Department of Energy
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

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Mr. Jim Piatt, Chief
Surface Water Quality Bureau
Water and Waste Management Division
New Mexico Environment Department
1190 St. Francis Drive, P. O. Box 26110
Santa Fe, NM 87502

XIII

Dear Mr. Piatt:

The Department of Energy (DOE) received your letter dated January 21, 1993, concerning the delivery of the sampling and remediation plan for Solid Waste Management Unit Number 3-010. Members of the Los Alamos National Laboratory's (LANL) Environmental Restoration Group (EM-13) have been working with members of your Bureau and members of the Hazardous and Radioactive Materials Bureau in the development of this plan. They also have been working with Barbara Driscoll of Region 6 of the Environmental Protection Agency (EPA). Therefore, it is important to ensure that EPA is also satisfied with the plan and that LANL incorporate all resolutions to all comments in the final printing of the plan.

For the reason stated above, DOE does not believe that the submittal date of February 8, 1993, for the revised plan will be achieved, and requests a 30-day extension for the delivery of this product. We do not believe that this should present a problem since field-work is not scheduled to begin until spring.

Should you have any questions, please contact Steve Slaten of my staff at (505) 665-5050.

Sincerely,

Joseph C. Vozella

Joseph C. Vozella, Acting Chief
Environment, Safety, and Health
Branch

LESH:7SS-016

cc:
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cc:
B. Swanton, Program Manager
Hazardous & Radioactive Material Bureau
New Mexico Environment Department
525 Camino de los Marquez
Santa Fe, NM 87502
D. Katzman, Geologist III
Hazardous & Radioactive Material Bureau
New Mexico Environment Department
525 Camino de los Marquez
Santa Fe, NM 87502
B. Driscoll
RCRA Permits Branch
U. S. Environmental Protection Agency
6 H-MA
1445 Ross Ave., Suite 1200
Dallas, TX 75202-2733
A. Tiedman, ADO, LANL, MS-A120
T. Gunderson, EM-DO, LANL,
MS-K491
C. Nylander, EM-DO, LANL,
MS-K491
R. Vocke, EM-13, LANL,
MS-M992
K. Hargis, EM-8, LANL, MS-K490
RPF, LANL, MS-M707
CRM, LANL, MS-A150

HSWA General

Letter from Jim Piatt, Chief, Surface Water Quality Bureau

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General Comments

1. **The Department will require a schedule for completion of the SRP with specific milestones for all phases of the plan's implementation. My letter of 9/10/92 specifically requested that a schedule be included as part of any corrective action report submitted to the Department.**

   A schedule will be provided with the revised SRP. As discussed and agreed to in our December 15, 1992, meeting with staff from NMED, the schedule will not be tied to specific dates but will be related to plan approval and suitable site conditions. As agreed in the meeting, field investigation and remediation activities will not begin until next spring when all snow has melted from the site.

2. **A Health and Safety Plan is required by the New Mexico Environment Department before staff can plan for, or conduct, independent investigations at the site. No such plan was provided in the SRP.**

   A Health and Safety Plan (HSP) is not required to be submitted as part of the SRP. As discussed at the meeting, a copy of the HSP will be provided to NMED so that NMED staff can plan for field activities at the site.

3. **A sampling grid should be established for radionuclide sampling. This grid could reasonably have wider spacing than that for the mercury grid (e.g. 3-meter spacing). Samples collected specifically for radionuclides should target the silt and clay sized portion of the sediment/soil.**

   It would probably be more cost and time efficient to characterize and remediate the site of both RCRA constituents and radionuclides with a single effort.

   Based on the site conceptual model and previous sampling, radionuclides are expected to have the same extent of contamination as mercury. For this reason, a single grid spacing was selected for both mercury and radionuclides. With the composite sampling approach being taken, there is no advantage in analyzing radionuclides less frequently than mercury. That is, the number of analyses depends on the number of rows or columns, not the number of grid points. The grid spacing presented in the SRP is preliminary. The final spacing will be determined based on the results of the field screening to be performed prior to sample collection. As shown in Table 4-2 of the SRP, all samples will undergo radiological analysis.

