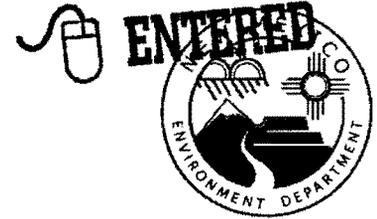


TA21

NEW MEXICO
ENVIRONMENT DEPARTMENT



Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1

Santa Fe, New Mexico 87505-6303

Phone (505) 476-6000 Fax (505) 476-6030

www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 24, 2010

George J. Rael
Environmental Operations Manager
Los Alamos Site Office
Department of Energy
3747 West Jemez Road, MS A316
Los Alamos, NM 87544

Michael Graham
Associate Director Environmental Programs
Los Alamos National Security, L.L.C.
P.O. Box 1663, MS 991
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL
PHASE II INVESTIGATION REPORT FOR DELTA PRIME SITE
AGGREGATE AREA, TECHNICAL AREA 21
LOS ALAMOS NATIONAL LABORATORY (LANL),
EPA ID #NM0890010515
HWB-LANL-10-025**

Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, L.L.C.'s (collectively, the Permittees) *Phase II Investigation Report for Delta Prime Site Aggregate Area* (Report), dated April 2010 and referenced by LA-UR-10-1890/EP2010-0097. NMED has reviewed the Report and hereby issues this Notice of Disapproval (NOD).

33681



Specific Comments

1) Section 3.4, Deviations, page 5, bullet 2:

Permittees' Statement: "At SWMU 21-024(g), boreholes at locations 2 and 9 could not be advanced past 11.5 ft because of auger refusal; therefore, samples were collected at 11.5 ft below ground surface (bgs) rather than at 15 ft bgs as prescribed in the work plan."

NMED Comment: The locations 2 and 9 refer to sample location IDs in the approved Work Plan. The Permittees must revise the text to identify the sample location IDs in the Report for these two sample locations.

2) Section 6.1.1, Soil and Rock Sampling and Analytical Results, page 12:

Permittees' Statement: "The analytical results for inorganic chemicals above background values (BV) are provided for soil and tuff in Table 6.1-1. The locations and analytical results of inorganic chemicals detected above BVs are shown in Figure 6.1-1."

NMED Comment: NMED acknowledges that the Tables and Figures only depict concentrations of inorganics and radionuclides above background values (BV). In many cases the deepest sampling interval does not appear on the Table or Figure because there were no detections above BV for inorganics or radionuclides and no detections for organics. For example, Table 6 (Proposed Sampling at SWMU 21-013(c)) in the approved Work Plan indicated that a deeper sample (8.0-9.0-feet) at location 21-25651 was necessary to determine the vertical extent of selenium. Figure 6.6-1 (Inorganic chemicals detected or detected above BVs at 21-013(c)) and Table 6.6-1 in the Report do not show a sampling interval from 8.0-9.0 feet. There is no way to know that a sample was collected from 8.0-9.0 feet without consulting the approved Work Plan. Without this knowledge, it would appear that the Permittees have not defined the extent of selenium at sample location 21-2561. The Permittees must revise all Tables and Figures, where appropriate, to include all sampling intervals and non-detects must be indicated as such.

3) Section 6.2.2, Spatial Distribution of COPCs at Consolidated Unit 21-003-99 and SWMU 21-024(c), page 15, bullets 3 and 5:

NMED Comment: The Permittees must explain why sample locations 21-605289 and 21-605292 have "no data" as indicated on Plate 2 in the Report.

4) Section 6.2.2, Spatial Distribution of COPCs at Consolidated Unit 21-003-99 and SWMU 21-024(c), page 15, bullet 12:

Permittees' Statement: "PCB extent is defined by decreasing concentrations with depth and all contamination above 1 mg/kg total PCBs has been removed from the site from within 10 ft bgs."

NMED Comment: At sample location 21-25748, Aroclor-1254 and Aroclor-1260 were detected at a depth of 14.0-15.0-feet at concentrations of 2.98 mg/kg and 1.16 mg/kg, respectively. SWMU 21-024(c) cannot achieve a “corrective action complete without controls” determination because total PCBs exceeds 1 mg/kg at the 14-15-foot depth interval at sample location 21-25748. A landuse restriction preventing construction of a building with a foundation deeper than 10-feet due to the presence of concentrations of PCBs that exceed 1 mg/kg would be required for this site if no further corrective action is conducted.

