



**DEPARTMENT OF ENERGY**  
Environmental Management Los Alamos Field Office (EM-LA)  
Los Alamos, New Mexico 87544

EMLA-2021-0032-02-001

November 19, 2020

Mr. Kevin Pierard  
Bureau Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505-6313

Subject: Response to the Notice of Disapproval, Periodic Monitoring Report for  
2019 Vapor-Sampling Activities at Material Disposal Area L, Solid Waste  
Management Unit 54-006, at Technical Area 54, May 2020

Dear Mr. Pierard:

The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) are providing responses to the comments in the New Mexico Environment Department's notice of disapproval for the "Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54," dated September 11, 2020.

These comment responses are submitted in accordance with Section XXIII(E) of the June 2016 Compliance Order on Consent, as modified on February 27, 2017.

If you have any questions, please contact David Diehl at (505) 551-2496 (david.diehl@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

**Arturo Duran**

Digitally signed by Arturo  
Duran  
Date: 2020.11.12 13:09:08  
-07'00'

Arturo Q. Duran  
Compliance and Permitting Manager  
Environmental Management  
Los Alamos Field Office

Enclosures:

1. Two hard copies with electronic files:  
Response to the Notice of Disapproval, Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, May 2020, Los Alamos National Laboratory (LANL), EPA ID #NM0890010515, LANL-20-028, Dated September 11, 2020 (EM2020-0521)

CC (letter and enclosure[s] emailed):

Laurie King, EPA Region 6, Dallas, TX  
Raymond Martinez, San Ildefonso Pueblo, NM  
Dino Chavarria, Santa Clara Pueblo, NM  
Chris Catechis, NMED-DOE-OB  
Steve Yanicak, NMED-DOE-OB  
William Alexander, N3B  
Emily Day, N3B  
David Diehl, N3B  
Michael Erickson, N3B  
Erich Evered, N3B  
Jeff Holland, N3B  
John Hopkins, N3B  
Kim Lebak, N3B  
Joseph Legare, N3B  
Dana Lindsay, N3B  
Pamela Maestas, N3B  
Christian Maupin, N3B  
Glenn Morgan, N3B  
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PRS website

**Pamela T. Maestas**

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**From:** Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>  
**Sent:** Thursday, November 19, 2020 12:05 PM  
**To:** Pamela T. Maestas  
**Subject:** RE: Submittal to NMED on 11/19/2020 of NOD Response MDA L Vapor PMR

Received

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**From:** Pamela T. Maestas <pamela.maestas@em-la.doe.gov>  
**Sent:** Thursday, November 19, 2020 10:00 AM  
**To:** Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>  
**Cc:** Dhawan, Neelam, NMENV <neelam.dhawan@state.nm.us>; Emily M. Day <Emily.Day@em-la.doe.gov>; Regulatory Documentation <RegDocs@EM-LA.DOE.GOV>; Martinez, Cynthia, NMENV <cynthia.martinez1@state.nm.us>; cheryl.rodriguez@em.doe.gov; John Hopkins <John.Hopkins@EM-LA.DOE.GOV>; David Diehl <David.Diehl@EM-LA.DOE.GOV>  
**Subject:** [EXT] Submittal to NMED on 11/19/2020 of NOD Response MDA L Vapor PMR

Mr. Pierard,

Attached for submittal is a pdf of the following:

- Response to the Notice of Disapproval, Periodic Monitoring Report for 2019 Vapor Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, May 2020 (EMLA-2021-0032-02-001)

Please acknowledge receipt of this submittal by responding to this email.

Let me know if you have any questions.

Thank you.

**Pamela T. Maestas**

**Regulatory Documentation Manager**

Newport News Nuclear BWXT-Los Alamos, LLC

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**Response to the Notice of Disapproval,  
Periodic Monitoring Report for 2019 Vapor-Sampling Activities at Material Disposal Area L,  
Solid Waste Management Unit 54-006, at Technical Area 54, May 2020,  
Los Alamos National Laboratory (LANL), EPA ID #NM0890010515, LANL-20-028,  
Dated September 11, 2020**

**INTRODUCTION**

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office responses follow each NMED comment.

**SPECIFIC COMMENTS**

**NMED Comment**

**1. Section 3.1 Tier Soil-Vapor Screening, Page 6.**

**DOE Statement:** "Table 3.1-2 presents the results of the Tier I screening for the first round of 2019 soil-vapor data. Twelve VOCs were identified that exceeded the Tier I SL. Table 3.1-3 presents the results of the Tier I screening for the second round of soil-vapor data. Fourteen VOCs were identified that exceed the Tier I SLs."

