

HSWA SNL 1306

Active site; what is policy?

M E M O R A N D U M

TO: Ronald A. Kern, Site POC, DOE Oversight Bureau, NMED
FROM: Martyne Kieling, Technical Support, DOE OB, NMED
DATE: October 22, 1996
SUBJECT: Review of Results of the Technical Areas III and V (OU 1306) RCRA Facility Investigation, Sandia National Laboratories, June 1996.

The DOE Oversight Bureau (DOE OB) has reviewed the subject document. The following technical comments are provided for the purpose of communicating the results of the review by the DOE OB staff. The comments are not provided or intended for the purpose of representing the regulatory position of the New Mexico Environment Department.

General Comments

1. ~~The subject document proposes 14 sites for No Further Action (NFA); therefore, I have included NFA comments. However, no site visits were conducted as part of this review. I recommend that each site be visited by DOE OB staff prior to release of final DOE OB comments.~~
2. Table 2-6, page 2-16, shows upper limits for Ba, Cr, and Ag which are higher than the upper limits reported in *Background Concentrations of Constituents of Concern to the SNL/NM ER Project and the KAFB IRP, March 1996*. SNL should provide an explanation of why the upper limits are higher. ~~SNL should also provide an evaluation of the influence that the higher values may have on site decisions.~~
3. Appendix B, C, and D do not contain the full data set. SNL should explain how the full data set was queried to create the abbreviated data files that are presented in Appendix B,

✓

C, and D, and why the abbreviation of data was done. The complete data set should be referenced and available upon request.

Specific Comments

4. Site 18: Concrete Pad

Table 3-5, Comparison of Site 18 Surface Soil Results to Technical Areas III and V Background Data

a. Cadmium, chromium, copper, lead, nickel and zinc were all found above TA 3/5^{probable} background UTL or 95th percentile.

In the RFI Workplan, Comment Responses March 1993, general comment 3, of the NOD stated that "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent."

Although background levels have not been approved, evidence should be presented to show that sampling extended until no increase in contamination levels is likely to occur and to verify that areas of contamination have been delineated.

b. The upper limit shown in Table 3-5 for nickel (12.9) does not match the upper limit shown in Table 2-6 (81.3).

5. Site 26: Burial Area (west of the Long Sled Track)

NFA may be appropriate as long as the entire area of Site 26 is transferred to Site 83, long sled track, and future subsurface investigations are conducted.

6. Site 31: Electrical Transformer Oil Spill

NFA may be appropriate at this site.

7. Site 34: Centrifuge Oil Spill

Page 6-4, Section 6.2.2; "Results of the soil sampling indicate that TPH was not present in any borehole in excess of the MDL (Table 6-1; Appendix C)."

TPH data is not listed in Appendix C. Please explain the

reason for this. In addition please refer to General comment 3.

8. Site 35: Vibration Facility Oil Spill

Page 7-5, Figure 7-3. ER Site 35 Extent of Total Petroleum Hydrocarbon in Soil and Appendix b

It is unclear if sample 35-R7, 1.0 ft is non detect (Figure 7-3) or if it has a concentration of 190 mg/kg (Appendix B). In addition, sample 35-SS-01 ~~is~~ has two concentrations listed, 5.71 mg/kg (Figure 7-3) and 5710 mg/kg (Appendix B). These discrepancies should be resolved. ~~If the higher values are actually errors, then Site 35 may be appropriate for NFA.~~ Nancy's stuff - #5.

9. Site 36: HERMES Oil Spill

~~NFA may be appropriate for Site 36.~~ However, the ground water contamination beneath ^{at} TA-5 should continue to be investigated. Add Nancy's # 6.

10. Site 37: PROTO Oil Spill

Site 37 may be similar to Site 36, (HERMES oil spill), where VOC contamination did not begin to appear in the soil until 25 to 75 ft bgs and then increased to a depth of approximately 200 feet bgs. SNL has suggested (page 8-13) *want to 350'* "The origin of most of the VOCs is postulated to be bacterial fermentation of the mineral oil." For these reasons, ^{deeper} subsurface samples should be collected for VOC and SVOC analysis at both sites 37 and 155 (Proto UST Site). Besides defining the extent of contamination at Site 37, these samples may provide information of value to the ground water investigation beneath TA-5. ~~NFA may not be appropriate for Site 37.~~ let bill go over.

