Response Summary

Action Memorandum and Action Memorandum Amendment Removal Action: Kenwood Stormwater Drainage Pathway

Montrose Chemical Superfund Site
Los Angeles County, California

June 11, 2002

On June 7, 2001, EPA issued an Action Memorandum selecting a Superfund response action pursuant to removal authority (40 C.F.R. 300.415 - "removal action") in the **Kenwood Stormwater Drainage Pathway** in Los Angeles County, California. The removal action was one of EPA's response actions selected for the Montrose Chemical Superfund Site. Montrose Chemical of California operated a plant at 20201 S. Normandie Avenue in Los Angeles County which manufactured the technical grade of the pesticide DDT from 1947 until 1982. Stormwater drainage from the plant was found to have carried DDT into front yards along one side of the residential street which borders the former drainage pathway from the plant. The removal action removed contaminated residential soils, backfilled the yards with clean soil, and restored the yards.

On October 1, 2001, EPA opened a public comment period on the Action Memorandum and administrative record. Pursuant to EPA regulations, EPA was required to hold this public comment period for 30 days. Upon the request of Ms. Cynthia Babich, Director of the Del Amo Action Committee, EPA extended the comment period to 60 days. The public comment period was scheduled to close on November 29, 2001. No public comments were received by EPA on the Action Memorandum as of that date.

On November 2, 2001, EPA signed an amendment to the Action Memorandum, which made an adjustment in the original response action to address field conditions discovered during the early phases of excavation. EPA opened the comment period on the Action Memorandum Amendment on February 25, 2002 for 30 days. This comment period was scheduled to close on March 27, 2002. In the announcement for this comment period, EPA stated that it would continue to accept comments on the original Action Memorandum, in addition to the Action

Memorandum Amendment, during the second comment period.

Based on a request from Ms. Cynthia Babich, EPA extended the second comment period to 60 days. The final comment period closed on May 1, 2002. This provided the public a total of 212 days to comment on the original Action Memorandum and 65 days to comment on the amendment to the Action Memorandum (the days in excess of 60 are due to a short delay in announcing the extension of the comment period).

EPA received comments from a single commenter, the Del Amo Action Committee (DAAC), (Ms. Cynthia Babich, director) during the comment period. This response summary provides EPA's responses to comments submitted by this commenter. The comments are copied directly. EPA's responses appear following each comment in *italics.*

On March 22, 2002, an independent scientific review was completed and issued pertaining to EPA's work on this removal action. This review was requested by U.S. Representative Jane Harman's Office and was conducted by Dr. Perry L. McCarty of Stanford University, and Dr. Yorem Cohen, of the University of California, Los Angeles. The Independent Review Report was provided to EPA via the regional office of Congresswoman Harman. The Independent Review Report was not submitted to EPA as a formalized comment on the action memorandum. However, it was issued during the public comment period, and as it is pertinent to the action, EPA has, at its discretion, summarized its major conclusions and responded with certain comments and clarifications to the document. These appear in this Response Summary after the response to DAAC.

It is noted in EPA's responses the term "DDT" refers to total DDT, the sum of DDT, DDE, DDD, and the DDT isomers, unless otherwise noted. EPA accounted for DDT as total DDT in its investigation and the removal process.

EPA, as detailed below, has reviewed and considered the comments of DAAC and the Independent Review Report on the Kenwood Stormwater Drainage Pathway Action Memorandum and Action Memorandum Amendment. After reviewing these public comments, EPA continues to believe that the cleanup action selected in the Action Memorandum and Action Memorandum Amendment are proper and appropriate cleanup measures for the conditions that existed in the historic stormwater drainage pathway as identified in the Action Memorandum.

Response to Comments

Del Amo Action Committee (DAAC), Commenter

Comment:

Preface Page

"Where there are threats of serious or
irreversible damage, lack of full scientific
certainty shall not be used as a reason for
postponing cost-effective measures to
prevent environmental degradation."
--Rio Declaration on Environment and Development ,1992

"When an activity raises threats of harm to
the environment or human hearth,
precautionary measures should be taken even
if some cause and effect relationships are not
fully established scientifically ."
--Wingspread Statement on the Precautionary Principle 1998

EPA Response:

Absolute 100% certainty does not exist, neither along Kenwood Avenue near the former Montrose plant property, nor anywhere else away from Montrose. Still, EPA has employed precautionary principles throughout this response action in multiple ways. EPA's removal action has reduced concentrations to levels similar to background, and these pose insignificant risks even using highly conservative assumptions.

Among the precautionary elements are the following:

- ***At 20 of the 22 properties subject to the cleanup, doing the removal was a highly precautionary measure.*** *With the exception of two properties, EPA found elevated levels of total DDT within the stormwater drainage pathway primarily in soils at or greater than 1 ½ feet in depth. As EPA has explained in public meetings, fact sheets, flyers, letters to residents, face-to-face discussions with residents, and in many meetings with*

DAAC, in order for DDT to have potential to cause health effects, it must be swallowed. Persons are not in direct contact with buried soils. EPA believed that a removal action was necessary because the potential for eventual future exposure was high. Still, there was little evidence of current direct exposure to soil with elevated DDT levels. EPA removed soils from residences along the pathway, in order to take precaution against soil that might be raised to the surface in the future, and against DDT that may not have been discovered during the collection and analysis of more than 1000 soil samples.

- ***EPA's calculations to estimate of the potential for health effects make extremely precautionary assumptions – to err, if they err, on the side of protection of health.*** *EPA has explained this in public meetings, fact sheets, flyers, letters to residents, face-to-face discussions with residents, and in many meetings with DAAC. When EPA makes these calculations, we assume that persons are eating the soil in their yards every day of their lives for 30 years. This is unlikely to actually be the case. We assume that all of the DDT that is ingested stays in the body. We use a special average (95% upper confidence level) of the DDT concentrations in soil that is higher than a plain average, to take precautions given the fact that we cannot sample everywhere. We set our cleanup levels so that even if all of these assumptions were true – exposure to (e.g. in this case, eating) soil every day for 30 years, levels higher than what we actually measure, etc. – the risk of health effects will be insignificant after the cleanup is completed.*

- ***EPA selected a cleanup level that not only provided for no significant chance of health effects for persons eating soil, but also brings the yards in the Kenwood Stormwater Pathway into the background range for DDT.*** *As EPA has explained in public meetings, fact sheets, flyers, letters to residents, face-to-face discussions with residents, and in many meetings with DAAC, there are low levels of DDT (1-3 ppm, up to about 10 ppm) in the Los Angeles area, likely due to previous widespread use of DDT for agriculture and residential pest control. Wherever EPA replaced soil in the removal action, there is essentially no DDT. Where EPA did not remove soil, the vast majority of remaining levels are in the 0-3 ppm range. By reducing DDT values comparable to background and lower, EPA has ensured that, even if DDT were later shown to be more toxic than we know today, in terms of DDT Kenwood still would not be different, and may well be better-off, than the rest of the general Los Angeles area. This was a precautionary measure.*

- ***EPA excavated to significant depths and used a confirmation sampling scheme that extended the removal area wider than sampling indicated was necessary***. *Most residential cleanups nationwide are undertaken to 1-2 feet depth for relatively immobile contaminants such as DDT. In this case, EPA excavated as much as 6 feet below ground surface to ensure the removal of DDT contaminated material. EPA also excavated at least 5 feet on all sides of any sample point that previously was shown to have DDT levels above 10 ppm. We then conducted confirmation sampling on 10 foot centers on*

the sides and bottom of the excavation to determine that cleanup was complete.

- ***EPA performed extensive air monitoring for dust and DDT during the removal and provided temporary relocation to residents during the removal action***.

Comment:

Main points:

6. As stated on page 5, footnote 2, "In addition, EPA and the State of California investigations in the early 1980' s documented the release of significant concentrations of DDT from the Montrose plant property in storm water". EPA and the State of California should be ashamed that they allowed exposure to continue to occur to the residents of Kenwood Ave., currently and in the past. It was ignored for a good 20 years when a known exposure pathway existed. The EP A and State of California did not do anything to protect the health of those being exposed.

EPA Response:

EPA disagrees with the statements of the commenter. The investigations referred to in the 1980s confirmed releases from the former Montrose plant into stormwater drainages at the southeastern corner of the plant site to the subsurface Kenwood Drain. At the time EPA conducted this sampling in the 1980s, the stormwater pathway from the Montrose plant property did not flow along any surface drainage pathway into the neighborhoods adjacent to the Montrose plant property. And, the historical configuration of the drainages downstream of the Normandie Avenue Ditch was not well understood at that time.

As part of EPA's investigation of historical releases of DDT from the Montrose plant property following the 1994 discovery of DDT contaminated fill at locations along 204th Street, EPA did develop information that confirmed the historical existence of a stormwater pathway from the Montrose plant property to and through what is now called the Kenwood Ditch. Information collected in this investigation and obtained from Montrose also indicated that DDT contaminated wastewater was occasionally released from the Montrose plant property and flowed through the Kenwood Ditch particularly in the early years of Montrose's operation.

EPA did not have sufficient information to begin planning for an investigation of Kenwood until late 1994. At that time, and continuing until 1998, EPA's resources and priorities were tied up in addressing the 204th Street DDT-contaminated fill. Planning work began in 1997 for the Phase I and Phase II neighborhood investigations, which were completed in 1999 and 2000.

Given what it knew at each step along the way, EPA has acted as quickly and efficiently as it could within the limits of the resources made available to it, to ensure the health of persons living along the stormwater drainage pathway.

Comment:

7. The level chosen by EPA for removal, 10 ppm, is not consistent with the level chosen by EP A as their DDT preliminary remediation goal which is 1.7 ppm.

EPA Response:

EPA has explained this matter thoroughly in meetings, fact sheets, response to comment flyers, and other discussions with DAAC. See EPA Response to DAAC 50 questions, February 2001; see also notes from EPA's April 24, 2001 meeting with Cynthia Babich and Johanna Bartran; see also EPA response to this question in Answers to Recent Questions Sheet, January 2001.

The PRG is not a regulatory standard to which EPA cleans all soils. Rather, the PRG is a benchmark (a reference point) that allows EPA to quickly screen and place into perspective the potential for health risks from contaminants in soils and water. The PRG does not define the level at which exposure to DDT becomes "unsafe." EPA selects cleanup levels at a given site from a range of concentrations of DDT (typically 1.7 ppm to 170 ppm if there is the hypothetical possibility of long-term exposure). Soils with concentrations in this range pose very low risks even for someone who eats soil every day for 30 years. 10 ppm is near the low end of this range of low risks and EPA believes that it represents a safe level.

EPA does not believe that cleaning up to 1.7 ppm would have been appropriate in this case because that level cannot be distinguished from the background DDT contamination. EPA has authority under the Superfund law to clean up contamination that came from Montrose. We picked a cleanup level (10 ppm) that was safe but that could be distinguished from the background DDT.

It is important to note that in each given yard where EPA has removed soil, there is essentially no DDT. Where soil remains, levels of DDT are similar to background levels and are well within EPA's chronic low risk range. In other words, the average yard not in this neighborhood, away from Montrose has DDT levels at or near background throughout. After EPA's cleanup on Kenwood, the yards on Kenwood have essentially no DDT where soil was replaced, and the levels similar to background where soil was not replaced. These yards are thus safer with respect to DDT than the background yards, on average.

Comment:

8. Blood levels in the community, taken by ATSDR, show 25% of those tested are at or above levels know [sic] to cause endrocrine disruption in developing fetus and low birth weight or premature babies. Please see DAAC Attachment 1, Dr. Kyle's review of blood levels from ATSDR community clinic and comments on risk assessment, DAAC Attachment 2, DDT Blood serum level chart and DAAC Attachment 3, Longnecker Study.

...

"The Risk assessment is based on the most sensitive end points". Blood levels in the community, taken by ATSDR, show 25% of those tested are at or above levels, 10 ng/ml, know to cause endrocrine disruption in developing fetus and low birth weight or premature babies. Please see DAAC Attachment I, Dr. Kyle's review of blood levels from ATSDR community clinic and DAAC Attachment 3, Longnecker Study. Which studies did EP A review? [*See Also* ***Response to Comment No. 41***]

...

Pg23 Removal criteria and levels are not protective of unborn children, as it does not incorporate levels at which endrocrine disruption occurs. [*See Also Response to* ***Comment No. 33***]

EPA Response:

These three comments were grouped together as they address a similar issue. Many points are necessary to provide a thorough response. In general, the commenter's statements suffer from many false inferences. EPA's cleanup levels are protective. Please see explanation below.

- *First, before discussing the technical points related to toxicological studies, it is useful to take a step back and realize that, even if the toxicity of DDT were later found to be higher, it would not result in more cleanup than EPA has already done for the Kenwood Stormwater Drainage Pathway. This is because EPA has reduced soil concentrations along the Stormwater Drainage Pathway to within the range of DDT background. The Superfund program is not designed, and we would not be able, to "clean up" all of South Los Angeles.*

- *The commenter refers to a study by Longnecker, et al. that suggests a relationship between DDT blood serum levels and preterm birth or low birth weight. EPA is familiar*

with the Longnecker study. While it has been taken seriously in focusing further study, the Longnecker study should be considered preliminary. Results from scientific literature are frequently reported to the public as sound evidence rather than as preliminary findings with uncertain validity. It cannot be concluded from the Longnecker study (and in fact, the study itself does not conclude) that the pre-term births or low birth weights observed in the study are due to endocrine disruption, nor that certain health effects occur at a particular blood level. EPA continues to evaluate at the national level information about DDT and other chemicals, as well as studies related to endocrine disruption.

