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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 24, 2011

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**RE: NOTICE OF DISAPPROVAL
PHASE II INVESTIGATION REPORT FOR
MIDDLE LOS ALAMOS CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY (LANL)
EPA ID #NM0890010515
HWB-LANL-11-022**

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 (LANS) (collectively, the Permittees) Phase II Investigation Report for Middle Los Alamos Canyon Aggregate Area (IR), dated March 2011 and referenced by EP2011-0099. NMED has reviewed the IR and hereby issues this Notice of Disapproval (NOD). The Permittees must address the following comments.

General Comments:

- 1) The construction worker scenario was not evaluated in the risk assessments conducted at Middle Los Alamos Canyon Aggregate Area. The risk assessments must demonstrate that residual contamination does not present an unacceptable risk to any potential receptors if LANL is proposing corrective action complete without controls. This includes a future construction worker receptor, whether future construction, demolition and decommissioning, or remediation activities are anticipated. The construction worker receptor must be evaluated at solid waste management units (SWMUs) and areas of concern (AOCs) at Middle Los Alamos Canyon Aggregate Area for the following reasons:
 - The foreseeable reasonable future use of sites Middle Los Alamos Canyon Aggregate Area is industrial and/or recreational (Section 4.1). It is reasonable to assume that at some point in the future, intrusive activities may occur in these areas.
 - If a SWMU/AOC is proposed for the status of corrective action complete without controls, no land use controls would be instated to prevent future construction activities.
 - An evaluation of residential risk does not always equate to an assumption of protectiveness for all receptors. In several cases, the screening levels for metals for a construction worker are more conservative than those for a resident.

Modify the risk assessments at Middle Los Alamos Canyon Aggregate Area to include evaluation of the construction worker receptor.

- 2) Dioxins/furans were only included in the analytical suites for a few AOCs/SWMUs at Middle Los Alamos Canyon Aggregate Area. Risk assessments conducted at sites where dioxins/furans were analyzed revealed that detected concentrations of dioxins/furans contributed significantly to the total lifetime excess cancer risk calculations, and at least two sites led to the total lifetime excess cancer risk being above the NMED target risk level of $1E-5$. Since detections of dioxins/furans led to significant risks at sites where dioxins/furans were analyzed, dioxins/furans must be included in the sampling and analysis plan for all sites at Middle Los Alamos Canyon Aggregate Area. The lack of data on concentrations of dioxins/furans at AOCs/SWMUs sampled within Middle Los Alamos Canyon Aggregate Area constitute a data gap for the nature and extent of contamination investigations and the human and ecological risk assessments. Amend the IR at Middle Los Alamos Canyon Aggregate Area to provide additional analytical data for dioxins/furans.
- 3) The toxicity equivalency factor (TEF) of 0.001 utilized in the risk assessments conducted at Middle Los Alamos Canyon Aggregate Area for heptachlorodibenzodioxin[1,2,3,4,6,7,8-] is inconsistent with the TEF of 0.01 listed on the World Health Organization website http://www.who.int/ipcs/assessment/tef_update/en/. As such, the toxic equivalency calculations and cancer risks have been underestimated at sites containing heptachlorodibenzodioxin[1,2,3,4,6,7,8-]. Revise all tables, risk calculations, and conclusions with respect to the corrected TEF for heptachlorodibenzodioxin[1,2,3,4,6,7,8-].

- 4) The USEPA Regional Screening Levels (RSLs) for mercury (inorganic salts) were utilized for the residential and industrial scenarios, rather than the NMED (2009) soil screening levels for mercury. Clarify whether analytical results define speciation of mercury, thus justifying the use of the RSLs and toxicity data for mercury salts.
- 5) The vapor intrusion pathway was not evaluated at Middle Los Alamos Canyon Aggregate Area. Although no definable plume has been shown to be present (Section H-4.3), volatile organic compounds (VOCs) were included in the lists of analyses requested and were detected at some of the AOCs/SWMUs. The vapor intrusion pathway must be evaluated and therefore, at a minimum provide a qualitative discussion for all sites where VOCs were detected whether or not buildings are present or are expected to be constructed in the future. To qualify for the status of corrective action complete without controls, the risk assessments must address (quantitatively and/or qualitatively) all potential exposure pathways.
- 6) For many of the Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) discussed in the IR, detection limits (DLs) are higher than background values (BVs) at one or more sample locations or sample intervals for various analytes. In many of these cases, the Permittees conclude that no BVs were exceeded. This occurs in discussions of inorganic constituents found in IR sections that concern nature and extent of contamination. The example below is from Section 6.2.4.4, Nature and Extent of Contamination at AOC 02-003(a), Inorganic Chemicals, on page 21:

“Antimony was not detected but had DLs (0.902 mg/kg to 1.17 mg/kg) above the soil BV (0.83 mg/kg) in four samples and had DLs (1.19 mg/kg to 1.32 mg/kg) above the Qbo BV (0.5 mg/kg) in six samples. Because antimony was not detected above BVs, the vertical extent of antimony is defined.”

The last statement is misleading because the analytical laboratory was unable to detect concentrations near the background level. While it may not change the outcome of the demonstration of extent, a more accurate statement would be that the COPC was not detected above the detection limit of the analysis, and that any concentrations detected between the DL and BV were qualified as “non-detect.” Revise the IR to clarify these statements.

- 7) The Permittees have utilized an inappropriate reference for the Approval of the Phase II Investigation Work Plan throughout the IR. The first instance of this reference is found in Section 1.1 (General Site Information) on page 1 of the IR. The reference refers to NMED 2009, 106703, which is a document related to Lower Sandia Canyon Aggregate Area. Revise the IR to correct all references to NMED’s Approval of the Phase II Investigation Work Plan.
- 8) In future submittals, where the Permittees assert that vertical extent has been defined, the deepest “clean” sample, which may be non-detect or below background values (BVs), must be included in the tables of results. In addition to samples exceeding the BVs or fallout

values (FVs), the tables must include any non-detect or low-concentration samples that are essential to demonstration that vertical extent has been defined.