   We agree that size fraction should be considered in the sampling approach. Because the mercury cleanup level is based on ingestion, the size fraction most likely to be ingested will be analyzed. This fraction includes fine sand, silt, and clay. This fraction is also the fraction most likely to undergo transport.

   It would be difficult to characterize and, if needed, remediate the site for radionuclides at this time. Specific screening action levels for radionuclides have not yet been developed for the ER Program. The site will be remediated for mercury as quickly as possible, as requested by NMED. Any additional actions needed for radionuclides would be implemented at a later date under the ER Program.

4. **The TCLP method should not be used for any of the sample analysis proposed in the SRP.**

The SRP does not indicate that samples will be analyzed or extracted using the TCLP. Section 4.2 indicates that samples will be analyzed for toxic metals, which includes the metals analyzed for with the TCLP.

5. **The NMED accepts the SRP's conclusion in Section 3.3.5 that excavation of contaminated soils is the only technology that would be effective in meeting all remedial objectives. It is our understanding that this is the remedial technology that you have selected for remediation of the contamination at SWMU 3-010. If this is not the case, please inform this Bureau of the technology which has been chosen.**

   As noted in Section 5.3 of the SRP, excavation of soils will be part of the selected remedial technology. The final means of treatment and/or disposal of the excavated soil has not been determined and will be based on the results of the sampling and analysis.

Specific Comments

These comments and questions reference specific sections and subsections of the SRP; "§" refers to the subsection referenced and "p" represents the paragraph number within a subsection.

§ 2.2 p3 **What were the concentrations of volatile organic compounds and PCBs found in the initial sampling effort? What are the ER Program action levels?**

At the time the original SRP was submitted, final results were not available. The results for volatile organics and PCBs, including detection limits and ER Program action levels are summarized below and will be included in the revised plan as an appendix. These results show that only 2 volatile compounds, acetone and 1,1,1-trichloroethane were detected. The detected concentrations of both of these compounds were many orders of magnitude less than the ER Program action levels. The detection limits for the remaining volatile compounds were many times less than the action levels. The detection limit for PCBs was also less than the action level.

Compound	Detection Limit, ug/kg	Concentration Detected, ug/kg	IWP Screening Action Level, ug/kg
VOLATILE ORGANICS			
Acetone		36	8×10^6
Benzene	5		2.4×10^4
Bromobenzene	5		
Bromochloromethane	5		
Bromodichloromethane	5		2×10^6
Bromoform	5		2×10^6
Bromomethane	10		3×10^4
2-Butanone	20		
n-Butylbenzene	5		
sec-Butylbenzene	5		
tert-Butylbenzene	5		
Carbon disulfide	5		8×10^6
Carbon tetrachloride	5		5.4×10^3
Chlorobenzene	5		2×10^6

Chlorodibromomethane	5		
Chloroethane	10		
Chloroform	5		1.1×10^5
Chloromethane	10		
o-Chlorotoluene	5		
p-Chlorotoluene	5		
1,2-Dibromo-3-chloropropane	10		3.2×10^5
1,2-Dibromoethane	5		
Dibromomethane	5		
o-Dichlorobenzene	5		
m-Dichlorobenzene	5		
p-Dichlorobenzene	5		
Dichlorodifluoromethane	10		2×10^7
1,1-Dichloroethane	5		7×10^5
1,2-Dichloroethane	5		7.7×10^3
1,1-Dichloroethene	5		1.2×10^4
trans-1,2-Dichloroethylene	5		
cis-1,2-Dichloroethylene	5		
1,2-Dichloropropane	5		
1,3-Dichloropropane	5		3.9×10^3
2,2-Dichloropropane	5		
1,1-Dichloropropane	5		
cis-1,3-Dichloropropene	5		2×10^4
trans-1,3-Dichloropropene	5		2×10^4
Ethylbenzene	5		8×10^6
Ethylene dibromide	5		
2-Hexanone	20		
Isopropylbenzene	5		
4-Isopropyltoluene	5		
Methyl iodide	5		
4-Methyl-2-pentanone	20		
Methylene chloride	5		9.3×10^4
Propylbenzene	5		
Styrene	5		2×10^7
1,1,1,2-Tetrachloroethane	5		
1,1,2,2-Tetrachloroethane	5		3.5×10^4
Tetrachloroethylene	5		1.4×10^5
Toluene	5		
1,1,2-Trichloro-1,2,2-trifluoroethane	5		
1,1,1-Trichloroethane		160	7×10^6
1,1,2-Trichloroethane	5		1.2×10^5
Trichloroethene	5		6.4×10^4
Trichlorofluoromethane	5		2×10^7
1,2,3-Trichloropropane	5		8×10^4
1,2,4-Trimethylbenzene	5		
1,3,5-Trimethylbenzene	5		
Vinyl acetate	10		
Vinyl chloride	10		
Xylenes	5		2×10^8

