Del Amo Superfund Site
Feasibility Study Report Comments Meeting

Draft Meeting Notes

February 28, 2008

Holiday Inn Torrance
19800 S. Vermont Avenue – Harbor Meeting Room (2nd Floor)
Torrance, California

Attendees:
Dante Rodriguez – EPA
Eva Davis – EPA (Ada)
Jose Garcia – EPA
Safouh Sayed - DTSC
Dina Kourda – DTSC
Randy Kellerman – CH2M Hill
Bill Breedlove – CH2M Hill
George Landreth – Shell
Larry Bone – Dow
John Dudley – URS
Jude Francis – URS
Erich Weaver – URS
Patrick Gobb – NewFields
Lisa Gritzner – Cerrell Associates, Inc.

By teleconference:
Rob Rouse – Dow
George Deeley – Shell

NAPL Technologies (Group Discussion)

1) As a follow-up to the NAPL orientation, EPA had a question regarding the screened interval of monitor wells located in NAPL areas and wondered if submerged screened intervals could be the cause for the absence of LNAPL observations. URS responded that the majority of monitor wells were screened across the water table interface to evaluate the potential presence of LNAPL, and LNAPL accumulations are only observed in a couple of wells. In addition, because LNAPL has been observed to be present in a smeared zone extending several tens of feet below the water table, LNAPL from that interval could still enter a well through a completely submerged screen if the LNAPL is present above residual saturation levels. At no location on the site has LNAPL been observed to be present in pools floating on the water table.
2) URS inquired about the selection process used to identify the NAPL technology sites forwarded for further evaluation. CH2M Hill responded that they had sorted through approximately 170 sites and attempted to select sites that were similar to Del Amo (based on soils, geology, groundwater, contaminant, etc.) and then further refined the list to select sites where appropriate information was available to support the technology used. The idea was to identify a limited numbers of sites that the Respondents could utilize as part of the NAPL technical review.

3) EPA-Ada stated that the NAPL treatment technologies described in the provided documentation is no longer considered innovative, since they have been utilized for numerous years at a variety of sites with a range of contaminants. The three main thermal technologies under consideration for Del Amo should include steam injection, electric resistive heating, and conductive heating. The vast majority of these technologies have been used at sites impacted with chlorinated solvents, but these still would apply to a benzene-impacted site due to benzene's volatility.

4) The Respondents stated that a mass removal percentage/efficiency is very hard to estimate, with some of the reports estimating the quantity removed as greater than the initial estimated starting quantity. In addition, additional monitoring is required at most of the identified sites to assess the long-term effectiveness of the remedial approach.

5) URS further quoted excerpts from a December 2007 memorandum issued by the EPA Groundwater Task Force that acknowledged that though there have been several implementations of aggressive NAPL remedial technologies, documentation of these tests have often been insufficient to quantify the extent of source mass reduction.

6) A lengthy discussion was then initiated, and the group discussed the EPA identified reference sites and the comparison of these sites with Del Amo. During this discussion, URS presented a summary of additional sites where thermal technologies had faced implementation or effectiveness problems. At most of these sites, field pilot tests were conducted but the technology was not implemented in full scale because predetermined remedial objectives were not achieved or because various operational problems were encountered during pilot testing. The experiences from these identified sites were presented for discussion purposes only and are not anticipated to be included in the FS.

Based on a review of these site reports, URS stated that with these aggressive technologies even if a high fraction of mass is removed there will still be relatively high contaminant concentrations (e.g. 100s of mg/L) that remain in groundwater in the source area. Thus these technologies do not provide significant benefits in the near term future (e.g. 30-50 years) with respect to aquifer restoration.
7) EPA-Ada stated that steam remediation should be considered at Del Amo, as this technology physically displaces the COCs and a robust SVE system must be incorporated to ensure that the vapors are captured.

8) The Respondents stated that due to the quantity of silt at the Del Amo site, steam injection technology would face greater technical challenges than other thermal technologies. In addition, with steam injection there is a greater tendency to recover the contaminants in “slugs” that may cause a treatment system upset and potentially cause a complete exposure pathway to the land surface that is currently not complete. In addition, any thermal system will require an extensive amount of space, since not all of the equipment would be installed below grade. This surface equipment will cause site access issues, result in some disruption of the present business activities on the site, and will create a perceived risk of exposure for on-site workers.

9) The FS assumed that remediation wells cannot be implemented inside the building. Furthermore, for source areas with potential NAPL under the building, no aggressive technologies such as in-situ chemical oxidation (ISCO) and in-situ soil heating (ISSH) alternatives were included. EPA did not concur with this approach and stated that it might be possible to install components under the building or to use slant drilling or horizontal wells. EPA-Ada then stated that in their experience, horizontal wells do not work with thermal technologies and this approach should not be included in the FS; however, slant drilling would be possible to extend under the buildings. EPA-Ada further stated that recently they have reviewed a site where they had installed slant borings on an 8-degree angle (which is more or less the average slant that is observed).