In addition, shallow samples that have higher contaminant concentrations than deeper samples, but are not shown in the tables because they are collected from a different media with a higher BV, must be included in the tables of results, if essential to demonstration of decreasing concentrations with depth. The example below is from Section 6.2.4.4, Nature and Extent of Contamination at AOC 02-003(a), Inorganic Chemicals, on pages 21-22:

“Iron was detected above the Qbo BV (3700 mg/kg) in six samples at locations 02-612348 and 02-612389. The highest concentration of 5750 mg/kg was detected at location 02-612389 from 49–50 ft bgs. Iron was detected at a concentration of 7520 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612348 from 5–7 ft bgs and was detected at a concentration of 9830 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612389 from 18–19 ft bgs. Iron concentrations decreased with depth at both locations. The vertical extent of iron is defined.”

While the shallow samples are discussed in the text, they are not shown in the Tables. Include these values in the Tables, if essential to demonstration of decreasing concentrations with depth.

- 9) The statement in the IR quoted in Comment 8 is not accurate. The referenced concentrations did not decrease with depth. The concentrations initially decreased from the Qal media samples to the Qbo media samples, but then increased with depth in the Qbo. Remove all inaccurate statements from the IR. While the concentrations are very low in most cases, and further investigation at these locations is likely unnecessary, the text must be revised to accurately reflect site conditions. Modify the text to indicate that initially concentrations are decreasing but then increase again with depth, and discuss the need to further investigate the vertical extent of contamination relative to the applicable SSL.
- 10) At several SWMUs and AOCs, risk estimates have been rounded down and reported with only one significant digit. In addition, the Permittees have concluded that risks slightly above the target risk levels are acceptable. Compliance with the requirements of Order on Consent (Order) Section VIII is determined by NMED. In some cases, sufficient site data, use of conservative assumptions, and other factors may lead to an acceptance of elevated risk. In other cases there may be sufficient uncertainty to conclude that while only slightly elevated, there is concern that excess risk is present and additional investigation and/or corrective actions are required. NMED evaluates risk estimates on a case-by-case basis. Revise the IR to provide a minimum of two significant digits for risk estimates and remove the conclusions regarding acceptable elevated risk levels.
- 11) Throughout the Nature and Extent Sections of the IR, the Permittees have included interpretations and qualifications of the data. Interpretation of data should not be discussed in the sections presenting analytical results. Section XI.C of the Order (Investigation Report) states, “In general, interpretation of data shall be presented only in the background,

conclusions and recommendations sections of the reports. The other text sections of the reports shall be reserved for presentation of facts and data without interpretation or qualification.” The examples below are from Section 6.14.4.4, Nature and Extent of Contamination at SWMU 02-005, Inorganic Chemicals, on page 107, Section 6.14.4.4, Nature and Extent of Contamination at SWMU 02-005, Radionuclides, on page 109, and Section 6.15.4.4, Nature and Extent of Contamination at SWMU 02-006(a), Inorganic Chemicals, on page 116, respectively:

“Because location 02-612380 is located next to a security fence, this zinc concentration, which was only detected at the surface, is likely from the fence rather than a site operation–related source.”

“The presence of plutonium-239/240 at low activities on the south-facing slope is likely related to the operations at TA-21, rather than related to site operation of SWMU 02-005.”

“The arsenic concentration of 17 mg/kg from 49–50 ft bgs at location 02-612641 is not consistent with the pattern of detection of arsenic across the site and is not consistent with known operational history of the site.”

Such statements are irrelevant to the observed nature and extent of contamination and must not be included in these sections. Move interpretive and qualitative statements from all Nature and Extent Sections of the revised IR to the appropriate section and provide supporting information for any conclusions.

Specific Comments:

12) Section 6.2.4.4, Nature and Extent of Contamination at AOC 02-003(a), Inorganic Chemicals, pages 21-22

Permittees’ Statement: “Iron was detected above the Qbo BV (3700 mg/kg) in six samples at locations 02-612348 and 02-612389. The highest concentration of 5750 mg/kg was detected at location 02-612389 from 49–50 ft bgs. Iron was detected at a concentration of 7520 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612348 from 5–7 ft bgs and was detected at a concentration of 9830 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612389 from 18–19 ft bgs. Iron concentrations decreased with depth at both locations. The vertical extent of iron is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR to correct the discrepancies.

13) Section 6.3.4.4, Nature and Extent of Contamination at AOC 02-003(b), Inorganic Chemicals, page 30

Permittees’ Statement: “Iron was detected above the Qbo BV (3700 mg/kg) in four samples at location 02-612390 with concentrations ranging from 4700 mg/kg to 5850 mg/kg. Iron was detected at a concentration of 6980 mg/kg (below the soil BV of 21,500

mg/kg) at location 02-612390 from 5–6 ft bgs. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR to correct the discrepancies.

14) Section 6.4.4.4, Nature and Extent of Contamination at AOC 02-003(c), Inorganic Chemicals, page 38

Permittees’ Statement: “Iron was detected above the Qbo BV (3700 mg/kg) in three samples at location 02-612420. The highest concentration of 5530 mg/kg was from 35–37 ft bgs. Iron was detected at a concentration of 6600 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612420 from 6–7 ft bgs. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR to correct the discrepancies.

15) Section 6.5.4.4, Nature and Extent of Contamination at AOC 02-003(d), Inorganic Chemicals, page 46

Permittees’ Statement: “Arsenic was detected above the Qct BV (0.56 mg/kg) in one sample at a concentration of 0.777 mg/kg at location 02-612412 from 9–10 ft bgs. Arsenic was detected at concentrations of 1.04 mg/kg and 0.988 mg/kg (below the soil BV of 8.17 mg/kg) from 0–0.5 ft and 4–5 ft bgs, respectively. Arsenic concentrations decreased with depth at this location. The vertical extent of arsenic is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR to address the arsenic concentrations relative to background values.

16) Section 6.5.4.4, Nature and Extent of Contamination at AOC 02-003(d), Inorganic Chemicals, page 46

Permittees’ Statement: “Barium was detected above the Qct BV (25.7 mg/kg) in one sample at a concentration of 63.2 mg/kg at location 02-612412 from 9–10 ft bgs. This concentration is slightly lower than the highest concentration of 63.7 mg/kg detected at previously sampled location 02-600218. Also, barium was not detected above BVs in samples as deep as 4.5–5.7 ft bgs at locations 02-01255, 02-600225, 02-600226, and 02-600227 approximately 40 ft downslope of location 02-612412. The vertical extent of barium is defined.”