- *The commenter states that 25% of DDT blood levels in the community are above 10 ng/ml, the level at which, the commenter claims, DDT is "known to cause endocrine disruption." As stated, the Longnecker study does not determine that DDT causes endocrine disruption nor that endocrine disruption is what caused the observed preterm births and low birth weights in the study. Longnecker did note that in their study they did not see any effect on premature birth rates for blood levels below 10 ng/ml. But, the Longnecker study alone is not sufficient to determine that 10 ng/ml is the blood level at which preterm birth can occur. Further study could confirm or refute these hypotheses; the commenter is incorrect to state them as fact at present.*

- *The commenter incorrectly infers that, because there are people in the community with blood levels higher than 10 ng/l, the DDT in their blood must be due to soil exposure from their yard. The problem with this inference is that there are people across the country with levels of DDT in their blood. Swallowing soil is one of the* <u>least</u> *likely means of exposure to DDT. Most persons born after 1972 have DDT stored in their tissues. The prevailing current opinion is that much of this is likely due to accumulating low-level contamination in the food chain from residual DDT in the environment (all foods, not just home-grown foods). In other words, DDT levels in blood serum may be a problem for all of us living in urban or post-agricultural areas. Because the serum blood levels do not appear to be higher near Montrose than in the general U.S. population (and because there is no apparent association between length of time living in the community and DDT blood serum level, ATSDR Clinic Study, pp. 21-22), it cannot be concluded that soil exposure along Kenwood is the cause of any particular level of DDT in blood serum, whether higher or lower than 10 ng/ml.*

- *As previously mentioned, a significant number of persons who live near the former Montrose plant have lived in countries that still actively allow the use of DDT, or have previously worked at the Montrose plant during its operation. These factors are likely to have resulted in higher blood serum levels of DDT for such people. For example, while the ATSDR Clinic Study identified no correlation between DDT blood levels and the length of time residents had lived in the neighborhood, it reported a strong correlation between blood levels and whether a person had lived in a country using DDT (i.e. past*

residential exposure) or worked at the former Montrose site (i.e. occupational exposure) – see the major conclusions of that study cited in this same response, below. The 25% figure cited by the commenter does not control for these factors.

- *The commenter has no basis to state that EPA's* soil *cleanup levels are not protective based on the DDT levels in* blood *serum. This is an apples-and-oranges comparison. For example, EPA selected a soil cleanup level of 10 ppm, and most remaining DDT remaining in soil is on the order of 0-3 ppm. Even if 10 ng/ml in* blood *were later shown to be a level of concern, on what basis does the commenter believe that 1-10 ppm in* soil *will result in higher blood levels than 10 ng/l? The commenter has no basis to relate these two levels, and the argument does not follow.*

- *In contrast to the commenter's statement, EPA does believe that, while its non-cancer risk values are based on an endpoint of liver effects, that this endpoint is at least as sensitive as the endocrine effects end point, so far as the limited studies have shown. This means that our cleanup levels should be sufficient to protect against endocrine effects even though they were derived for a different end point originally.*

To recap:

- *The greatest source of DDT exposure in the general population is not from soil. Even so,*

- *The* blood *serum levels in persons tested in the neighborhood appear to be similar or lower than that found in the general U.S. population.*

- *EPA has now reduced the concentrations of DDT in* soil *along Kenwood Avenue to be the same or lower than, those found in soil in the rest of the south L.A. area.*

- *EPA's risk assessment protects for the most sensitive endpoints.*

- *EPA's cleanup numbers are well within EPA's low chronic risk range, which provides for insignificant health risks even if a person swallows soil for 30 years.*

- *Even if EPA later determines that DDT is more toxic than we thought, we have already reduced soil concentrations about as much as we can under the Superfund statute.*

Finally, we believe that the commenter incorrectly frames the conclusions from the Dean Baker, et. al *Study (ATSDR Clinic Study). Important conclusions from this study are as follows:*

"The Del Amo/Montrose Community Environmental Health Program-Final Report"
December 1999; by Dean Baker and Haiou Yang

! *p. i: "There were no patterns of clinical conditions among clinic participants that were clearly consistent with exposure to toxic substances from the hazardous waste sites."*

! *p. 20: "Thus, the DDT levels [serum blood levels] may be slightly elevated by CDHS guidelines, but they are low compared to US general population historical levels."*

! *p. 20: "In summary, we found that 81 of the female participants had one or more babies while living in the neighborhood. Of these, none had total serum DDT above 75 ng/mL, which is approximately 1/2 the concentration that the California Department of Health services recommended women should not breast feed."*

! *p. 21: "In every analysis, DDT occupational exposure was the variable most strongly associated with total serum DDT concentration."*

! *p. 21-22: "Among people who had not lived in Mexico/CA, there was no trend for increasing serum total DDT by length of residence in the area. One would have expected such a trend if there had been ongoing exposure to DDT in the neighbood." "Among children, there was also no association between total serum DDT and length of residence in the community."*

! *p.28: "As shown in Table 12, the observed number of most conditions was quite similar to the expected number based on the US population. The rates for dermatitis, headaches, high blood pressure, anemia and bladder infections were higher in the Del Amo/Montrose community that in the US survey data. We believe the rates for high blood pressure, anemia and bladder infections may be higher than those found in the national survey because our examination both asked questions about these conditions and performed clinical testing, whereas the national survey did not include clinical testing."*

! *p. 28: "Although the number of conditions is small and the methods for the evaluations were not strictly comparable, it seems that the observed number of benign and malignant neoplasms (cancers) were quite similar to the expected numbers based on the national survey."*

! *p. 60: "Overall, there were no [health] conditions that appeared to be consistently associated with total serum DDT concentration among the clinic participants."*

- *p. 69: " In summary, there were no clear and consistent associations between the neighborhood variables and health outcomes among the children."*

- *p. 78: "We found that the miscarriage rate was approximately equal and the birth defect rate was approximately equal, if no lower for the female participants during and after they lived in the community." " in summary, we observed no association between living in the community and rates of adverse pregnancy outcomes - miscarriages and birth defects."*

Comment:

32. The risk assessment was based on DDT levels (6, 700 ppm) from EPA sampling, this maximum level was magnitudes lower than the levels found during the removal action (173,000 ppm). Please see DAAC Attachment 1, comments on risk assessment from our toxicologist, Dr. Kyle.

EPA Response:

This issue has been previously addressed by EPA in many discussions with Cynthia Babich, DAAC, and discussions with Dr. Kyle.

The commenter poses this question in a way that is misleading because it incorrectly suggests that DDT levels throughout the Kenwood drainage were found to be significantly higher than originally found by EPA's investigation. This is not the case. This misleading implication is also made in DAAC Attachment 1, by Dr. Amy Kyle. Also, the statement that EPA's original risk assessment was "based on 6700 ppm" reflects a misunderstanding of how EPA performs and uses risk assessments. This is further discussed below.

What the commenter has done is compare the single two highest DDT soil concentration values found in EPA's earlier investigation, and during the removal action, respectively. While the very highest level of DDT found anywhere along the pathway was higher during the actual cleanup than during the investigation, sampling results for total DDT above 1000 ppm were exceedingly *rare in yards along the west side of Kenwood Avenue, both before during the investigation and during the removal action. The high DDT levels referred to in the comment were contained to a flat, localized depositional layer material found at only three out of 22 yards. It was not found in the other 18 yards. Where found, this material was a small remnant of the actual Kenwood ditch, the original surface of the ground of the stormwater pathway. The layer was one to two inches thick. At two of the three yards where the layer material occurred, the lateral extent of the layer material was limited (several feet square). In all three yards, the depth of the layer was between 3 and 4.5 feet below the surface of the ground and so persons*

were not in contact with it. DDT levels immediately above and below this layer material were typical of those found in EPA's previous investigation. Except in these highly localized occurrences of layer material, levels of DDT found in yards during the removal action were largely consistent with those found in the original investigation.

It is not necessary to revise the risk assessment to address the layer material, nor would doing so have changed the amount of cleanup performed by EPA in the yards. To explain why this is the case, two points are critical, and an understanding of how EPA uses risk assessment.

First, and most *importantly, in this case* all *properties in the defined Kenwood Stormwater Drainage Pathway were eligible to receive the cleanup, regardless of the value of hypothetical risk assigned to them by the risk assessment*[1]*. EPA uses risk assessment, in general, as a tool to assist it in deciding whether and where to take a cleanup action. In this case, based on existing data and EPA's risk assessment, EPA determined that there were 12 properties which posed hypothetical risks from DDT in soil sufficient to warrant cleanup. However, because the stormwater historically traversed all of the yards in the pathway, in order to provide an extra degree of protection, EPA decided to provide the cleanup to all yards (See Action Memorandum, Section V.4, page 25). So, the risk assessment did not determine which yards within the Kenwood Stormwater Drainage Pathway were eligible to receive the cleanup - they all were.*

Second, the higher levels in the depositional layer material did not change the need to clean up, which had already been established by the risk assessment; it merely made the need to clean up more acute. Recalculating the risk based on the depositional layer would not have lead to a different degree of cleanup.

The risk estimate values you see in our risk assessment evaluate chronic *risk, that is, the hypothetical possibility of a health effect if there is exposure to a relatively low level of a chemical over a very long period of time such as 30 years. Such levels do not pose a hazard from casual contact with soil in any one spot. As we have discussed with DAAC and residents of Kenwood, EPA uses a highly health-protective method when evaluating chronic (long term) risks. This method takes into account all the sample levels in a yard, not merely the highest level. This approach is appropriate for DDT levels up to about 500 ppm or so. This chronic assessment had already served to indicate to EPA that an action was warranted.*

The depositional layer material had DDT levels that were significantly higher than 500 ppm. The localized layer material, if it were dug up and put on the surface, could pose acute *health risks; that is, short-term contact could have an effect. The potential for a future acute hazard*

[1]Homeowners for three properties declined the cleanup. EPA treated this removal action as voluntary. Of the three declining, one property had sample results indicating elevated levels of DDT, a second did not. A third property homeowner declined to be sampled or cleaned up. This last owner fairly recently brought in 10-12 feet of clean fill into his front yard, and so his potential for exposure to elevated DDT was small.

(if the soil were ever dug up) merely confirmed EPA's determination that a cleanup was needed. Regardless of the results of the chronic *risk assessment, EPA would have cleaned up the depositional layer areas, as well as the location with 6700 ppm originally found in the investigation.*

Comment:

33. Very little characterization of other portions of Kenwood Ave. yards has occurred. Please see DAAC Attachment 5, Independent Review. Page 15, last sentence. It has also been documented and mentioned in this Action Memorandum that, "In the process of building the Kenwood Drain, a large amount of soil was moved around, out of, and back into residential yards.". ..."This activity, and subsequent activity by some owners over the ensuing decades to bring soil in or move soil on their property , has resulted in a high degree of variability in where DDT -contaminated soil has come to be located along the west side of Kenwood Avenue.". Pg 5

EPA Response:

EPA has issued a clarification to the independent review on this matter which was provided to DAAC at the public meeting on the Independent Review on April 16, 2001. The response is as follows:

It is true that back yards and soil areas were not generally characterized to the same level of detail as the main storm water pathway, and the [Independent Review] report is correct in suggesting that there were no indications that such areas would have received high levels of contamination.

Still, EPA conducted back yard and additional front/side yard sampling at six properties, including those where the owner indicated that soil may have been moved from the front to the back yards. In one case, for instance, 13 additional borings (52 samples from depths up to four feet) were collected from the back, both sides, and front of the house. Five other yards were sampled in the back yard (or in one case, the front yard nearer to the house) to assess whether soil from the storm water pathway in the front yard may have been spread to the back. In each of these cases, between four and eight borings with samples analyzed up to between four and eight feet were collected. Also, EPA did collect some samples in back yards at random along Kenwood during its original Phase I investigation.

None of these back and side yard samples showed levels of DDT exceeding 10 ppm.

Also importantly, during both the investigation and the cleanup, EPA sampled in a grid pattern and extended that grid until the edge of contamination associated with the Kenwood Stormwater Drainage Pathway was found.

The commenter refers to the high variability due to historical movement of soils within the front yards. This is in part why EPA collected so many samples within the drainage pathway in this case. Between the original investigation and the confirmation sampling in the removal, literally thousands of samples were collected in this two-block stretch of Kenwood Avenue.

In short, EPA characterized a phenomenon, the drainage pathway. We sampled the pathway and defined its size by moving outward. Where there was some indication that soil may have been moved from the front yard, extra sampling was conducted. Other than this, there was no reason to expect that the stormwater pathway traveled through back yards along Kenwood Avenue.

Comment:

34. ATSDR has not established an oral chronic reference dose for DDT (ATSDR DDT Toxicological Profile Update 2001).

EPA Response:

The comment refers to the toxicological value used to estimate how toxic a chemical is with respect to causing non-cancer health effects. EPA uses a chronic oral risk reference dose (RfD Oral) of 5x10-4 mg/kg/day, as can be found in EPA's Integrated Risk Information System (IRIS). ATSDR sometimes develops its own values for risk reference doses. These are called Minimal Risk Levels, or MRLs. Many times, ATSDR will seek to develop values that EPA has not already developed. EPA cannot speak to whether ATSDR plans a separate development of a risk reference dose for DDT. However, EPA uses the IRIS reference doses where available for its risk assessments, and specifically, EPA used this value in its risk assessment, so non-cancer effects were accounted for in the risk assessment.

Comment:

35. Emergency response action under CERCLA does not provide for permanent relocation, so by using this method of removal EP A precluded the community from being permanently relocated. The National Contingency Plan, NCP, emphasizes implementing remedies that protect human health and the environment, maintaining protection over time, and minimize untreated waste. What is left at Kenwood is contamination under structures and in people's back yards; this action clearly does not meet the requirements of the NCP. Pgs 31-32.

EPA Response:

The type of action taken by EPA is called a time critical removal action.

There are two parts to this comment. The first refers to relocation, and the second refers to the protectiveness of the remedy. As the former requires a longer response, we will take up the latter part first. The cleanup that EPA has performed protects human health and the environment, and the protection is assured over time, by removing the soils that persons might be in contact with to levels that pose insignificant risks even if persons eat the soil, and to levels that are similar to background levels for DDT. Rather than leaving the soils in place, we have removed them and treatment alternatives are now being considered as part of another remedy selection.

The commenter presents, and EPA has, no evidence of contamination remaining under structures or remaining in back yards in the Kenwood neighborhood at levels that would pose any significant health risk.[2] *Based on EPA's extensive investigation, EPA-generated data does not support the commenter's statements.*

Regarding permanent relocation and the use of time critical removal authority: the Action Memorandum provides a significant discussion about why EPA chose to use removal authority in this case. It is important to note that even if EPA had used remedial authority, in which permanent relocation can be possible as part of the response action, the specifics of this situation were such that a permanent relocation still would not have been selected. In response to the comment, here is the actual Action Memorandum text:

> *This Action Memorandum requests a response action to be performed under Removal Authority. The preamble to the National Contingency Plan (50 Federal Register 37625, September 16, 1985) states "[t]here are certain situations where EPA's removal authority does not extend, e.g., permanent relocation cannot be performed as part of a removal response." A permanent relocation of residents is not permitted under the authority being used in this case.*
>
> *However, authority or lack of authority to perform a permanent relocation is not the reason that EPA has selected the use of removal authority in this case. In fact, <u>EPA would not have selected permanent relocation as a response action</u>*

[2]It is noted that depositional layer material does remain at 20713 S. Kenwood Avenue, 4.5 feet below the ground, and under the garage. The owner of this property declined to have EPA remove that portion of the material. As long as this material remains at its present depth, there is no potential for it to cause exposure or health effects. EPA is evaluating whether further provisions need to be made to address this material in the long term.

