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M E M O R A N D U M

TO: Ron Kern, Program Manager, NMED/RCRA Technical Program
THROUGH: Bruce Swanton, Program Manager, DOE/EM Oversight
FROM: AIP/LANL DOE Oversight Staff
DATE: August 30, 1994
SUBJECT: Review Of LANL's Draft Phase II Sampling Plan for Mercury SWMU 3-010(a) for Operable Unit (OU) 1114 RCRA Facility Investigation Work Plan (RFIW) submitted August 1994

The Hazardous and Radioactive Materials Bureau (HRMB) Agreement in Principle (AIP) staff have completed the review of the Draft Phase II Sampling Plan for Mercury SWMU 3-010(a) for Operable Unit (OU) 1114 RCRA Facility Investigation Work Plan (RFIW). This memo details the comments stemming from the review. For clarity, the memo contains numbered items listing comments that are keyed to a specific chapter/section number or figure in the RFIW Sampling Plan, as well as to the paragraph, bullet and page number e.g., **ITEM 2. (4.4.4.4, p2, b5, pg. 4-17)**. The AIP program is submitting these comments and technical recommendations to the HRMB's Enforcement/Technical Programs because of eventual New Mexico HSWA authorization. Any non-HWSA comments listed, e.g., comments pertaining to radiological potential contaminants of concern (PCOC), are those that are not specific to RCRA regulations but are included in this memo for the sake of completeness of the work plan review.

ITEM

- 1. SPECIFIC COMMENT (Table 1 and Table 2, pg. 7)** It is not specified what type of tritium analyses were performed on all the samples listed in these tables, e.g., short/long count standard scintillation method or low-level electrolysis method. It is recommended that tritium analysis methods and the limit of detection (LOD) for the specific methods be listed below the tables.

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2. **GENERAL COMMENT** It is recommended that sediment sample(s) be taken and analyzed for metals, rad and VOAs at the seep sample location. The excavation of the hillside mercury SWMU could have resulted in mobilization of PCOCs into drainage catchment basins below the hillside trench.
3. **SPECIFIC COMMENT (6.4.2.2, p7, pg. 19)** The text mentions that a photoionization detector (PID) or equivalent field instrument will be used to detect soil vapor values above background (background will be ambient air readings), then a bag sample will be taken. LANL should clarify the sensitivity of the field instruments to be used. Is LANL completely confident that volatile organic contaminants (VOC) at very low concentrations will be detected? More detail should be provided about the instrumentation, i.e., what lamp ionization energy is to be used. Additionally, field instrument detection limits for specific VOCs that are likely to exist at the site should be provided in a table in the Sampling Plan.
4. **SPECIFIC COMMENT (6.4.2.2, p1, pg. 20)** The text mentions that "This drilling investigation may not be able to determine the extent of contamination if COCs are found to follow fractures into the tuff". It should be specified in this sampling plan how tuff fractures will be addressed, characterized or sampled in order to discern whether fractures in the tuff are a viable transport mechanism for PCOCs within the trench and in the drainage below the trench.

cc: Barbara Hoditscheck, RCRA Program Manager
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Phase II Mercury SWMU Meeting at AIP White Rock office, 8/30/94

LANL/DOE brief responses to NMED/AIP comments:

1. LANL will provide all tritium method and level of detection information in the revised sampling plan.
2. LANL insisted they were careful not to allow any material from the excavation site to flow into the drainage below the SWMU hillside. LANL will not take a sediment sample from the seep sample location, but AIP will take one sample and run a full analysis suite of metals, VOCs and rad.
3. LANL explained that the PID would not be used as guidance for selecting samples for laboratory analyses, but would be used as a guide for selecting locations of bore holes. Additionally, LANL will supply all field instrument information in the revised sampling plan.
4. LANL will do what it can to look for evidence of horizontal and vertical fractures during the investigation, LANL will attempt sampling of fractures/fracture fill material where located by bore holes. LANL mentioned that the majority of the fractures in the excavation trench were horizontal in trend. LANL suggested that the soil gas survey of the Phase II investigation should give information on the bounding and lateral extent of any VOC contamination due to the horizontal nature of the fractures in the tuff. LANL had no answers of how to address possible PCOC migration in vertical tuff fractures, except that the vertical tuff fractures were not a common feature within the trench.

LANL/DOE brief responses to EPA comments:

1. No definition for contaminants of concern (COC) in text.

LANL response: A definition of COC will be added to the revised sampling plan
2. Explain the use of this coefficient of variation for sample collection. Why isn't a 95% confidence interval used? If the number of samples is based on detecting a relative difference of 25% with 90% confidence, what is the base measurement from which the relative difference is made, and how is the base measurement derived for a group of VOCs?

LANL response: A complete definition of this statistical method and its use for selecting the number of additional samples for laboratory analysis will be provided in the revised sampling plan.

3. Should seeps be sampled and analyzed for VOAs?

LANL response: The chance of getting a VOC hit from the seep is very low due to the sampling technique which allows a great deal of aeration of the water before collection. AIP and LANL will determine when the proper flow rate allows for the sampling of VOCs at the seep location. LANL and AIP will split samples during this event.

MEETING RESULTS

1. LANL will proceed with the Phase II investigation. Field work is expected to begin on 9/6/94 and end by 10/1/94.
2. LANL will have a revised Phase II sampling plan to EPA and NMED before 9/6/94.
3. A Phase II final report will depend on laboratory analysis turn around and QA/QC and data validation by LANL.