5) Section 6.3.2, Spatial Distribution of COPCs at Consolidated Unit 21-006(c)-99, page 16, bullet 6:

Permittees’ Statement: “Lateral extent is defined for americium-241, cesium-137, isotopic plutonium, strontium-90, tritium, and isotopic uranium south of location 21-601199 by decreasing or remaining essentially the same with depth. Tritium increased slightly laterally but was detected at trace levels.”

NMED Comment: The Permittees must revise the text to identify the sample ID for the sample collected “south of location 21-601199.” Additionally, the Permittees must define the lateral extent of tritium at this location. The Permittees must also revise the text, where appropriate, to indicate that the lateral extent of tritium south of location 21-601199 must be defined in the Phase III investigation.

6) Section 6.3.3, Summary of Human Health Risk-Screening Results, page 17:

Permittees’ Statement: “PAHs are found in asphalt and are a product of incomplete combustion from the tailpipes of motor vehicles. The source of the benzo(a)pyrene and the other PAH COPCs is probably runoff from the asphalt road upslope from the outfall. Therefore, the slightly elevated cancer risk estimated for the residential scenario at this consolidated unit is not related to a release from the site and does not require further investigation or remediation.”

NMED Comment: The cumulative cancer risk for the residential scenario slightly exceeded the target risk level of 1E-05. Polycyclic aromatic hydrocarbons (PAHs) were the primary driver for the excess cancer risk. While most of the detects for PAHs were in surface soil samples (0-0.5 feet below ground surface, ft bgs), there were several detections in subsurface soil at depths up to four ft bgs. The presence of PAHs in subsurface soil suggests that their presence are not due to runoff or vehicle exhaust, but could be the result of past site activities. The Permittees must either provide additional evidence supporting their conclusion that “the slightly elevated cancer risk estimated for the residential scenario at this consolidated unit is not related to release from the site” or revise the Report to recommend soil removal for PAHs.

7) Section 6.8.2, Spatial Distribution of COPCs at Consolidated Unit 21-022(h)-99, page 25, bullet 3:

Permittees' Statement: "Molybdenum increases to the south; however, detections are at trace levels at approximately 1 mg/kg. Therefore, the extent is defined for molybdenum."

NMED Comment: The Permittees must define the lateral extent of molybdenum, the vertical extent of barium at location 21-605282, and the Permittees must revise the text, where appropriate, to indicate that the lateral extent of molybdenum to the south of location 21-605284 must be defined as part of the Phase III investigation.

8) Section 6.9.2, Spatial Distribution of COPCs at Consolidated Unit 21-023(a)-99, page 26, bullet 5:

Permittees' Statement: "Vertical extent is defined for plutonium-239 at location 21-601114 by decreasing activities with depth."

NMED Comment: The Permittees must define the vertical extent of plutonium-239 (PU-239) at location 21-601114. The concentrations increase with depth at this location (2-3-feet: 2.25 pCi/g; 4-5-feet: 2.88 pCi/g; 9-10-feet: 3.77 pCi/g). The Permittees must also revise the text, where appropriate, to indicate that the vertical extent of PU-239 at location 21-601114 must be defined as part of the Phase III investigation.

9) Section 6.9.3, Summary of Human Health Risk-Screening Results, 21-023(a)-99, page 27:

Permittees' Statement: "The operations associated with these buildings would not have resulted in the release of PAHs, such as benzo(a)pyrene. Benzo(a)pyrene is probably from runoff from the road, which is upslope of the site."