<u>even if remedial authority were being used</u>. EPA Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions [OSWER Directive 9355.0-71P, EPA 540F-98-033, PB98-963305] provides EPA's policy on the situations in which permanent relocation may be considered when using remedial authority. This policy states,

> *„EPA's preference is to address the risks posed by the contamination by using well-designed methods of cleanup which allow people to remain safely in their homes and businesses. This is consistent with the mandates of CERCLA identified above, and the implementing requirements of the NCP which emphasize selecting remedies that protect human health and the environment, maintain protection over time, and minimize untreated waste.*
>
> *Because of CERCLA's preference for cleanup, it will generally not be necessary to routinely consider permanent relocation as a potential remedy component...*

The policy states the situations in which permanent relocation may be considered. The Kenwood storm water drainage pathway does not fit the situations discussed in the policy. Because of this, even if this were a remedial action, the present situation would lie outside EPA's policy for use of permanent relocations. EPA can safely and effectively complete this removal action without performing a permanent relocation.

36. Policy: Permanent relocation may be considered in situations where EPA has determined that structures must be destroyed because they physically block or otherwise interfere with a cleanup and methods for lifting of moving structures safely, or conducting cleanup around the structures, are ***not implementable*** *from an engineering perspective.*

The yard features and structures that must be moved to complete this removal action can be safely moved and they will not interfere with the cleanup. Based on existing data, EPA does not plan to excavate under houses[[3]]. The removal of soils is implementable from an engineering perspective.

37. Policy: Permanent relocation may be considered in situations where EPA has determined that structures cannot be decontaminated to levels that are protective of human health for their intended use, thus the decontamination alternative may not be implementable.

[3]It is noted that EPA's Action Memorandum Amendment revised this plan and provided for some excavation under structures. However, the other statements and conclusions in this paragraph remain true.

Decontamination of major structures (e.g. buildings) is not required for the contemplated removal action. Most minor structures (e.g fences, retaining walls) that are above ground can be moved and reused. Minor structures below ground (e.g. footings, root balls) can be removed and disposed, and then replaced with in-kind materials and features. Hence, the contamination can be removed effectively from the properties.

38. Policy: Permanent relocation may be considered when EPA determines that potential treatment or other response actions would require the imposition of unreasonable use restrictions to maintain protectiveness (e.g. such as children playing in their yards, would have to be prohibited or severely limited)

It is anticipated that, through the removal action requested in this Action Memorandum, EPA will be able to restore the properties within the Kenwood storm water drainage pathway to full residential use. Because the contamination will have been removed as a result of this removal action, no use restrictions will be necessary to maintain protectiveness and typical activities will be not be curtailed.

39. Policy: Permanent relocation may be considered when an alternative under evaluation includes a temporary relocation expected to last longer than one year.

It is anticipated that EPA will be able to complete this action without the need for any temporary relocations. However, should temporary relocation be requested or determined necessary, its duration for a resident of a given property would not exceed the length of the removal work at that property. About 2-3 weeks is expected to be required to excavate and install backfill, and another 3-4 weeks may be required to restore each property[4]. Temporary relocations exceeding a year will not be necessary.

The primary reasons for using removal authority in this case are (1) to acquire the ability to act more quickly to address the contamination in this residential area, and (2) because the nature of this contamination problem is well-suited to

[4]It is noted that some residents were relocated for time periods longer than 3-4 weeks. This was because many residents, at the urging of other parties, withheld providing EPA access to their property to perform the work until the last minute. EPA therefore had to advance the removal action up and down the street to the next available property rather than in a uniform fashion directly up the street - this in turn resulted in relocation times for some persons longer than originally presumed. Nonetheless, relocation times in no case approached a year (the entire removal action took 7 months, and the longest relocations were on the order of 8-10 weeks). The other conclusions and statements in this paragraph remain true.

removal authority. There are no practicable options for reducing the potential for exposure to the contaminated soil itself other than to remove it. In-situ and ex-situ on-site cleanup options are not practicable in this residential yard situation. Therefore, the action required does not lend itself to the development of technically varied alternatives which are then studied at length in a feasibility study. Rather, a classic removal of the contaminated medium is indicated.

Comment:

40. The residual contamination remaining exceeds the preliminary remediation goal.

EPA Response:

See EPA response to commenter's comment no. 2, above, for extensive response to the issue of the cleanup level versus the preliminary remediation goal, or PRG. Where EPA has removed soil, there is essentially no DDT. Where soil remains, levels of DDT are similar to background levels and are well within EPA's chronic low risk range.

Comment:

41. Cost benefit analysis was preempted as well, by using the emergency response action. This action should not have been taken under the authority of an emergency response action. It should have remained under the remedial action authority of Superfund. The amount of money spent on this action works out to be about $500,000.00 per home.

EPA Response:

See EPA response to commenter's comment no. 7, above. There is no "cost benefit analysis" requirement per se under either removal or remedial Superfund cleanup authority. However, cost is one of the criteria that must be considered under either authority. Cost was, in fact, considered in conjunction with the criteria of effectiveness and implementability.

Viewing this comment in light of other earlier comments by the commenter, we might surmise that the commenter intends to imply that EPA should have selected buyout and permanent relocation of residents instead of cleanup of the yards as being more cost effective, because the cost of cleaning and restoring each property was more than the cost of buying each property. While strictly it is true that the costs of cleanup may have been higher than the cost of property purchase and permanent relocation or residents, EPA must consider more than just this fiscal fact. First, the facts of this case are not aligned with the conditions under which permanent

relocation is typically considered under EPA's relocation policy, as explained in response to commenter's comment no.7 above. EPA's policy holds that EPA should, wherever possible, seek to clean up the contamination and return residents to their homes. However, even if this had not been the case, as the commenter points out in comment no. 7, CERCLA (the Superfund law) and the National Contingency Plan (NCP, regulations for Superfund) provide that EPA should, wherever possible, seek remedies that result in the treatment of wastes rather than leaving them in place. Had EPA provided permanent relocation, EPA would have had to pay for such relocation and *pay for cleanup of the soil as well. Further, Congress has limited EPA's authority to conduct permanent relocations under the Superfund statute (at 42 U.S.C. §9601(24)) to those situations where permanent relocation is both more cost effective* and *environmentally preferable to cleanup. EPA believes that removing the contaminated soil from the ground at residential properties is environmentally preferable, under EPA's mandate, and in terms of any potential future exposure to the soil, than is leaving it in place.*

It should be noted that the costs of the removal action were greater than originally expected, in part, because:

- *EPA excavated to greater depths than originally planned;*
- *EPA performed more extensive air monitoring than originally planned;*
- *Encouraged by third parties, residents delayed providing property access to EPA to complete the cleanup; as a result, EPA had to advance the removal action back and forth on the street, each time moving to the next home that had provided legal access to do the work, rather than move progressively and methodically up the street; this resulted in a much greater time to complete the work, and an expanded relocation program;*
- *Many more people requested temporary relocation than originally planned.*

Comment:

46. EP A's approach to investigating the complex exposure pathways and various contamination issues here has been a piece meal process which has lead to many conflicts between DAAC, residents and EP A. The community has, and still is, looking for a more holistic approach to the remaining issues ahead of us all. Looking at a small slice at a time has impacted all involved. Stress impacts have reached dangerous levels and are causing health impacts to many residents. Stress impacts have been clearly articulated to EPA by Dr. Pam Tucker, ATSDR, in Atlanta in her many publishing's and briefings on stress impacts at Superfund sites, DAAC Attachment 6.

EPA Response:

The meaning of this comment is not entirely clear. We will respond as best we can. There appear to be three distinct components: a piecemeal approach, a need for a holistic approach, and the impacts of stress. From previous contacts with the commenter we assume that the commenter is saying that: 1) EPA's Superfund approach operates in multiple subprojects rather than address the site all at once, 2) perhaps that EPA's Superfund program is not dealing with all environmental impacts on residents in the community, and 3) the community has experienced significant stress as a result of contamination issues. We take each of these in turn.

On the first point, it is true that EPA does not have the resources to advance every aspect of the Superfund site at one time. Hence, groundwater, soils at the Montrose facility, soils in the neighborhood, the Del Amo waste pits, etc. all advance on somewhat differing timetables. We can understand that this can be difficult for residents because it seems like the issues related to the Superfund sites persist - we appear to address one issue, then another arises. One might argue, perhaps, that it would be simpler and easier if EPA came up with a solution to all of the problems at the same time. While we can understand this viewpoint, it is not within our ability and resources to make remedy selection occur in this way at large and complex sites like the Montrose Chemical Site. What we can do is continue our efforts to help the community be aware of all the pieces and the progress in each, and how they may affect community members.

On the second point, it is true that the Superfund program is designed to address a specific environmental problem. It cannot address all environmental issues that a community may face. EPA has stressed to DAAC and the Montrose/Del Amo Partners for many years that this community sits in the shadow of many industrial enterprises, as well as being surrounded by some of the worst air quality in the nation. For the most part, these are not factors that can be addressed by Superfund, and yet they can potentially account for many of the health complaints that some persons in the community have been encouraged, by parties other than EPA, to attribute to DDT.

Third, as regards stress. The discovery of contamination, particularly when it occurs in residential soils, is inherently stressful to communities. Having one's own yard demolished and excavated cannot help but be stressful. EPA did not put the contamination out there, and we cannot remove all stress that the contamination might cause. However, stress can be lowered and managed.

One major contributor to stress is uncertainty and misinformation, which leads to fear. Conversely, a good weapon against stress is solid information and understanding. With understanding comes control and a reduction in stress and fear. Paramount to this understanding in this case is knowledge of the ways that DDT can, and cannot, *cause harm. For*

instance, understanding that one is not exposed to DDT four feet down; understanding that one is not drinking the groundwater from under the site; understanding that DDT at low levels is routine in soils outside of the Montrose area. EPA has endeavored long and hard to explain these sorts of facts, and EPA's protective assumptions and procedures, to assist residents in developing this understanding. We have sought to accomplish this through many recurring meetings with residents, through fact sheets and information packages to residents, graphics and risk assessments, community hotlines with staff available to answer questions and concerns, and in meetings with DAAC and DAAC leaders in the hopes that DAAC would help residents to understand this information.

Comment:

47. Are deed restrictions being put in place? Future home construction is likely to occur on these "double-deep" lots. If not, what is EP A proposing to put into place to protect future workers and residents from undisturbed DDT contamination during new home construction or repairs to existing structures? "The property lots on the west side of the street are double lots; they are deep enough to have two houses built on them". Pg 13

EPA Response:

In crafting its cleanup approach for the Kenwood Stormwater Drainage Pathway, it was EPA's goal to clean up the properties sufficiently so that deed or use restrictions would not be necessary. The excavations took place to a depth that should provide for freedom of residential activities. The only location where a institutional control may be needed is in the County median, at depth (perhaps 6 to 12 feet), directly around the Kenwood Drain. If the County later excavates and replaces the drain itself (as opposed to merely slip-lining the drain), some of the backfill around the drain at those depths may remain contaminated - and EPA believes that it may be appropriate to put such controls in place so that monitoring takes place in the event of such a project. EPA will examine the prospect of placing such controls in a later record of decision for the Montrose site. We wish to clarify that we do not have evidence of levels of DDT that could pose an acute threat to workers doing routine road work or working on residential sewer or water lines.

As we have also discussed above, there is one property on Kenwood Avenue where the homeowner declined to allow EPA legal access to the property to clean it up, and another where the property owner did not want EPA to finish removing depositional layer material at 4.5 feet below the ground under the garage. EPA may need to consider longer term measures for these properties, including either deed restrictions or provisions for cleaning (or finishing cleaning).

Comment:

Page-Specific Comments:

48. Pg 1 "This removal action will remove unacceptable long-term health risks to residents and will attain the Applicable or Relevant and Appropriate Requirement (ARAR ' s) identified herein for this action". There is no long-term monitoring plan in place for the community which would determine if health risks will develop or worsen with long term exposure to levels present in this community. It will remain unknown weather DDT blood levels in the community will decrease because of this action because there is no long term monitoring.

EPA Response:

It is true that there is no long-term monitoring plan for blood levels of DDT in the community. One conclusion of the Dean Baker study, et. al, (ATSDR Clinic Study) is that levels of DDT in blood serum appear commensurate with those in the general U.S. population. Levels of DDT in blood serum from persons on Kenwood Avenue were lower than those in the study area not on Kenwood Avenue. Those persons with elevated levels of DDT in their blood typically lived in countries where DDT was used, or formerly worked at the former Montrose Chemical plant. The DDT soil "levels present in the community" are either roughly the same as background or EPA has reduced the soil concentrations to levels commensurate with background.

Comment:

49. Pg3 "Stauffer Chemical Company, one of Montrose's parent corporations, also operated, unti1 1963, a small plant at the Montrose plant property for manufacturing Benzene hexachloride (BHC), another pesticide. Stauffer Chemicals also conducted some experiments on the alpha and beta isomers of BHC at the Montrose plant property". "Significant quantities of DDT and other hazardous substances were released as a result of Montrose's operations". The community has stated, repeatedly, our concerns about other chemicals besides DDT, like BBC, Lindane, monochlorobenzene, etc... that have been released into the community. For EP A to focus solely on one or two chemicals seems to fall short of understanding the exposure scenarios prior to their disruption of high levels of known contamination along Kenwood. We are concerned about the synergistic effects of these chemicals on our unborn, developing children and immune systems.