PCBs			
Mixed-Arochlor	60		91
Arochlor 1242	60		91
Arochlor 1254	60		91
Arochlor 1260	60		91

§ 2.2 p1 **How deep is the sediment/tuff interface in the channel?**

Samples that were collected from 0-3 inches on the slope, can not be compared with samples taken at the sediment/tuff interface along the stream channel. In order for samples to be valid for comparison with each other and to analyze trends, they should be collected in the same manner and at the same depth.

Samples that are intended to target mercury contamination in the stream channel should also be collected at and/or near the surface in addition to samples at the sediment/tuff interface.

The depth of the sediment/tuff interface varies along the channel. The minimum depth is zero, at points where the tuff is exposed. The maximum depth is estimated to be approximately one foot for most of the stream channel and possibly several feet at the mouth of the channel where it joins Twomile Canyon.

The existing sample results were presented as a summary of existing information concerning contamination at the site. It is recognized that the previous sampling was very limited and that the results from the existing samples are not directly comparable. The existing data were used only as general indicators of the extent of contamination for the purpose of developing a qualitative conceptual model. The revised SRP will better clarify the limitations of the existing data.

The proposed sampling approach described in the SRP uses vertical compositing of sediment samples. The reason for this approach is that vertical mixing of sediments is expected to occur during runoff events. Because of this mixing the depth of maximum mercury contamination is not known. As discussed at the December 15, 1992, meeting, this approach is appropriate in light of the relatively shallow depth of sediment.

§ 3.1 p4 **Volatilization may not be reduced by covering the site. The cover may prevent vapors from escaping to the atmosphere and reduce worker exposure, but the "greenhouse warming" effect may actually be produced by the translucent cover, enhancing volatilization.**

The cover was placed at the request of NMED to prevent runoff of contaminated soil. The text will be revised to clarify that the purpose of the cover was not to prevent volatilization, although the cover may limit release to the atmosphere.

§ 3.2 p2 **The cleanup level for mercury in Subpart S is 20 mg/kg and not 80 mg/kg. Remediation at SWMU 3-010 should attain health-based action levels that are derived from the assumption of direct ingestion and not a residential use scenario. Conservative cleanup levels are justified for SWMU 3-010, in part, because of the close proximity of the water course.**

The SRP will be revised to reflect an action level for mercury of 20 mg/kg.

§ 3.3.1 **Additional sampling should also consider volatile organic compounds.**

During the previous sampling event, the sample collected from the area believed to be most heavily contaminated was analyzed for volatile organic compounds using EPA Method 8260. As noted in the response to the comment on § 2.2 p3, only two volatile compounds were detected, both at concentrations below screening action levels. These results are consistent with process knowledge of the waste source, which indicates no significant source of volatile contamination. Based on this sampling and process knowledge, no volatile contamination is expected and analysis for volatiles will not be performed. This rationale for not including volatile organics will be included in the revised SRP.