NMED Comment: The cumulative cancer risk for the residential scenario exceeded the target risk level of 1E-05. The primary drivers for the excess risk were PAHs and arsenic. The Report indicates that "the operations associated with these buildings would not have resulted in the release of PAHs, such as benzo(a)pyrene. Benzo(a)pyrene is probably from runoff from the road, which is upslope of the site." However, PAHs were detected consistently in samples to a depth of 17 ft bgs. The presence of PAHs in subsurface soil suggests that their presence is not due to runoff, but could be the result of past site activities. The Permittees must either provide additional evidence supporting their conclusion that the elevated cancer risk estimated for the residential scenario is not related to a release from the site, or revise the Report to recommend soil removal for PAHs. The Report also indicates that the arsenic exposure point concentration (EPC) is similar to background concentrations, resulting in an overestimation of the risk. However, no quantitative evidence (e.g., a statistical comparison of background to site levels to see if they are significantly different) has been provided to support this assumption. The Permittees must either provide additional

information demonstrating that the arsenic detected at the site is statistically the same as background, or revise the Report to recommend limited soil removal for arsenic.

10) Section 6.11.2, Spatial Distribution of COPCs at SWMU 21-024(b), page 29:

Permittees' Statement: "Lateral extent was defined for nitrate west of location 21-600504 by decreasing concentrations at location 21-605285."

NMED Comment: According to Table 18 in the approved Work Plan, the sample was also analyzed for strontium. The Permittees must revise the text to discuss the results of strontium sampling at location 21-605285.

11) Section 6.12.3, Summary of Human Health Risk-Screening Results, SWMU 21-024(d), page 31, paragraph 3:

Permittees' Statement: "Arsenic risk contributes to approximately half of the total risk at the site and is the main contributor to the cancer risk. The arsenic EPC is similar to background concentrations and results in an overestimation of the risk."

NMED Comment: The cumulative cancer risk for the residential scenario exceeded the target risk level of 1E-05 due to the presence of arsenic. While the Report states that the concentrations of arsenic are similar to background, no quantitative evidence (e.g., a statistical comparison of background to site levels to see if they are significantly different) has been provided to support this assumption. The Permittees must either provide additional information demonstrating that the arsenic detected at the site is statistically the same as background, or revise the Report to recommend limited soil removal for arsenic.

12) Section 6.14.1, Soil and Rick Sampling and Analytical Results, page 33:

NMED Comment: The Permittees reference Tables 6.14-1, 16.14-2, and 6.14-3 in this section of the Report; however, these Tables were not included in the Report. The Permittees must revise the Report to include Tables 6.14-1, 16.14-2, and 6.14-3.

13) Section 6.18.2, Spatial Distribution of COPCs at SWMU 21-024(k), page 39, bullet 1:

Permittees' Statement: "Vertical extent is not defined for barium, calcium, or strontium at this location because the auger hole could not be advanced deeper given the proximity of the sloped mesa edge."

NMED Comment: The Permittees must include this explanation in Section 3.4, Deviations. Section 3.4 must be revised as necessary.

14) Section 6.19.3, Summary of Human Health Risk-Screening Results, Consolidated Unit 21-024(l)-99, page 41:

Permittees' Statement: "The operations associated with this building would not have resulted in the release of PAHs, such as benzo(a)pyrene, which comprise the majority of the carcinogenic COPCs. The source of the benzo(a)pyrene and the other PAH COPCs is probably runoff from the asphalt north, east, and west of former building 21-021."

NMED Comment: The cumulative cancer risk for the residential scenario exceeded the target risk level of 1E-05. PAHs were the primary driver for the excess cancer risk. There were several detections in subsurface soil at depths up to eight ft bgs. The presence of PAHs in subsurface soil suggests that their presence may not be due to runoff, but could be the result of past site activities. The Permittees must either provide additional evidence supporting their conclusion that the slightly elevated cancer risk estimated for the residential scenario at this consolidated unit is not related to a release from the site, or revise the Report to recommend limited soil removal for PAHs.

15) Section 6.24.2, Spatial Distribution of COPCs at SWMU 21-027(c), page 49, bullet 3:

Permittees' Statement: "Lead concentrations increased southeast of location 21-27142 at location 21-605234; however, no additional samples can be collected on the slope and extent is defined by sampling conducted at Los Alamos Canyon (LANL 2004, 087390)."

NMED Comment: The Permittees have not adequately described the field conditions which prevented collecting a sample beyond location 21-605234 to define the lateral extent of lead. The Permittees have also not identified the sampling locations in Los Alamos Canyon that define the lateral extent of lead. The Permittees must either define the extent of lead at SWMU 21-027(c), or provide a detailed description of the field conditions at the site and identify the Los Alamos Canyon sampling locations that define the extent of lead. The Permittees must also include the lead concentrations detected at each of the Los Alamos Canyon sampling locations.