EPA Response:

With this action EPA is addressing a stormwater release from the Montrose Chemical Superfund site. We are, therefore, logically focusing on the chemicals that may have emanated in stormwater from the former Montrose Chemical plant. Based on extensive information about Montrose operational history, which is summarized in the Remedial Investigation Report for the Montrose Chemical Superfund Site, these contaminants include total DDT, BHC, and chlorobenzene. It should be noted that lindane, mentioned by the commenter, is just one form (or isomer) of BHC. EPA has sampled for all of these contaminants within the Kenwood stormwater drainage pathway.

The great majority of samples analyzed for chlorobenzene did not detect it; and the very few that did were at levels below even EPA's low chronic risk range and therefore did not pose a health risk. BHC was found at low concentrations in soils, typically at the center of the former storm water pathway, that were considered by EPA in its risk assessment. Of course, DDT, its isomers and metabolites (e.g. DDD, DDE), were all tested for as part of this investigation and cleanup. EPA used the sum of all forms of DDT, DDD, and DDE when representing DDT for each sample.

From a remedial standpoint, it was appropriate to focus on DDT in this case because it was far more prevalent (both in terms of concentration and extent) than BHC, and was an indicator of potential BHC. DDT and BHC have similar physical properties (nonvolatile, relatively insoluble in water, adsorptive to soils, relatively persistent). Because it arrived in the few yards where it occurred by the same stormwater that the DDT did, removing soil with DDT also removed co-located BHC. (See also Independent Review Report, page 11, regarding removal of co-located contaminants) There was no reason to expect BHC outside the area that the DDT was found.

The commenter refers to other contaminants in the community. The focus of this removal action is related to Montrose Chemical. EPA is not aware of other contaminants that may be affecting the Kenwood community, other than air contaminants from local industry and the urban environment.

Comment:

50. "Dissolved groundwater contamination which extends through as many as six hydro stratigraphic units and to a distance of up to 1.3 miles from the former Montrose plant property"; Groundwater contamination stretching as far as 1.5 miles from the plant property, goes right under our neighborhood. This in itself seems to present safety concerns about soil gas escaping to the surface. It is our understanding that the

groundwater has risen over the years and it is smearing benzene contamination onto the solids it comes in contact with, like sand it passes through. What characterization in the greater community has occurred with .regard to soil gas migration concerns expressed by the community?

EPA Response:

EPA has explained this matter to DAAC in numerous meetings and correspondences. EPA has also responded to this matter in its Response Summary for the Record of Decision: Dual Site Groundwater Operable Unit; Montrose Chemical and Del Amo Superfund Sites, March 30, 1999. It is noted that this matter is entirely unrelated to the matter of the selection of cleanup for the Kenwood neighborhood soils, but we will nonetheless provide a response here.

The commenter refers to the concept of "offgassing" of chlorobenzene and benzene from the groundwater. In concept, this can occur when contaminants leave the groundwater and move up through soils a limited distance as a vapor. EPA does not believe that persons in residences are exposed to soil gas contamination that has come off the water table for several reasons:

1) The vast majority of the groundwater contamination that is under residences is not in the water table aquifer (layer), but in the aquifers below it. In these areas, the water table (first layer with water) is clean. To understand this, one can picture clean water layers near the surface lying over contaminated layers deeper down. In order for contamination to offgas into the soils above the water table, the water table must be contaminated. Because the water table under virtually all the residences is clean, there are no contaminants to offgas into the soils above the water table at these locations.

2) Even in the very limited extreme northern area of the neighborhood where benzene groundwater contamination exists in the water table under residences (Montrose chlorobenzene does not exist in the water table under residences at <u>all</u>), the water table is more than 50 feet under the ground, and the effects of significant offgassing typically do not extend more than 10-15 feet. This is especially true in this case, because benzene has been shown to readily biodegrade in the soils above the water table over time; this greatly impedes the movement of offgassed vapors toward the ground surface, and

3) Soil gas samples taken in soils in residential yards directly over the groundwater contamination nearest the Del Amo waste pits did not indicate the presence of offgassed contaminants.

The commenter refers to and appears to be confused about references in EPA literature regarding"smearing." This refers to what is called "non aqueous phase liquid" (NAPL) benzene at the Del Amo site. To understand this, it is important to know that benzene can exist

both in a pure form and in dissolved form. As an analogy, consider a clump of oil in a beaker of water. Most of the pure oil sits in the bottom of the beaker, but some of it does dissolve into the water. At the Del Amo site, enough of the benzene dissolves in the water to create contaminated groundwater, but a large portion remains in pure form, caught in the soil under the point it was released at the original Del Amo plant site. When the water table rose, this pure benzene NAPL was smeared upward in the soil column to the new, higher location of the water table. This does not affect residences. This also is a different matter than where dissolved benzene, which can move with the moving water table, may have come to be located.

In short, for reasons discussed, EPA does not believe that offgassing nor smeared NAPL from the water table is directly affecting residences.

Comment:

51. Pg4 "DDT and BHC in fill materials which were deposited in what came to be residential areas". "Because of these properties, the primary fate and transport mechanisms by which DDT could have entered residential soils surrounding the former Montrose plant are: ...3) by direct dumping of fill materials from the Montrose plant site". Pg 7

    Where are these areas, other than the removal area on 204th St. ? A huge community concern is that there are many areas throughout the community that chemicals have been dumped into or filled up with. If there was a hole or any other depression in the community or adjacent to it, things other than dirt seemed to have been placed there. This is evident due to the discovery of: the 204tb St. DDT fill area; tires and concrete pulled out of the yard at 20723 Kenwood Ave.; as well as a huge State site located on Artesia and Normandie, which was a former pottery manufacturer. When the pottery manufacturer closed shop, huge holes were left behind which were filled up with toxic chemicals. Not enough has been done to ensure other community fill areas have been properly characterized. DAAC Attachment 5, Independent Review. page 14, sentence 3.

EPA Response:

This question is technically not pertinent to the Kenwood Avenue cleanup. However, EPA will in its discretion respond here.

Despite significant EPA investigation, EPA is unaware of any residential areas, other than those on 204th Street already addressed by EPA, in which DDT or BHC from Montrose came to be located as a result of placement of fill material. EPA went to significant effort to assess the potential for DDT-contaminated fill events in areas within 30 square blocks of the former Montrose plant, <u>other</u> than the identified fill area on 204th Street. The results of our sampling in

this regard were reported in the Remedial Investigation Report Addendum: Residential Soils and Produce; Montrose Chemical Superfund Site, Los Angeles County, California, April 2001. The results were also summarized for the public in a fact sheet EPA provided in November 1999. These investigations revealed no indications of additional DDT-fill events.

We acknowledge that the comment refers not only to DDT in fill materials, but to the potential for other industrial chemicals in fill as well. Along these lines, a few points are in order. First, many local areas in residential neighborhoods over the last several decades have received fill materials, typically at the time that development occurs. It is important to note that fill, on the one hand, and contaminated fill, on the other, are two different things. The commenter is correct in noting that some items of what appeared to be construction debris, and a couple of tires, were found at 20723 Kenwood upon excavation. However, there was no evidence of burial of toxic materials there. We do not agree with the commenter that the finding of fill materials alone implies that the placement of toxic fill material exists beyond what was found at 204th Street. Still, the commenter's point that there are many former and current industrial sites in this community is true and well-taken.

Second, it is not feasible for EPA to find and sample every location where fill may be located, for all possible contaminants, in order to determine whether there may be contaminants in the fill. Our sampling in the investigation was, of course, focused on DDT and Montrose Chemical, and while we sampled many possible fill areas and did not find significant DDT, we cannot guarantee every possible fill location was found nor that all possible contaminants have been found. However, EPA did use available information including historic aerial photographs to identify areas to be sampled as part of its investigation of this issue. Ten individual historically low-lying areas were sampled and no values above 10 ppm DDT were detected; the vast majority of such samples were below 1 ppm. It is true, however, that the potential for contaminated fill exists in all neighborhoods near industrial areas, and far more investigation has been done in this neighborhood than in most.

EPA cannot speak to the other potential fill sources noted by the commenter. We would recommend that the commenter speak with the California Department of Toxic Substances Control for more information about the site mentioned.

Comment:

52. Pg 8 "Long-standing residents (living in the area for 20-40 years) have provided anecdotes to EP A from memory of times that Kenwood Avenue became a "river" and many yards along the street flooded". Flooding and ponding occurred all along both sides of Kenwood, although the East side of Kenwood has virtually had no investigation.

EPA Response:

The topographic information for the area clearly shows the lowest point by elevation was the west side of the street. In addition, the former Kenwood Ditch itself was visible in many historical photographs, always on the west side of the street. Ponding could be seen on occasion at several points on the west side of the street. The only locations ponding could be seen in any photograph on the east side of the street was just north of the intersection of Kenwood Avenue and Torrance Boulevard. EPA placed several borings in this area and did not find significant DDT concentrations. It is noted that Kenwood Avenue was widened during the history of the drainage.

There are, of course, fewer data taken from the east side of the street than the west side, as the west side is where the problem was identified and needed to be characterized. However, several yards on the east side were sampled and no elevated levels of DDT were found.

Comment:

53. Pg6/7 "This removal action does not address: ...contamination in non-residential areas"; How is contamination in non-residential areas like: the lot directly across from the Montrose plant site where the previously named Western Waste containers are off loaded raising considerable dust which blows into the community; the area to the South/West of Montrose; the railroad right of way; the commercial lot on the Northern corner of 204th Street and Normandie Ave.; and the Jones Chemical property going to be characterized?

EPA Response:

All of these areas are being addressed as part of EPA's ongoing on- and near-property investigation - referring to the Montrose property itself and the commercial/industrial properties immediately surrounding it. These areas have been previously sampled. See Montrose Chemical Superfund Site Remedial Investigation Report. However, we anticipate additional sampling in some of these areas prior to proposing a soil remedy for the Montrose plant property.

Comment:

54. Pg8 "EPA's investigations also targeted homegrown produce". EPA failed in its efforts to prove or disprove DDT is being up taken in homegrown produce during larger neighborhood sampling effort, although EPA testing in 1994 at 1055 W. 204th St. did

prove produce grown there contained DDT. EP A is now trying to answer this by growing radishes in a lab from soil taken from the community. This is not a process that has been bought into by the community. Past testing of produce has proven uptake of DDT in our homegrown produce. Please also see DAAC Attachment 5, Independent Review, page 7, paragraph 2.

EPA Response:

EPA did not set out to prove that uptake of DDT into homegrown produce is not possible. Rather, we wanted to see whether it appeared that real produce from the neighborhood contained DDT at the low levels we were primarily seeing in the 30-block study area (which includes Kenwood Avenue but is much larger). EPA sampled more than 40 separate homegrown fruits and leafy vegetables and did not find DDT in any of these plants (except for one sample taken far from Montrose in a background area, which showed a very low level of 0.02 ppm DDT). DDT is hydrophobic and lipophilic, meaning in tissues it tends to be found in oils and fat and not in aqueous media (i.e. water). Hence, DDT was never expected in watery fruits and our sampling confirmed this. The purpose for growing the radishes was to evaluate the uptake of DDT into root vegetables (where one eats the part of the plant in the ground), which was not addressed in the original sampling. Homegrown eggs have been shown to contain DDT, which has been readily acknowledged by EPA, ATSDR, and CADHS. However, as low levels of DDT are prevalent in soils outside the Montrose area, it is likely this is a generalized urban environmental problem.

That DDT was found in produce at 1055 W. 204th Street does not discount the fact that 40 later samples of produce did not contain DDT. Nor does it make EPA's sampling of produce "a failure." The levels of DDT in the fill material at 1055 W. 204th Street were high. Given high enough DDT levels in soil, DDT uptake into plants can occur. Also, if vegetables are not washed before consumption, some soil consumption can occur. However, at typical background levels of DDT, if produce is adequately washed, data indicate that leafy vegetables and fruits in this neighborhood are not likely to contain DDT. EPA will provide more information as it becomes available with regard to root vegetables.

The presence of DDT in home-grown free-range chicken eggs is possible even at typical low background DDT levels in soil. Thus, persons eating homegrown free-range chicken eggs in the Los Angeles area do likely experience some exposure to DDT. The California Department of Health Services (DHS) has issued a fact sheet (2000) to the neighborhood including and surrounding Kenwood Avenue discussing the egg-related data and making recommendations to residents as to how to reduce any health risks associated with DDT in homegrown chicken eggs.

Comment:

55. Pg 8/9 "Surface soil samples in the study area and not near the Kenwood storm water drainage pathway average approximately 1.8 ppm and ranged up to approximately 10 ppm (95th percentile) total DDT, whereas surface soil samples in the background area averaged 1.2 ppm and ranged up to approximately 6-8 ppm (95th percentile) total DDT". "EPA has shown in the RI Report Addendum that the difference between the average of DDT concentrations in the background area and the average of DDT concentrations in the 30-block study area is statistically significant". EPA states conflicting background numbers in various documents. Litigation papers in USA and State (California vs. Montrose Chemical Corporation Of California state agricultural background levels of DDT as 2 ppm (pg 15 line ll-12) and quote above states "1.2- 6 to 8". Which is it? What is the national background level for DDT?

EPA Response:

This matter was thoroughly explained to DAAC on multiple occasions by EPA. EPA's treatment of background concentrations is not inconsistent. The commenter's reference to the citation in "Litigation papers" was a response to a Montrose motion filed by the United States in U.S. District Court. The reference to an agricultural background level is actually EPA quoting a statement by Montrose Chemical. EPA did not make the statement; Montrose did - and EPA cannot say why Montrose believed this was an appropriate agricultural background level. The commenter has taken this statement out of context and without regard to its source, attributed it to EPA, and then suggested that EPA's treatment of background is somehow inconsistent.

EPA is not aware of a fully national background study for DDT. However, a California statewide study of DDT in soils of agricultural areas, arranged by county, showed that background levels of 30 ppm or more can be supported. EPA's direct study for the Montrose project of DDT in background soils focused on six distinct neighborhoods to the north, northwest, west, southwest and south of the former Montrose plant. EPA attempted to pick areas that were not noted as being former agricultural areas. More than 70 surface soil samples were collected. DDT levels averaged 1-3 ppm. The upper end of the percentile range was in the 6-8 ppm range. EPA has used 10 ppm as an approximation of where concentrations are due to Montrose and not present merely due to background. Because these background levels are outside the immediate Montrose area, but still in residential areas in the south L.A. area, EPA believed this measure of background was appropriate.