§ 3.3.4 <u>Soil Washing</u>

In situ soil washing should not be considered as a remediation option because of the close proximity to the stream channel.

The text will be revised to indicate that in-situ soil washing will not be considered because of the location of the site adjacent to the stream channel.

<u>Thermal Treatment</u>

The date and title of the "recent EPA study" referenced here should be included.

The appropriate reference will be provided in the revised SRP.

§ 4.1 p3 **The conceptual model that, in part, forms the basis for "identification of data needs" is not based on a proper or adequate initial investigation. The conceptual model is based on too few data points and on inconsistent sampling methodology.**

LANL believes that the conceptual model described in the SRP is appropriate for this type of investigation. The conceptual model presented in the SRP was based on all existing sampling and analysis data, visual inspection of the site, process knowledge, and the physical and chemical properties of the identified contaminants. One purpose of the conceptual model is to summarize all existing data and identify the data needs to be addressed during the field investigation. As described in Section 4.1, one goal of the field investigation is to collect the data needed to verify the conceptual model. Any deficiencies in the conceptual model resulting from the number of data points or the previous sampling methodology will be identified from the sampling and analysis data.

As discussed at the December 15, 1992, meeting, LANL agrees that field screening would be appropriate to refine the conceptual model prior to beginning sampling. This screening would involve the use of X-ray fluorescence (XRF) to better define the extent of highly contaminated soil prior to identifying specific sample locations. The SRP will be revised to include this screening.

§ 4.2 p2 **Composites are not an acceptable method for characterizing the**

degree and extent of contamination at SWMU 3-010. Composing samples within rows or columns would effectively dilute the concentrations of constituents that may be present in the sediment/soil above Subpart S cleanup levels. In addition, the "cleanup levels" that are proposed for use as triggers for further investigation (i.e., analysis of discrete samples) are significantly above health-based action levels from Subpart S that assume a direct ingestion scenario. A wider grid spacing than the one proposed in the Plan would be acceptable if discrete samples are taken instead of composites. The three sampling points immediately below the "hot spot" (column 3, rows 3-5) should still be locations of samples at discrete intervals at depth. A map showing distribution of contamination could be produced. This would greatly aid in understanding the mechanism by which mercury (and other contaminants found at the site) have migrated from the original disposal location.

It is recommended that sampling and analysis start in the "hot spot" and move progressively downslope in order to delineate the area of contamination. This may require the use of a mobile lab so that real- time results can be used to assist in determination of next-phase objectives.

The use of composite samples described in the SRP is intended to minimize the number of sample analyses needed to implement a corrective action. The rationale for the composite sampling approach is described in Section 4.2. Key points associated with this approach are:

Migration of mercury and contamination of soil above the cleanup level is expected to be very limited. The area of soil requiring excavation is not expected to extend much beyond the area that is visibly contaminated with mercury. All subsamples for compositing will be collected outside of this area. The composite samples, therefore, are intended to represent the average concentration of mercury in areas that do not require cleanup. Large variability among subsamples is not expected and compositing appears appropriate.

The mercury cleanup level (20 mg/kg) [Note: EM-13 to provide] is much greater than the expected detection limit for mercury (0.25 mg/kg). The number of subsamples per composite will range from 4 to 10. Because of the low detection limit, it will be possible to determine if any of the subsamples is above the cleanup level, even with the maximum dilution factor of 10.

Discrete samples will be collected at each of the grid points and retained for possible analysis. If the results of the composite samples appear inconsistent with the conceptual model (i.e., the area of contamination is more widespread), these discrete samples can be analyzed to more precisely determine the extent of contamination. As agreed at the December 15, 1992, meeting, an action level of one-half the cleanup level will be used to identify composite samples requiring discrete analysis. That is, if a composite sample is over one-half the cleanup level, replicates of the discrete subsamples comprising the composite will be analyzed.

If contamination above cleanup levels is limited to the extent

expected, it will not be necessary to precisely define the boundaries of contamination in order to implement the remedial action. That is, additional precision would not be warranted given the relatively imprecise nature of the technology used for excavation.