11. Site 51: Building 6924 Pad, Tank, and Pit

NFA may be appropriate for Site 51.

12. Site 78: Gas Cylinder Disposal Pit

Arsenic and chromium were found in the surface verification samples above TA 3/5 background UTL or 95th percentile. However, the sample taken at 5 ft within the same borehole showed arsenic and chromium below background. ~~To some extent the confirmatory samples have verified that Site 78 has been~~

~~remediated.~~ However, SNL should note general comment 3 in the *RFI Workplan, Comment Responses March 1993, of the NOD* "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent."

~~NFA may be appropriate for Site 78.~~

13. Site 83: Long Sled Track

No comment (active site).

14. Site 84: Gun Facilities

No comment (active site).

15. Site 100: Building 6620 Drain/Sump

Page 14-4, 14.2.2 Excavation Results; "The reconnaissance survey conducted during preliminary site scoping activities did not reveal any evidence of the drain in the northeast corner of building 6620,..."

In the *RFI Workplan, Comment Responses March 1993*, the response to comment 1, Section 16.0, Site 100, SNL stated that "...an attempt will be made to remove a portion of the black tile in the static-free room to confirm or deny the presence of the floor drain,..." SNL should discuss if an attempt was made during the reconnaissance survey to remove black tile to search for the floor drain. NFA may be appropriate at Site 35, if SNL can document that reasonable efforts were made to locate the floor drain system.

16. Site 102: Radioactive Disposal Area

NFA may be appropriate for Site 102.

17. Site 105: Mercury Spill At Building 6536

No comment (NFA approved by EPA). See EPA comment No. 14.

18. Site 107: Explosives Test Area

~~NFA may be appropriate for Site 107.~~ See EPA Comment No. 15

19. Site 111: Building 6715 Sump/Drain

NFA may be appropriate for Site 111. Include NFA in Comment No. 16.

20. **Site 188: Building 6597 Above-Ground Spill Containment Tank**
No comment (NFA approved by EPA).

21. **Site 195: Experimental Test Pit**
No comment (NFA approved by EPA).

22. **Site 196: Building 6597 Cistern**

Page 21-6, 21.2.2 Nature and extent of contamination, Paragraph 6; "The vertical extent of TPH contamination was not adequately determined in Boreholes D1 or D2."

At location D2 the TPH increases with depth. At 12 feet below the top of the sludge TPH was at 40,000 ppm. Additional sampling and analysis for TPH, VOC and SVOC may be required to define the extent of the waste oil plume and locate potential VOCs. Nancy: The Logic Flow Diagram

Conditions at Site 196 may be similar to those at Site 36, HERMES oil spill, See Specific Comment No. 10. ~~NFA may not be appropriate for Site 196.~~

23. **Site 240: Short Sled Track**

No Comment (active site). Nancy Comment No. 20.

24. **Site 241: Storage Yard**

Table 23-3, Comparison of Site 241 Surface Soil Results to Technical Areas III and V Background Data

Copper, lead and zinc were all found above TA 3-5 background UTL or 95th percentile. Copper was found to be above background in only one sample (the duplicate of this sample was below background). Appendix C lists three lead and four zinc results from that were above background.

In the RFI Workplan, Comment Responses March 1993, general comment 3, of the NOD stated that "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent." Additional soil samples may be needed at Site 241 to characterize the extent of the lead, and zinc contamination.

A comparison of the maximum concentrations to RCRA Subpart S residential and industrial levels may be needed. ~~NFA may not~~

~~be appropriate for Site 241.~~

MK:mk

cc: Neil Weber, Chief DOE OB, NMED
File

Combi : EPA/NMED comments
3/18/97

MEMORANDUM

TO: Ronald A. Kern, Site POC, DOE Oversight Bureau, NMED
FROM: Martyne Kieling, Technical Support, DOE OB, NMED
DATE: October 22, 1996
SUBJECT: Review of **Results of the Technical Areas III and V (OU 1306) RCRA Facility Investigation, Sandia National Laboratories, June 1996.**

The DOE Oversight Bureau (DOE OB) has reviewed the subject document. The following technical comments are provided for the purpose of communicating the results of the review by the DOE OB staff. The comments are not provided or intended for the purpose of representing the regulatory position of the New Mexico Environment Department.