The Respondents stated that based on a water level of 50 feet bgs, an 8-degree angle would not provide any added benefit when dealing with large building footprints (commonly several hundred feet on a side). After much discussion, EPA concurred that the FS should not be modified to include slant drilling. However, to make the FS complete, the FS needs to include an evaluation of aggressive technologies implemented beneath the buildings where a potential NAPL source area is present. The evaluation would assume that the NAPL area is within the footprint of associated historical rubber plant facilities. Alternatives 5 (ISCO) and 6 (ISSH) should be added to Source Areas 4, 7 and 8. A full FS evaluation and criteria rating should be presented. This will also allow the public to comment on the proposed approach for attempting to apply a NAPL remediation technology beneath an existing building.

10) After agreeing on the approach for NAPL, URS presented information on the carbon footprint associated with operation of one remedial system and stated that the Respondents wanted to incorporate this information into the FS. EPA-Ada stated that the recovered product could be re-used to reduce the projected carbon footprint; however, URS stated that the reuse of any recovered product would not be practical and there would be no added value. The Respondents stated that the
reuse of recovered product had been evaluated for the Pits OU and this approach was not determined to be feasible. EPA concurred that the Respondents could introduce the carbon footprint information into the FS evaluation, with the best fit being in the “Overall protection of human health and environment” rating section.

11) The Respondents then stated that another factor that should be considered in the short-term effectiveness section relates to safety issues associated with the operation of thermal systems. The Respondents wanted to know if EPA has had any experience or have any knowledge of safety issues at any of the identified sites.

EPA was unsure if this information was available, but EPA-Ada stated that they had reviewed an ISCO site where the fuel caught fire and caused a problem. EPA stated that they would review their files and provide any pertinent information.

12) EPA wanted to incorporate text into the FS regarding utility corridors and that these improvements would limit the application of a thermal remediation system, as the utility and pipeline companies would not allow this approach. The proximity of any potential thermal system to a utility corridor would have an impact on the implementability rating (i.e., poor).

13) The Respondents then started to discuss the ratings assigned in the FS and EPA’s comments and revised ratings. After much discussion, the Respondents and EPA agreed on the following:

a. Part 1, Comment 7 - Use “risk-based threshold levels” instead of “risk-based action levels”

b. Part 1, Comment 32 - Define risk-based threshold levels as concentration levels used to estimate the extent of impacted soil for evaluation of active remedial alternatives.

c. Part 1, Comment 36 - Dante agreed that since the Permit Review IC has been implemented it need not be considered “problematic” anymore.

d. Part 1, Comment 57, Modify the respondent-suggested edit as follows… “…..to identify this pathway as warranting evaluation of remediation for certain land parcels.”

e. Part 1, Comment 63, Modify the respondent-suggested edit as follows… “…where SVE could be effective in removing a significant percentage of vadose zone contaminant mass in that area.”

f. Part 2, Comments 22, 24, and 25 – EPA stated that there is no need to evaluate slant borings/wells for SA9 because ISCO and ERH-inside buildings are to be included for SAs 4, 7 and 8.

g. Part 3, Rationale, Table G-1 - Rating for RTMV for “Capping” alternative – EPA stated that they would retain a “0” rating for this alternative.

h. Part 4, Comments 3 and 4 - SAs 4, 7 and 8 – Include new alternatives incorporating ISCO and ERH through vertical wells inside the building as Alternatives 5 and 6. Also, include Alternatives 3A, 4A as variations on
the existing Alternatives 3 and 4 with SVE, Hydraulic Extraction wells inside the buildings.

i. Part 4, Rationale, Table G-2 – Based on the review of the performance of the in-situ soil heating technologies, assume a mass removal in the range of 60% to 90%.

j. Part 4, Table G-2, LTE table – EPA would like to retain its recommended rating of “8” for the In-situ Soil Heating (ISSH) alternative.

k. RTMV table - EPA would like to retain its recommended rating of “8” for the ISSH alternative.

l. STE table – For the most impacted source areas (e.g. SA3) reduce STE from 8 to 7 because of very high benzene vapor concentrations anticipated and associated risk to employees.

m. STE table – Combine SVE ratings for technology components with “access issues” as one technology component.

n. STE table – Edit the rationale text for ISSH and ISCO technology components to reflect the differences between the higher-rated and lower-rated alternatives. One suggestion was to change the rationale text for ISCO and ISSH to remove the word “minor”.

o. Implementability table – Edit the rationale text for ISSH – One suggestion was “active remediation has technical and location difficulties with regards to implementation”. EPA was in agreement with such a change but stated that the rationale text for other technology components should use the same type of sentence structure.

14) EPA stated the following regarding the rationale tables:

- Respondents can make minor edits to the rationale text phrases.
- Respondents should use consistent wording in the tables.
- Low permeability issues should be called out for SVE.
- Place ranges on NAPL recovery as opposed to having one set number.

**Community Outreach (Group Discussion w/EA Participation)**

15) EPA stated that their goal is to perform some public outreach mid-FS and prior to issuance of the ROD, to counter a potential public perception that EPA has already made up their mind on the remedy.