**NMED Statement:** Please correct the text and Table 3.1-2 to include benzene among the volatile organic compounds (VOCs) to be identified as a Tier I Potential for Groundwater Impact during the first 2019 sampling round. It should be noted that benzene was detected during the first round with a maximum pore-gas concentration of 2,202  $\mu\text{g}/\text{m}^3$ . This detection exceeds the calculated Tier I Screening Levels (SLs) of 1,140  $\mu\text{g}/\text{m}^3$  provided in Table 3.1-1. It should also be noted that the first round benzene detection exceeds the second round benzene detection (1,400  $\mu\text{g}/\text{m}^3$ ), which is listed in Table 3.1-3 as a Tier I Potential for Groundwater Impact. Please also consider comment 2.

**DOE Response**

1. Table 3.1-2 will be revised to indicate "Yes" for benzene in the Tier I Potential for Groundwater Impact column. Section 3.1 will also be modified to indicate that 13 volatile organic compounds (VOCs) were identified that exceeded the Tier I screening level (SL). The text will be revised to note that the first round benzene detection exceeds the second round benzene detection.

**NMED Comment**

**2. Section 5.2.1 Potential for Groundwater Contamination, Page 8.**

**DOE Statement:** "Tables 5.1-1 and 5.1-2 show the 13 VOCs that exceed Tier I groundwater screening levels. These VOCs are benzene; carbon tetrachloride; chloroform; 1,1-DCA; 1,2-DCA; 1,1-DCE; 1,2-DCE; 1,4-dioxane; methylene chloride; PCE; 1,1,1-TCA; 1,1,2-TCA; and TCE."

- a. **NMED Comment:** *Thirteen VOCs are mentioned in the text to exceed the Tier I SL but fourteen VOCs are presented in Table 3.1-3 during the second round of soil vapor sampling and testing. Table 3.1-3 shows that isopropanol was detected in addition to the thirteen other VOCs mentioned, during the Second Round of sampling. Resolve the discrepancy.*
- b. **NMED Comment:** *Revise Table 5.1-2 to include the benzene detection of 1800 µg/m<sup>3</sup> for Location ID 54-27642 at the 175-ft depth (Sample ID MD54-20-191689), it is an exceedance of the SL. Also, correct the groundwater Tier I SL of 1135 µg/m<sup>3</sup> for benzene in Table 5.1-2 to be consistent with the 1140 µg/m<sup>3</sup> value provided in Tables 3.1-1, 3.1-2 and 3.1-3. Similar discrepancies have been noted for several other constituents. Some deviate significantly from the SL provided in Table 3.1-1, such as acetone, bromodichloromethane, isopropylbenzene, and Xylene[1,3-]+Xylene[1,4-]. Please revise the tables in the Report so that each table uses the same groundwater SL for each constituent.*
- c. **NMED Comment:** *Appendix E of the Consent Order outlines NMED expectations for the presentation of subsurface vapor monitoring analytical data in Periodic Monitoring Reports (PMRs). The Report does not contain figures that graphically present the results of the subsurface vapor monitoring analytical data in map and vertical profile views. Figures similar to Figures 4.3-3 through 4.3-14 of the August 2019 Interim Measures Final Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54 (IMFR) must be included in the revised Report and subsequent PMRs.*
- d. **NMED Comment:** *Please revise the Report to include:*
- i. *Figures of isoconcentration maps that present each contaminant found to exceed Tier I groundwater screening levels for the current monitoring event, if at more than one location.*
  - ii. *Vertical profiles of each isoconcentration map that depicts each contaminant found to exceed Tier I groundwater screening levels for the current monitoring event.*
  - iii. *Figures presenting geologic cross-sections based on borehole data. As with the IMFR report figures, the geologic cross-section can be incorporated into the vertical profiles.*
  - iv. *Figures that show changes, if any, in vapor contaminant concentration with time for each contaminant that exceed screening levels.*

## **DOE Response**

- 2.a. Section 5.2.1 will be revised to indicate that 14 VOCs exceeded Tier I groundwater SLs, and isopropanol will be added to the list of VOCs in this section. Isopropanol will also be added to Tables 5.1-2 and 5.2-2.
- 2.b. The benzene concentration in Table 5.1-2 will be shaded to denote the concentration at Location ID 54-27642 at the 175-ft depth (Sample ID MD54-20-191689) is greater than the Tier 1 SL. The groundwater Tier I SL of 1135 µg/m<sup>3</sup> for benzene in Table 5.1-2 will be updated to 1140 µg/m<sup>3</sup>. The Tier I SLs reported in Tables 5.1-1 and 5.1-2 will be reviewed and updated to match the concentrations listed in Table 3.1-1 for each constituent.