Comment:

56. Pg9 "Numerous accounts by long-standing residents in the neighborhood have corroborated that storm water used to pond so extensively at this property (20723 Kenwood Ave.), that at times the foundation was inundated to the base of the siding". EPA would not do any soil removal under this house, this defies common sense. The home on this property is extremely old and future foundation work is eminent[sic]. In fact elevated levels of DDT were left in place near the foundation on the North side of the homes foundation. What will protect the workers and residents on this property in the future?

EPA Response:

It is not true that EPA left contaminated soils in place to the north of the north foundation of the property at 20723 S. Kenwood Avenue. To the contrary, EPA found that there was a four foot stem wall on the north foundation of the house, which allowed us to excavate right up to the foundation to a 2-foot depth. All confirmation samples returned less than 10 ppm. During the Phase II investigation, EPA also collected six samples from under the house at 20723 S. Kenwood Avenue. All of these samples showed DDT at levels below 10 ppm. At the completion of the excavation to the north of the stem wall, the elevation of the bottom of the excavation was below the elevation of the dirt under the house at that location, and soil at that elevation outside the wall was clean. In short, we have sampled under the house, we have removed all soil to the north of the house to depths lower than the crawlspace bottom, and all confirmation samples and under-house samples do not show elevated levels of DDT. EPA therefore did not find a basis to excavate under the house at 20723 Kenwood Avenue, nor do we find a need to place special restrictions to protect workers.

We acknowledge that there was historical ponding in the area of this house; however, this does not mean that soils under the house itself received high levels of DDT. In fact, it appears from depositional patterns that most of the DDT was deposited out of suspension north and east of the house.

Comment:

57. Pg 10. "There is significant variability in the concentrations of total DDT both laterally and with depth. The variability in DDT soil concentrations can be attributed, at least in part, to movement of soil. So how can EP A say where all the contamination is? So how can anyone state that the residents are not at risk? What about the yards EPA did not remediate or the portions of yards remediated that EPA left intact?

EPA Response:

It is true that there is significant variability in DDT soil concentrations within the areas in each yard affected by the stormwater pathway, for the reasons stated in the Action Memorandum. This means that soils vary from one point to the next within the affected area, with depth, and from yard to yard depending on what has happened in the yard over the intervening years since the Ditch existed. EPA recognized the likelihood of this variability from the beginning, before any samples were taken, and we fashioned our approach to characterizing and addressing the problem accordingly.

Despite the variability, the source of the contamination remains a fixed phenomenon (originally, a ditch) with a finite size and specific location. In this case, the phenomenon was storm water flowing in a ditch, located at the lowest point. There was no basis, for example, for the storm water to flow uphill and into back yards. Hence, clearly, the first objective was to identify the location of the original ditch and its easement. This was the original source.

A certain amount of human-induced activity in front yards would be expected over the intervening decades - which would vary from property to property. Examples include moving in or removing soil or small cut-and-fill soil movements while landscaping the yard, making sewer repairs, rototilling for sod placement, and notably, the construction of the Kenwood Drain. However, the area over which soil at the bottom of the Kenwood Ditch would be disseminated by this activity plausibly would span a reasonable range. While concentrations vary up and down within the affected area, one can set out to define the boundaries of the affected area itself. The second objective, therefore, was to move outward from the original easement until levels of DDT were no longer elevated in any samples. This, together with the area defined by the original easement, represents the area affected by the storm water drainage pathway in any given yard. Between investigation and later confirmation sampling, EPA collected more than 2000 samples for this purpose.

Finally, when the potential for unlikely soil movement from the front to back yards was raised with respect to particular properties, EPA sampled the back- and side-yards in those properties. It is noted that samples from borings at six properties so-sampled showed no DDT at elevated concentrations.

Thus, while EPA cannot state with absolute certainty where every increase and decrease was in soil concentrations in a given yard, by removing the soil in the area affected by the phenomenon, the DDT with elevated concentrations was removed.

EPA applied the removal action to all 25 properties in the storm water pathway. Of these, 22 property owners agreed to receive the cleanup. Only one of the properties whose owners did not

wish to accept cleanup had levels of DDT which appeared to be significantly elevated. Another homeowner allowed EPA to clean except for under his garage. In a later record of decision, EPA will need to consider whether additional response actions, such as excavation or deed/use restrictions, should be selected for these two properties.

The portions of the yards EPA left intact at the properties which were cleaned up have no evidence of elevated DDT levels within the top 6 feet of soil, and there is no reason to expect high levels in those areas given the nature of the phenomenon addressed by the removal action.

Comment:

58. Pg 11 "For the most part, it appears that the soil that was the bottom of the Kenwood Ditch no longer exists as a single intact structure and so it is more meaningful to discuss those residual locations within each yard where the DDT -contaminated soil from the Ditch has come to be located". Can EP A really know where DDT has come to be located, or is this speculation and assumptions?

EPA Response:

EPA's assertions as to where DDT has come to be located are not based merely on speculations and assumptions. As is discussed in response to earlier comments, and in numerous discussions with DAAC, EPA assessed historical Montrose operational information, aerial photography, the history of land use, knowledge about the nature of DDT and the movement of stormwater, and the relief of the area. (See, for example, pages 2-5 of the Action Memorandum) EPA then devised an extensive protocol for sampling a heterogeneous environment based on the fate and transport characteristics posed by this information. (See, for example, pages 7-14 of the Action Memorandum) More than 1000 samples were collected from borings 4-8 feet in depth as well as surface soil samples. A systematic process was used to grid the affected area and move outward away from the source phenomenon until levels of DDT fell off. Supplemental sampling was conducted in side and back yards in areas where there was a potential for movement of soil beyond the front yard (no elevated DDT was found in any of these supplemental samples). During excavation, another more than 1000 samples were collected to confirm that no further widening or deepening of the excavation was needed.

EPA's analysis of where DDT came to be located is based on a wealth of environmental data, which was designed to test and modify, as necessary, the conceptual framework of how DDT entered these yards. The data fit and support that framework well. The data indicate that the extent of the DDT was well-demarcated and that the removal targeted well the area that needed to be excised.

Comment:

59. Pg 12 "The majority of the elevated total DDT concentrations in soil on the west side of Kenwood Avenue occur in soils at approximately 2 feet below ground surface. Concentrations of total DDT is subsurface soils (e. g. at 2 feet or 4 feet below ground surface) are, on average, higher than are concentrations is surface soils". Is this because volitization [sic] has been occurring in the subsurface soils?

EPA Response:

As has been explained on numerous occasions and in written materials to DAAC, DDT is not a volatile compound. DDT has a Henry's Law Constant of $2.8x10^{-5}$ atm-m^3/mole, and a vapor pressure of 0.00000015 millimeters of mercury. These measures of volatility indicate that DDT is a highly non-volatile compound; it tends to sorb to organic material in soil, and will even dissolve in water, despite its low solubility, before significantly volatilizing into air. This means that DDT does not appreciably evaporate and offgas as would, for instance, benzene, alcohol, or trichloroethylene. So, the reason that the higher levels of DDT are at greater depths along Kenwood is not due to volatilization. Most likely, the reason is that the level of the ground surface was lower 50 years ago than it is today. By and large, the soil with DDT has been progressively covered up over the decades since the majority of the DDT was laid down by storm drainage. This was confirmed by direct observation during excavation along Kenwood; the historic bedding planes and surface structures could be seen 2.5-4.5 feet below current grade. The degree of covering, and the depth at which DDT occurs, varies from yard to yard depending on the varying and specific historical activities in each yard. But overall (and with 2 notable exceptions), the greater concentrations of DDT resided at depth rather than at the surface from this phenomenon.

Also, DDT, DDD, and DDE slowly biologically degrade in the environment, and the rates of degradation can be different in shallow soils than in deep soils. In particular, aerobic biodegradation can be more prevalent in shallow, and particularly surface, soils. This also may explain a greater loss of DDT from the shallow soils, although we cannot easily perform a measurement of this difference directly.

Comment:

60. How many samples were taken on the east side in comparison to the west side, 1) in general and 2) with reference to extensive ponding areas on both sides of Kenwood Ave.?

EPA Response:

See earlier response to comment about sampling on the east side of the street.

Eighteen samples were collected on the east side of Kenwood during the Phase I Investigation. Also during Phase I, EPA placed and sampled six borings from the middle of Kenwood Avenue and two borings in former ponding areas on the east side of the street. In the Phase II Investigation, EPA installed and sampled an additional three borings in ponding areas on the east side of the street. Each boring had samples at two or three depths up to about 4 feet. No DDT above 10 ppm was detected in any of these samples. It is noted that the "ponding areas" on the east side were limited to the far southern portion of Kenwood Avenue, as most of the ponding was on the west side of the street in association with the stormwater drainage pathway there.

Comment:

61. "Historically, storm water drainage with Montrose contaminants likely followed a similar path and/or traveled under Normandie Avenue to location north of 204th Street where it flowed to the head of the Kenwood Ditch via an unimproved channel and culvert" .What investigation has EP A conducted on the areas where waste flowed past Kenwood Ave., to the South of Torrance Blvd.?

EPA Response:

EPA has not conducted investigations in soils south of Torrance Boulevard. The stormwater drainage pathway opened into a slough in that location, almost all of which lies under the cap over a State Superfund site at that location - formerly an industrial area.

Comment:

62. "Current property values average approximately $140,000 -$180,000 without accounting for the contamination". Where did EP A get these figures? Is EP A referring to the devaluation of property values due to the contamination at the two Superfund sites or the contamination on Kenwood Ave.?

The figures were based on a rough assessment of local property values. EPA intended to place a context on the value of the properties in the absence of (that is, without the variable of)

contamination on the properties. The knowledge of unremediated contamination can result in lower property values that would exist were there no contamination. When contamination is removed, property values can recover. There are many market forces which can affect property value, not only the presence of contamination.

Comment:

63. Pg 13 "Similarly, the amount of time people have lived in the neighborhood varied from less than a year to more than 30 years. Many families tend to be extended; that is, three generations may live in the same household". This makes this population in the community even more suspetiable [sic] to effects from DDT exposure due to multigenerational helath [sic]impacts, as reference [sic] in ATSDR's updated 2001 DDT toxicological profile. "The property lots on the west side of the street are double lots; they are deep enough to have two houses built on them". Future home construction is likely to occur on these lots. What is EP A proposing to put into place to protect future workers and residents from undisturbed DDT contamination?

EPA Response:

The effects of multigenerational influences can be debated. It is possible that persons living on Kenwood Avenue decades ago at the time the drainage was deposited may have been directly exposed to DDT in their front yards. Within the last twenty years, however, the possibility of direct DDT exposure was much less given the depth of the majority of the DDT contamination, for all but two of the households.

By removing the contamination to a depth below which persons would not be exposed, EPA has largely eliminated the potential for <u>future</u> exposure, regardless of how many persons live at a given property.

It is not clear what "undisturbed contamination" the commenter refers to. Except for the two properties discussed earlier, there is only one area where EPA believes that additional protections may be needed, and that is in the event that the County actually removes the huge 4-foot Kenwood Drain, at depths of 7-12 feet below the surface, which sits within several feet of the street (in the median and/or extreme front portion of yards). The backfill around this drain <u>at these significant depths</u> *may still contain elevated DDT from the Kenwood Drain construction effort. The removal of a drain such as the Kenwood Drain is exceedingly rare. Usually, maintenance is carried out in such drains without removing them. EPA intends to evaluate various options for addressing the Drain excavation scenario. It is assumed that at a minimum notification requirements will be set up with the County and additional sampling/monitoring would take place during such an activity. It is important to note that:*

- *EPA has no reason to believe that plausible residential activities would result in a resident or worker encountering further undisturbed contamination;*

- *The data available do not indicate that routine road or sidewalk work on Kenwood Avenue would result in any significant risk to workers or residents;*

- *Even in the area of the Kenwood drain, there is no potential for exposures to DDT unless excavations reach 7-12 feet in depth.*

Comment:

67. Pg 14 "EP A's investigation shows concentrations of DDT in soil in yards on the west side of South Kenwood Avenue at concentrations up to 6,700 ppm". This number is small when compared to reported elevations encountered during the removal. This leads to many conclusions, including our feeling that with all those samples, there is still a great deal of uncertainty about the location of contamination which has been dumped into the community via fill, storm water or other means. It is very insincere for EP A to equivocally state over and over again that the residents have no future health risks from DDT, which EP A left in place.

EPA Response:

As already discussed, the commenter makes unsubstantiated comments about "DDT left in place," and misleading statements about higher levels of DDT which were discovered in distinct areas during the cleanup work. See response to comments 4 and 27, above for response to this comment.

EPA understands how the finding of depositional layer material with higher DDT concentrations in localized spots in three of 22 yards could cause feelings of uncertainty with respect to the data. Nonetheless, it is common for excavation to uncover variations and even higher levels than are shown in investigation. In this case, the localized depositional layer material found merely confirmed, rather than refuted, EPA's working conceptual model for the stormwater pathway. It was squarely within the pathway already being removed by the removal action. EPA's assessment of the stormwater drainage phenomenon worked *, otherwise we would not have found or removed the depositional layer at all.*

Consider the following from EPA's Action Memorandum Amendment:

> *The white depositional layer, though not present in all yards, is confirming residual physical evidence of the former Kenwood Ditch. The possibility of depositional DDT in this former storm*

> *water ditch, and residual contamination from it, was what led EPA to investigate Kenwood Avenue over the course of two years and perform this removal action. Per the original Action Memorandum, EPA set out to remove this ditch and residual contaminated soils associated with it. The layer, where it has been found, is within the Kenwood storm water pathway already subject to the removal action. The Montrose Chemical plant, and the contaminant transport process that gave rise to the depositional layer, is the same process that has been the target of our investigation and gave rise to the DDT in soils that we have been removing all along. The facts surrounding this layer are squarely within the objective of the removal action as already laid out by the original Action Memorandum.*

Consider also the following from EPA's Clarification Statement on the Congressional Independent Scientific Review:

> *The white layer caused EPA to check and excavate to greater depths than would otherwise have been the case, to ensure that it was removed. However, the white layer was found in areas within the stormwater drainage pathway already being addressed by EPA, and exists due to the pathway. In this sense, the white layer material did not signal the presence of wider contamination in areas unrelated to or outside that pathway. White layer material was found at 3 of 22 properties; it was not present at the great majority of properties.*

Comment:

68. Pg 15 Discussion about "cover" at 20723 Kenwood, ". ..it is expected that the effectiveness of the cover could be compromised if additional action is not taken in the near future". Cover was in place 18 months and was immediately compromised when installers cut holes in it on the side of the yard to allow existing plants to grow. Before a one year period had elapsed, huge rips in the cover in the front yard occurred because the sun rotted the material which allowed exposure to continue to the two little girls playing in the yard, including on top of the "cover".