16) Section 6.25.1.1, Inorganic Chemicals in Soil, page 51, paragraph 8:

Permittees' Statement: "Silver was not detected above the BV (1 mg/kg) but had DLs (1.1 mg/kg) above the BV in 3 of 10 samples. The DL is similar to the BV; therefore, silver is not identified as a COPC in soil."

NMED Comment: The Permittees must explain why the detection limit for silver is greater than the background value (BV) of 1 mg/kg.

17) Section 6.25.1.2, Inorganic Chemicals in Tuff, page 52, paragraphs 12-14:

Permittees' Statement: "Selenium was not detected but had DLs (0.49 mg/kg to 1 mg/kg) above the BV (0.3 mg/kg) in all seven tuff samples. Selenium is identified as a COPC in tuff."

"Silver was not detected above the BV (1 mg/kg) but had DLs (1.1 mg/kg to 1.2 mg/kg) above the BV in four of seven tuff samples. The DLs are below the maximum background concentration for silver in tuff (1.9 mg/kg). Therefore, silver is not identified as a COPC in tuff."

"Thallium was not detected but had DLs (1.2 mg/kg) above the BV (1.1 mg/kg) in two of seven tuff samples. The DLs are less than the maximum background concentration of thallium in tuff (1.7 mg/kg). Thallium is not identified as a COPC in tuff."

NMED Comment: The Permittees must explain why the detection limits for selenium, silver, and thallium are greater than their established background values (BV) of 0.3 mg/kg, 1 mg/kg, and 1.7 mg/kg, respectively.

18) Section 7.1, Nature and Extent of Contamination, page 55, SWMUs 21-024(l)-99 and 21-027(c):

NMED Comment: The Permittees state that nature and extent have been defined for SWMU 21-027(c). See Specific Comment 15.

19) Section 7.2.1, Human Health Risk-Screening Assessments, page 55:

Permittees' Statement: "A human health risk-screening assessment was not performed for SWMU 21-022(j) [part of Consolidated Unit 21-022(h)-99] because samples were collected from depths greater than 5 ft where no complete pathways are present and receptors are not exposed to contaminants."

NMED Comment: Human health risk-screening assessments for the residential and construction worker scenarios utilize samples obtained from depths of 0 to 10 feet below ground surface (bgs), not 5 feet bgs. While no samples were collected from depths of less than 10 feet at this SWMU, the Permittees must revise the text to state "[a] human health risk-screening assessment was not performed for SWMU 21-022(j) [part of Consolidated Unit 21-022(h)-99] because samples were collected from depths greater than 10 ft where no complete pathways are present and receptors are not exposed to contaminants."

20) Section 8.2, Recommendations for Corrective Actions Complete, page 58:

Permittees' Statement: "Thirteen sites for which nature and extent of contamination are defined do not pose potential unacceptable risks or doses under the current and reasonably foreseeable future land use scenarios (residential, industrial, and construction

worker)...[t]hese 14 sites are appropriate for corrective action complete without controls because they do not pose potential unacceptable risks or doses under a residential scenario and to the environment.”

NMED Comment: The Permittees must revise the text to reflect that there are 12 sites for which nature and extent of contamination are defined. See Specific Comment 15.

In accordance with Section III.W.3.b of the March 1, 2005 Order on Consent (Order), the Permittees may obtain a Certificate of Completion for each site where corrective action is complete. The Permittees must submit their request for Certificates of Completion under separate cover. NMED reminds the Permittees that approval of the Report does not constitute approval of a corrective action complete determination pursuant to Section III.W.3.b of the Order. If a Certificate of Completion is obtained, the Permittees may initiate a Class 3 Permit Modification Request for Corrective Action Complete subject to NMED’s review and approval. Only through this process can a “Corrective Action Complete” determination be obtained.

21) Section 8.3, Schedule for Recommended Activities, page 58:

Permittees’ Statement: “A Phase III Investigation work plan will be developed and submitted to NMED 6 mo after this investigation report is reviewed and approved.”

