007	4/10/2007	4/10/2007	4/10/2007	4/11/2007	4/11/2007	4/11/2007	5/3/2007	5/3/2007	5/2/2007	5/3/2007	5/4/2007	5/3/2007
		Sample Depth	107-110	105-110	115-120	115-120	114-120	117-120	117-120	113-116	117-120	104-107	117-120	113-116	113-116	113-116	113-116	107-110	110-113
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Volatile Organics																			
Chloroform	80	µg/L	0.45 J	0.35 J	0.17 J	ND (0.50)	ND (0.50)	ND (0.50)	0.26 J	ND (0.50)	0.15 J	0.17 J	0.14 J	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Chloromethane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.15 J	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,2-Dichloroethene	6	µg/L	**7 J**	0.66	0.49 J	0.3 J	ND (0.50)	**28 27 33**			**7.1 J**	0.3 J	0.18 J	ND (10.0)	ND (2.50)	4.6	3.3	ND (0.50)	ND (0.50)
Cyclohexane	NE	µg/L	0.29 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.91	0.69	3.1	0.53	ND (0.50)	ND (0.50)	69	20	0.18 J	2.4	ND (0.50)	ND (0.50)
Dibromochloromethane	80	µg/L	ND (0.50)	0.24 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorodifluoromethane (Freon 12)	1000	µg/L	0.11 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Ethylbenzene	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	6.8 J	150	0.49 J	ND (0.50)	ND (0.50)	ND (0.50)
Isopropylbenzene	770	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	40	12	ND (0.50)	0.28 J	ND (0.50)	0.13 J
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	22	250	1.2 J	ND (0.50)	ND (0.50)	ND (0.50)
Methyl cyclohexane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	18	16	0.16 J	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	13	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**910**	6	6.4 J	**22**	0.31 J	0.48 J
o-Xylene	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	7.9 J	150	0.2 J	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	5	µg/L	**110 7.**	**4**	1.8	0.79	ND (0.50)	0.73	0.58	**17 3**	**4**	0.64	3.1	ND (10.0)	ND (2.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Toluene	150	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	23	**220**	ND (0.50)	0.12 J	ND (0.50)	ND (0.50)
trans-1,2-Dichloroethene	10	µg/L	1.7 J	0.18 J	ND (0.50)	ND (0.50)	ND (0.50)	**15 J**	**14 J**	8.9 J	2 J	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	0.36 J	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	5	µg/L	**82 43**		**8.2**	3.8	ND (0.50)	**25 23 64 6**			**8**	2.3	**6.8**	ND (10.0)	0.85 J	0.3 J	1.1	ND (0.50)	ND (0.50)
Trichlorofluoromethane (Freon 11)	150	µg/L	0.31 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.18 J	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	ND (0.50) J	ND (0.50)	ND (0.50)	ND (0.50)
Vinyl chloride	0.5	µg/L	0.37 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**1.4 1**	**.2**	**1.8**	**0.69**	ND (0.50)	ND (0.50)	ND (10.0)	ND (2.50)	**3.9**	ND (0.50)	ND (0.50)	ND (0.50)

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-10

Summary of Well Siting HydropunchÈ Results - MW29 and MW30

Omega Chemical Superfund Site

		Sample ID	OC2-HP2937A-W-0-536	OC2-HP2939A-W-0-541	OC2-HP2940A-W-0-545	OC2-HP2940A-W-1-546	OC2-HP2942A-W-0-547	OC2-HP2943A-W-0-549	OC2-MW29-W-0-599	OC2-MW30-W-0-600
		Sample Location	HP29-37A	HP29-39A	HP29-40A	HP29-40A	HP29-42A	HP29-43A	MW29	MW30
		Sample Date	5/7/2007	5/8/2007	5/9/2007	5/9/2007	5/9/2007	5/10/2007	7/13/2007	7/16/2007
		Sample Depth	113-116	113-116	110-113	110-113	104.5-107.5	107-110	90-110	95-115
Analyte	Screening Level	Units	Analytical Results							
Emergents										
1,4-Dioxane (p-dioxane)	3	µg/L	ND (2) R	1.7 J	ND (2) R	ND (2) R	2.3 J	2.3 J	ND (2.00)	1.1 J
Perchlorate	6	µg/L	---	---	---	---	---	---	3.4	ND (2.00)
General Chemistry Parameters										
Alkalinity	NE	mg/L	---	---	---	---	---	---	380	690
Alkalinity bicarbonate	NE	mg/L	---	---	---	---	---	---	380	690
Biological oxygen demand	NE	mg/L	---	---	---	---	---	---	2	2
Bromide	NE	mg/L	---	---	---	---	---	---	1.3	1.4
Chloride	250	mg/L	---	---	---	---	---	---	230	**280**
Fluoride	NE	mg/L	---	---	---	---	---	---	0.24	0.17
Nitrate (as Nitrogen)	10000	mg/L	---	---	---	---	---	---	8.7	ND (0.10)
Sulfate	250	mg/L	---	---	---	---	---	---	**270**	15
Total kjeldahl nitrogen	NE	mg/L	---	---	---	---	---	---	ND (0.30)	0.16 J
Total Organic Carbon	NE	mg/L	---	---	---	---	---	---	1.2	1.7
Metals										
Aluminum	50	µg/L	---	---	---	---	---	---	---	46.9 J
Arsenic	10	µg/L	---	---	---	---	---	---	1.3	6.7
Barium	1000	µg/L	---	---	---	---	---	---	59.6	467
Boron	1000	µg/L	---	---	---	---	---	---	---	375
Calcium	NE	µg/L	---	---	---	---	---	---	---	225,753
Copper	1300	µg/L	---	---	---	---	---	---	0.62 J	0.32 J
Iron	NE	µg/L	---	---	---	---	---	---	---	2,541
Magnesium	NE	µg/L	---	---	---	---	---	---	---	60,894
Manganese	50	µg/L	---	---	---	---	---	---	**594 5**	**17**
Nickel	100	µg/L	---	---	---	---	---	---	1.9	1.6
Potassium	NE	µg/L	---	---	---	---	---	---	---	6,388 J
Selenium	50	µg/L	---	---	---	---	---	---	8.3	ND (5.00)
Silicon	NE	µg/L	---	---	---	---	---	---	---	15,344
Silver	NE	µg/L	---	---	---	---	---	---	ND (1.00)	0.015 J
Sodium	NE	µg/L	---	---	---	---	---	---	---	130,356
Vanadium	50	µg/L	---	---	---	---	---	---	1.8 J	ND (1.00)
Zinc	NE	µg/L	---	---	---	---	---	---	5.2 J+	1.9 J
Semi-Volatile Organics										
bis(2-Ethylhexyl)phthalate	4	µg/L	---	---	---	---	---	---	ND (5.00)	0.51 J
Di-n-butyl phthalate	NE	µg/L	---	---	---	---	---	---	3.3 J	1.6 J
Fluorene	NE	µg/L	---	---	---	---	---	---	ND (5.00)	ND (5.00)
Volatile Organics										
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.31 J	ND (0.50)
1,1-Dichloroethane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.55	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloroethene	6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.11 J	ND (0.50) J
1,2-Dichloroethane	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	**4.5**
1,2-Dichloropropane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Benzene	1	µg/L	0.63	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.23 J
Bromodichloromethane	80	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J