As described in the response to § 4.1 p3, field screening with XRF will be used to better define the hot spot before sampling begins.

§ 4.2 p4 **One sample does not define the boundaries of a hot spot; therefore, additional samples should be collected in order to adequately define the hot spot.**

The hot spot has been defined based on the presence of visible mercury contamination on the ground surface. The sample collected within this area indicates the level of mercury associated with this visible contamination. The sample is not intended to define the boundaries of the hot spot. The revised SRP will better describe the basis for identifying the hot spot. Figures 4-1 and 4-2 will be revised to show that they indicate the approximate location of the hot spot.

§ 4.2 p6 **Samples from rows 6 through 10 should also be analyzed for lead and TPH, as well as for radionuclides.**

The issue of analysis of samples from rows 6 through 10 for TPH and metals was discussed at the October 16, 1992, meeting attended by NMED. At that meeting, it was agreed that these samples would only be analyzed for mercury. The rationale for this approach is that these rows are beyond the area expected to require cleanup and that data on other analytes was needed only to evaluate treatment and disposal options. If the results of the sampling indicate that contamination is more widespread than expected, the need for further sampling for lead and TPH will be evaluated. As agreed at the December 15, 1992, meeting, TPH analysis will be performed on the confirmatory samples collected after remediation.

§ 4.2 p7 **It is unlikely that the soil/sediment on the hillslope is 2 meters thick, sample intervals should be shortened to 0.25 m thick intervals. This would result in a composite from 0-0.25m, 0.25-0.5 m, 0.5-0.75 m. etc. If contamination is still present in the deepest sample, next phase sampling could address this issue.**

As explained in the SRP, if the depth to the tuff is less than 2 m, the final sample will be composited over the bottom 0.5 m interval. The objective of the vertical sampling is to determine how deep to excavate. The objective is not to obtain a precise vertical profile of contamination. Given the precision of excavation technologies, the current sampling strategy is believed to be adequate.

§ 4.2 p8 **Composites of more than one sampling site should not be used in the stream channel sampling plan. Discrete samples should be collected from no more than 5-m spacing for the first five sampling points. Remaining sample locations could be spaced at wider intervals and should extend further down the stream channel than the proposed fifty meters. A sampling point should be located at the junction of the stream channel and Twomile Canyon.**

We have been informed that LANL has documentation regarding

mercury levels in the Pajarito wetlands located downstream from the site of contamination after Twomile Canyon enters Pajarito Canyon. This data should have been included in the SRP and must be provided to the NMED. If no such documentation exists, or if the data is found to be inconclusive, further sampling of the wetlands may be necessary.

Stream sediment samples should be collected from both the surface of the streambed and at the sediment/tuff interface. Surface samples should be collected from 0 to 12.0 inches, or from 0 to tuff, whichever is lesser.

Sediment samples from the stream should also be analyzed for total metals and TPH, to be consistent with the SRP scheme for rows 1-5.

The rationale for composite sampling was discussed in the response to the comment for § 4.2 p2. LANL believes that this rationale is also applicable to stream channel sampling. LANL agrees that closer sample spacing would be appropriate for the first subsamples. A 5-m spacing will be used for the five subsamples to be used for the first composite. A 10-m spacing will be used for the remaining subsamples. LANL agrees that a discrete sample should be taken at the mouth of Twomile Canyon. As discussed in the response to the comment for § 4.2 p2, an action level will be used to identify when analysis of discrete subsamples is needed. As discussed at the December 15, 1992, meeting, the action level for stream channel composites will be lower than the level for composites collected from the hillside.

The need for sampling the Pajarito wetlands area was discussed at the December 15, 1992, meeting. As agreed at this meeting, wetlands sampling will not be included as part of the current effort. Based on the results of the sample collected from the mouth of the stream channel at Twomile Canyon, wetlands sampling may be conducted at a later date.