EPA Response:

It is not true that installers ripped holes in the cover to allow plants to grow. The main purpose of the cover was to prevent exposure to surface soils and dust. Small plant-stem sized holes in the cover would not allow dust migration, even if they did exist.

EPA is aware that degradation did occur in the cover over time - at several locations, the black mesh under the green cover could be seen. EPA was not aware of this condition initially; when we did become aware of it we went to the property within a week and repaired the cover with new mesh and turf.

Comment:

69. Pg 16 EP A's outreach activities often left many residents overwhelmed and scared -The "team" usually consisted of 4-5 large white males. The team mostly just dropped in on people without the courtesy of an appointment. As well, many felt the one on one's and yard specific information was a mechanism to withhold information from interested community members, DAAC and adjacent property owners.

EPA Response:

While the prospect of a removal of soil in one's front yard can be scary to a resident, and indeed, seem overwhelming, EPA worked very hard to ease fears and explain the situation to homeowners and tenants throughout this action. Most persons we spoke with appreciated EPA's activities and information. EPA developed more than 30 different outreach materials (virtually all of which were translated). EPA provided property-specific information packets and information. We sat with individual homeowners, sometimes for minutes, sometimes for hours, according to each person's needs.

We disagree with the characterization of our outreach team as routinely consisting of "4-5 large white males." EPA's team included males and females of different races. Among the most common outreach members were our community outreach coordinators: a Latina female and a fluent male versant in the culture of Paraguay and South America. A third outreach coordinator who assisted on occasion is a Latina female. Our community coordinators include a Latino male and an African American spanish-speaking female. The project manager, who is white, was very often present. Our toxicologist is female. EPA utilized an African American relocation advisor. The U.S. Corps of Engineers field engineer is white.

We understand the commenter's concern that outreach can be more effective when the communicator can culturally relate to the community. At the same time, racial and gender-based characterizations can dismiss the value, experience, and dedication that each person on the team has brought to the project.

We also disagree with the commenter that EPA's one-on-one outreach strategies constituted an attempt to hide information from adjacent property owners or to keep information from DAAC. In fact, by tailoring each meeting with residents to their specific needs and questions, each homeowner got the same general information, and a larger body of specific information that they specifically requested and found of interest, than they would in a general meeting.

Comment:

70. Pg 16/17 "One of the findings of this report was that, when statistics are adjusted to remove data for persons who had worked at Montrose and who had lived in countries where DDT is still in use. This is a bogus assumption for a couple of reasons: 1) NHANES data uses a national average, to pull out groups would negate the value of looking at a national average; 2) The average used by the clinic was based on outdated NHANES data even though more recent data was available, at the time, for comparison.

EPA Response:

We must acknowledge that the ATSDR Clinic study, in accordance with the authors of that study, was not an epidemiological study. Still, the comparisons of averages to NHANES has some usefulness, and we disagree that controlling for various factors is "bogus" per the commenter.

The question is not whether blood serum levels of DDT may be higher in the neighborhood (or Kenwood in particular) than the national average. The question, rather, is whether blood serum levels may be higher due to *exposure to DDT from Montrose in neighborhood soils where such persons live now. This can be a difficult question to answer conclusively because of the large array of factors that can lead to DDT in blood serum. If there are historical factors, other than exposure to DDT in soil in the yard, that apply to persons now living in the neighborhood that could result in much higher levels of blood serum DDT (for instance, having worked at Montrose - historical exposure coming primarily from the workplace; or having lived in a country where DDT is in widespread use - historical exposure likely coming from the former living situation), it is necessary to control for these factors in the comparison.*

Montrose is not a "national" phenomenon. If we retain in the neighborhood average the blood levels from persons who worked at Montrose, and it ends up higher than the national average, it would not be clear that any difference is due to Montrose DDT in neighborhood soils. However,

if persons who have neither worked at Montrose nor lived in countries which use DDT average higher than the national average, then there would be stronger evidence for a neighborhood DDT soil source of exposure. As stated earlier, blood serum DDT levels in the neighborhood among those tested were the same or lower than the national average and blood levels did not correlate to the length of residence in the community as one would expect if Montrose releases were the cause.

As for the updated NHANES data, we would recommend that the commenter contact ATSDR.

Comment:

71. Pg22 Incineration of stockpiled soils would be a bad move on EP A's Part!

EPA Response:

The remedial action for the Montrose soils, including the stockpiled soils, is the subject of an EPA feasibility study and EPA will issue a proposed plan for public comment prior to selecting a remedial action for the soils.

72. Pg23 Removal criteria and levels are not protective of unborn children, as it does not incorporate levels at which endrocrine disruption occurs.

EPA Response:

*EPA provides a comprehensive response to this comment in response to **Comment No. 3**, above. Please see that response.*

As explained to the commenter at a meeting on April 24, 2001, based on the most recent EPA data, EPA believes that its toxicity values for DDT are already stringent enough to protect for endocrine disruption endpoints. Still, as explained above to earlier comments and in numerous other meetings and correspondence with the commenter, even if DDT were found to be more toxic (and so far it hasn't), EPA has reduced concentrations in the Kenwood stormwater drainage to levels that are commensurate or better than background levels of DDT. A higher toxicity for DDT would not translate into lower cleanup levels for DDT in soils - we cannot "clean up" all of Los Angeles County.

Comment:

73. Pg25 "It is not presently anticipated that elevated levels of DDT will be found under houses. This cleanup standard does not apply to soil under houses and excavation under houses is not covered by this Action Memorandum". Again seems to be a lack of characterization, as there was and is contamination under houses/structures. Even though excavation underneath houses is not covered in this Action Memorandum, a contingency plan should have been in place to deal with this unanticipated occurrence.

EPA Response:

The commenter quotes from the original Action Memorandum, which did not address excavating under structures, largely because there was no evidence at the time it was issued of soil requiring remediation under structures. EPA therefore did not specify a contingency for cleanup and cleanup levels to address something it could not foresee and could not adequately define. Once there was evidence of soils requiring remediation under two structures, EPA issued the Action Memorandum Amendment, which addressed the specifics of that find and provided for the cleanup under structures. EPA conducted confirmation sampling in all excavations during the cleanup action, and extended excavations toward structures where necessary to excavate the contamination. With the exception of the structures identified in the Action Memorandum Amendment, no DDT requiring removal was identified under structures during the course of the removal action.

Comment:

74. "While EPA's sampling has been extensive, it is still possible that some DDT has been missed in EPA's sampling". Indeed some had, "white layer". Now the community continues to live with the uncertainties of other non-pursued or missed "hot spots". "The excavation may be deepened at discrete locations to remove individual points of elevated concentration ("hot spots" as indicated by previous sampling). This type of removal is not complete. During the two previous community removals entire areas were taken down to a uniform level, not like the pock marked approach proposed here. This has proven to be inadequate, and has not relieved health concerns of some residents or does it nourish property value rebound.

EPA Response:

Again, the commenter quotes from the original Action Memorandum. See earlier responses to Comments no. 28, 4, and 27.

The Tier 2 protocol that the commenter quotes from provided for a uniform 2 foot depth of excavation with removal where necessary of a few slightly elevated levels below that depth. It applied to "Tier 2 properties," defined in the Action Memorandum. At the time of the original Action Memorandum, most Tier 2 properties had most often either no or an isolated few samples above 10 ppm at any depth in the entire yard. After execution of the removal action, however, under the Action Memorandum Amendment, EPA no longer followed the Tier 2 protocol. Most properties were excavated to 3-6 feet regardless of Tier. In essence, EPA did excavate deeper in almost all areas of many yards than originally planned. We also excavated in all yards at at least some point to 4.5 feet below street grade to inspect for depositional layer material.

We disagree that, as the commenter says, the approach EPA has taken is "incomplete" and that it is "proven to be inadequate." The commenter has presented no substantiation of these statements. Digging everywhere to the same depth would not, in and of itself, imply that the removal would be more complete. Confirmation data was used throughout the cleanup at the bottom and sides of all excavations to confirm cleanup completion. See earlier responses for a discussion of how EPA's investigation determined the nature and extent of contamination at properties in the Stormwater Drainage Pathway; refer also to the Action Memorandum pages 2-5, also to the Addendum to the Remedial Investigation Report for the Montrose Chemical Superfund Site; Residential Soils and Produce Investigation.

Comment:

75. Pg26 "Attempts will be made to adjust the depth of the excavation to be less that the depth of buried utilities such as water, gas, and sewers, where these exist". These attempts will elevate chances of future exposure to homeowners/residents during repair work to utilities, many of which are aged.

EPA Response:

EPA ultimately did not make any depth adjustments to avoid utilities, especially after the Action Memorandum Amendment. The depths of the excavation were based on the needed excavation area and subsequent confirmation sampling, regardless of the presence and depth of buried utilities.

Comment:

76. Pgs 28-29 "There is a water main under the sidewalk most of the way down the west side of Kenwood Avenue, and the Kenwood Drain itself lies near the street and median. These two structures will not be removed/excavate under this removal action. Excavation will occur above and to the side of these two structures where they occur". At 1203 W. 204th, at least a one foot layer around the water main was left in place, as reported by workers, how will this protect residents during future soil disruption?

EPA Response:

Confirmation samples at 1203 W. 204th Street were below 10 ppm indicating that even where this soil was left in place, there is no evidence of elevated DDT contamination. Elsewhere on the street, the vast majority of samples above the water main were below 10 ppm. In a few localized cases, levels were slightly above 10 ppm and do not pose any significant health risk as stand-alone points.

Comment:

77. "Imported soil shall meet EPA Residential Soil Preliminary Remediation Goals (PRGs) with respect to all contaminants tested, except for arsenic, which shall meet a standard of 4 parts per million (ppm)". The residual contamination remaining exceeds the preliminary remediation goal! Community soil left in place can be up to 10 ppm and is over that level in many locations sampled by EPA in the greater community. The import soils go by PRG's, so the question is, are PRG's only used when it is convenient to EP A needs?

EPA Response:

*The basis EPA used for choosing 10 ppm, and the relationship to the PRG, is explained in detail in response to **Comment No. 2**, above. Please see that response. 10 ppm is a health-protective level for DDT in residential soil.*

It was also appropriate to apply the PRGs to the imported soil. As the soil was coming in from another location, EPA needed to make sure that it was not exchanging a DDT problem for another problem . It makes sense that we bring in soil that is as free of contaminants as reasonably possible. After performing historical use investigations for the borrow sources, EPA sampled the borrow source (import soils) and compared to PRGs not only for DDT, but for the suite of common industrial contaminants and metals.

The fact that EPA used PRGs as standards for borrow source soil does not *imply that the soils remaining in place with DDT levels between the residential soil PRG and 10 ppm are not safe for residential soils.*

We note that the PRG was not used for arsenic because arsenic is naturally-occurring throughout California at levels above the PRG. As such, it would not have been possible to obtain borrow source material at levels below the PRG. However, the level we used, 4 ppm, is significantly below the naturally occurring average for arsenic. This was noted in the Action Memorandum, Section V.6, page 28).

Comment:

78. "At the conclusion of this response action, the elevated and unacceptable potential health risks from soils with DDT will be eliminated". EP A's statement is impossible to achieve and misleading.

EPA Response:

We disagree that elimination of unacceptable potential health risks and elevated DDT levels is not possible. EPA's removal action removed DDT above 10 ppm; about 10,000 cubic yards of soil and debris from 22 properties along the Kenwood Stormwater Drainage Pathway. This action eliminated unacceptable health risks from DDT at those properties.

Comment:

79. "EP A's risk assessment is based on chronic lifetime exposure to DDT". ATSDR has not established an oral chronic reference dose, (ATSDR Toxicological Profile Update 2001).

EPA Response:

See EPA response to ***Comment No. 6****, above.*

Comment:

80. "The Risk assessment is based on the most sensitive end points". Blood levels in the community, taken by ATSDR, show 25% of those tested are at or above levels, 10 ng/ml, know to cause endrocrine disruption in developing fetus and low birth weight or premature babies. Please see DAAC Attachment I, Dr. Kyle's review of blood levels from

ATSDR community clinic and DAAC Attachment 3, Longnecker Study. Which studies did EP A review?

EPA Response:

*A comprehensive response to this comment is given in response to **Comment No. 3** above. Please see that response. Again, DDT is a common residual contaminant in the United States. Available evidence does not support the view that DDT blood levels near Kenwood Avenue exceed those of the general U.S. population.*

Comment:

81. The risk assessment was based on DDT levels (6,700 ppm) from EPA sampling, this maximum level was magnitudes lower than the levels found during the removal action (173,000 ppm). Please see DAAC Attachment 4, comments on risk assessment from our toxicologist, Dr. Kyle. Swimming pools disturb soil to a dept of 10 feet, not 4-6 feet.

EPA Response:

*Extensive response to this comment was given in response to **Comment No. 4**, above. See that response.*

It is noted that the historical Kenwood stormwater drainage pathway is primarily within 25 feet of the street, or in the County median. County Codes do not allow residents to dig swimming pools in their front yard and/or in the County easement.

Comment:

82. Pg 30 "This level is also the World Health Organization reference values for DDT in countries outside the United States". What significant value does this add to EPA risk scenario?

EPA Response:

As will be explained below, the World Health Organization (WHO) value of 350 ppm DDT became moot to the ultimate cleanup. But, we will provide background to help the commenter understand the original use of this number.

As stated previously, EPA ultimately made the cleanup available to all properties in the defined Kenwood Stormwater Drainage Pathway. Yards were excavated to similar depths. However, at the time of the original Action Memorandum, EPA divided the properties into two tiers, depending on the hypothetical risk posed by the soils as calculated in the risk assessment. Originally (not ultimately), there were some differences in the depths of planned excavations depending on the Tier that each property was in. In order to separate Tier 1 from Tier 2, EPA used criteria for chronic risk, which were calculated based on a highly health-protective average of soils in the yard. At the same time, EPA also wanted to have a separate criterion to apply to the hypothetical case where for some reason the average was low but a single point by itself was high enough to pose an acute (short term) hazard. EPA used 350 ppm as a criterion for this purpose. Typically, acute risks are not assumed to be appreciable for DDT until soil levels reach at least 500 ppm; but EPA used 350 ppm as it was a World Health Organization value that provided some additional support for this value.