Table 5-10

Summary of Well Siting HydropunchÈ Results - MW29 and MW30

Omega Chemical Superfund Site

		Sample ID	OC2-HP2937A-W-0-536	OC2-HP2939A-W-0-541	OC2-HP2940A-W-0-545	OC2-HP2940A-W-1-546	OC2-HP2942A-W-0-547	OC2-HP2943A-W-0-549	OC2-MW29-W-0-599	OC2-MW30-W-0-600
		Sample Location	HP29-37A	HP29-39A	HP29-40A	HP29-40A	HP29-42A	HP29-43A	MW29	MW30
		Sample Date	5/7/2007	5/8/2007	5/9/2007	5/9/2007	5/9/2007	5/10/2007	7/13/2007	7/16/2007
		Sample Depth	113-116	113-116	110-113	110-113	104.5-107.5	107-110	90-110	95-115
Analyte	Screening Level	Units	Analytical Results							
Volatile Organics										
Chloroform	80	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J	ND (0.50)
Chloromethane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.77	ND (0.50) J
cis-1,2-Dichloroethene	6	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.15 J	0.79
Cyclohexane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	1
Dibromochloromethane	80	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.43 J	ND (0.50)
Ethylbenzene	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Isopropylbenzene	770	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.098 J
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.028 J	ND (0.50)
Methyl cyclohexane	NE	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	13	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.79	0.28 J	ND (0.50)	4.8
o-Xylene	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	1.8	ND (0.50)
Toluene	150	µg/L	0.39 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.067 J	0.093 J
Trichloroethene	5	µg/L	ND (0.50)	ND (0.50)	0.83	0.71	ND (0.50)	ND (0.50)	4.8	ND (0.50) J
Trichlorofluoromethane (Freon 11)	150	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Vinyl chloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50) J

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-11

Summary of Source Area Investigation Results – Site D

Omega Chemical Superfund Site

		Sample ID	OC2-HPT1A-W-0-363	OC2-HPT1B-W-0-364	OC2-HPT2A-W-0-372	OC2-HPT2B-W-5-373	OC2-HPT3B-W-0-368	OC2-HPT3B-W-1-369	OC2-HPT4A-W-0-370	OC2-HPT4B-W-0-371	OC2-HPT5A-W-0-374	OC2-HPT5B-W-0-375	OC2-HPT5B-W-1-376
		Sample Location	HPT-1A	HPT-1B	HPT-2A	HPT-2B	HPT-3B	HPT-3B	HPT-4A	HPT-4B	HPT-5A	HPT-5B	HPT-5B
		Sample Date	2/21/2007	2/21/2007	2/23/2007	2/23/2007	2/22/2007	2/22/2007	2/22/2007	2/22/2007	2/23/2007	2/23/2007	2/23/2007
		Sample Depth	37-40	47-50	37-40	47-50	47-50	47-50	37-40	47-50	37-40	47-50	47-50
		Gradient	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down	Down
Analyte	**Screening Level**	**Units**									**Analytical Results**		
Emergents													
1,4-Dioxane (p-dioxane)	3	µg/L	**14 J**	**55 J**	ND (2) R	**46 J**	**54 J**	**60 J**	ND (2) R	**55 J**	ND (2) R	**60 J**	**67 J**
Volatile Organics													
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	150	330	ND (0.50)	300	290	350	ND (0.50)	370	ND (0.50)	330	380
1,1-Dichloroethane	5	µg/L	0.87 J	2 J	ND (0.50)	1.4 J	2 J	1.5 J	ND (0.50)	1.6 J	ND (0.50)	1.8 J	1.6 J
1,1-Dichloroethene	6	µg/L	**140**	**290**	0.15 J	**210**	**220**	**260**	ND (0.50)	**270**	0.13 J	**240**	**260**
1,2-Dichloroethane	0.5	µg/L	ND (2.00)	**11**	ND (0.50)	**8.9**	**11**	**11**	ND (0.50)	**11**	ND (0.50)	**10**	**10**
Chloroform	80	µg/L	30	**92**	ND (0.50)	70	**87**	**85**	ND (0.50)	**85**	ND (0.50)	**84**	**81**
cis-1,2-Dichloroethene	6	µg/L	**8 J**	**13 J**	ND (0.50)	**15 J**	**17 J**	**16 J**	ND (0.50)	**15 J**	ND (0.50)	**16 J**	**15 J**
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (2.00)	ND (2.50)	ND (0.50)	0.93 J	1.4 J	1.2 J	ND (0.50)	1.1 J	ND (0.50)	1.2 J	0.97 J
Methyl tert-butyl ether	13	µg/L	ND (2.00)	2.1 J	ND (0.50)	1.6 J	1.7 J	1.7 J	ND (0.50)	1.8 J	ND (0.50)	1.5 J	1.6 J
Methylene chloride	5	µg/L	ND (2.00) J	ND (2.50) J	ND (0.50)	ND (2.50)	ND (2.50)	ND (2.50)	ND (0.50)	0.6 J	ND (0.50)	ND (2.50)	ND (2.50)
Tetrachloroethene	5	µg/L	**190**	**570**	0.3 J	**450**	**470**	**520**	ND (0.50)	**570**	0.21 J	**560**	**570**
trans-1,2-Dichloroethene	10	µg/L	ND (2.00)	ND (2.50)	ND (0.50)	0.97 J	1.1 J	1.1 J	ND (0.50)	1 J	ND (0.50)	1.2 J	1.1 J
Trichloroethene	5	µg/L	**380**	**370**	0.27 J	**450**	**420**	**450**	0.11 J	**480**	0.19 J	**460**	**470**
Trichlorofluoromethane (Freon 11)	150	µg/L	74	140	ND (0.50)	130 J	130	150	ND (0.50)	**160**	ND (0.50)	140	140 J
Total Volatile Organics													
TVOC	NE	µg/L	972.87	1,820	0.72	1,639	1,651	1,848	0.11	1,967	0.53	1,846	1,931