NMED Comment: NMED will establish a due date for the Phase III Investigation Work Plan in its approval of the Report.

22) Table 1.1-1, DP Site Aggregate Area Sites Addressed in this Report, Pages 137-138:

NMED Comment: Table 1.1-1 (*DP Site Aggregate Area Sites Addressed in this Report*) is identical to Table 1 (*SWMUs and AOCs Addressed in This Plan*) in the approved Work Plan with one exception-- the last row in Table 1 in the approved Work Plan is presented as follows:

Consolidated Unit	SWMU/AOC Number	Site Description
PCB-contamination area	Near SWMU 21-024(m)	Cliffall

The Report only discusses two PCB-contaminated areas: SWMU 21-003-99 and SWMU 21-024(c). The Permittees must explain in what document this “PCB-contamination area near SWMU 21-024(m)” is addressed and why it is not included in Table 1.1-1 of the Report.

23) Figure 6.8-1 (Inorganic chemicals detected or detected above BVs at Consolidated Unit 21-22(h)-99), Figure 6.8-2 (Organic chemicals detected at Consolidated Unit 21-22(h)-99, and Figure 6.8-3 (Radionuclides detected or detected above BVs/FVs at Consolidated Unit 21-22(h)-99), pages 90-92:

NMED Comment: The Permittees must revise Figures 6.8-1 through 6.8-3 to identify the location of each individual SWMU (21-022(h), 21-022(i), and 21-022(j)) that make up Consolidated Unit 21-022(h)-99.

24) Appendix E, Diesel Tank 21-57 Spill Site Investigation, Figure E.1.0-1:

NMED Comment: Figure E.1.0-1 appears to be cut off at the edges (e.g., the legend is illegible) and does not have a title. The Permittees must replace Figure E.1.0-1 with the complete Figure.

25) Appendix E, Diesel Tank 21-57 Spill Site Investigation:

NMED Comment: Based on a review of Appendix E, it appears that the nature and extent of contamination resulting from the diesel tank 21-57 spill has been defined. However, the data indicate elevated levels of total petroleum hydrocarbon-diesel range organics (TPH-DRO) at levels above New Mexico screening levels. The Report does not address these elevated levels nor does it indicate whether any additional action or investigation will be conducted on this area. The Permittees must remediate contaminated soil in the vicinity of the TA-21-57 aboveground diesel tank in accordance with NMED's TPH Screening guidelines. The Permittees must include this work as part of the Phase III Investigation Work Plan.

Appendix H

26) Appendix H, Section H-3.4, Exposure Point Concentration Calculations, pages H-18 – H-19:

NMED Comment: In the discussion of the determination of exposure point concentrations (EPCs), the Permittees state that the minimum number of detected data required to statistically determine an EPC, with an acceptable level of confidence, is five. It appears that the use of five detected data points follows the Permittees' guidance contained in Standard Operating Procedure (SOP)-5250, R0, Attachment 10, dated May 20, 2009. In past discussions concerning this issue, the Permittees indicated that the "minimum number of samples needed to conduct statistical comparisons is 10 per medium evaluated" (Response to the Notice of Disapproval for the Investigation Report for Upper Los Alamos Canyon Aggregate Area, Los Alamos National Laboratory, Dated December 3, 2009). While this statement was referencing comparisons to background, this theory should apply to any type of statistical comparison, including statistically estimating an EPC. NMED requires consistency

between sites and consistency with past approvals concerning the minimum number of samples required to statistically determine the EPC. The Permittees must clarify what steps will be taken to ensure that the methods used to calculate EPCs for sites within DP Site Aggregate Area are identical to those used for other sites across LANL.

27) Appendix H, Section H-5.3, Screening Evaluation, page H-53, paragraph 3:

Permittees' Statement: "Individual HQs for a receptor are summed to derive an HI; an HI greater than 1.0 is an indication that further assessment may be needed to be sure that exposure to multiple COPECs [constituents of potential ecological concern] at a site will not lead to potential adverse impacts to a given receptor population."