It is important to note that this value became entirely moot with respect to this removal action because 1) there were no properties with single points above 350 ppm that didn't already have an elevated DDT average; and 2) the Tier 1/ Tier 2 distinction lost significance when EPA began following the protocols put forth in the Action Memorandum Amendment.

Comment:

83. "Rationale for 10 ppm as the cleanup level". The level chosen by EPA for removal, 10 ppm, is not consistent with levels chosen by EPA as their preliminary remediation goal which is 1.7 ppm for DDT .

EPA Response:

*This comment was addressed in EPA's response to **Comment No. 2**, above.*

Comment:

84. Pgs 31-32 "Thus, after the removal action, properties in the Kenwood storm water drainage pathway can be considered usable for residential purposes without restriction". This removal is not protective of residents. So much of the yard was not remediated or tested. This reassurance is not true.

EPA Response:

See earlier responses to similar comments. Based on extensive sampling and investigation, EPA is not aware of other portions of the yards that require remediation. EPA followed a well-planned and systematic approach for delineating the extent of contamination. The commenter provides no evidence that further remediation is necessary. EPA believes that the statement in the Action Memorandum is true.

Comment:

85. "Section 8" Emergency response action under CERCLA does not provide for permanent relocation so by using this method of removal EP A precluded the community from being permanently relocated. The N CP emphasizes implementing remedies that protect human health and the environment, maintaining protection over time, and minimize untreated waste. What is left at Kenwood is contamination under structures and in people's back yards; this action clearly does not met the requirements of the NCP .

EPA Response:

The commenter presents no evidence to substantiate the claim that contamination remains in back yards and under houses. There is no evidence that soils referred to by the commenter – in parts of the yard away from the stormwater pathway and not removed during the cleanup action -- need remediation[5]*. Thousands of samples were used to confirm this.*

EPA gave an extensive response to the matter of permanent relocation in relation to removal authority in response to ***Comment No. 7****, above. Please see response to that comment. Per that response please note again that even under remedial authority, EPA would not have selected permanent relocation.*

We disagree that EPA's action does not meet the requirements of the NCP. EPA's removal action protects human health by removing the soils in the former drainage pathway and other

[5]As stated previously, EPA acknowledges that one property owner with clearly elevated DDT levels on the property failed to give EPA legal access to perform the removal. The elevated levels in this yard were at significant depth and contact with the highly contaminated soils is unlikely so long as the soil is not excavated. EPA will need to further examine what long-term approach may be appropriate for this property. Also, one property owner did not want EPA to complete removal of DDT-contaminated soils 4.5 feet below the level of his garage. As long as the garage remains in place, these soils cannot form a health threat. However, EPA will also consider whether any long term approach is appropriate for this property.

soils with elevated levels of DDT from the drainage as evidenced by direct data. The protection is maintained over time as persons are not and cannot be in contact with unacceptable levels of DDT in the future. The preference for treatment is satisfied as the soil has been removed and is pending management at the Montrose property.

While we acknowledge the commenter's intention of obtaining permanent relocation, it must be recognized that there are means of achieving protection of human health and the environment other than permanent relocation. EPA chose one of those means consistent with its statutory authority and applicable guidance.

Comment:

86. Pg33 "Should the excavation be extended to within three feet of a building or property line, the top soil to about six inches in depth will be removed in this area. However, if terracing is necessary to protect the foundation and/or existing structures adjoining the property, some soil within three feet of the building or property line may be left in place". The area around a homes foundation is a high use area of the yard, including flower, vegetables and fruit growing beds. This premeditated practice of avoiding the contamination near and under structures is not protective of the residents or the public's health! Please again refer to comments under page 9.

EPA Response:

We disagree that the action was not protective of health in this regard. The commenter misleadingly raises the notion that all soils adjacent to foundations remain contaminated and that persons doing yard work in flower beds are immediately exposed to those soils. This is not the case. The commenter's point is well-taken that areas immediately adjacent to foundations may contain flower beds in which more direct contact with soil is possible. EPA placed the provision cited by the commenter in the original Action Memorandum because there can be cases where excavation adjacent to foundations is not possible without undermining the foundation.

However, EPA did not merely avoid or ignore the issue of DDT levels near foundations. At many properties contamination did not extend to foundations, in the first place. Where it did, we removed as much soil to as great a depth as possible adjacent to the foundation and then paid close attention to DDT levels remaining in soil. EPA was fully prepared to amend the Action Memorandum to address such soils, if the data showed that this was necessary to protect human health. In most cases, once the maximum amount of soil that could be removed was excavated away, levels of remaining soil adjacent to foundations were already below 10 ppm. In the few cases where there was a local sample near a foundation above 10 ppm, the sample was at

significant depth (e.g 2-4 feet) and *the isolated level was not high enough to present any significant health threat.*

Comment:

87. Pg35 What is the history on the lifespan of these type of cells? What is the failure rate of similar cells?

EPA Response:

The storage cells were designed to last at least 10 years, if properly maintained. EPA's agreement with Montrose requires that Montrose regularly inspect and maintain the cells for four years, after which the responsibility for operation and maintenance shifts to EPA. There is no ready-made "failure rate" for such cells. Generally they are constructed to be more durable than necessary and then actively maintained so that "failure"-- that is, some sort of degradation or opening of the cells-- does not occur. The rate of degradation of liners in cells of this type varies with the design of the cell and what is contained in the cell. Some liner materials are more durable than others, some waste materials cause degradation of the liner material over time; liquids are generally more difficult to contain than solids. In this case, the cells are over-engineered; that is, more secure than necessary to hold this type of soil material. The design includes two liners of highly durable and UV-resistant polypropylene on both the bottom and the top (4 total) of each cell, including a thick 45-millimeter liner. The cells also have multiple layers of geotextile to provide puncture protection. The encapsulated waste is soil with no liquids, and on average low concentrations of DDT. This material is largely inert with respect to the cell liners ---that is, it is stable and does not cause cell degradation of the polypropylene. It would be difficult for these cells to "fail," unless both layers of the top polypropylene liner fully degraded and exposed the soil to wind. The potential for this is extremely remote, especially given the fact that the cells will be routinely inspected and repaired should any breach of the liner occur.

Comment:

88. Pg38 "Excavated soil containing 1 ppm of DDT or more qualifies as a hazardous waste under California law, 22 CCR Section 66261.24". EPA has stated that the soil in our community is not hazardous, but if excavated it becomes hazardous waste? What does this mean for property owners future soil removals, like to build a 2nd home on their "double lots"?

EPA Response:

Levels of DDT at 1 ppm do not present a health threat from DDT either acutely or chronically. However, the state law cited by the commenter governs the management of hazardous wastes at operating industrial facilities. The State of California has set what is called a "toxicity characteristic" waste level of 1 ppm for DDT - meaning that under certain circumstances, soils with DDT can be defined as "hazardous wastes" under State law for the purposes of management even though they may not present a health hazard. Under the Superfund law (CERCLA as amended), EPA must follow applicable state environmental law in conducting its cleanup activities at a Superfund site. (See 42 U.S.C. Section 9261(d)(2)) As applied to the Kenwood Removal Action, certain portions of state hazardous waste law did apply to EPA's activities at the point contaminated soil was excavated; and, in particular, state law requirements were followed in transporting the soil to the Montrose Plant Property and to the design and construction of the storage cells. EPA notes that the average background level of DDT in the South Los Angeles area exceeds the State standard. Because the standard for DDT cited by the commenter is a State standard, we would recommend that persons further interested in this issue contact the State Department of Toxic Substance Control (DTSC) regarding how DTSC might apply the standard in Los Angeles County.

Comment:

89. Pg40 "This removal action will address elevated levels of total DDT and significant long-term (chronic lifetime) potential health risks associated with total DDT in residential yards along the Kenwood storm water drainage pathway". ATSDR has not established an oral chronic reference dose (ATSDR Toxicological Profile Update 2001).

EPA Response:

*This comment was previously made and addressed by EPA in response to **Comment No. 6**, above.*

Comment:

90. Pg 40/41 " At the conclusion of the removal action, residual risks from soils in the Kenwood storm water drainage pathway will be near the low end of EPA's risk range: properties receiving the cleanup will be usable for residential purposes without restriction, and the unacceptable residential health risk from DDT in this neighborhood will have been

addressed". This is not the fact of the matter; this is again EPA's assumptions and speculations only.

EPA Response:

*EPA disagrees with the commenter. See response to **Comment No. 22** above.*

Comment:

91. Pg41 "See attachment 2, confidential memorandum from John Lyons, EP A Assistant Regional Counsel". We did. We are very concerned and have sent comments to that effect about this proposed consent decree to those making decisions that the residents of this community will have to live with. We will continue to pursue this issue through Mr. Lyons and the US District Court via Judge Real.

EPA Response:

Comment is noted.

Comment:

92. Attachment 1 "The Risk Assessment provides estimates of future potential health risks. The risk estimates indicate that soils on the west side of Kenwood Avenue are sufficiently elevated above background to require an EP A removal cleanup action". This statement does not say that only 12 properties are sufficiently elevated, where did EP A really come up with the Tier I and Tier 2 property division? Please see DAAC attachment I, Dr. Kyle's review of blood levels from ATSDR community clinic and DAAC Attachment 3, Longnecker Study. Which studies did EP A review?

EPA Response:

The statement cited by the commenter is lifted out of context. It is a general statement intended to imply that the risk assessment provided sufficient justification for an action under the Superfund statute for Kenwood Avenue. It was not intended to make a property-by-property distinction as to where and how the cleanup action would be applied. The Tier 1 and Tier 2 distinction was based on the comparing property-specific hypothetical risk estimates with criteria established in the Action Memorandum. The risk estimates were derived from EPA's property-specific risk assessment which was conducted in accordance with EPA Risk Assessment

Guidance for Superfund, including Part D. This risk assessment appeared in the Remedial Investigation Report Addendum: Residential Soils and Produce Investigation, Appendix K.

As has been discussed already, EPA offered the same cleanup to all 25 properties in the stormwater drainage pathway; the Tier 1 and Tier 2 distinction was not ultimately of consequence to which properties were cleaned nor to how much they were cleaned.

*For a much more detailed response to the matter of the Longnecker study and blood levels, please see the EPA response to **Comment No. 3**, above.*

Comment:

First Amendment To Action Memorandum "Request for Removal Action for Kenwood Storm Water Drainage Pathway" November2, 2001
DAAC comments in bold.

93. Pg3 "EP A determined that the existing dust control and monitoring, dust suppression, and public access controls were already adequate to address the intended removal of this layer, and so excavation proceeded, with the intention of removing it along with all other soil already marked for removal". When EPA found the white layer, many things we feel, should have been reevaluated and shared with concerned community members. We have been shut out of the data receiving loop as an attempt to dissuade public and community involvement in this process. One of the things we feel should have been reevaluated is the protectiveness of emissions with such high levels of DDT being excavated. This is also a conclusion of the Independent Review, (DAAC Attachment 5, page 13, 2nd paragraph, sentences 6 & 8,), conducted at the request of Congresswoman Harman. This report states, " It is noted, however, that the above estimate was carried out prior to the discovery of the white layer". "Therefore, the California 24-hour ambient air quality standard (50 ug/m3) may not have been sufficiently protective against emissions from the white layer".

EPA Response:

EPA would agree with this assertion if, in fact, the white layer had been extensive or had occurred en masse throughout the soil column in the yard. Had this been the case, it would have been plausible that any dust coming from the excavation would be appreciably affected by the white layer - in effect, the dust would be white layer dust. However, EPA disagrees with the commenter, and to some extent, the Independent Review Comment, for the reason that the white layer was found in only three properties, was generally quite localized both horizontally and vertically (confined to a few inches in thickness between 3 and 4.5 feet below grade, in relatively small areas of the yards with the exception of 20713 Kenwood) . Accordingly, the vast majority

of any soil (and hence, presumably, any dust) in the excavation was still soil that did not contain white layer material. Dust levels were very well contained to the excavation during EPA's activities. EPA monitored dust levels from four monitors surrounding each excavation as well as multiple monitors in the neighborhood. Data indicate that dust and DDT were controlled. See also Independent Review, Page 14, or see citation in response to Independent Review, below. Moreover, the calculation cited above reveals that the 50 ug/m^3 dust goal was protective with DDT at 6700 ppm. However, this calculation uses chronic (lifetime long term) risk values, not acute values, and therefore was highly health-protective to begin with. Based on the limited extent of the layer material, the short time period associated with its removal, the highly protective nature of the original calculations, and the effective dust control, EPA believes that the dust suppression during excavation activities was protective and that the depositional layer did not affect this conclusion.

Comment:

94. Pg 9 "The identification of the layer shall include sampling to confirm that high-concentration DDT is present (as opposed to gypsum or some other whitish substance)". According to the DDT recipe on page 3 of US EPA Docket No.88-10 signed 2-19-1988, In The Matter of: Montrose Chemical Corporation of California, Calcium sulfate dihdrate (industrial ground gypsum) , is listed as the fourth ingredient. So wouldn't screening out gypsum remove an indicator of DDT contamination from EP A's toolbox?

EPA Response:

The list cited is not a "DDT recipe." Also, the list is not in an order of volumetric precedence. Rather, it is a list of materials that Montrose made use of at various times in its processing. The chemical process to make DDT does not involve gypsum, and gypsum is not a raw material for pure DDT production. The vast majority of Montrose's product was technical grade DDT; that is, virtually pure DDT that was shipped to formulators for use in other products. Primarily after 1964, Montrose also produced some DDT formulations, primarily 75% wettable powder. Gypsum may have been used in a small percentage of these formulations (e.g. mixed in with the DDT), which in turn were a small percentage of total DDT product from the plant. From information submitted to EPA by Montrose, gypsum was not a component of the primary DDT formulation produced by Montrose (75% wettable powder). However, the best sampling to use as an indicator of technical grade or formulated DDT contamination is sampling for DDT (and of course DDD and DDE) itself, which EPA did. Gypsum occurs naturally in the environment. As DDT is persistent, finding gypsum with no DDT would not tend to indicate that DDT was present – rather, it most likely would indicate natural gypsum.