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-12

Summary of Source Area Investigation Results – Site E

Omega Chemical Superfund Site

		Sample ID	OC2-HPF1A-W-0-521	OC2-HPF1B-W-0-522	OC2-HPF2A-W-0-524	OC2-HPF2B-W-0-525	OC2-HPF3A-W-0-358	OC2-HPF3B-W-0-359	OC2-HPF4A-W-0-377	OC2-HPF4B-W-0-378	OC2-HPF5A-W-0-334	OC2-HPF5B-W-0-335	OC2-HPF6A-W-0-360	OC2-HPF6B-W-0-362
		Sample Location	HPF-1A	HPF-1B	HPF-2A	HPF-2B	HPF-3A	HPF-3B	HPF-4A	HPF-4B	HPF-5A	HPF-5B	HPF-6A	HPF-6B
		Sample Date	5/2/2007	5/2/2007	5/2/2007	5/2/2007	2/20/2007	2/20/2007	2/23/2007	2/23/2007	1/26/2007	1/26/2007	2/21/2007	2/21/2007
		Sample Depth	74-77	84-87	74-77	84-87	77-80	87-90	77-80	87-90	72-75	82-85	77-80	87-90
		Gradient	Up	Up	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down
Analyte	**Screening Level**	**Units**	**Analytical Results**											
Emergents														
1,4-Dioxane (p-dioxane)	3	µg/L	**7.3 J**	**6.8 J**	**7.3 J**	**5.6 J**	**21 J**	**16 J**	**4.6 J**	**19 J**	**23**	**33**	**37 J**	**7.4 J**
Volatile Organics														
1,1,1-Trichloroethane	200	µg/L	0.25 J	0.2 J	ND (1.00)	ND (1.00)	1.2	ND (1.00)	0.8 J	2	4.9	38	33	4.9
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	24	13	79	86	4.9	36	5	5.8	8	6.3	14	27
1,1-Dichloroethane	5	µg/L	**44**	**37**	0.56 J	0.59 J	**9.1**	**8.2**	**5.8**	**23**	**52**	**64**	**42**	2.8
1,1-Dichloroethene	6	µg/L	**70**	**67**	**57**	**61**	**42**	**70**	**44**	**110**	**120**	**76**	**67**	**19**
1,2-Dichloroethane	0.5	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	**1.8**	ND (0.50)	**2.7**	**2.8**	**4.8**	**3.7**	ND (0.50)
Benzene	1	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	0.12 J	ND (1.00)	ND (1.00)	ND (0.50)
Bromodichloromethane	80	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	0.25 J	ND (1.00)	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	0.13 J	ND (1.00)	ND (1.00)	ND (0.50)
Carbon tetrachloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (1.00)	0.17 J
Chloroform	80	µg/L	6.9	3.4	19	18	1	1.6	2	2.4	5	14	1.3	1.5
cis-1,2-Dichloroethene	6	µg/L	**41**	**38**	**7.7 J**	**7.7 J**	**11 J**	**16 J**	**12 J**	**43 J**	**56 J**	**81**	**110 J**	**11 J**
Dichlorodifluoromethane (Freon 12)	1000	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	1.6	0.45 J	0.25 J	0.24 J	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)
Methyl tert-butyl ether	13	µg/L	0.69 J	ND (0.50)	0.57 J	1	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50) J	ND (1.00) J	ND (1.00)	ND (0.50)
Methylene chloride	5	µg/L	ND (0.50)	0.16 J	ND (1.00) J	ND (1.00) J	ND (0.50)	ND (1.00) J	ND (0.50)	0.25 J	ND (0.50) J	ND (1.00) J	ND (1.00) J	ND (0.50) J
Tetrachloroethene	5	µg/L	**94**	**100**	**140**	**140**	**54**	**170**	**93**	**160**	**160**	**250**	**260**	**55**
trans-1,2-Dichloroethene	10	µg/L	0.84 J	0.68 J	0.36 J	0.35 J	0.24 J	ND (1.00)	0.15 J	0.27 J	1.5 J	2.5 J	2.3 J	0.18 J
Trichloroethene	5	µg/L	**87**	**72**	**150**	**150**	**49**	**130**	**63**	**71**	**83**	**86**	**91**	**85**
Trichlorofluoromethane (Freon 11)	150	µg/L	19	11	53	60	5	20	4.9	4.7	6.7	4.9	6.4	19
Vinyl chloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	0.25 J	**0.51**	0.35 J	0.4 J	ND (0.50)
Total Volatile Organics														
TVOC	NE	µg/L	387.68	342.44	507.19	524.64	179.04	454.05	230.9	425.61	500.66	628.1	631.1	225.55

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-13

Summary of Source Area Investigation Results – Former Earl Manufacturing
Omega Chemical Superfund Site