The rationale for collecting vertical composites of sediment samples was discussed in the response to the comment on § 2.2 p1. That is, composites will be used because of the vertical mixing of the sediments. The sample interval will be revised based on the comment and the expected depth of sediments. Samples will be composited over the interval 0 to 12 inches. If the depth of sediment is greater than 12 inches, an additional discrete sample will be collected at the sediment/tuff interface.

As agreed at the December 15, 1992, meeting, metals and TPH analysis will be performed on the samples collected from the stream channel.

§ 4.2 p9 **All water samples should also be analyzed for TPH, tritium, isotopic plutonium and cesium-137. Water quality samples should also be taken below the proposed furthermost downstream site located immediately downstream from the jogging path bridge. It is recommended that at least one sample point be located at the junction of the stream channel and Twomile Canyon.**

LANL agrees to analyze water samples for the constituents identified in the comment and to collect a sample at the junction of the stream channel and Twomile Canyon. The SRP already indicates that a sample will be collected immediately downstream of the jogging path bridge.

As agreed at the December 15, 1992, meeting, water sampling will be implemented before soil sampling and remediation begins. Water samples will be collected from significant runoff events prior to remaining field activities.

Letter from William K. Honker, P.E., Chief, RCRA Permits Branch (6H-P)

EPA COMMENTS

1. The sampling strategy as presented (4.2 Sampling Strategy pp. 23-31 through 5.1 Data Evaluation pp.31-34) is overly complicated and would require two steps prior to complete evaluation of the site. In addition, a single composite sample created from samples across rows or down columns as proposed in the Sampling Plan would dilute samples too much, and would not give an accurate view of the extent of contamination. EPA would prefer LANL choose one of the following approaches to sampling in order to evaluate the extent of contamination for removal of material:

A. LANL could use a one meter grid and form one composite sample within each grid by choosing three or five samples within each meter grid which would be combined into one composite sample. If the composite sample produced is above the action level, then the entire grid is removed to a predetermined level (possibly 6" or 12"). The grid is then resampled, and if found not to be above the action level, then no more soil is removed. LANL should begin sampling near the hot area and proceed down the slope. The gird size could be expanded as LANL approached the stream bed. Discrete samples would still be collected as indicated in the Sampling Plan for Column 3, Rows 3-5.

B. LANL could take discrete samples based on node points as established in the current grid pattern. The proposed grid sized with the exception of the nodes along Column 3 could be expanded. Discrete samples would be taken until samples no longer exceeded the proposed action level. The entire grid as proposed by LANL would not need to be sampled, rather samples would be taken until samples lower than the action level were found. The area to be removed would be bounded by samples which were found to be below the action level for Mercury. LANL would predetermine that a square meter surrounding each discrete node (found to be above the action level) would be removed. It would be better to be conservative in the amount of material determined to be removed.

LANL may want to use one of its mobil laboratories for this exercise, as this would provide a quicker turn-around for determining the extent of contamination, and during the soil removal would be a faster way of confirming that all contaminated soil has been removed.

LANL believes that the sampling approach described in the SRP is appropriate for the site and the remedial activities to be undertaken. The premise for the approach is that the contaminated area requiring cleanup can be identified on the basis of visual observations, field screening, and limited discrete sampling. The composite sampling would serve to verify that the remaining areas are below cleanup levels. Compositing allows a wide area to be sampled with a minimum number of analyses. The issue of sample dilution is addressed through the use of a sufficiently low detection limit and screening levels to identify when discrete subsamples from the composite should be analyzed.

The rationale for the proposed approach will be expanded in the revised SRP. The approach is based on the conceptual site model presented in the SRP. Important features of this model are:

There is only one activity and waste stream associated with the source of contamination at this site (i.e., disposal of vacuum pump oil).

The source of contamination (i.e., point at which wastes were disposed) is well

defined and is marked by visible contamination with oil and mercury.

The major constituents identified in the waste (oil, mercury, radionuclides) are not very mobile in the soil environment and are not expected to have migrated appreciably from the disposal location.