NMED Comment: For several ecological receptors, the screening assessment indicated hazard quotients (HQs) and hazard indices (HIs) above the target level of 1.0. Where HIs were above 1.0, additional evaluation was conducted to include area use factors, population use factors, and information from Dourson and Stara (1983). The Report indicates that a conclusion of Dourson and Stara is "that the LOAEL [lowest-observed adverse effect level] to NOAEL adjustment [no-observed adverse effect level] indicates that HIs up to 10 may not adversely affect ecological receptors. To maintain conservatism, [Dourson and Stara] state that HIs less than 3 do not adversely affect ecological receptors." The paper indicates that if a 10-fold uncertainty factor is applied, the ratio of the average subchronic to chronic NOAEL or LOAEL for one-half the data are below 2.0 and approximately 96% of the ratios are below a value of 10. The intent of this analysis appears to be to determine whether or not the uncertainty factor as applied is appropriate, rather than whether or not the ratios are indicative of acceptable risk. This paper further discusses the use of uncertainty factors and indicates that use of a default uncertainty factor (10-100) may not be appropriate. The paper indicates that additional uncertainty factors may be appropriate to account for the sensitivity of the adverse effect and interspecies adjustments. Based upon review of the categories of uncertainty, several issues should be addressed: intertaxon extrapolation, study duration extrapolation, and endpoint extrapolation. Use of the generic uncertainty factor as applied for the Delta Prime (DP) Aggregate Area sites (as well as addressed in EcoRisk) may not be appropriate and additional evaluation and review of uncertainty factors may be warranted. Further, because uncertainty factors consistent with those addressed in the paper were not applied, it is not clear that the assumption that an HI of less than 10 is indicative of acceptable risk. Also noteworthy is that this study appears to be directed at pesticides and may not be directly applicable to all contaminants.

Dourson and Stara also specifically address ratios below a value of 10.0. In reviewing the adjusted ecological HIs provided in Appendix H, there are several sites where the HIs greatly exceed the target level of 1.0 and are significantly above a ratio of 10.0. It is noted that the EPCs for several of these constituents are based on upper confidence levels (UCL) of the mean and not a maximum detected concentration. Therefore, it does not appear that a single detection is driving the risk in all cases. A qualitative statement is made in the Report that the HIs are acceptable as the concentrations of contaminants driving the risks are similar to

either background or levels of contaminants detected in other canyons/areas where biota studies are on-going. However, data were not provided demonstrating the levels of contamination are statistically similar (e.g., Wilcoxon Rank Sum test) to either background or other areas in the canyon. Further, it is understood that the biota studies are on-going and that data for all COPECs have not been collected (e.g., dioxins/furans). Additional evaluation of risk to ecological receptors where the HI is greater than 1.0 in the adjusted HI calculations is warranted. The Permittees must conduct a bounding analysis using the LOAEL to demonstrate that the levels of contamination present do not pose unacceptable harm to the environment.

28) Appendix H, Table H.4.1-3 (Parameter Values Used to Calculate Radionuclide SALs for the Industrial and Construction Worker Scenarios), page H-258:

NMED Comment: In reviewing the exposure parameters used to develop the radionuclide screening action levels (SALs), NMED noted that an exposure time of nine hours per day was applied. The Report indicated that this was representative of a normal work day at the Laboratory. In contrast, the screening levels for chemicals (NMED 2009) for the industrial and construction worker are based upon an exposure time of eight hours per day, which may result in under-conservative screening levels for these two receptors. The Permittees must explain whether or not the chemical screening levels are appropriate and protective of the industrial and construction worker scenarios and whether or not modifications to the exposure times are warranted to more accurately reflect worker activities at the Laboratory. If appropriate, the Permittees must update Section H-5.4 (*Uncertainty Analysis*) to address this issue.

29) Appendix H, Section H-4.3, Evaluation of Vapor Intrusion, page H-33:

Permittees' Statement: "The vapor intrusion indoor air pathway was not evaluated because all buildings within the DP Site Aggregate Area are abandoned and are scheduled for D&D. There are no receptors in the reasonably foreseeable future; therefore, the pathway is incomplete."