NMED Comment: Barium at this location was detected at concentrations over twice the BV. Barium concentrations detected in samples at depths of five feet below ground surface (bgs) obtained from 40 ft away cannot be used to define the vertical extent of contamination related to a sample obtained from a depth of 10 ft bgs. Revise the IR accordingly.

Based on Table 6.5-2, there is an apparent concentration of constituents in the Qct media at location 02-612412. Provide a discussion pertaining to the detection of several inorganic COPCs at elevated levels at this sampling location and depth in this media.

17) Section 6.5.4.4, Nature and Extent of Contamination at AOC 02-003(d), Inorganic Chemicals, page 46

Permittees' Statement: "Chromium was detected above the Qct BV (2.6 mg/kg) in one sample at a concentration of 17.1 mg/kg at location 02-612412 from 9–10 ft bgs. Chromium concentrations increased with depth at this location and were above those detected at previously sampled location 02-600218. However, chromium was not detected above BVs in samples as deep as 4.5–5.7 ft bgs at locations 02-01255, 02-600225, 02-600226, and 02-600227 approximately 40 ft downslope of location 02-612412. The vertical extent of chromium is defined."

NMED Comment: Chromium at this location was detected at concentrations over six times the BV. Concentrations detected in samples obtained at shallower depths from locations 40 ft away cannot be used to define the vertical extent of contamination at this sample location. Revise the IR accordingly. Also, see second paragraph of Comment 16.

18) Section 6.5.4.4, Nature and Extent of Contamination at AOC 02-003(d), Inorganic Chemicals, page 47

Permittees' Statement: "Zinc was detected above the soil BV (48.8 mg/kg) in two samples and above the Qct BV (40 mg/kg) in one sample at location 02-612412. The highest concentration of 78.2 mg/kg was detected from 9–10 ft bgs. Zinc concentrations increased with depth at this location, and the highest concentration was similar to those detected at previously sampled location 02-600218. Zinc was detected at lower concentrations at locations 02-01255, 02-600225, and 02-600226 and was not detected above BVs in the deepest sample from 4.5–5.7 ft bgs at location 02-600227; these locations are approximately 40 ft downslope of location 02-612412. The vertical extent of zinc is defined."

NMED Comment: Zinc at this location was detected at concentrations approximately twice the BV. See Comments 16 and 17. Revise the IR accordingly.

19) Section 6.7.4.4, Nature and Extent of Contamination at AOC 02-004(a), Inorganic Chemicals, page 65

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in 15 samples at five locations. The highest concentration of 6340 mg/kg was detected at location 02-612346 from 25–26 ft bgs. Iron was detected at concentrations of 8750 mg/kg and 9300 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612326 from 5–6 ft and 15–16 ft bgs, respectively, and was detected at concentrations of 9360 mg/kg and 6150 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612328 from 5–6 ft and 15–16 ft bgs,

respectively. Iron concentrations decreased with depth at all five locations. The vertical extent of iron is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR accordingly.

20) Section 6.7.4.4, Nature and Extent of Contamination at AOC 02-004(a), Inorganic Chemicals, page 65

Permittees’ Statement: “Manganese was detected above the soil BV (671 mg/kg) in 1 sample and above the Qbo BV (189 mg/kg) in 13 samples at five locations. The highest concentration of 1860 mg/kg was detected at location 02-612326 from 15–16 ft bgs. Manganese was detected at concentrations of 356 mg/kg and 341 mg/kg (below the soil BV of 671 mg/kg) at location 02-612346 from 8–9 ft and 15–16 ft bgs, respectively. Manganese concentrations decreased with depth at all five locations. The vertical extent of manganese is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR accordingly.

21) Section 6.8.4.4, Nature and Extent of Contamination at AOC 02-004(b), Inorganic Chemicals, page 76

Permittees’ Statement: “Iron was detected above the Qbo BV (3700 mg/kg) in four samples at location 02-612280. The highest concentration of 5400 mg/kg was detected at location 02-612280 from 49–50 ft bgs. Iron was detected at a concentration of 8300 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612280 from 5–6 ft bgs. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined.”

NMED Comment: See Comments 8 and 9. Revise the IR accordingly.

22) Sections 6.8.5, Summary of Human Health Risk Screening, page 77 and H-4.5-7, AOCs 02-004(b,c,d), page H-43

Permittees’ Statement: “The total excess cancer risk for the residential scenario is 2×10^{-5} , which is above the NMED target risk level of 1×10^{-5} (NMED 2009, 108070). The cancer risk [is elevated] partly because of arsenic and is overestimated. As discussed in the uncertainty analysis in Appendix H (section H-4.4.2), the arsenic EPC is similar to being exposed to a naturally occurring arsenic level, and the risk does not incrementally increase above that which would result from exposure to naturally occurring levels of arsenic. The risk is reduced to approximately 1×10^{-5} without arsenic and is equivalent to the NMED target risk level of 1×10^{-5} (NMED 2009, 108070).”

NMED Comment: The text concludes that the omission of arsenic from the residential risk calculations at SWMU 02-004(b,c,d) would result in an acceptable level of risk for the resident, and that site concentrations would not pose any potential unacceptable risks for a

residential receptor. Arsenic should not be omitted from consideration in the conclusions for the following reasons:

- Arsenic exceeded maximum background concentrations in several samples and site concentrations are statistically different than background;
- The residential EPC for arsenic should not be compared to background ranges because it is generally incorrect to compare a 95% upper confidence limit (UCL) to background concentrations;
- Concentrations of dioxins/furans posed a greater risk to residential receptors than arsenic;
- Since the TEF used for heptachlorodibenzodioxin[1,2,3,4,6,7,8-] was incorrect (as noted in General Comment Number 2), risks from exposure to dioxins/furans have been underestimated. Therefore, exposure to dioxins/furans may pose an unacceptable level of risk to residents, in addition to arsenic exposure.

Modify the conclusions in Section 6.8.5 and H-4.5.7 to include arsenic in the risk evaluation, and determine if potential unacceptable risks to residential receptors exist at SWMU 02-004 (b,c,d) from exposure to dioxins/furans.