General Comments

1. Table 2-6, page 2-16, shows upper limits for Ba, Cr, and Ag which are higher than the upper limits proposed in *Background Concentrations of Constituents of Concern to the SNL/NM ER Project and the KAFB IRP, March 1996*. SNL should provide an explanation of why the upper limits are higher.
2. Appendix B, C, and D do not contain the full data set. SNL should explain how the full data set was queried to create the abbreviated data files that are presented in Appendix B, C, and D, and why the abbreviation of data was done. The complete data set should be referenced and available upon request. In the future, Sandia should specify the format of the data and the procedures used to retrieve and view the data.
3. Throughout the approved RFI Work Plan, Sandia committed to conducting additional interviews with current or former employees who may have historical knowledge of site operations. However, the RFI Report does not mention if these interviews were conducted. Sandia should describe the results of any interviews that were conducted during the investigation.
4. The aerial photographs reviewed during the RFI were dated from 1973 to 1990. Are any older aerial photographs available?

HWSA GNL 03405/1306

5. Sandia continues to use TPH analyses instead of analyses for specific constituents, such as benzene, toluene, and ethylbenzene. Sandia should use EPA Methods 8240, 8020, and unmodified 8015.

Specific Comments

6. Site 18: Concrete Pad

Table 3-5, Comparison of Site 18 Surface Soil Results to Technical Areas III and V Background Data

- a. Cadmium, chromium, copper, lead, nickel and zinc were all found above TA 3/5 background UTL or 95th percentile.

In the RFI Workplan, Comment Responses March 1993, general comment 3, of the NOD stated that "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent."

Although background levels have not been approved, evidence should be presented to show that sampling extended until no increase in contamination levels is likely to occur and to verify that areas of contamination have been delineated.

- b. The upper limit shown in Table 3-5 for nickel (12.9) does not match the upper limit shown in Table 2-6 (81.3).

7. Section 3.2.3.1, Surface Soil, Page 3-6

- a. Sandia states that two samples exhibited elevated TPH concentrations of 367 ppm and 2,250 ppm. In Section 3.2.3.2, Sandia compares these readings to New Mexico Underground Storage Tank Regulations. However, this does not appear to be an underground storage tank site so these regulations do not apply. Furthermore, General Comment 14 of EPA's September 10, 1993 Notice of Deficiency stated that "If laboratory analysis indicates elevated TPH concentrations, Sandia should re-sample and analyze for the entire suite of petroleum hydrocarbons utilizing analytical methods 8240, 8020, and unmodified 8015." Therefore, Sandia should conduct additional surface soil sampling at this site.
- b. **Table 3-6, Comparisons of Site 18 Analytical Results to Proposed RCRA Subpart S Soil Action Levels, Page 3-12**
Sandia should submit a copy of the Site 18 investigative results to Ms. Lou Roberts, EPA Region 6 PCB Coordinator. The proposed 10 ppm action levels for PCBs is only appropriate for certain land use scenarios. The RFI Report does not describe the proposed future land use scenario for this site.

8. Site 26: Burial Area (west of the Long Sled Track)

Sandia has proposed No Further Action for this site based upon the results of the shallow geophysical surveys and aerial photo analysis, and the fact that the site lies adjacent to Site 83, the Long Sled Track, which is an active site. The NFA proposal should be denied for the following reasons:

- a. Only nonintrusive investigative methods were employed at this site. The Phase 3 investigation that was approved by EPA as part of the original work plan does not appear to have been carried out. Specifically, boreholes were not completed as specified and no metals analyses were performed. Sandia should discuss this discrepancy in the RFI Report.
- b. Because the site has not been completely investigated and delineated, the fact that it may be located "within" another site cannot be verified.
- c. The NFA request seems to be an attempt to show cleanup progress that may not really exist. Because it takes a great deal of time and resources to remove a site from the permit, the permit modification process should be reserved for "legitimate" NFAs.