		Sample ID	OC2-HPE1A-W-0-320	OC2-HPE1B-W-0-321	OC2-HPE2A-W-0-322	OC2-HPE2B-W-0-323	OC2-HPE3A-W-0-413	OC2-HPE3B-W-0-414	OC2-HPE4A-W-0-415	OC2-HPE4B-W-0-416	OC2-HPE5A-W-0-417	OC2-HPE5B-W-0-418	OC2-HPE6A-W-0-419	OC2-HPE6B-W-0-420	OC2-HPE7A-W-0-421	OC2-HPE7B-W-0-422
		Sample Location	HPE-1A	HPE-1B	HPE-2A	HPE-2B	HPE-3A	HPE-3B	HPE-4A	HPE-4B	HPE-5A	HPE-5B	HPE-6A	HPE-6B	HPE-7A	HPE-7B
		Sample Date	1/23/2007	1/23/2007	1/23/2007	1/23/2007	3/16/2007	3/16/2007	3/16/2007	3/16/2007	3/16/2007	3/16/2007	3/19/2007	3/19/2007	3/19/2007	3/19/2007
		Sample Depth	32-35	42-45	32-35	42-45	32-35	49-52	32-35	45-48	32-35	46-49	32-35	45-48	32-35	45-48
		Gradient	Up	Up	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Analyte	**Screening Level**	**Units**	**Analytical Results**													
Volatile Organics																
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	0.53	0.41 J	0.5	1.6 J	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	ND (5.00)	ND (2.00)
1,1-Dichloroethane	5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.00)	ND (10.0)	ND (10.0)	**5.9 J**	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	0.24 J	ND (5.00)	ND (2.00)
1,1-Dichloroethene	6	µg/L	0.98	0.71	1	2.5	ND (10.0)	3.5 J	ND (25.0)	**8.4 J**	ND (100)	**13 J**	ND (50.0)	4.5	ND (5.00)	**20**
Carbon disulfide	160	µg/L	0.14 J	ND (0.50)	0.11 J	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	ND (5.00)	ND (2.00)
Chloroform	80	µg/L	0.21 J	0.17 J	0.21 J	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	ND (5.00)	ND (2.00)
cis-1,2-Dichloroethene	6	µg/L	0.21 J	0.14 J	0.18 J	0.59 J	ND (10.0)	3.1 J	ND (25.0)	ND (25.0)	ND (100)	**7.7 J**	ND (50.0)	1.7	ND (5.00)	1.1 J
Ethylbenzene	300	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	4.6 J	ND (2.00)
Isopropylbenzene	770	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	97	11
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	5.6	ND (2.00)
Tetrachloroethene	5	µg/L	**24**	**28**	**180**	**420**	**2,100**	**2,200**	**5,300**	**3,500**	**13,000**	**3,800**	**9,000**	**230**	ND (5.00)	**340**
Toluene	150	µg/L	0.14 J	ND (0.50)	ND (0.50)	ND (2.00)	ND (10.0)	ND (10.0)	ND (25.0)	ND (25.0)	ND (100)	ND (25.0)	ND (50.0)	ND (1.00)	ND (5.00)	ND (2.00)
Trichloroethene	5	µg/L	**5.7**	**5.7**	**19**	**41**	**220**	**390**	**600**	**590**	**1,700**	**650**	**1,100**	**24**	ND (5.00)	**35**
Total Volatile Organics																
TVOC	NE	µg/L	31.91	35.13	201	465.69	2,320	2,597	5,906	4,098	14,700	4,471	10,100	260.44	107.2	407.1