23) Section 6.8.4.4, Nature and Extent of Contamination at AOC 02-004(f), Inorganic Chemicals, page 76

Permittees' Statement: "Manganese was detected above the Qbo BV (189 mg/kg) in six samples at locations 02-612346 and 02-612347. The highest concentration of 260 mg/kg was detected at location 02-612346 from 49–50 ft bgs. Manganese was detected at concentrations of 356 mg/kg and 329 mg/kg (below the soil BV of 671 mg/kg) at location 02-612346 from 8–9 ft and at location 02-612347 from 5–6 ft bgs, respectively. Manganese concentrations decreased with depth at both locations. The vertical extent of manganese is defined."

NMED Comment: See Comments 8 and 9. Revise the IR accordingly.

24) Section 6.12.4.4, Nature and Extent of Contamination at AOC 02-004(f), Inorganic Chemicals, page 92

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in six samples at locations 02-612346 and 02-612347. The highest concentration of 6340 mg/kg was detected at location 02-612346 from 25–26 ft bgs. Iron concentrations decreased with depth at both locations. The vertical extent of iron is defined."

NMED Comment: See Comment 9. Revise the IR accordingly.

25) Section 6.13.4.4, Nature and Extent of Contamination at AOC 02-004(g), Inorganic Chemicals, page 101

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in three samples at location 02-612293. The highest concentration of 5150 mg/kg was detected at location 02-612293 from 35–36 ft bgs. This concentration is comparable to the concentration of 4940 mg/kg detected from 49–50 ft bgs. However, iron was detected at concentrations of 8170 mg/kg and 8990 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612293 from 5–7 ft and 15–16 ft bgs, respectively. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined."

NMED Comment: See Comments 8 and 9. Revise the IR accordingly.

26) Section 6.14.4.1, Soil and Rock Sampling, page 103

Permittees' Statement: "Excavation could not be performed at location 02-600561, which is on a steep rocky slope inaccessible by mechanized equipment, because of safety concerns and practicability. Instead, deeper and step-out samples were collected to evaluate the extent of PCB contamination at location 02-600561"

NMED Comment: Deeper and step-out sampling is not a suitable substitution for removal of contaminated soils. Sample results indicate that this area continues to contain significant contamination levels of PCBs. Sampling also indicates that the Permittees were able to auger by hand to depths over four feet bgs at this location. Therefore, it is reasonable to assume that the area could be excavated by hand and the soils disposed appropriately. Include, in the Phase III Work Plan, a proposal to excavate and dispose of these PCB-contaminated soils or provide justification for technical infeasibility in the revised IR.

Also, based on the high levels of PCB contamination in this area, there is a high probability that these contaminants have migrated down the drainage below this location. Propose sampling locations down-drainage from this location in the Phase III Work Plan.

27) Section 6.14.4.4, Nature and Extent of Contamination at SWMU 02-005, Inorganic Chemicals, page 107

Permittees' Statement: "Because location 02-612380 is located next to a security fence, this zinc concentration, which was only detected at the surface, is likely from the fence rather than a site operation-related source."

NMED Comment: See Comment 11. Remove the interpretive/qualitative statements and modify the IR to discuss the concentrations encountered in relation to the SSLs.

28) Section 6.14.4.4, Nature and Extent of Contamination at SWMU 02-005, Radionuclides, page 109

Permittees' Statement: "Cesium-137 was detected in four samples at four of the eight locations on the south-facing slope. The highest activity of 0.745 pCi/g was detected at location 02-612382 from 1.5–2.5 ft bgs. Cesium-137 activities decreased with depth or did not show a clear trend with depth at the four locations. Cesium-137 was not detected or not detected above FVs in the lateral samples at the north boundary of the TA-02 core area (section 6.32.2), which is located to the south and downgradient of these locations. TA-21 is located to the north and upgradient of these locations. The presence of cesium-137 at low activities on the south-facing slope may be related to the operations at TA-21, rather than SWMU 02-005."

NMED Comment: Cesium-137 activities at all four locations increased with depth. Remove statements that are not supported by the data. Also, see Comment 11. Remove all interpretive and/or qualitative statements from this section.

29) Section 6.14.4.4, Nature and Extent of Contamination at SWMU 02-005, Radionuclides, page 109

Permittees' Statement: "Plutonium-239/240 was detected in eight samples at six locations on the south-facing slope. The highest activity of 0.243 pCi/g was detected at location 02-612379 from 0–0.5 ft bgs. Plutonium-239/240 activities decreased with depth at the five locations. Plutonium-239/240 was detected at an activity of 0.0254 pCi/g at location 02-612384 from 1.5–2.5 ft bgs; however, this activity is only slightly above the MDL (0.018 pCi/g). The presence of plutonium-239/240 at low activities on the south-facing slope is likely related to the operations at TA-21, rather than related to site operation of SWMU 02-005."

NMED Comment: Based on Table 6.14-4, plutonium 239/240 was detected at seven locations during the Phase II sampling. The paragraph above is confusing because in the first sentence, six locations are discussed, then in the third sentence, the number is reduced to five. Clarify these discrepancies. Also, see Comment 11. Remove interpretive and/or qualitative statements from this section.

30) Section 6.15.4.4, Nature and Extent of Contamination at AOC 02-006(a), Inorganic Chemicals, page 116

Permittees' Statement: "The arsenic concentration of 17 mg/kg from 49–50 ft bgs at location 02-612641 is not consistent with the pattern of detection of arsenic across the site and is not consistent with known operational history of the site. Arsenic was not detected above BVs at the two locations (02-612649 and 02-612642) directly downgradient of location 02-612641."

NMED Comment: Location 02-612649 is not directly downgradient of location 02-612641. Correct the statement in the revised IR.

31) Section 6.15.4.4, Nature and Extent of Contamination at AOC 02-006(a), Inorganic Chemicals, page 116

Permittees' Statement: "Lead was detected above the Qbt 3 BV (11.2 mg/kg) in six samples at two locations. The highest concentration of 67.2 mg/kg was detected at location 02-612648 from 25–26 ft bgs. Lead concentrations decreased with depth at location 02-612648."

NMED Comment: See Comment 9. Revise the IR accordingly.

