SFUND RECORDS CTR
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Tom.Perina@CH2M.com
05/31/2005 09:48 AM

To Christopher Lichens/R9/USEPA/US@EPA
cc
bcc
Subject SSD and OSS memos

Chris,

attached are draft memos addressing the OPOG/CDM response to the review comments on the SSD and OSS Work Plans. Please call me to discuss after you have had the time to review. Specifically, let me know if you want to modify the first comment in the OSS memo.

Tom Review of CDM Responses to EPA OSS WP Add 2 Comments 052905.pdf

Review of CDM Responses to EPA SSD Workplan Comments 05_29_05-R2.pdf

MEMORANDUM **CH2MHILL**

Review Comments on "Response to Comments on Omega SSD Testing Work Plan," Dated May 9, 2005, Prepared by Camp Dresser & McKee, Inc.

TO: Christopher Lichens/USEPA Region IX

FROM: Tom Perina/CH2M HILL, Riverside
Mike Grigorieff/CH2M HILL, Santa Ana

DATE: May 27, 2005

As you requested, CH2M HILL reviewed the memorandum prepared by Camp Dresser & McKee, Inc. (CDM), dated May 9, 2005, and titled Response to Comments on Omega SSD Testing Work Plan. CDM prepared the subject document on behalf of the Omega Chemical Site PRP Organized Group (OPOG). This memorandum presents OPOG/CDM's responses to review comments made by EPA/CH2M HILL on the initially submitted workplan.

Consistent with the oversight role of the U.S. Environmental Protection Agency (EPA), this technical memorandum presents recommendations and comments that CH2M HILL believes will streamline and improve the project. The goal of this review is to confirm that the approach to the investigation is appropriate and consistent with the goals at this site and is consistent with typical industry practices.

In the section below, original EPA comments and CDM's responses for which we still have additional comments were excerpted directly from CDM's memorandum and "pasted" into this memo. Our review comments are provided below these excerpts and are shown in underlined, bold, italicized font.

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3. *The work plan addendum should include at least one or two tests at greater depths than 3 to 5 feet below the floor. The existing slab may be situated on shallow engineered fill that may vary with regard to relative compaction and overall soil characteristics (e.g., compacted soil, gravel, etc.) compared to the native soils below. It would also be worthwhile to check extraction flow rates and vapor characteristics at a depth closer to where future extraction lines may be installed.*

Response: A sub-slab system targets vapor extraction from the material immediately beneath the building foundation – as opposed to the native soils that are present at greater depths. Furthermore, the effectiveness of the SSD system will be significantly more influenced by the materials directly beneath the slab, rather than the underlying deeper native soils. For these reasons, permeability testing within native soils would not provide information that supports the objectives of the testing.

COMMENT: The response comment states that the effectiveness of the SSD system will be significantly more influenced by the material directly beneath the slab, rather than the underlying deeper native soils. This is essentially true. However, there can be anomalies and exceptions to this general rule. Furthermore, since the specific type of SSD system that might be needed has not been defined, such as the depth or location of soil vapor extraction points or piping, it would seem prudent to obtain at least some information from greater depths. Conducting one or two tests at greater depths as recommended does not seem unreasonable to address this potential uncertainty.

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5. *OPOG should be aware of the document titled "Guidance For The Evaluation And Mitigation of Subsurface Vapor Intrusion To Indoor Air, Department of Toxic Substances Control, California Environmental Protection Agency," December 15, 2005 (Revised February 7, 2005). This document contains comprehensive descriptions of certain procedures such as initial system purging and leak testing that are not currently addressed in the work plan addendum. The Cal-EPA document can be used or incorporated by reference as appropriate.*

Response: The referenced guidance document will be added to the Work Plan's reference list.

COMMENT: A clarification is needed regarding the Cal-EPA document in question. It should be used directly in the workplan or incorporated into the workplan by reference as appropriate. With either approach, the intent is to make this document and its procedures an integral part of this workplan and not to merely include it as a listed reference item.

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7. *Section 2.1, Investigating Sub-Slab Conditions: A fourth set of test holes should be placed in a location described as the bottom right hand corner of Figure 2-1. This will provide more complete coverage of the site.*

Response: CDM believes that data from the three proposed testing areas will adequately characterize the sub-slab material permeability. In addition, OPOG is obligated to minimize the impact of testing to the Skateland building floor and minimize disruption to Skateland activities. However, if the data from the three test locations are highly variable and do not form a sound technical basis for SSD design, then an additional test at an additional location may be warranted. In this scenario, the additional test would only be performed after receiving EPA approval.

COMMENT: The criteria for the number of holes to be used have not been provided. One could argue that 4 holes are better than 3 but that other factors such as impact on the facilities and costs could offset the advantages of more holes. The current pattern of 3 borings is based partly on the fact that there is little space available for placement of additional test holes because of the presence of the skating area inside the building. If the skating rink was accessible, it is very likely that additional test holes would be installed to get broader coverage of the facility. Accordingly, the test program should try to place a

reasonable number of test holes in what little space is available, namely the area shown in the bottom right hand of Figure 2-1, as EPA previously noted. Furthermore, this is in the proximity of the facility bathrooms, which had relatively high levels of VOCs in the indoor air. Accordingly, EPA requests that this 4 test hole location be included in the workplan.

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8. *Section 2.1.4, Investigating Sub Slab Conditions: The stated procedure involves drilling pressure measurement holes at four specified distances from each suction hole. The hole placement is shown in Figure 2-1. This figure shows that essentially all the pressure monitoring holes are on one side of each suction hole. Additional pressure measurement holes should be provided to comply with the criteria stated under EPA's Procedure Item 2.b. which states that "Sample holes should be located in two or three directions from each suction test hole."*

COMMENT: Clarification is needed to explain where each of the 3 new test holes will be installed. In addition, EPA requests that the two suction/test hole areas shown on the left side of Figure 2-1 be revised to locate test holes that are installed radially at specified distances from each suction hole, to the extent possible, in order to be in compliance with EPA Procedure Item 2.b, as requested in EPA's original review comments. Specifically, the test holes should not be in a linear alignment to the extent possible.

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9. *Section 2.2.4, Testing SSD: In addition to test PID readings, a summa canister sample should be collected at the end of the test (see comment 11).*

Response: While it may be true that a second round of samples will show different contaminant concentrations, these additional results will not provide information that will be helpful in evaluating SSD feasibility or design. PID readings before and after testing at each hole will be used to determine how the total VOC concentrations changed over the period of evaluation.

COMMENT: EPA recommends a summa canister sample at the end of the test for the following reasons: PID's are sometimes inconsistent, especially if the VOC concentration range is wide, which could occur when sampling initial test gas and end of test gas. Although PID results are very helpful, it is also important to get at least two good sets of data that can serve as reference "anchor" data. The second sample will be representative of operational conditions of the SSD system.

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11. Section 3.2.1, Vapor Sampling: This section states that one sample will be collected from each suction hole. Section 2.2.3 states that a summa canister grab sample will be collected immediately after the suction hole is installed. This stagnant sample may not be representative. Additional summa canister samples should be collected toward the end of the vapor extraction testing.

Response: See response to Comment 9.

COMMENT: See comments to Comment 9