NMED Comment: Several volatile organic compounds (VOCs) were detected at low concentrations across the aggregate area. Because VOCs were not detected above residential screening levels and the Permittees do not intend to release the land and/or re-develop the area for residential use, the exclusion of the vapor intrusion scenario is reasonable. However, as previously discussed with the Permittees, the evaluation of the vapor intrusion scenario is not limited to the residential scenario. Evaluation of the potential exposure through inhalation of indoor air by an indoor worker must also be addressed. The Permittees must clarify whether or not the assumptions used to justify exclusion of vapor intrusion for the residential scenario also apply to an industrial worker and the businesses that currently occupy property within DP Site Aggregate Area.

30) Appendix H, Section H-4.2.10, SWMU 21-024(b), pages H-25 – H-26:

NMED Comment: At solid waste management unit (SWMU) 21-024(b), limited soil removal is proposed as part of the Phase III work. The removal action is driven by elevated levels of plutonium and americium in soil. However, the risk assessment also showed areas of elevated arsenic contamination, which resulted in excess risk above the target level of 1E-05. The Permittees must propose to remove the areas with elevated arsenic as part of the Phase III removal action.

31) Appendix H, Section H-4.2.19, Consolidated Unit 21-026(a)-99, page H-31:

NMED Comment: The Permittees propose limited soil removal to address radionuclide contamination at SWMU 21-026(a)-99. The Permittees must also propose to remove any soil containing elevated levels of benzo(a)pyrene and dibenz(a,h)anthracene, which are driving the risk assessments ((benzo(a)pyrene for industrial and dibenz(a,h)anthracene for residential and construction) as part of the Phase III corrective action activities.

32) Appendix H, Section H-4.4.2, Exposure Assessment, SWMU 21-022(f), page H-35:

Permittees' Statement: "The construction worker HI of approximately 3 (HI of 2.5) is primarily from manganese, which has an HQ of 2.4. Manganese was detected above background at one location with an EPC (1121 mg/kg), which is similar to the maximum soil background concentration (1100 mg/kg). In addition, the construction worker SSL (463 mg/kg) is similar to the background concentrations for Qbt 2, 3, 4 and soil. If manganese is not included, the HI for the construction worker is 0.1, which is less than the NMED target HI. Therefore, this SWMU does not require further investigation or remediation and there is not potential unacceptable risk for the construction worker scenario from site operations."

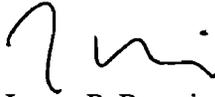
NMED Comment: Due to manganese, the construction worker HI exceeds the target hazard level of 1.0. The Permittees state that this is due to a single detection of 1,100 milligrams per kilogram (mg/kg) of manganese at location 21-603142 at a depth of 8.5 to 9.5 ft. However, in reviewing the data summary figure (Figure 6.7-1), manganese was also detected at the same sample location from 6.5 to 7.5 feet bgs at a concentration of 1,580 mg/kg. The Permittees must explain why this data point was not included in the risk assessment for the construction worker and revise the risk calculations as appropriate.

The Permittees must address all comments in this letter in a revised Report. The Permittees must submit the response to this NOD and the revised Report to NMED no later than **August 1, 2010**. All submittals (including maps) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. In addition, the Permittees shall submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Messrs. Rael and Graham
June 24, 2010
Page 13

Please contact Kathryn Roberts at (505) 476-6041 should you have any questions.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
K. Roberts, NMED HWB
S. Yanicak, NMED DOE OB, MS M894
T. Skibitski, NMED DOE OB
L. King, EPA 6PD-N
B. Criswell, EP-TA-21, MS C349
M. Thacker, EP-TA-21, MS C349
W. Woodworth, DOE-LASO, MS A316
D. McInroy, EP-CAP, MS M992
C. Rodriguez, DOE-LASO, MS A316

File: '10 LANL, TA-21 (SWMUs 21-012(b), 21-024(a), 21-024(e), 21-024(g), Consolidated Unit 21-024(l)-99, SWMU 21-024(o), Consolidated Unit 21-026(a)-99, and SWMU 21-027(c), Consolidated Unit 21-006(c)-99, SWMU 21-022(f), Consolidated Unit 21-022(h)-99 and 21-023(a)-99, and SWMUs 21-024(b), 21-024(d), 21-024(h), 21-024(i), 21-024(j), 21-024(k), 21-024(n), and 21-027(a), AOC 21-002(b), SWMUs 21-009, and 21-013(c), Consolidated Unit 21-003-99, 21-024(c))