32) Section 6.15.4.4, Nature and Extent of Contamination at AOC 02-006(a), Inorganic Chemicals, page 116

NMED Comment: Beryllium was detected above the BV at location 02-612650, but was not discussed in the IR. Provide a discussion and proposed future actions related to the detection of beryllium.

33) Section 6.16.4.4, Nature and Extent of Contamination at SWMU 02-006(b), Inorganic Chemicals, page 124

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in four samples at location 02-612374. The highest concentration of 8890 mg/kg was detected at location 02-612374 from 15–16 ft bgs. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined."

NMED Comment: See Comment 9. Revise the IR accordingly.

34) Section 6.17.4.4, Nature and Extent of Contamination at AOC 02-006(c), Inorganic Chemicals, page 132

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in seven samples at locations 02-612345 and 02-612463. The highest concentration of 10,700 mg/kg was detected at location 02-612463 from 15–16 ft bgs. Iron concentrations decreased with depth at this location, but increased slightly with depth at location 02-612345. Iron concentrations are comparable to others at similar depths across the TA-02 core area. Further sampling for iron is not warranted."

NMED Comment: See Comment 9. Revise the IR accordingly.

35) Section 6.17.4.4, Nature and Extent of Contamination at AOC 02-006(c), Inorganic Chemicals, page 132

Permittees' Statement: "Vanadium was detected at concentrations of 7.75 mg/kg and 10.5 mg/kg (below the soil BV of 39.6 mg/kg) at location 02-612345 from 5–6 ft and 15–16 ft bgs, respectively."

NMED Comment: See Comment 8. Revise the IR accordingly.

36) Section 6.17.4.4, Nature and Extent of Contamination at AOC 02-006(c), Organic Chemicals, page 133

Permittees' Statement: "TPH-DRO was detected in five samples at location 02-612345. The highest concentration of 537 mg/kg was detected at location 02-612345 from 5–6 ft bgs. Concentrations of TPH-DRO decreased with depth at this location. The vertical extent of TPH-DRO is defined."

NMED Comment: See Comment 9. Revise the IR accordingly.

37) Section 6.19.4.4, Nature and Extent of Contamination at AOC 02-006(e), Inorganic Chemicals, page 141

Permittees' Statement: "Iron was detected above the Qbo BV (3700 mg/kg) in four samples at location 02-612292. The highest concentration of 7550 mg/kg was detected at location 02-612292 from 15–16.5 ft bgs. Iron concentrations decreased with depth at this location. The vertical extent of iron is defined."

NMED Comment: See Comment 9. Revise the IR accordingly.

38) Section 6.19.4.4, Nature and Extent of Contamination at AOC 02-006(e), Inorganic Chemicals, page 141

Permittees' Statement: "Manganese was detected above the Qbo BV (189 mg/kg) in four samples at location 02-612292. The highest concentration of 263 mg/kg was detected at location 02-612292 from 25–26 ft bgs. Manganese concentrations decreased with depth at this location. The vertical extent of manganese is defined."

NMED Comment: See Comment 9. Revise the IR accordingly.

39) Section 6.19.4.4, Nature and Extent of Contamination at AOC 02-006(e), Organic Chemicals, page 141

Permittees' Statement: "These results are not consistent with the patterns of detection of PCBs at other sites, are not consistent with known sources of PCBs at TA-02, and are not consistent with transport properties of PCBs."

NMED Comment: See Comment 11. These interpretive and/or qualitative statements are irrelevant to the discussion of nature and extent. Remove interpretive and/or qualitative statements from this section.

40) Section 6.20.3.4, Site Contamination, Inorganic Chemicals, page 162

Permittees' Statement: "Iron was detected at concentrations of 8180 mg/kg and 6660 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612388 from 5–6 ft and 15–16 ft bgs, respectively."

NMED Comment: See Comment 8. Revise the IR accordingly.

41) Section 6.20.4.4, Site Contamination, Inorganic Chemicals, page 171

Permittees' Statement: "Aluminum was detected at concentration 6770 mg/kg (below the soil BV of 29,200 mg/kg) at location 02-612393 from 15.5–16.5 ft bgs."

NMED Comment: See Comment 8. Revise the IR accordingly.

42) Section 6.20.4.4, Site Contamination, Inorganic Chemicals, page 171

Permittees' Statement: "Iron was detected at concentrations of 7400, 8520, and 6600 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-612391 from 5–6 ft bgs; at location 02-612392 from 5–6 ft bgs; and at location 02-612420 from 6–7 ft bgs, respectively. Iron concentrations decreased with depth at these three locations, and stayed constant with depth at location 02-612393."

NMED Comment: See Comment 8. Revise the IR accordingly.

43) Section 6.20.4.4, Site Contamination, Inorganic Chemicals, page 172

Permittees' Statement: "Manganese was detected at a concentration of 356 mg/kg (below the soil BV of 671 mg/kg) at location 02-612392 from 5–6 ft bgs. Manganese concentrations decreased with depth at this location."

NMED Comment: See Comment 8. Revise the IR accordingly.

44) Section 6.20.4.5, Summary of Human Health Risk Screening, page 173

Permittees' Statement: "The total excess cancer risk for the industrial scenario is 6×10^{-76} , which is below the NMED target risk level of 1×10^{-5} (NMED 2009, 108070)."

NMED Comment: The risk assessment value of 6×10^{-76} appears to be a typographical error. Correct this error in the revised IR.

45) Section 6.21.4.4, Nature and Extent of Contamination at SWMU 02-008(a), page 170

Permittees' Statement: "Location 02-612280, sampled for AOCs 02-004(b,c,d,e) in 2010, was only approximately 25 ft northwest of the site (Figures 6.8-1 and 6.11-1). Results from location 02-612280 are used to evaluate the vertical extent of contamination at SWMU 02-008(a)."

NMED Comment: The vertical extent of TAL metals, nitrate, SVOCs, VOCs, cesium-137, plutonium-239/240, uranium-235, and tritium has not been defined at SWMU 02-008(a). Detected concentrations from locations 25 ft away may not be used to define the vertical extent of contamination at this location. Propose sampling to define the vertical extent of TAL metals, nitrate, SVOCs, VOCs, cesium-137, plutonium-239/240, uranium-235, and tritium at SWMU 02-008(a) in the Phase III Work Plan.