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-14

Summary of Source Area Investigation Results – Site F

Omega Chemical Superfund Site

		Sample ID	OC2-HPW1A-W-0-394	OC2-HPW1B-W-0-395	OC2-HPW2A-W-0-396	OC2-HPW2B-W-0-397	OC2-HPW10A-W-0-542	OC2-HPW3A-W-0-379	OC2-HPW3B-W-0-380	OC2-HPW4A-W-0-382	OC2-HPW4B-W-0-383	OC2-HPW5A-W-0-388	OC2-HPW5B-W-0-389	OC2-HPW5B-W-1-390	OC2-HPW6A-W-0-384	OC2-HPW6B-W-0-387	OC2-HPW7B-W-0-391	OC2-HPW8A-W-0-365	OC2-HPW8B-W-0-392
		Sample Location	HPW-1A	HPW-1B	HPW-2A	HPW-2B	HPW-10A	HPW-3A	HPW-3B	HPW-4A	HPW-4B	HPW-5A	HPW-5B	HPW-5B	HPW-6A	HPW-6B	HPW-7B	HPW-8A	HPW-8B
		Sample Date	3/12/2007	3/12/2007	3/12/2007	3/12/2007	5/9/2007	3/5/2007	3/5/2007	3/6/2007	3/6/2007	3/8/2007	3/9/2007	3/9/2007	3/7/2007	3/8/2007	3/9/2007	2/22/2007	3/9/2007
		Sample Depth	47.5-50.5	67-70	35.5-38.5	47.5-50.5	48-53	32-35	47-50	37-40	47-50	37-40	47-50	47-50	42-45	50-53	50-53	32-35	50-53
		Gradient	Up	Up	Up	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Analyte	**Screening Level**	**Units**	**Analytical Results**																
Emergents																			
1,4-Dioxane (p-dioxane)	3	µg/L	ND (0) R	ND (0) R	1.1 J	ND (20) R	ND (2) R	ND (2) R	**34 J**	ND (2) R	ND (4) R	ND (2) R	**17 J**	**19 J**	ND (2) R	ND (4) R	**45 J**	**9.3 J**	ND (2) R
Chromium VI	11	µg/L	ND (0.30)	ND (0.30)	ND (0.30)	0.61	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)	ND (0.30)
Metals																			
Aluminum	50	µg/L	**191 J+**	**8,170**	**785 J+**	**356 J+**	**408**	---	**583**	---	**16,600**	---	**293**	**1,670**	---	**279**	**351**	**223**	**276**
Antimony	6	µg/L	ND (2.00) J	ND (2.00) J	ND (2.00) J	0 J	ND (2.00) J	---	ND (2.00) J	---	ND (2.00) J	---	0 J	0 J	---	0 J	0 J	ND (2.00) J	0 J
Arsenic	10	µg/L	0.54 J	9.9	1.3	2.1	3.8	---	**11.8 J**	---	**37.6 J**	---	ND (1.00)	2.7	---	0.34 J	0.66 J	3.5	0.47 J
Barium	1000	µg/L	219	410	137	237	127	---	270	---	705	---	222	242	---	78.2	352	71.1	141
Beryllium	4	µg/L	ND (1.00)	0.72 J	ND (1.00)	ND (1.00)	ND (1.00)	---	ND (1.00)	---	1.8	---	ND (1.00)	0.14 J	---	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Cadmium	5	µg/L	ND (1.00)	ND (1.00) J	ND (1.00)	ND (1.00) J	ND (1.00)	---	ND (1.00)	---	0.49 J	---	ND (1.00)	ND (1.00)	---	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Calcium	NE	µg/L	82,700 J	81,500 J	119,001 J	67,400 J	73,000 J	---	129,000	---	204,000	---	99,800 J	105,000 J	---	144,999 J	152,001 J	218,001	171,000 J
Chromium	50	µg/L	4.4 J+	38.3	5.7 J+	2.9 J+	2.4	---	3	---	6.5	---	4.4	10.1	---	3.2	3.7	2.4	4
Cobalt	NE	µg/L	1.3	17	2.2	0.77 J	0.74 J	---	1.6	---	7.7	---	2.4	4.5	---	3.9	3	4.8	2.5
Copper	1300	µg/L	0.65 J	30	2.4	4.3	2.4	---	6.7 J	---	23.8 J	---	0.89 J	8.2	---	3.8	13	1.8 J	2.8
Iron	NE	µg/L	24.9 J	12,100	590	109	267	---	546 J	---	16,400 J	---	51.4 J	1,230	---	65.4 J	100 J	97.6 J	77.7 J
Lead	15	µg/L	0.19 J	10	0.68 J	3.2	0.31 J	---	0.74 J	---	6	---	ND (1.00)	2.2	---	0.17 J	0.21 J	ND (1.00) J	0 J
Magnesium	NE	µg/L	28,300	24,500	54,800	25,000	29,700 J	---	52,000 J	---	102,000 J	---	73,300	77,000	---	97,900	86,700	57,400	65,700
Manganese	50	µg/L	**212**	**1,330**	**236**	**154**	**63.2**	---	**245**	---	**830**	---	**640**	**654**	---	**712**	**540**	**213**	**336**
Mercury	2	µg/L	ND (0.20)	ND (0.20) J	ND (0.20) J	ND (0.20)	ND (0.20)	---	0.03 J	---	0.13 J	---	ND (0.20)	ND (0.20)	---	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.20)
Nickel	100	µg/L	4.4	33.8	7	8.7	8.9	---	23.4	---	23.3	---	10.5	14.1	---	22.7	24.5	13.6	20.1
Potassium	NE	µg/L	8,720	6,720	18,100	20,700	13,300 J	---	6,130	---	11,000	---	15,300	15,700	---	16,900	11,700	42,600	15,000
Selenium	50	µg/L	0.51 J	3.2 J	1.6 J	ND (5.00)	ND (5.00)	---	ND (5.00)	---	2.8 J	---	3 J	2.1 J	---	3.5 J	1.9 J	7	8.5
Sodium	NE	µg/L	48,400	41,700	63,800	49,300	48,300 J	---	58,000 J	---	88,000 J	---	87,700	92,300	---	162,999	95,600	126,000	77,100
Vanadium	50	µg/L	ND (1.00) J	**51.9**	2.9	3.6	3.3 J	---	3.1	---	**75**	---	1.6	10.5	---	0.9 J	0 J	ND (1.00)	ND (1.00)
Zinc	NE	µg/L	2.4 J+	66.4	11.4 J+	10.3 J+	3.6	---	11.4	---	72.5	---	7	16.3	---	5.1	6	9.1	4.1
Volatile Organics																			
1,1-Dichloroethane	5	µg/L	ND (0.50)	ND (0.50)	1.4	ND (0.50)	ND (0.50)	ND (0.50)	0.19 J	0.73	1.3	0.16 J	0.49 J	0.38 J	0.3 J	0.76 J	0.23 J	0.25 J	0.12 J
1,1-Dichloroethene	6	µg/L	1.1	ND (0.50)	**21 J**	0.62	ND (0.50)	0.3 J	1.1	4.2	**15**	0.87	6	2.5	1.3	**9.9**	3.2	2	2.6
1,2-Dichlorobenzene	600	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	3.4	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloroethane	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.46 J	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	**0.51**	ND (0.50)	ND (0.50)
1,3-Dichlorobenzene	600	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.5	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
Acetone	NE	µg/L	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (10.0)	ND (5.00)	ND (5.00)	19	18	ND (10.0)	ND (5.00)	ND (5.00)	ND (5.00)
Benzene	1	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.29 J	ND (0.50)	0.42 J	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
Carbon disulfide	160	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	0.21 J	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	0.15 J	0.28 J	ND (0.50)	ND (1.00)	0.12 J	ND (0.50)	0.11 J
Carbon tetrachloride	0.5	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	0.42 J	0.2 J	ND (0.50)	0.25 J	**15**	ND (0.50)	0.29 J
Chloroform	80	µg/L	ND (0.50)	0.13 J	0.27 J	ND (0.50)	ND (0.50)	0.16 J	ND (0.50)	0.67	1.3	1.4	7.6	5.1	4.1	13	39	0.32 J	1.6
Chloromethane	NE	µg/L	ND (0.50)	0.22 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
m,p-Xylenes	1750	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.14 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
Methyl tert-butyl ether	13	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	1.6	0.54 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
Tetrachloroethene	5	µg/L	0.5	ND (0.50)	1.6	0.35 J	**6.4**	5 J	**11**	**71**	**120 J**	**15**	**95**	**27**	**18**	**120**	**51**	**62**	**59**
Toluene	150	µg/L	ND (0.50)	ND (0.50)	ND (0.50)	0.26 J	ND (0.50)	0.24 J	ND (0.50)	0.19 J	ND (1.00)	0.24 J	0.16 J	0.12 J	ND (0.50)	ND (1.00)	0.18 J	ND (0.50)	0.16 J
Trichloroethene	5	µg/L	**9.5**	0.59	**23 J**	0.66	3	0.32 J	4.4	3.8	**9.8**	0.72 J	3 J	1.7	1.1	4.7	2	2.6	**8.8**
Vinyl chloride	0.5	µg/L	ND (0.50)	ND (0.50)	0.15 J	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)	ND (0.50)
Total Volatile Organics																			
TVOC	NE	µg/L	11.1	0.94	47.42	2.32	9.4	6.65	20.59	82.65	147.94	18.39	112.82	56.28	42.8	148.61	111.24	67.17	72.68

Table 5-15

Summary of Source Area Investigation Results – TCE Source at Whittier Blvd.

