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06/23/2005 12:53 PM

To Christopher Lichens/R9/USEPA/US@EPA
cc
bcc
Subject RE: EE/CA Alternatives and Logistics

Chris,

we already discussed this, so I just reiterate.

It seems that there was a misunderstanding between us and Dave and Chuck regarding the downgradient re-injection. Its main purpose would be the disposal of the extracted and treated groundwater. The use of the re-injection to treat, in-situ, the downgradient portion of the plume could become a secondary benefit, but it would not be necessary.

The main comment on Dave's e-mail is that Alternative 3 does not need only the data collected under the OSS RI, but it has to consider the the OSS FS for potential conflict of the soil and groundwater remedies. This would be a major schedule impact. I am really surprised that it escaped everybody's attention, including mine. As you mentioned, EPA can issue a "friendly order" to clean the on-property groundwater concurrently with the on-site soils and DPE falls in place. Furthermore, the EECA is for an interim remedy, so a final solution for on-property groundwater does not have to be part of it.

I also disagree with Dave's rationale for the need for additional data to evaluate Alternative 1. Alternative 1 can be rejected solely on the basis of limited containment relative to Alternatives 2 and 3. The checking for the presence of hot spots and sand channels can be a design issue.

Please call me on my cell if you want to discuss.

Tom

From: Chamberlin, David [mailto:ChamberlinDC@cdm.com]
Sent: June 23, 2005 8:04 AM
To: Lichens.Christopher@epamail.epa.gov; Perina, Tom/RIV
Cc: Chuck McLaughlin
Subject: EE/CA Alternatives and Logistics

Chris - this e-mail is intended to summarize our discussions in the June 16 conference call, with specific reference to the Alternatives to be evaluated in the revised EE/CA report, and logistics for completing the document.

Alternatives to be Included

Alternative 1 - Extraction and treatment of groundwater on the Omega property. The general description of the Alternative would be unchanged from the draft EE/CA report. However, additional text would be added which describes how performance, via containment, would be measured. Specifically, the revised text will describe that piezometric monitoring will be used to demonstrate that hydraulic control of groundwater leaving any "hot spots" on the property is being achieved.

This alternative will not be selected. Although the alternative will meet the RAOs - hydraulic containment of contaminated groundwater will be demonstrate via piezometric data - it will not be as effective as the other two alternativesin this regard. Specifically, it will will not contain the relatively high levels of contamination that exist between the Omega property and Putnam Street. Secondarily, the effectiveness and implementability of this alternative is expected to be lower than Alternative 3, as it calls for extraction of groundwater from a very low permeability aquifer that directly underlies the Omega property without the benefit of an applied vacuum.

Additional data - i.e., those groundwater and soils data to be collected under the current draft Addendum to the On-site Soils RI/FS Work Plan - would be very important to completing the EE/CA report. Such data, inlcuding most notably the MIP borings, are expected to identify any permeable layers capable of transmitting contaminants and, hence, capable to yield adequate groundwater for an extraction systems. These data, therefore, would assist in confirming (or modifying) the implementation challenges of this alternative, and provide a better basis for locating the extraction wells.

Alternative 2 - Extraction and treatment of groundwater at both the Omega property and at Putnam Street. This alternative addresses EPA's request to combine the proposed Alternatives 1 and 2 in the draft EE/CA report. The combined extraction systems would assume to discharge to either the sanitary sewer, or storm drain under an NPDES permit (or substantive compliance thereof). Hydraulic control at Putnam Street would be demonstrated via piezometric data. Hydraulic control would not need to be demonstrated for the Omega property component of extraction, as such control would be specified to occur at Putnam Street.

This alternative also would not be selected. It will score higher than Alternative 1 in that it will contain contaminant mass over a greater geographic area, notably that which exists in groundwater between the Omega property and Putnam Street. However, it will score lower than Alternative 3, as current data indicate that there are more effective means to control groundwater contamination on the Omega property and begin to effect mass removal/destruction.

Additional data - the information to be collected under the RI/FS work plan Addendum, inlcuding MIP borings and hydropunch samples, would be essential to determining Omega property groundwater characteristics and prove that there are better means to address groundwater beneath and, potentially, down-gradient of the Omega property.

Alternative 3 - Extraction and treatment of groundwater at Putnam Street. Additionally, the alternative would contemplate that additional mass removal/destruction would be achieved beneath the Omega property, with the primary options to do so being (a) dual phase extraction (DPE) or (b) re-injection of groundwater from Putnam street on the Omega property with an amendment for enhanced anaerobic biodegradation (EAB) of groundwater contaminants.

This alternative would be "selected" as the preferred approach. It will score higher than Alternative 1 in that it will contain contaminant mass over a greater areal extent, similar to Alternative 2. It will score higher than Alternative 2, as the effectiveness and implementability of on-property remediation (DPE or EAB) is expected to be considerably greater and more effective than groundwater extraction and treatment.

Additional data - the planned on-site data collection is essential to determine whether DPE or EAB is the appropriate technological choice for the on-property component of the remedy, and to assist in selecting the locations and depths for such actions. Also, the data will provide a basis for selecting the number and location of treatment wells. Furthermore, similar to Alternative 2, the data are also expected to provide further substantiation that on-property extraction of groundwater (without DPE) has significant technical limitations.

Last, as an overall summary comment, OPOG is concerned that the current data are not adequate to

determine if on-property groundwater remediation is feasible and, if so, which technological option would be the most effective means to meet the RAOs. Conversely, if the additional data demontrate that on-property groundwater remediation is not feasible or would not be effective, OPOG assumes that the EE/CA remedy would be confined to extraction and treatment of groundwater at Putnam Street only.

Logistics for Completing the EE/CA Report

Approach 1 - defer submittal of the EE/CA report until after the additional data have been selected. OPOG strongly supports this approach. The most significant advantages are that the data will allow for (a) more conclusive and quantitative comparison of the above three EE/CA alternatives, to confirm that Alternative 3 is indeed the most appropriate, and (b) refinement of Alternative 3 - specifically, the selection of either DPE or EAB as the on-site component of the remedy. In short, the data would significantly increase the likelihood that the alternatives have been fully evaluated, and increase the confidence in the preferred/selected alternative.

The only potential disadvantage with this approach is impact to portions of the schedule. Specifically, the majority of the data collection is scheduled to occur in August and September of this year. The data would be evaluated on a real time basis, and the EE/CA report would likely be submitted in October. Compared to Approach 2 below, this would potentially reflect a 3-month delay in the remedy selection and EPA's "approval process" (e.g., the Proposed Plan and Action Memorandum). However, this potential delay in document submittal could be fully mitigated and offset by the design, installation, and testing of the Putnam Street extraction wells concurrent with EPA's approval/documentation process.

Approach 2 - submit the EE/CA report in July. The primary advantage of this approach is that it will keep EPA's approval process on a faster schedule. Assuming that the EE/CA is approved by the end of July, EPA could then commence with preparation of the Proposed Plan and Action Memorandum in August, September, and October. The primary disadvantage is that the decisions made with respect to remedy selection would be less "informed" without the additional data. In other words, there would less certainty that Alternative 3 is the right choice, and selection of the on-property component of the remedy (i.e., DPE vs. EAB) would have be deferred to the design phase.

We look forward to further discussion on these matters with you in our call on Friday June 24 at 10:00 PDT.