9. Site 31: Electrical Transformer Oil Spill

Section 5.3, Evaluation of Data

- a. According to Section 7.6.3 of the approved Work Plan, "If the above four confirmation samples yield positive results for either PCBs or TPH, then shallow soil borings using a hand auger will be used to define the vertical extent of soil contamination." Each boring will be completed to a depth of 5 ft..." TPH results were positive for 2 of the 12 samples collected at this site. However, it does not appear that the Work Plan was followed since soil borings were not completed. Sandia should explain the reason for this variance or complete the shallow soil borings.
- b. The text states that PCBs were not detected above the MDL. However, the results were not included in the RFI Report. Sandia should include the PCB sample results in the RFI Report.

10. Site 34: Centrifuge Oil Spill

Page 6-4, Section 6.2.2; "Results of the soil sampling indicate that TPH was not present in any borehole in excess of the MDL (Table 6-1; Appendix C)."

TPH data is not listed in Appendix C. Please explain the reason for this. In addition please refer to General comment 2. This site may be appropriate for NFA pending receipt of this information.

11. Site 35: Vibration Facility Oil Spill

- a. **Page 7-5, Figure 7-3. ER Site 35 Extent of Total Petroleum Hydrocarbon in Soil and Appendix B**
It is unclear if sample 35-R7, 1.0 ft is non detect (Figure 7-3) or if it has a concentration of 190 mg/kg (Appendix B). In addition, sample 35-SS-01 has two concentrations listed, 5.71 mg/kg (Figure 7-3) and 5710 mg/kg (Appendix B). These discrepancies should be resolved.
- b. **Section 7.2.2, Nature and Extent of Contamination**
Please see General Comment 5, above, concerning the use of TPH analyses to define the nature and extent of contamination and the use of NMED UST regulations. The approved Work Plan includes Notice of Deficiency comment #14, which requires additional analyses when elevated concentrations of TPH are detected. TPH concentrations at this site were as high as 7,200 mg/kg.

12. Site 36: HERMES Oil Spill

Figure 8-2, Location of Shallow- and Deep-Subsurface Soil Boreholes

According to this figure, only two (2) deep boreholes were installed during this RFI. According to the approval letter issued by EPA on April 19, 1994, a minimum of five (5) boreholes were to be installed. One of the boreholes should have been completed as an angled borehole. Sandia should explain the reason for these variances from the approved Work Plan. Additionally, the ground water contamination at TA-5 should continue to be investigated.

13. Site 37: PROTO Oil Spill

Site 37 may be similar to Site 36 (HERMES Oil Spill) where VOC contamination did not begin to appear in the soil until 25 to 75 ft bgs and then increased to a depth of approximately 200 feet bgs. SNL has suggested (page 8-13) **"The origin of most of the VOCs is postulated to be bacterial fermentation of the mineral oil."** For these reasons, deeper subsurface samples should be collected for VOC and SVOC analysis at both Sites 37 and 155 (Proto UST Site). Besides defining the extent of contamination at Site 37, these samples may provide information of value to the ground water investigation beneath TA-5.

14. Site 51: Building 6924 Pad, Tank, and Pit

This site may be appropriate for NFA.

15. Site 78: Gas Cylinder Disposal Pit

Arsenic and chromium were found in the surface verification samples above the TA 3/5 background UTL or 95th percentile. However, the sample taken at 5 ft within the same borehole showed arsenic and chromium below background. However, SNL should note general comment 3 in the *RFI Workplan, Comment Responses March 1993, of the NOD* "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent."

16. Site 83: Long Sled Track

a. Section 12.2.2, Radiation Survey, Page 12-5/6

Sandia states that "All but one of large soil area (located southeast of the impact area) were removed in the course of the VCM at this site." Will the large soil area be removed prior to site decommissioning? Does this large soil area pose any risks to site workers?

b. Section 12.3, Summary and Conclusions

What is the estimated date of decommissioning for this site? The site should undergo a complete investigation within two years after site decommissioning.

17. Site 84: Gun Facilities

a. Section 13.2.2, Surface Radiation Survey, Page 13-6

Were the "three remaining area sources" removed in the spring of 1996 as planned? If not, when will they be removed.

b. Section 13.4, Summary and Conclusions, Page 13-7/8

What is the estimated date of decommissioning for this site? The site should undergo a complete investigation within two years after decommissioning.