Omega Chemical Superfund Site

		Sample ID	OC2-HPA16A-W-0-431	OC2-HPA16A-W-1-432	OC2-HPA17A-W-0-436	OC2-HPA18A-W-0-433	OC2-HPA1A-W-0-354	OC2-HPA6A-W-0-350	OC2-HPA7A-W-5-353	OC2-HPA8A-W-0-356	OC2-HPA9A-W-0-352	OC2-HPA10A-W-0-357	OC2-HPA12A-W-0-430	OC2-HPA13A-W-5-428	OC2-HPA14A-W-0-427	OC2-HPA15A-W-0-434
		Sample Location	HPA-16A	HPA-16A	HPA-17A	HPA-18A	HPA-1A	HPA-6A	HPA-7A	HPA-8A	HPA-9A	HPA-10A	HPA-12A	HPA-13A	HPA-14A	HPA-15A
		Sample Date	3/22/2007	3/22/2007	3/22/2007	3/22/2007	2/19/2007	2/15/2007	2/19/2007	2/19/2007	2/16/2007	2/20/2007	3/21/2007	3/21/2007	3/21/2007	3/22/2007
		Sample Depth	96-101	96-101	104-109	103-106	92-95	104-107	105-108	104.6-107.6	105-108	93-96	104-107	99.5-104.5	95-105	107-110
		Gradient	Up	Up	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down	Down	Down
Analyte	**Screening Level**	**Units**	**Analytical Results**													
Volatile Organics																
1,1-Dichloroethene	6	µg/L	**19**	**19**	**61**	**55**	1.5	3.8 J	**13**	**7.3**	ND (0.50)	ND (0.50)	**14**	**56**	**38**	**38**
Benzene	1	µg/L	**1.2**	**1.2**	ND (2.50)	ND (5.00)	ND (0.50)	0.4 J	ND (5.00)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
Carbon disulfide	160	µg/L	0.21 J	0.17 J	ND (2.50)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (5.00)	0.1 J	0.21 J	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
Chloroform	80	µg/L	0.16 J	0.18 J	ND (2.50)	ND (5.00)	ND (0.50)	ND (0.50)	1.2 J	5.8	2.3 J	ND (0.50)	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
m,p-Xylenes	1750	µg/L	0.13 J	0.13 J	ND (2.50)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
Methyl tert-butyl ether	13	µg/L	ND (0.50)	ND (0.50)	ND (2.50)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (5.00)	0.39 J	ND (0.50)	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
Tetrachloroethene	5	µg/L	0.31 J	0.31 J	ND (2.50)	ND (5.00)	0.2 J	0.34 J	1.4 J	1.8 J	1 J	ND (0.50)	3.1 J	ND (20.0)	ND (5.00)	ND (5.00)
Toluene	150	µg/L	0.59	0.56	ND (2.50)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (5.00)	ND (0.50)	ND (0.50)	ND (5.00)	ND (20.0)	ND (5.00)	ND (5.00)
Trichloroethene	5	µg/L	**88**	**89**	**570**	**770**	**9.7**	**22 J**	**640**	**880**	**53**	ND (0.50)	**970**	**2,700**	**990**	**910**
Total Volatile Organics																
TVOC	NE	µg/L	109.6	110.55	631	825	11.4	26.54	655.6	894.9	56.79	0.21	987.1	2,756	1,028	948

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-16
Summary of Residential Area HydropunchÈ Results
Omega Chemical Superfund Site

		Sample ID	OC2-HPRA1A-W-0-279	OC2-HPRA1B-W-0-280	OC2-HPRA1B-W-1-281	OC2-HPRA2A-W-0-277	OC2-HPRA2B-W-0-278	OC2-HPRA3A-W-0-275	OC2-HPRA3B-W-0-276	OC2-HPRA4A-W-0-284	OC2-HPRA4B-W-5-285
		Sample Location	HPRA-1A	HPRA-1B	HPRA-1B	HPRA-2A	HPRA-2B	HPRA-3A	HPRA-3B	HPRA-4A	HPRA-4B
		Sample Date	1/10/2007	1/10/2007	1/10/2007	1/9/2007	1/9/2007	1/9/2007	1/9/2007	1/10/2007	1/10/2007
		Sample Depth	40-43	50-53	50-53	40-43	50-53	47-50	57-60	44-47	54-57
Analyte	Screening Level	Units	Analytical Results								
Emergents											
1,4-Dioxane (p-dioxane)	3	µg/L	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	1.4 J
Volatile Organics											
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	µg/L	ND (0.50)	2.9	3	ND (0.50)	ND (1.00)	ND (0.50)	0.54 J	0.35 J	39
1,1-Dichloroethene	6	µg/L	0.68	**14 16**		ND (0.50)	**14**	ND (0.50)	**17**	ND (0.50)	**12 J**
Benzene	1	µg/L	0.14 J	ND (1.00)	ND (1.00)	0.17 J	ND (1.00)	ND (0.50)	ND (1.00)	0.24 J	ND (0.50)
Bromodichloromethane	80	µg/L	ND (0.50)	ND (1.00)	ND (1.00)	0.27 J	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	0.14 J
Carbon disulfide	160	µg/L	0.14 J	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (0.50)
Chloroform	80	µg/L	ND (0.50)	1.1	1.1	1.1	0.93 J	ND (0.50)	0.98 J	0.22 J	1.8
cis-1,2-Dichloroethene	6	µg/L	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	3.8 J
Methyl tert-butyl ether	13	µg/L	ND (0.50)	0.42 J	0.41 J	ND (0.50)	0.48 J	ND (0.50)	0.49 J	ND (0.50)	ND (0.50) J
Methylene chloride	5	µg/L	ND (0.50)	0.37 J	0.36 J	0.19 J	0.31 J	ND (0.50)	0.4 J	ND (0.50)	ND (0.50) J
Tetrachloroethene	5	µg/L	2.5	**23 23**		0.62	**22**	0.3 J	**24**	1.7	**90**
Toluene	150	µg/L	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	0.15 J	ND (0.50)
trans-1,2-Dichloroethene	10	µg/L	ND (0.50)	ND (1.00)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	ND (0.50)	0.21 J
Trichloroethene	5	µg/L	**18 330**		**310**	0.86	**260**	0.48 J	**230 7.**	**3**	**140**
Trichlorofluoromethane (Freon 11)	150	µg/L	ND (0.50)	0.6 J	0.63 J	ND (0.50)	ND (1.00)	ND (0.50)	ND (1.00)	0.14 J	15 J
Total Volatile Organics											
TVOC	NE	µg/L	21.46	372.39	354.5	3.21	297.72	0.78	273.41	10.1	301.95