16) EPA confirmed that the Pilot Program Fact Sheet and Cover letter will only be mailed to property owners included in the pilot program. These documents will likely be issued by the end of March 2008. Approximately 2 weeks after the mailing, EPA will call each property owner to confirm that they received the mailing and a face-to-face meeting will be requested with selected property owners. URS is currently in the process of confirming property owner contact information, and will provide the currently available information to EPA now, and follow-up with the additional information later.
17) Lisa stated that some tenants may have the ability to make site improvements through their lease and it would be undesirable for them to expend funds for a project without knowing of the pilot project.

URS stated that historically, some property owners did not want us to interact with their tenants. It was agreed that the most effective way to address this issue is to discuss the tenants during the initial meetings with property owners.

Lisa wanted to know how any new owner would be notified of the proposed program. EPA stated that any new owner would be notified of the Del Amo Superfund site through their due diligence process and through the permitting notification IC layer.

18) The Respondents wanted to know if EPA would be requesting that the property owners forward the Pilot Program Fact Sheet to their tenants or would we be preparing a separate flyer specifically oriented to the tenants. EPA stated that the current Fact Sheet is generic and that this document could be forwarded to each tenant. EPA then stated that we could ask the Property Owners if they would like for EPA and/or the Respondents to meet with their tenants to discuss this issue.

19) EPA stated that their legal staff is reviewing the “Final Fact Sheet” and forwarding letter and that upon receipt and incorporation of their comments, the “Final” version would be forwarded to the Respondents for one final review.

20) The Group discussed that property owners included both institutional owners and individual owners, with institutional owners possibly having a better understanding of IC issues.

21) The group then confirmed that the following meetings would be established:

**Meeting 1**

One-on-one meetings with selected property owners within the Pilot Program to:

- Introduce and describe role of ERT in the cleanup;
- Discuss the approach developed to minimize potential future permitting problems;
- Provide information on Del Amo Superfund site and how it relates to their parcel;
- Inform the property owners of the institutional control Pilot Program and explain how this program could potentially impact future construction projects; and,
- Discuss the next steps in Superfund process and how the property owners will be incorporated into the process.
This meeting would be attended by EPA technical and community relations personnel. The Respondents would not participate in this meeting.

**Meeting 2**

Meet with the remaining property owners as a group, and possibly additionally include business group representatives to:

- Introduce and describe role of ERT in the cleanup;
- Provide information on Del Amo Superfund site and how it relates to their parcels;
- Inform the property owners of the institutional controls; and,
- Discuss the next steps in Superfund process and how the property owners will be incorporated into the process.

This meeting would be attended by EPA technical and community relations personnel. The Respondents would not participate in this meeting.

**Meeting 3**

Meet with the larger community at the Holiday Inn. Invitees would include property owners, tenants, key individuals of the business community (i.e., Chamber of Commerce and Harbor Gateway), City/County of LA representatives, and nearby community residents. This meeting will be more generic and possibly have break-out groups (i.e., affected property owners, other property owners, and community) to promote discussion.

Prior to this meeting, Lisa suggested that EPA prepare a holding statement in case an owner or community member contacts them with questions regarding the flyer prior to the meeting.

**IC Pilot Program Status (Group Discussion w/EA Participation)**

- EPA stated that the goal of the permitting program is to have the applicant or the City contact the Del Amo ERT.

- Lisa stated that a Motion for an ordinance to be passed by City Council that would require the City to contact the ERT would be the best way to address the issue. Lisa will prepare a draft motion for EPA’s review and if acceptable, this language would be provided to the City of LA for consideration. This motion would be limited to the Del Amo site and could be used as a model for expansion in the future.
• The Respondents offered for participants to meet with Steve McKae to visit with the City of Oakland regarding their IC ordinance and Lisa will pull the ordinance to check on applicability to Del Amo.

• EPA stated that the Bureau of Engineering can add a flag as notification to contractors prior to digging on the streets. Though the trench worker exposure risks do not exceed threshold levels, a health and safety advisory (flag) for digging on a street within the site boundary will be added to the Bureau of Engineering database.

• The Group discussed adding groundwater restrictions to the parcel summaries; however, the Respondents were still discussing the approach for properties to be included. Until an approach is decided on, EPA concluded that the groundwater restrictions should not be added to the parcel summaries, which would be used for the property owner meetings.

Action Items

• EPA will provide a FS due date.
• The Respondents should prepare and provide local ordinance language to EPA for use with the City of LA.
• The parcel summaries will be provided to the Respondents team for review and then forward to EPA for their use during property owner meetings.
• Section 10 of the FS can remain, but the text should be crafted in such a manner so that the reader understands that these are the Respondents opinion and is not necessarily the remedy that will be selected by EPA.
• Attorney’s for the Respondents are considering EPA’s comment requesting that groundwater institutional controls be added to the evaluations presented in the Draft Final FS Report. The Respondents will contact EPA and DTSC with the Respondents’ position regarding that comment.
Dante,

Attached is the draft FS meeting minutes of our 2/28 meeting. These minutes were primarily derived from Pat's notes, and then updated by the Respondent's team. Please review and provide us your comments.

Thanks.

Jude

(See attached file: FS Meeting Notes_draft to EPA_3-18-08.doc)