15. Site 100: Building 6620 Drain/Sump

Page 14-4, 14.2.2 Excavation Results; "The reconnaissance survey conducted during preliminary site scoping activities did not reveal any evidence of the drain in the northeast corner of building 6620,..."

In the *RFI Workplan, Comment Responses March 1993*, the response to comment 1, Section 16.0, Site 100, SNL stated that "...an attempt will be made to remove a portion of the black tile in the static-free room to confirm or deny the presence of the floor drain,..." SNL should discuss if an attempt was made during the reconnaissance survey to remove black tile to search for the floor drain. NFA may be

appropriate at Site 35, if SNL can document that reasonable efforts were made to locate the floor drain system and that no floor drain system exists.

16. Site 102: Radioactive Disposal Area

NFA may be appropriate for Site 102.

17. Site 105: Mercury Spill At Building 6536

No comment,(NFA previously approved by EPA).

18. Site 107: Explosives Test Area

Section 17.1.2, Sampling Strategies

Sandia states that "The sampling and analysis plan was modified slightly from that proposed in the RFI Work Plan..." This is not entirely accurate. The sampling grid spacing was doubled from that approved in the RFI Work Plan. Furthermore, there is no discussion of the statistical analysis of the data from the previous study, a task described in Section 18.6.3 of the approved RFI Work Plan. Sandia should explain the rationale for these changes.

19. Site 111: Building 6715 Sump/Drain

Section 18.8.2, Nature and Extent of Contamination

Sandia should submit copies of its three borehole logs. Section 19.6.1 of the approved Work Plan committed to providing a complete description of surface-soil samples, including a complete description of grain size, color, grain shape, lithology, moisture content, etc. NFA may be appropriate for this site pending receipt and review of this information.

20. Site 188: Building 6597 Above-Ground Spill Containment Tank

No comment,(NFA previously approved by EPA).

21. Site 195: Experimental Test Pit

No comment(NFA previously approved by EPA).

22. Site 196: Building 6597 Cistern

a. Section 21.1.2.2, Sludge Thickness Determination

The last sentence of this section seems to be missing a few words. Sandia should clarify this sentence.

b. Page 21-6, 21.2.2 Nature and extent of contamination, Paragraph 6; "The vertical extent of TPH contamination was not adequately determined in Boreholes D1 or D2."

At location D2 the TPH increases with depth. At 12 feet below the top of the sludge TPH was at 40,000 ppm. Additional sampling and analysis for TPH, VOC and SVOC may be required to define the extent of the waste oil plume and locate potential VOCs. The Logic Flow Diagram for this site (see page 22-9 of the RFI Work

Plan) indicates that sampling will continue until TPH is no longer detected. Thus, the RFI Work Plan has not been fully implemented at this site. Additional vertical delineation is required.

Site 196 may be similar to Site 36, HERMES oil spill, See Specific Comment No. 10 (refer to Site 37 - Proto - - numbering system may be inaccurate...)

23. Site 240: Short Sled Track

NMED has some concerns over the increased use of field screening compared to what was called for in the approved Work Plan. But because this site has been reactivated, the results of this investigation may not represent actual conditions at the time of decommissioning sometime in the future. The sampling plan for this site should be re-implemented at the time of final site decommissioning.

24. Site 241: Storage Yard

Table 23-3, Comparison of Site 241 Surface Soil Results to Technical Areas III and V Background Data

Copper, lead and zinc were all found above TA 3-5 background UTL or 95th percentile. Copper was found to be above background in only one sample (the duplicate of this sample was below background). Appendix C lists three lead and four zinc results that were above background. In the *RFI Workplan, Comment Responses March 1993*, general comment 3, of the NOD stated that "Field sampling must extend horizontally and vertically until no subsequent increase in contaminant levels is likely to occur. A minimum of two (2) "clean" samples are required to verify delineation. These samples should be at or below the background levels previously approved by the EPA for each constituent." Additional soil samples may be needed at Site 241 to characterize the extent of any copper, lead and zinc contamination. A comparison of the maximum concentrations to RCRA Subpart S residential and industrial levels may be needed.

MK:mk

cc: Neil Weber, Chief DOE OB, NMED
File