46) Section 6.22.4.4, Nature and Extent of Contamination at AOC 02-008(c), AOC 02-008(c)(ii), Radionuclides, page 141

Permittees' Statements: "Uranium-234 was detected above the Qbt 3 BV (1.98 pCi/g) in three samples at location 02-612982. The highest activity of 2.08 pCi/g was detected at location 02-612982 from 35–37 ft bgs. Uranium-234 activities were only slightly above the BV and decreased slightly with depth at this location. The vertical extent of uranium-234 is defined.

"Uranium-235/236 was detected above the Qbt 3 BV (0.09 pCi/g) in three samples at location 02-612982. The highest activity of 0.143 pCi/g was detected at location 02-612982 from 49–50 ft bgs. This activity is not significantly above the BV and is lower than the activity of 0.236 pCi/g detected at location 02-600625 from 16.5–21 ft bgs, approximately 25 ft north of location 02-612982. The vertical extent of uranium-235/236 is defined.

"Uranium-238 was detected above the Qbt 3 BV (1.93 pCi/g) in three samples at location 02-612982. The highest activity of 2.12 pCi/g was detected at location 02-612982 from 25–26 ft bgs. Uranium-238 activities were only slightly above the BV and decreased slightly with depth at this location. The vertical extent of uranium-238 is defined."

NMED Comment: Some of the radionuclides discussed in these paragraphs increased in concentration with depth, while others decreased. In either case, the magnitude of change in either direction is slight. There is sufficient uncertainty in concentration trends for radionuclides that additional subsurface evaluation is necessary at this location as part of the future Phase III investigation activities planned for this site. Uranium-235/236 detections in a sample obtained from 25-feet away at a depth of 16.5-21 ft bgs cannot be utilized to define vertical extent of contamination relative to detections at 49-50 ft bgs, as quoted in the second paragraph above. In regard to the paragraph concerning uranium-238 above, see Comment 8. Propose future sampling at this site to define the vertical extent of radionuclide contamination.

47) Section 6.26.4.4, Nature and Extent of Contamination at AOC 02-011(a), AOC 02-011(a)(i), Inorganic Chemicals, page 220

Permittees' Statement: "Iron was detected at a concentration of 7360 mg/kg (below the soil BV of 21,500 mg/kg) at location 02-613571 from 5–6 ft bgs. Iron concentrations decreased with depth at this location."

NMED Comment: See Comment 8. Revise the IR accordingly.

48) Section 6.26.4.4, Nature and Extent of Contamination at AOC 02-011(a), AOC 02-011(a)(i), Inorganic Chemicals, pages 220-221

Permittees' Statement: "Manganese was detected at a concentration of 339 mg/kg (below the soil BV of 671 mg/kg) at location 02-613571 from 5–6 ft bgs. Manganese concentrations decreased with depth at this location."

NMED Comment: See Comment 8. Revise the IR accordingly.

49) Section 6.26.4.4, Nature and Extent of Contamination at AOC 02-011(a), AOC 02-011(a)(i), Organic Chemicals, page 221

NMED Comment: The Permittees state that lateral and vertical extent of PCBs is defined for both excavation areas except for north of location 02-600385. The lateral and vertical extent of PCBs is not defined to the south of location 02-600385 or to the east of location 02-600386. At both of these locations, PCBs were detected at concentrations above the default soil cleanup value of 1mg/kg and further soil removal is warranted.

In addition, the Permittees did not sample to the west of location 02-600386, stating that a concrete slab prevented sampling. This is not a viable reason for not conducting appropriate sampling. Concrete slabs can be easily cored to access sampling locations or soils can be accessed from the excavation below the base of the concrete. The Permittees must propose to conduct sampling beneath the concrete slab to define the extents of PCB contamination in the Phase III Investigation Work Plan.

50) Section 6.26.4.4, Nature and Extent of Contamination at AOC 02-011(a), AOC 02-011(a)(viii), Organic Chemicals, page 227

Permittees' Statement: "The detections of PCBs in the sample from 49–50 ft bgs at location 02-612292 are not consistent with the patterns of detection of PCBs at other sites, are not consistent with known sources of PCBs at TA-02, and are not consistent with transport properties of PCBs."

NMED Comment: See Comments 11 and 28. Revise the IR accordingly.

51) Section 6.26.4.4, Nature and Extent of Contamination at AOC 02-011(a), AOC 02-011(a)(x), Radionuclides, pages 229-230

NMED Comment: Uranium-234, uranium-235/236, and uranium-238 concentrations all increased with depth at location 02-612983. No discussion was provided for these constituents. Provide a discussion of the sampling results and proposed Phase III activities to define the extent of contamination. Also, remove language from the Summary section on page 230 stating that the vertical extent of isotopic uranium is defined.

52) Section 6.29.4.4, Nature and Extent of Contamination at AOC 02-011(d), Inorganic Chemicals, page 248

NMED Comment: The Permittees infer that the extent of arsenic contamination was defined during the Phase I investigation at AOC 02-011(d), as no additional sampling was conducted during the Phase II investigation to further define the extent of arsenic contamination. It is uncertain whether the extent of arsenic has been adequately defined at AOC 02-011(d) since one detection of arsenic in sediment (8.7 mg/kg) at sample location 02-01247 (Figure 6.29-2) was above the sediment background comparison value of 3.98 mg/kg. Also, no subsurface samples were collected along the industrial waste line and additional samples may reveal increasing concentrations of arsenic with increasing depth. Additional sampling is warranted at AOC 02-011(d) in order to further define the extent of contamination of arsenic for the following reasons:

- The elevated detection of arsenic has led to a residential risk estimate that exceeds the NMED target risk level of $1E^{-5}$ (Section H-4.5.26).
- Section H-4.4.2 states that the elevated detection of arsenic is naturally occurring.
- Section H-4.5.26 states that there are no unacceptable risks to residents from exposure to soil/sediment at AOC 02-011(d).

The Permittees must propose to further evaluate the nature and extent of contamination of arsenic at AOC 02-011(d) in the Phase III Investigation Work Plan.