- 2.c. The report will be updated to include additional figures as requested. The current report includes figures for 1,1,1-trichloroethane (TCA) similar to Figures 4.3-7 through 4.3-14 in the “Interim Measures Final Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54” (hereafter the MDA L IM Final Report) (N3B 2018, 700039). Figures will be added for 1,2-dichloroethane (1,2-DCA), tetrachloroethene (PCE), and trichloroethene (TCE).
- 2.d. The report will be updated to show results from the most recent rounds of sampling for constituents that exceed Tier I SLs at more than one location, including isoconcentration figures in both map view and vertical cross-sections. Cross-section figures will include geologic information. Changes in concentration with time will be shown in graphs for each well where consistent exceedances of Tier I SLs are seen, similar to Figures 4.3-7 through 4.3-14 in the MDA L IM Final Report.

### **NMED Comment**

#### **3. Section D-2.0 Appendix D Volatile Organic Compound Plume Trend Analysis, Page D-1**

**DOE Statement:** “Current recommendations from the interim measures report (N3B 2018, 700039) call for an analysis of restarting the SVE pumping units if total VOC concentrations at any port rise above 2000 parts (of VOCs) per million by volume (ppmv).”

**NMED Comment:** NMED notes that, based on DOE’s March 2020 draft response to NMED’s draft Comment No. 7b regarding the review of the IMFR, this criteria will be replaced by “more clearly established monitoring data thresholds” that will be documented in a proposed revision of the IMFR, or in a new interim measure plan. Subsequent PMRs will use the new thresholds once they are mutually agreed upon by DOE and NMED.

### **DOE Response**

3. Agreed. Clearly established monitoring data thresholds will be developed and included in future PMRs.

### **NMED Comment**

#### **4. Section D-2.0 Appendix D Volatile Organic Compound Plume Trend Analysis, Page D-1**

**DOE Statement:** “Note that the increase in total VOCs is not from the primary seven analytes of concern, and the increase above pre-SVE values is not seen in the data for 1,1,1-trichloroethane (TCA) versus depth (Figure D-2.0-13).”

- a. **NMED Comment:** Provide a discussion in the revised report that explains why there is an observed increase in total VOCs considering the primary seven analytes of concern are not the source (e.g., discuss other VOCs that are contributing to the total VOC concentration) and clarify if the increase pertains to just the one port in boring 54- 27642 or to all of the borings being discussed. Include in the discussion how and why the “primary seven analytes of concern” were selected and how they relate to the thirteen VOCs that exceed Tier I SL discussed in Section 5.2.1. In general, Section D-2.0 is hard to follow. Please revise the section to provide clarity, such as discussing one boring and/or analyte at a time. This was done for only Borehole 54-02089 in Section D-2.1.1 but not for the other eastside sentry boreholes.

- b. NMED Comment:** *1,1,1-trichloroethane (TCA) is the only VOC to be included in the concentration versus depth and time plots for sentry boreholes (Figures D-2.0-1, D-2.0- 6, D-2.0-10, D-2.0-13 and D-3.0-1). See Comment No. 2.d.iv concerning the addition of figures to the revised report. Include all the VOCs that exceed the SLs in these figures and include in the discussion in Section D-2.0.*

## DOE Response

- 4.a. The text will be revised accordingly. The seven analytes of concern were chosen using a two-tiered screening process developed in consultation with NMED nearly a decade ago and are reported in Appendix B of the MDA L corrective measures evaluation (CME) report (LANL 2011, 205756). The results of the screening process identified seven VOCs of potential concern and 1,4-dioxane as a chemical of potential concern. These seven VOCs are 1,2-DCA, 1,1-dichloroethene, 1,2-dichloropropane, methylene chloride, PCE, TCA, and TCE (LANL 2010, 109955). If these seven VOCs of potential concern need to be revisited, a logical path forward should be discussed.
- 4.b. The plots will be revised accordingly for analytes with consistent Tier I exceedances. This list of analytes will be developed in consultation with NMED to ensure concurrence on the list of VOCs of potential concern.

## REFERENCES

- LANL (Los Alamos National Laboratory), July 2010. "Periodic Monitoring Report for Vapor-Sampling Activities at Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, Second Quarter Fiscal Year 2010," Los Alamos National Laboratory document LA-UR-10-3957, Los Alamos, New Mexico. (LANL 2010, 109955)
- LANL (Los Alamos National Laboratory), September 2011. "Corrective Measures Evaluation Report for Material Disposal Area L, Solid Waste Management Unit 54-006, at Technical Area 54, Revision 2," Los Alamos National Laboratory document LA-UR-11-4798, Los Alamos, New Mexico. (LANL 2011, 205756)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), August 2018. "Interim Measures Final Report for Soil-Vapor Extraction of Volatile Organic Compounds from Material Disposal Area L, Technical Area 54," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2018-0008, Los Alamos, New Mexico. (N3B 2018, 700039)