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MEETING NOTES

TO: Distribution

DATE: April 19, 1994

FROM: Philip Nixon

PROJECT: Solar Pond IM/IRA

MEMO #: SP307:042094:01

ATTENDANCE:

Steve Howard, DOE/SMS
Phil Nixon, ES
Lee Pivonka, G&M
Harlen Ainscough, CDH
Shaleigh Whitesell, PRC
Andy Ledford, EG&G
Harry Heidkamp, ES
Rick Millikin, ES
John Haasbeek, ERM
Mark Hill, ES
Arturo Duran, EPA

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Peg Witherill, DOE
Steve Keith, EG&G
John Rampe, DOE
John Hicks, ES
Steve Paris, EG&G
Bob Glenn, ES
Rick Wilkinson, ES
Ron Schmiermund, ES
Marc Hill, ES
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SUBJECT: Weekly Status Meeting

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1.) Path Forward on the Engineered Cover and Vadose Zone Soils

Andy Ledford reported that EG&G/DOE had determined the appropriate path forward for the IM/IRA design. The design of the engineered cover will include:

- the excavation of vadose zone soils beneath the SEPs down to as far as the mean of the seasonal high water table elevation with the subsequent lowering of the subsurface drainage layer to an appropriate depth.

- The 1000 year cover design will be retained.

Andy specified that modeling activities performed by ES had demonstrated that the soils beneath the current subsurface drainage layer that are above the mean of the seasonal high water table elevation present a potential threat to ground water quality in the event that the ground water were to rise. ES investigated *ex situ* soil treatment, *in situ* soil treatment, and excavation with lowering the subsurface drainage layer. The excavation option was selected because it was the easiest to implement at OU4 and was the most cost effective. The 1000 year engineered cover design was retained because it will provide the maximum potential flexibility for DOE to consolidate hazardous waste materials beneath the engineered cover. The 1000 year engineered cover will be cheaper to implement than the 1000 year engineered cover because the RCRA cover would have to be redesigned, and additional sampling would be required to demonstrate than any hazardous waste to be consolidated under the cover would have to have constituent of concern (COC) concentrations that are less than the preliminary remediation goals (PRGs). If the PRGs were exceeded, then additional money would have to be spent to decontaminate or ship the hazardous materials offsite.

Harlen Ainscough indicated the CDH was happy to see DOE address the subsurface soils beneath the SEPs.

Arturo Duran recommended that DOE include a liner system as a component of the subsurface drains that would collect downward migrating leachate and prevent rising groundwater from contacting the consolidated materials. Harlen Ainscough indicated that the liner would not be necessary because the subsurface drainage layer would cause rising ground water to flow away from the consolidated materials. John Haasbeek pointed out that if a liner were used, then a leachate collection/treatment system would be required since captured leachate would require a method for removal. This would change the passive engineered cover system to an active system. The current design criteria requires a passive system. Arturo requested that the conceptual approach be re-visited to optimize

the overall system for 1000 year protection. Harlen Ainscough specified that there may be a controlled and monitored release of liquid from the system.

It was agreed that the general modifications should be implemented in a design concept. It is noted that the conceptual design will be modified during title design.

2.) Implications of Ground Water Discharging from the Subsurface Drainage Layer

Andy Ledford pointed out that the subsurface drainage layer would be used more frequently if it were lowered to the mean of the seasonal high water table elevation. It was agreed that the drainage system should not be continuously draining ground water. John Haasbeek and Lee Pivonka stated that on average the system may be used once a year for a few weeks. Phil Nixon indicated that the design intent is to tie the subsurface drainage layer into the interceptor trench system (ITS). Harlen Ainscough responded that this concept is appropriate since the ground water at the ITS system will be controlled/treated until it is remediated.

It was agreed that there was no regulatory provision that would prohibit the release of ground water to the surface.

3.) Discussion Concerning the Appropriateness of the Post-Closure Monitoring System

Lee Pivonka discussed the function of the equipment that was recommended for the Post-Closure monitoring system. The selected equipment includes

1. Neutron probes
2. Time Domain Reflectory (TDR)
3. Frequency Domain Capacitance (FDC)
4. Suction Lysimeters

The first 3 technologies provide indirect soil moisture data, and the fourth technology is capable of providing direct soil moisture chemistry data. It is anticipated that data will be collected from the suction lysimeter only if an upset condition is indicated from the indirect monitoring systems.

Lee stated that neutron probes, TDR, and suction lysimeters are widely accepted and commonly used at DOE sites. The FDR is a relatively new technology that was selected for the OU4 SEPs because the current TDR technology is incapable of cable lengths greater than 100 feet. However, the FDCs and TDRs are not redundant systems.

John Haasbeek indicated that the use of vadose zone monitoring can reduce the number of required ground water monitoring wells. This can save money because the vadose zone equipment has automatic data collection and is therefore cheaper to operate than wells/laboratory analysis. In addition, vadose zone monitoring can provide an early warning of potential ground water contamination. Over time, the engineered cover and vadose zone monitoring information may be used to reduce the amount of groundwater sampling that is required.

John Haasbeek stated that the early detection of potential problems could result in repairs that would not necessarily require costly ground water remediation.

It was discussed that the analyte list should focus on the COCs and the historical OU4 constituents. Once each year a full HSL or Appendix IX analysis may be performed. Harlen Ainscough specified that the analyte list would be finalized when the Post-Closure Care Permit is issued after closure of the SEPs.

4.) Comments on Building 788

Harlen Ainscough provided comments on the IM/IRA-EA decision document pages addressing the removal of Building 788.

Harlen questioned the use of a Temporary Unit for the building waste/debris. Rick Millikin indicated that the Temporary Unit was proposed for the use of the tanks on the 750 Pad to store residual sludge. Harlen Ainscough will investigate the need for a T.U. in this regard.

DOE committed to segregating 788 waste/debris according to the potential for decontamination and free release. ES will propose wastes that are likely to be successfully decontaminated. Decontamination will be assessed with respect to:

- the potential for success
- the cost effectiveness of decontamination

Steve Howard indicated that the RFP has started to release waste from the site. ES will obtain the release requirements to assess the potential for decontamination success. It should be noted that the building has not been fully characterized. Characterization data is very important to predict the potential for successful decontamination.

Arturo Duran recommended that the pros and cons be fully identified for the options associated with the disposition of Building 788 materials.

5) Final Comments on Part IV of the IM/IRA-EA Decision Document

Harlen Ainscough provided comments on Part IV of the IM/IRA-EA decision document.

Harlen indicated that the disposition of OU4 utilities under the engineered cover is appropriate, but lines outside OU4 would be subject to the remedial enhancement assessment. Steve Howard indicated that DOE transferred portions of the OU9 Original Process Waste Lines (OPWLs) to OU4 with the intent that they could be dispositioned beneath the engineered cover.

Harlen indicated that the CAMU discussion should be enhanced to address to positive attributes of the CAMU designation.

6) Open Issues

Harlen Ainscough reported that he had met with the AGO concerning the ground water quality standards.

The AGO has tentatively agreed that the Point of Compliance (POC) at the toe of the engineered cover must be protective of ground water with respect to the onsite resident scenario. [Phase I]

The ITS will be the POC for the most stringent of all the applicable standards (including surface water and aquatic organisms protection standards) [Phase II]

Philip A. Nixon

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