53) Section 6.29.5, Summary of Human Health Risk Screening, page 249

Permittees' Statement: "The total excess cancer risk for the residential scenario is 2×10^{-5} , which is above the NMED target risk level of 1×10^{-5} (NMED 2009, 108070). The cancer risk is partly because of arsenic and is overestimated. As discussed in the uncertainty analysis in Appendix H (section H-4.4.2), the arsenic EPC is similar to being exposed to a naturally occurring arsenic level, and the risk does not incrementally increase above that which would result from exposure to naturally occurring levels of arsenic. The risk is reduced to approximately 3×10^{-6} without arsenic, and is below the NMED target risk level of 1×10^{-5} (NMED 2009, 108070)."

NMED Comment: See Comment 8. Revise the IR accordingly.

54) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 286

Permittees' Statement: "Aluminum concentrations decreased with depth at this location."

NMED Comment: Based on Table 8.6-2, aluminum concentrations did not decrease with depth at this location (see Comment 8). Revise the IR accordingly.

55) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 287

Permittees' Statement: "Barium concentrations decreased with depth at this location."

NMED Comment: Based on Table 8.6-2, barium concentrations did not decrease with depth at this location (see Comment 8). Revise the IR accordingly.

56) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 287

Permittees' Statement: "Cobalt concentrations decreased with depth at this location."

NMED Comment: Based on Table 8.6-2, cobalt concentrations did not decrease with depth at this location (see Comment 8). Revise the IR accordingly.

57) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 287

Permittees' Statement: "Copper was detected above the Qbt 3 BV (4.66 mg/kg) in seven samples at four locations. The highest concentration of 12 mg/kg was detected in the deepest sample (9–10 ft bgs) at location 26-612301. Copper concentrations decreased with depth at location 26-612297, but increased with depth at locations 26-612300, 26-612301, and 26-612302. The highest copper concentrations detected at locations 26-612300 and 26-612302 are 8.1 mg/kg and 6.9 mg/kg, respectively, which do not appear to be the result of a release because they are not significantly above the maximum tuff background concentration (6.2 mg/kg). Therefore, the vertical extent is defined at locations 26-612300 and 26-612302. However, the vertical extent of copper is not defined at location 26-612301, and the lateral extent of copper is not defined to the southeast at this location."

NMED Comment: The vertical extent of copper contamination has not been defined for locations 26-612300, 26-612301, and 26-612302. Copper concentrations increased with depth at all three locations. Revise the text accordingly and propose additional sampling at each location in the Phase III Investigation Work Plan.

58) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 287

Permittees' Statement: "Lead concentrations decreased with depth at both locations."

NMED Comment: Based on Table 8.6-2, lead concentrations did not decrease with depth at these locations (see Comment 8). Revise the IR accordingly.

59) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 288

Permittees' Statement: "Magnesium concentrations decreased with depth at both locations."

NMED Comment: Based on Table 8.6-2, magnesium concentrations did not decrease with depth at location 26-612297 (see Comment 8). Revise the IR accordingly.

60) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 288

Permittees' Statement: "Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in seven samples at four locations. The highest concentration of 22.6 mg/kg was detected at location 26-612294 from 9–10 ft bgs. Nickel concentrations increased with depth at locations 26-612294 and 26-612300 and decreased with depth at locations 26-612297 and 26-612301. The highest nickel concentration detected at location 26-612300 is 8.9 mg/kg, which does not appear to be the result of a release because it is not significantly above the maximum tuff background concentration (7 mg/kg). Therefore, the vertical extent of nickel is defined at location 26-612300. However, the vertical extent of nickel is not defined at location 26-612294, and the lateral extent of nickel is not defined to the west at this location."

NMED Comment: The vertical extent of nickel contamination has not been defined for locations 26-612294, 26-612297, and 26-612300. According to Table 8.6-2, nickel concentrations increased with depth at all three locations (see Comment 8). Revise the text accordingly and propose additional sampling at each location in the Phase III Investigation Work Plan.

61) Section 8.6.4, Nature and Extent of Contamination at TA-26, Inorganic Chemicals, pages 288

Permittees' Statement: "Selenium was detected above the Qbt 3 BV (0.3 mg/kg) in 15 samples and above the soil BV (1.52 mg/kg) in 4 samples at all eight locations. The highest concentration of 5.4 mg/kg was detected at location 26-612300 from 5–6 ft bgs. Selenium concentrations decreased with depth at six of the eight locations, did not change with depth at location 26-612294 at a concentration of 1.6 mg/kg, and increased slightly with depth at location 26-612302 from 1.4 mg/kg to 1.7 mg/kg. These concentrations are lower than

previously detected concentrations. Selenium concentrations also decreased laterally from previously sampled locations. The lateral and vertical extent of selenium are defined on the canyon slope.”

NMED Comment: Based on Table 8.6-2, selenium was detected above BVs in samples from nine locations, not eight as stated in the text. Table 8.6-2 also shows that selenium concentrations increased with depth at two locations (26-612298 and 26-612302). Revise the IR to correct the discrepancies.

62) Table 7.3-3, Organic Chemicals Detected at AOC 21-028(c), pages 766

NMED Comment: The Table is missing a footnote for (i). Provide a footnote for (i) in the revised IR.

63) Table 7.3-4, Radionuclides Detected or Detected above BVs/FVs at AOC 21-028(c), pages 769

NMED Comment: The Table is missing a footnote for (e). Provide a footnote for (e) in the revised IR.

64) Table 8.6-4, Radionuclides Detected or Detected above BVs/FVs at TA-26, pages 782

NMED Comment: The Table contains a footnote labeled (e), which should be labeled (d). Correct this mistake in the revised IR.

65) Section H-4.4.2, Exposure Assessment, page H-33

NMED Comment: The uncertainty discussions for AOCs 02-006(b), 02-006(e), and 02-011(d) state that elevated levels of arsenic are likely background related based on comparing the 95% UCL of the mean with background comparison values. It is incorrect to compare a mean concentration with a background comparison value. The background value (i.e., 95% upper tolerance limit) is used for point-to-point comparisons. Because the UCL is not a point estimate, it cannot be used as an estimate of an individual site observation for comparison to background threshold values. Remove these discussions from the text in Section H-4.4.2 and retain arsenic for evaluation in the risk assessment conclusions for AOCs 02-006(b), 02-006(e), and 02-011(d). Determine if additional lines of evidence would suggest that the elevated detections of arsenic are representative of background concentrations.