The purpose for the statement cited by the commenter was to clarify that visually white material can commonly be seen in the ground during excavation, which is found to be gypsum only and contains no DDT. Simply finding white material visually would not confirm the presence of a DDT depositional layer. The statement indicates that when something appears to be white layer material, it will be sampled to determine that it really contains DDT.

Comment:

95. Pg 11/17 "The original estimate was low with respect to certain costs that were known at the time of signing the Action memorandum on June 7, 200 1". Why were all costs under estimated by over 5.5 Million Dollars? This is a very unprofessional accounting practice, we feel this was used as a mechanism to deflate true costs, so that the costs of a removal compared to other possible options, like the option a majority of the homeowners want -BUYOUT -could not fully be compared as a cost effective solution.

EPA Response:

We disagree that the accounting was unprofessional or used as a mechanism to deflate true costs. EPA would not have selected permanent relocation anyway. Please see EPA response to ***Comments No. 7 and No. 9*** *regarding cost and cost-effectiveness.*

Comment:

96. Water Main Break "Ultimately, the water had to be disposed as a hazardous waste". What were the results of the water analysis? What testing was done to determine the saturation level of this pool of contaminated water into adjacent areas that EP A had just backfilled?

EPA Response:

Levels of DDT in the water varied up to 89 ppb (parts per billion). For water, the regulatory standards required disposing of it/treating it as a hazardous waste under state and federal law. After the water was drained off, EPA excavated an additional 6 inches from the excavation on all sides and the bottom. EPA then re-sampled the bottoms and sides of the excavation (re-did the confirmation sampling) to confirm that the levels of DDT were below 10 ppm.

End of comments

Summary and Related Responses to Independent Scientific Review

On March 22, 2002, an independent scientific review was completed and issued pertaining to EPA's work on this removal action *Report of Independent Panel on Kenwood Avenue; DDT-contaminated Soil Removal Action, Submitted to Congresswoman Jane Harman.* This review was requested by Congresswoman Jane Harman's Office and convened on December 13, 2001. The review panel consisted of Dr. Perry L. McCarty of Stanford University, and Dr. Yorem Cohen, of the University of California, Los Angeles. The Independent Review Report was provided to EPA via the regional office of Congresswoman Jane Harman. The Report was not submitted to EPA as a formalized comment on the action memorandum. However, it was issued during the public comment period, and as it is pertinent to the action, EPA has, at its discretion, summarized its major conclusions and responded with certain comments and clarifications to the document.

Page numbers refer to the Independent Review Report. Additional EPA clarifications, where applicable, are shown in *italics*. Because there are not comments submitted to EPA, this section drops the "Comment:" and "EPA Response:" format used in the earlier section.

1. Page 7 states that "It should be noted that, at the present time, significant portions of the Kenwood corridor area are paved (roads, sidewalks, driveways) and sampling data from soil under these areas are lacking. Therefore, the possibility of subsurface soil contamination in such areas cannot be discounted."

   While in the Phase II investigation EPA did not generally collect samples under sidewalks and driveways, all sidewalks and driveways (within the front yards) in cleaned up yards were removed and excavation took place under them. Excavation also occurred under the two asphalt alleyways which intersect the pathway. Confirmation sampling conducted at the bottom of these excavations as it was in the yards themselves.

2. On Page 10, The reviewers concurred with EPA that the higher concentrations were in deeper soils:

   Surface soil concentrations of total DDT were at levels (
   risks in a few residential yards if left unremediated. It mu
   concentration zones (or "hot spots") were at depths grea
   direct exposure to such soils due to routine contact is u
   contaminated soil is possible due to residential constru
   landscaping.

EPA notes that this statement should be interpreted to refer to contact with contaminated soil before the cleanup took place. Except at two properties where property access to perform the cleanup was refused in whole or in part, there are no longer contaminated soils within the range of depths that such activities would occur, after the cleanup.

3. Page 13, Section 7, Response to Question 1 states, "The potential does exist...that spreading of soil contaminated with DDT could have occurred on some Kenwood Avenue properties, but data to confirm or refute this is not available." And,

   Page 14, Section 4, Response to Question 4 states, "Little if any detailed characterization of backyards along Kenwood Avenue has been undertaken, perhaps because there have been no indications that this area may have received high levels of contamination."

   It is true that back yards and soil areas were not generally characterized to the same level of detail as the main storm water pathway, and the report is correct in suggesting that there were no indications that such areas would have received high levels of contamination.

   Still, EPA conducted back yard and additional front/side yard sampling at six properties, including those where the owner indicated that soil may have been moved from the front to the back yards. In one case, for instance, 13 additional borings (52 samples from depths up to four feet) were collected from the back, both sides, and front of the house. Five other yards were sampled in the back yard (or in one case, the front yard nearer to the house) to assess whether soil from the storm water pathway in the front yard may have been spread to the back. In each of these cases, between four and eight borings with samples analyzed up to between four and eight feet were collected. Also, EPA did collect some samples in back yards at random along Kenwood during its original Phase I investigation.

   None of these back and side yard samples showed levels of DDT exceeding 10 ppm. Also importantly, during both the investigation and the cleanup, EPA sampled in a grid pattern and extended that grid until the edge of contamination associated with the Kenwood Stormwater Drainage Pathway was found.

4. Page 9, Section 5, states, "[EPA's risk assessment] also assumed that ingested soil contained the average (mean) total DDT concentration found in a yard, not the maximum concentration.

   Page 15, Section 7, Response to Question 5 states, "it is not clear how much [the white layer] would have raised the estimated risk since the calculated risk is a function of the geometric mean concentration, not the highest concentration found."

Three points are important here.

1. *All properties received the cleanup, regardless of the value of hypothetical risk assigned to them by the risk assessment. Thus, the risk assessment values, while useful, do not have a bearing on whether a yard was cleaned nor on how much it was cleaned.*

2. *It is generally true that EPA estimates* chronic *risk, that is, hypothetical risk from exposure to a chemical over a long period of time such as 30 years, from the standpoint of average concentrations - because a person does not stay in one spot during all those years.*

   However, EPA does not simply take a straight average of the sample data to derive this concentration. Rather, we typically use a value known as the 95% Upper Confidence Limit on the Mean (95% UCL). This is a very conservative statistical value that is virtually always higher than the straight average to take into account sampling uncertainty and statistical variability. If the 95% UCL cannot be reasonably determined, we typically use the maximum sampling value. There were several cases on Kenwood Avenue where the estimated risk was in fact, based on the maximum DDT value for this reason. Use of the 95% UCL or maximum is more health protective than use of the simple or geometric mean as the assumed exposure point concentration.

3. *The white layer material itself had levels of DDT that would likely pose* acute *health risks; that is, harm could be realized from casual contact and might not require years and years to have an effect. (Of course, as the report points out, no such contact was presently possible given the depth of the layer material) In such situations, EPA would not typically use the same averaging technique used for estimating chronic risks. The concentrations in the layer material were high enough that there was little question that exposure to the material needed to be precluded. Because of the acute hazard, recalculating the chronic risk estimate would not have been useful, and that is why we removed the material rather than recalculating a risk.*

5. Page 10 states, " Accumulation of DDT by plants is also possible. Therefore, subsistence on fruits and vegetables from such contaminated areas could pose elevated risk relative to background risk areas."

   EPA agrees that uptake of DDT into plants is theoretically possible (although uptake of the highly hydrophobic (lipophilic) DDT into watery fruits is not expected).

   Still, EPA collected and analyzed 41 samples of fruits and leafy vegetables from homegrown gardens within the Montrose/Del Amo neighborhood, and no DDT was

detected in any of the samples (fruit or vegetable). This does not prove that uptake is impossible, but it provides strong evidence that is not occurring in this neighborhood at the levels of DDT that have typically been found.

EPA is continuing to analyze additional samples of radishes grown in soil taken from Kenwood Avenue during the removal action. This will allow us to assess uptake into root crop vegetables, where the part of the plant in contact with soil is what is consumed. This will also assist in determining whether washing and scrubbing the food, or removing the skin, is effective in reducing any exposure which might exist.

The report is correct to point out that, if uptake into plants actually does occur, having removed the high levels of DDT contamination along Kenwood Avenue should have greatly reduced this risk. It may be impossible to remove all such risk, and such attempts to do so would be beyond the scope of the Superfund Program, as most urban soils do contain some low level of DDT.

6. Page 10 states, "**The presence of the white layer signaled the possibi**

The white layer caused EPA to check and excavate to greater depths than would otherwise have been the case, to ensure that it was removed. However, the white layer was found in areas within the stormwater drainage pathway already being addressed by EPA, and exists due to the pathway. In this sense, the white layer material did not signal the presence of wider contamination in areas unrelated to or outside that pathway. White layer material was found at 3 of 22 properties; it was not present at the great majority of properties.

7. On Page 11, the reviewers conclude that: **"It is reasonable to expect that any c mingled with DDT would have also been removed."**

8. On page 11, the reviewers note restate EPA's approach to determining that the dust standard would be protective even if the highest levels found at the site were released as dust. They then go on to state,

> **It is noted, however, that the above estimate was carried one adopts the highest concentration in the white laye estimation method the PRG would be reached when the c white layer zone) would be about 10 $\mu g/m^3$. Therefore, th (50 $\mu g/m^3$) may not have been sufficiently protective again recognized that the above approach as used by the USEPA**

EPA concurs that the approach was protective when considered over the entire remediation area, as stated by the reviewers. We also believe that it is not reasonable to presume that dust solely from the white layer was produced when the white layer was

excavated. EPA would agree that dust control levels might have needed to be lowered during excavation of the depositional material (white layer material) if, in fact, the white layer had been extensive or had occurred throughout the soil column in the yard. In such instances, it would be plausible that any dust coming from the excavation would be appreciably affected by the white layer - in effect, the dust would be white layer dust. However, the white layer was found in only three properties, was generally quite localized both horizontally and vertically (confined to a few inches in thickness between 3 and 4.5 feet below grade, in relatively small areas of the yards with the exception of 20713 Kenwood) . Accordingly, the vast majority of any dust in the excavation was dust that did not contain white layer material. Dust levels were very well contained to the excavation during EPA's activities. Moreover, the calculation cited above reveals that the 50 ug/m^3 dust goal was protective with DDT at 6700 ppm. However, this calculation uses chronic (lifetime long term) risk values, not acute values, and therefore was highly health-protective to begin with. Based on the limited extent of the layer material, the short time period associated with its removal, the highly protective nature of the original calculations, and the effective dust control, EPA believes that the dust suppression was protective and that the depositional layer did not affect this conclusion. We believe the reviewers acknowledge these facts when they state, **"It is recognized that the abov USEPA is conservative when considered over the entire remedi**

9. Page 13 states,

> **During the USEPA Phase II investigation, on the order of 1 former Kenwood ditch and analyzed for DDT, BHC, and c the area covered to evaluate the presence of these chemi they may pose. Sampling was not conducted to determin nor is there sufficient information to judge whether ar former Kenwood ditch may be contaminated above accep not likely to be of significant concern, as they would n The broad sampling and analysis program conducted for dispersion of DDT has not resulted in excessively high so**

EPA concurs with these conclusions, and also notes that there is no indication of other chemicals in this neighborhood associated with the Superfund site. See response to DAAC ***Comment No. 13*** *above.*

10. Page 13 also concludes,

> **The likely soil contaminants in the Kenwood Avenue neig in water and are essentially non-volatile. High levels of 200 feet below groundwater surface at Kenwood Avenue i of several volatile and semi-volatile hazardous chemical long as this water is not drawn for domestic use by the r**

> **California regulations, there is little reason for concer**
> **USEPA plans to remediate this contaminated groundwate**
> **Los Angeles in general and many other urban areas, air co**
> **problem is not specific to Kenwood Avenue residents.**

EPA concurs with these assessments.

11. **Page 14, in response to an inquiry by the Congresswoman rega**
concludes,

> **During the soil removal action, near residents were prov**
> **thus insuring their safety. The main potential hazard du**
> **contaminated dust. Monitoring for air particulates (PM**
> **indicated that unacceptably high levels of DDT were not**
> **measured air particulate concentrations were higher th**
> **but the average DDT concentration in the particulates r**

EPA concurs with these conclusions.

12. Page 14, in response to an inquiry by the Congresswoman as to whether EPA's cleanup is protective, also concludes,

> **The residential areas where DDT has been removed are sub**
> **previously. Since the removed DDT contaminated soil wa**
> **during normal living or from construction should be g**
> **DDT would also remove other possible hazardous chemic**
> **waters from the former Montrose Chemical site.**

EPA concurs with these conclusions.

13. **Page 14, in response to an inquiry by the Congresswoman as to**
been appropriately characterized as far as DDT, BHC, and chlo
concerned."

EPA concurs with this conclusion.

14. Page 15, in response to a question posed by the Congresswoman regarding EPA's selected cleanup option versus other possible cleanup options, concludes,

> **There are various alternatives that could protect the h**
> **along Kenwood Avenue, including soil removal as carrie**
> **alternatives would have been protective from the high D**

layer, as well as from other DDT contamination along th of the DDT in the removal area was not associated with t distribution of higher than normal DDT concentration with an impermeable layer or in-situ cleanup of the soil a acceptable options, either to the community or to regul and replacement of only a surface layer of soil, and no r risk reduction, but probably not sufficient for adequate complete removal of soil, either removing it to a greater reduce exposure even further. However, such greater rer of the high cost, and by the fact that it would have exte action.

15. Page 16 states, "Had that [white] layer been found during the Phase II study, it is likely to have increased the estimated risk to owners of properties where this layer was present.

As is noted by the report, the layer was at least 2 ½ and as much as 4 ½ feet below the ground. In that state, it would not pose any risk to owners of properties where it resides, because owners could not be in contact with it.

The possible future *estimated risk would have been higher - under the scenario where the layer is brought to the surface by residential activities. Under such a scenario, the estimated risk would be higher because the layer would pose an acute risk -- hence, EPA removed the layer*[6].

[6]As noted earlier, a small segment of layer material under a garage remains, 4.5 feet below grade, at a property where the owner did not allow EPA to excavate under the garage. As long as the garage remains in place over the material, it cannot cause harm as there is no means of exposure to the material. However, EPA will consider whether a long term approach is needed for such soils in a future record of decision. See earlier comments.