Notes:

Sample depth in feet below ground surface.
Bold indicates result is above screening level.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
R = Rejected
ug/L = micrograms per Liter

Table 5-17
Summary of Residential Area Soil Gas Results
Omega Chemical Superfund Site

	Sample ID	OC2-SGRA1A-G-0-303	OC2-SGRA1A-G-1-304	OC2-SGRA1B-G-0-305	OC2-SGRA1C-G-0-306	OC2-SGRA2A-G-0-307	OC2-SGRA2B-G-0-308	OC2-SGRA2C-G-0-309	OC2-SGRA3A-G-0-310	OC2-SGRA3B-G-0-311	OC2-SGRA3C-G-0-312	OC2-SGRA4A-G-0-298	OC2-SGRA4A-G-1-299	OC2-SGRA4B-G-0-300	OC2-SGRA4C-G-0-301
	Sample Location	SGRA1A	SGRA1A	SGRA1B	SGRA1C	SGRA2A	SGRA2B	SGRA2C	SGRA3A	SGRA3B	SGRA3C	SGRA4A	SGRA4A	SGRA4B	SGRA4C
	Sample Date	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007	1/15/2007
	Sample Depth	12.5-13	12.5-13	21.5-22	31.5-32	7-7.5	12.5-13	28.5-29	11.5-12	18.5-19	28.5-29	10.5-11	10.5-11	18-18.5	30.5-31
Analyte	Units	Analytical Results													
Volatile Organics															
1,1,2-Trichloro-1,2,2-trifluoroethane	PPBV	ND (4.30)	ND (4.30)	ND (7.40)	8.3	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.80)	ND (7.10)	6.1	4.8	14	47
1,2,4-Trimethylbenzene	PPBV	7.8	9.8	4.9 J	7.8	4.1	8.5	3.1	3.9	27	3.5 J	2.7	2.2	6.3	ND (21.0)
1,3,5-Trimethylbenzene	PPBV	4.4	5.7	4.7 J	3.9 J	1.7 J	3.8	1.5 J	1.9 J	14	ND (7.10)	1.4 J	1.1 J	4.1	ND (21.0)
Benzene	PPBV	7.4	8.4	8.5	6.9 J	1.3 J	2.6	1.3 J	5.2	6.2	8.9	1.5 J	1.2 J	7.6	ND (21.0)
Butane	PPBV	2,200 J	510 J	350	240	16	30	38	350	660	390	14	12	590	260
Chloroform	PPBV	14	16	5.4 J	ND (7.60)	36	24	12	25	11	4.1 J	2.6	2 J	6.4	ND (21.0)
Ethylbenzene	PPBV	8.1	9.6	5.4 J	7.6	2.3	5.5	3.2	7.4	12	6.5 J	2.8	2.2	8.1	ND (21.0)
m,p-Xylenes	PPBV	29	35	11 J	28	8.3	21	12	26	39	22	9.8	7.8	26	37 J
o-Xylene	PPBV	8	9.6	6.7 J	6.8 J	2.8	6.5	3.5	6.5	19	5.9 J	2.9	2.4	8.4	ND (21.0)
PROPYLENE	PPBV	---	---	---	---	---	---	---	1,200	---	---	---	---	---	---
Tetrachloroethene	PPBV	3.1 J	3.8 J	5.3 J	48	4.4	4.4	5	3.5	1.9 J	7.5	18	16	9.1	23
Toluene	PPBV	35	40	21	30	6.2	18	6.4	33	25	38	9	7.1	37	39
Trichloroethene	PPBV	ND (4.30)	ND (4.30)	ND (7.40)	28	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.80)	ND (7.10)	2.3	1.5 J	ND (2.40)	12 J
Trichlorofluoromethane (Freon 11)	PPBV	ND (4.30)	ND (4.30)	ND (7.40)	ND (7.60)	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.10)	ND (2.80)	ND (7.10)	1.2 J	ND (2.10)	ND (2.40)	ND (21.0)

Notes:

Sample depth in feet below ground surface.
ND (250) = Not detected above listed reporting limit.
-- = Not detected or not analyzed.
J = Estimated value
ug/L = micrograms per Liter