66) Sections H-4.5.10, AOC 02-004(g) and H-4.4.2, Exposure Assessment, pages H-44 and H-33

NMED Comment: The risk assessment conducted at AOC 02-004(g) demonstrates that the total dose to residents is 17 mrem/yr. This dose is greater than the DOE target dose limit of 15 mrem/yr. Sections H-4.5.10 and H-4.4.2 explain that the majority of the dose is

due to a single sample with a high detection of cesium-137. The conclusions of the risk assessment state that no unacceptable doses exist for a resident based on the removal of the high detection of cesium-137 from the radionuclide dataset. No reason is provided for why it is justified to remove this detection from the dataset. Rather a more compelling argument would be a spatial evaluation of risk driven by a single detection. However, a residential receptor would be exposed to all surface soil at AOC 02-004(g) and removal of this detection of cesium-137 from consideration in the risk assessment is not justified. Further, radionuclide COPCs are of particular concern at Middle Los Alamos Canyon Aggregate Area based on site history. Provide additional lines of evidence to justify the radiological risk at AOC 02-004(g).

67) Tables H-2.2-1 through H-2.2-56, pages H-71 through H-164

NMED Comment: Most of the tables display a negative value for the minimum concentrations (nondetected and some detected concentrations) for radionuclide COPCs. It is not possible to have a negative concentration. Modify Tables H-2.2-1 through H-2.2-56 accordingly and address this issue either in a footnote or in the text with a corresponding reference in the tables.

68) Table H.2-2-16, EPCs for AOC 02-004(e) for the Residential Scenario, page H-98

NMED Comment: There is a typographical error for the EPC for 2,3,7,8-tetrachlorodibenzodioxin (105E-6 mg/kg). The EPC should be 1.05E-6 mg/kg, as shown in Table 6.11-3. Revise Table H.2-2-16 accordingly.

69) Table H-2.2-19, EPCs for AOC 02-004(g) for the Industrial and Recreational Scenarios, page H-103

NMED Comment: The analyte 1,2,3,4,7,8-hexachlorodibenzodioxin is not listed on Table H-2.2-19, and is inconsistent with Table 6.13-3. This does not affect the conclusions of the risk assessment as 1,2,3,4,7,8-hexachlorodibenzodioxin was included for evaluation in the risk assessment. However, modify Table H-2.2-19 to include 1,2,3,4,7,8-hexachlorodibenzodioxin.

70) Table H-4.2-59, Dioxin/Furan Calculation for AOC 02-004(b,c,d) for the Industrial and Recreational Scenarios, page H-197

NMED Comment: The toxic equivalency calculations are incorrect for the following constituents of potential concern (COPCs):

- Heptachlorodibenzodioxin[1,2,3,4,6,7,8-]
- Hexachlorodibenzodioxin[1,2,3,4,7,8-]
- Hexachlorodibenzodioxin[1,2,3,6,7,8-]
- Hexachlorodibenzodioxin[1,2,3,7,8,9-]
- Octachlorodibenzodioxin[1,2,3,4,6,7,8,9-]
- Pentachlorodibenzodioxin[1,2,3,7,8-]

Therefore, the 2,3,7,8-tetrachlorodibenzodioxin toxic equivalency sum has been underestimated. Modify Table H-4.2-69 accordingly and any other tables in the IR that would be affected.

71) Table H-4.2-59, Dioxin/Furan Calculation for AOC 02-004(b,c,d) for the Industrial and Recreational Scenarios, page H-197

NMED Comment: The exposure point concentration (EPC) listed for heptachlorodibenzofuran[1,2,3,4,7,8,9-] (6.57E-6 mg/kg) is inconsistent with the EPC of 1.468E-5 mg/kg listed on Table H-2.2-13. Modify Table H-4.2-59 accordingly, and any other tables that would be affected.

72) Table H-4.2-78, Residential Carcinogenic Screening Evaluation for AOC 02-004(e), page H-208

NMED Comment: The residential risk from exposure to dioxins/furans has been underestimated at AOC 02-004(e) due to an incorrect TEF value as explained in General Comment Number 2. As the current risk is estimated to be at the NMED target level of 1E-5, the corrected risk level is likely to be above the NMED target risk level of 1E-5. Utilizing the correct TEF for heptachlorodibenzodioxin[1,2,3,4,6,7,8-], determine if COPCs present at AOC 02-004(a) would pose an unacceptable level of risk to residential receptors.

73) Table H-4.2-97, Residential Noncarcinogenic Screening Evaluation for AOC 02-004(g), page H-218

NMED Comment: The residential risk from exposure to dioxins/furans has been underestimated at AOC 02-004(g) due to an incorrect TEF value as explained in General Comment Number 2. As the current risk is estimated to be at the NMED target level of 1E-5, the corrected risk level is likely to be above the NMED target risk level of 1E-5. Utilizing the correct TEF for heptachlorodibenzodioxin[1,2,3,4,6,7,8-], determine if COPCs present at AOC 02-004(g) would pose an unacceptable risk to residential receptors.

74) Tables H-4.2-94, H-4.2-97, and H-4.2-101, pages H-216, H-218, and H-220

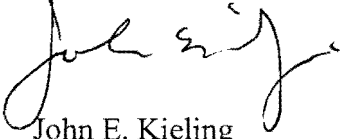
NMED Comment: The EPC listed for 2-methylnaphthalene (0.0178 mg/kg) is inconsistent with the EPC value of 0.0152 mg/kg listed on Tables H-2.2-19 and H-2.2-20. It is noted that the EPC used is greater and therefore results in a more conservative hazard index, and therefore does not affect the risk assessment. However, modify Tables H-4.2-94, H-4.2-97, and H-4.2-101 to display the correct EPC for 2-methylnaphthalene.

Messrs. Rael and Graham
May 24, 2011
Page 23

The Permittees must address all comments herein and submit a revised IR by **June 17, 2011**. Any additional work proposed for the next phase of investigation (Phase III) must be listed in the Recommendations Section of the IR. 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 must submit a redline-strikeout version that includes all changes and edits to the Investigation Work Plan (electronic copy) with the response to this NOD.

Please contact Ben Wear at (505) 476-6041 should you have any questions.

Sincerely,



John E. Kieling
Acting Chief
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cc:

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