

Impacts related to Solar Pond clean out vs. IAG RFI/RI Investigation

DOE/RFO has expressed concern regarding potential impacts from pondcrete operations to the IAG milestone for submittal of the Draft Phase I RFI/RI Report for OU 4. DOE-RFO also stated that the timing for clean out of the Solar Ponds is not a technically defensible reason to seek extensions to the IAG commitments for OU 4. To accommodate the source characterization DOE/RFO proposed utilizing alternate drilling methods, e.g. directional drilling and/or horizontal jack and bore techniques.

EG&G EM has planned and coordinated efforts for the IAG Phase I RFI/RI field activities with pondcrete operations for clean out of the Solar Ponds. Forty-nine soil borings are planned for the Phase I RFI/RI for OU 4 source and soils characterization, of those borings, 17 are directly located within the ponds. These 17 borings are necessary both technically for characterization of the contaminant source and per the IAG requirements. Thus, clean out of the ponds will directly affect approximately 35% of the planned RFI/RI field work as mandated in the approved Final Phase I RFI/RI Work Plan. The remaining 65% of the RFI/RI work is scheduled to be performed initially, thus allowing the pondcrete activities maximum time for clean out of the ponds. Also, the RFI/RI activities have been coordinated and planned that once one pond is cleaned out, the drilling can be performed immediately on that pond. At the same time the pondcrete activities can continue on other ponds that are to be cleaned.

EG&G selected a subcontractor for implementation of the OU 4 Work Plan. This contractor has provided the capability for proposed horizontal or directional drilling techniques that may be applied during the investigation of OU 4. On July 30, 1992, EG&G representatives attended a demonstration of horizontal jack and bore type drilling and directional drilling techniques. The demonstration was performed by two companies that proposed work to EG&G's implementing subcontractor. Neither of these techniques provide any means of obtaining environmental samples. The horizontal method was the most promising for adaption to include a sampling device. Both drilling methods are advantageous, because they are displacement methods and do not produce drill cuttings nor require the use of drilling fluids.

While EG&G agrees with DOE that horizontal drilling techniques are useful, there remain significant issues concerning our ability to vertically drill within the ponds. The IAG requires characterization of the source and soils for a RCRA Phase I assessment. The source in this case is the ponds. The vertical drilling within the ponds is necessary to provide the vertical profile and obtain samples through the source of contamination. Once the source characterization is accomplished, horizontal drilling can provide presence/absence information of contaminants. However, primarily because of physical barriers, horizontal drilling will not provide information directly about the source. A selected horizontal drilling level would need to be located to avoid buried utilities and, more importantly, to avoid any chance of corrupting the engineered pond liners. The information collected would be limited to a discrete horizontal level beneath the ponds and could be used to direct/locate vertical drilling activities once the ponds are cleaned out.

Additionally, if horizontal drilling techniques are utilized, continuous sampling would not be practical because of the increased number of samples and associated costs. Thus, a sampling interval would be proposed rather than using continuous sampling methodology.

In summary EG&G EM believes that even if horizontal drilling methods can be applied at the Solar Ponds, vertical drilling within the ponds will still have to be performed in order to provide the necessary vertical profile of contamination for source characterization. Also, source characterization is explicitly required in accordance with the IAG. The horizontal drilling methods may be useful for guiding drilling locations for vertical borings and may also provide presence/absence information. However, these methods will be extremely limited due to physical barriers, development of sampling methods, and costs. Therefore, we do not recommend using horizontal drilling techniques.