Table 5-18
Analytes with Maximum MCL Exceedances
Omega Chemical Superfund Site

Well ID or Facility Name	Date	Result (ug/L)	MCL (ug/L)	Analyte	Exceedance
MW10	Jul-07	43	5	Trichloroethene	8.6
MW10	Jul-07	43	5	Tetrachloroethene	8.6
MW11	Jul-07	21	5	Tetrachloroethene	4.2
MW12	Jul-07	160	5	Trichloroethene	32
MW13B	Jul-07	0.75	0.5	1,2-Dichloroethane	1.5
MW14	Jul-07	370	5	Tetrachloroethene	74
MW15	Jul-07	520	5	Tetrachloroethene	104
MW16B	Jul-07	18	5	Trichloroethene	3.6
MW17A	Jul-07	290	5	Tetrachloroethene	58
MW1A	Jul-07	390	5	Trichloroethene	78
MW2	Jul-07	1100	5	Tetrachloroethene	220
MW20A	Jul-07	37	5	Trichloroethene	7.4
MW23A	Jul-07	810	5	Tetrachloroethene	162
MW24A	Jul-07	590	5	Tetrachloroethene	118
MW25B	Jul-07	180	5	Trichloroethene	36
MW26B	Jul-07	150	5	Tetrachloroethene	30
MW27B	Jul-07	360	6	1,1-Dichloroethene	60
MW30	Jul-07	4.5	0.5	1,2-Dichloroethane	9
MW4A	Jul-07	450	5	Tetrachloroethene	90
MW5	Jul-07	390	5	Tetrachloroethene	78
MW6	Jul-07	210	5	Tetrachloroethene	42
MW7	Jul-07	21	5	Tetrachloroethene	4.2
MW8A	Jul-07	68	5	Tetrachloroethene	13.6
MW9A	Jul-07	550	5	Tetrachloroethene	110
OW1A	Aug-07	90000	5	Tetrachloroethene	18000
OW2	Aug-07	1200	5	Tetrachloroethene	240
OW3A	Aug-07	2100	5	Tetrachloroethene	420
OW4A	Aug-07	150	5	Tetrachloroethene	30
OW5	Aug-07	2400	5	Tetrachloroethene	480
OW6	Aug-07	22	5	Tetrachloroethene	4.4
OW7	Aug-07	41	5	Tetrachloroethene	8.2
OW8A	Aug-07	6500	5	Tetrachloroethene	1300
Cenco-MW101	Nov-06	92	1	Benzene	92
Cenco-MW103	Aug-06	71	13	Methyl tert-butyl ether	5.46
Cenco-MW105	Nov-06	51	5	Trichloroethene	10.2
Cenco-MW106	Aug-06	10	0.5	Vinyl chloride	20
Cenco-MW107	Aug-06	3.7	1	Benzene	3.7
Cenco-MW201	Nov-06	140	1	Benzene	140
Cenco-MW203	Aug-06	11	0.5	Vinyl chloride	22
Cenco-MW205	Aug-06	40	1	Benzene	40
Cenco-MW501A	Aug-06	6300	1	Benzene	6300
Cenco-MW603	Nov-06	150	5	Tetrachloroethene	30
Cenco-MW605	Nov-06	26	5	Trichloroethene	5.2
Cenco-W1	Aug-06	86	1	Benzene	86
Cenco-W3A	Aug-06	38	17	Naphthalene	2.24
Cenco-W4	Aug-06	3.5	1	Benzene	3.5
McKesson Facility	Mar-07	100000	5	Tetrachloroethene	20000
Angeles Chemical Co Fac	Dec-05	34100	5	1,1-Dichloroethane	6820
Earl Manufacturing	2007	13000	5	Tetrachloroethene	2600
Foss Plating Company	Mar-06	490	5	Tetrachloroethene	98

Table 5-18
Analytes with Maximum MCL Exceedances
Omega Chemical Superfund Site

Well ID or Facility Name	Date	Result (ug/L)	MCL (ug/L)	Analyte	Exceedance
Lincoln Distribution Cntr	1995	67	5	Tetrachloroethene	13
Modine Manufacturing Co	1989	42	5	Tetrachloroethene	8
Phibro-Tech, Inc.	2006	19000	50	Hexavalent Chromium*	380
Pilot Chemical Company	1998	7000	1	1,2-Dichloroethane	14000
Site A	1990	520	5	Tetrachloroethene	104
Site B	Dec-89	260	5	Trichloroethene	52
Site C	Sep-03	330	6	1,1-Dichloroethene	55
Site D	2007	570	5	Tetrachloroethene	114
Site E	2007	260	5	Tetrachloroethene	52
TCE Source at Whittier Boulevard	2007	2700	5	Trichloroethene	540
Techni-Braze, Incorp.	Nov-05	4500	5	Tetrachloroethene	900
Valvoline Oil Company	1993	120	5	Tetrachloroethene	24
West Bent Bolt	2007	120	5	Tetrachloroethene	24
Ashland EX-1	Aug-07	430	0.5	Vinyl chloride	860
Ashland EX-2	Aug-07	14	0.5	Vinyl chloride	28
Ashland EX-4	Aug-07	104	5	1,4-Dichlorobenzene	21
Ashland EX-5	Aug-07	3.1	0.5	Vinyl chloride	6.2
Ashland EX-6	Aug-07	120	0.5	Vinyl chloride	240
Ashland MW-12R	Aug-07	5.7	5	Trichloroethene	1.1
Ashland MW-15B	Aug-07	7.2	0.5	1,2-Dichloroethane	14
Ashland MW-16B	Aug-07	39	0.5	Vinyl chloride	78
Ashland MW-17A	Aug-07	16	0.5	Vinyl chloride	32
Ashland MW-1R	Aug-07	24	0.5	Vinyl chloride	48
Ashland MW-21A	Aug-07	1100	0.5	Vinyl chloride	2200
Ashland MW-23	Aug-07	21	5	Tetrachloroethene	4.2
Ashland MW-24	Aug-07	13	5	Trichloroethene	2.6
Ashland MW-25	Aug-07	32	0.5	Vinyl chloride	64
Ashland MW-27	Aug-07	52	5	Trichloroethene	10
Ashland MW-2R	Aug-07	44	0.5	Vinyl chloride	88
Ashland MW-4R	Aug-07	20	5	Trichloroethene	4
Ashland MW-5	Aug-07	130	0.5	Vinyl chloride	260
Ashland MW-6R	Aug-07	57	5	1,1-Dichloroethane	11
Ashland MW-7	Aug-07	11	5	Tetrachloroethene	2.2

* California Primary MCL for Total Chromium used