These aspects of the model will be verified prior to sampling through the use of field screening with X-ray fluorescence (XRF). If the screening confirms that the extent of contamination is limited, the sampling approach presented in the SRP will be implemented. The exact location of the grid will be based on the screening results. The grid will be located such that the samples for compositing are located outside of the area identified as being highly contaminated. The composite samples are intended to represent the average concentration of mercury in areas not expected to require cleanup.

The potential for dilution of samples through compositing will be addressed through the use of a screening level that is below the cleanup level. If the results of the composite are above this screening level, replicates of the individual subsamples comprising the composite will be analyzed. For composites collected on the hillside, the screening level will be half of the cleanup level.

2. It is unacceptable to composite the ten samples taken along the stream bed into two samples. LANL should collect discrete samples at each location, sampling catchments whenever possible. As previous sampling in the stream bed has indicated low levels of mercury the number of samples may be reduced. In addition, it would seem appropriate considering the age of this SWMU that LANL should locate the first wetland area (artificially produced or not) on this drainage system and take a soil sample within the wetland.

The rationale for composite sampling was discussed in the response to the comment No. 1. LANL believes that this rationale is also applicable to stream channel sampling. In response to a comment from NMED, LANL has agreed that closer subsample spacing would be appropriate for the first composite. A 5-m spacing will be used for the five subsamples to be used for the first composite. A 10-m spacing will be used for the remaining subsamples. As noted in the response to comment No. 1, a screening level will be used to indicate when discrete subsamples from the composite should be analyzed. This screening level is currently being developed based on discussions with NMED and is expected to be lower than the screening level for the hillside samples. The proposed detection limit for mercury (0.25 mg/kg) will allow a low enough screening level to indicate whether any subsamples could be at levels of concern. As described in the SRP, subsamples will be collected from catchments.

Based on discussions with NMED, LANL has decided not to perform wetlands sampling at this time. As requested by NMED, a stream sediment sample will be collected at the mouth of the stream channel where it enters Twomile Canyon. Based on the results of this sample, LANL and NMED will determine whether sampling of downstream wetlands is necessary.

3. The action level of 80 mg/kg as proposed by LANL, even though this is in the approved Installation Work Plan, is higher than the action level as proposed in Subpart S which is currently being used as guidance by EPA. Therefore, EPA requests that LANL use an action level of 20 mg/kg to be consistent with Subpart S. This action level is also more appropriate in view of the concerns of the State of New Mexico, and the State's current problems with mercury in surface water.

The SRP will be revised to reflect an action level for mercury of 20 mg/kg.

4. The Sampling Plan should indicate how samples are to be collected (stainless steel trowel, shovel, split spoon or Shelby tube, etc.). Appendix B, Standard Operating Procedures (SOP), describes all the possible methods of collection. The

sampling plan should indicate which method LANL is using for collection and then cite the SOP for details. For example, five surface soil samples will be taken within each meter grid, one at each grid node and one in the center. These samples will be collected from 0-6" using a stainless steel trowel. All samples from a single grid will be composited in a stainless steel bucket.

LANL will revise the SRP to identify the specific methods of sample collection that will be used.

5. LANL shall provide more details about the results of the previous investigation, such as how the samples were collected, and depth of collection.

The locations and depths of sample collection are described in Section 2.2 of the SRP. LANL will revise the SRP to describe how the samples were collected.

6. The choice of soil washing as remedial treatment to be implemented at the site is not acceptable.

In response to a comment from NMED, the text will be revised to indicate that in-situ soil washing will not be considered because of the location of the site adjacent to the stream channel. If ex-situ soil washing is to be used, it will be implemented away from the site.

7. LANL shall provide a sampling schedule.

A schedule will be provided with the revised SRP. As agreed to by NMED, the schedule will not be tied to specific dates but will be related to plan approval and suitable site conditions. Field activities will not begin until next spring when all snow has melted from the site.

8. LANL shall provide a Health and Safety Plan

A site-specific health and safety plan for the field investigation phase of the work will be provided.