

DRAFT

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Draft from
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Review of LANL Voluntary Corrective Action Reports
April 19, 1996

DOE Oversight Bureau, NMED
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DOE Oversight Bureau (DOB) has reviewed the subject documents. The following comments are provided to communicate the results of the review. They are not provided or intended for the purpose of representing the regulatory position of the New Mexico Environment Department.

FU-1 HSWA

19-002 Surface Disposal Area, Former TA-19

The site does not appear to be appropriate for NFA.

Section 1.0
Figure 1 is not included.

Section 2.0
Figure 2 is not included.

Section 2.0
"Each of the three samples were also analyzed for VOCs for waste characterization purposes..." Assurances should be provided that the analytical results for VOCs and for the SVOCs described in the next paragraph are not based on a TCLP extract.

Another paragraph (page 2) states "Based on sampling results which showed no SVOCs to be present above analytical detection limits..." Assurances should be provided that these results were not the result of analysis of a TCLP extract.

Page 4, Paragraph 2 "Analytical results (by XRF) from the two soil samples revealed no...metals concentrations above background levels or LANL SALs." Reviewers question whether analysis of soil by XRF is equivalent to analysis of soil for total metals on the target analyte list (TAL) by EPA Methods 6010 and 7471, and question if XRF data can be used for comparison to background or SALs.

Page 4, Paragraph 3 Assurances should be provided that the "Initial VOC results..." were not results based on the analysis of a TCLP extract or mobile laboratory results.

Page 4, Paragraph 4 "A new sample (0119-95-0031) for TCLP and XRF metal analysis...". It is not clear what the purpose was for the TCLP metal analysis. Was it for comparison to the XRF metal analysis? It should not be a surprise that mercury was detected at 120 ppm by XRF and not detected in a TCLP extract. Documentation should be provided that data collected for comparison to background and SAL is based on analysis of the total sample (not a TCLP extract) and not based on XRF field screening data. Also, assurances should be provided that data collected for comparison to background and SALs is analyzed using



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accepted EPA Methods and that the data is of acceptable quality.

Table 1 is particularly confusing, since both total metal and XRF results are shown in the same table. Apparently sample numbers 0119-95-0001, 0002, and 0003 are totals, and are from a fixed laboratory, using approved EPA methods, and report data of acceptable quality. What analytical method was used (i.e., Method 6010, 7471 etc.) to analyze sample numbers 0119-95-0001, 0002, and 0003? Assurances should be provided that the data is of acceptable quality to make background/SALs comparisons.

Page 7, last sentence "Toluene was the only VOC detected in any of the soil samples." Assurances should be provided that these samples were not analyzed after being extracted by TCLP.

Page 8, paragraph 1 A multiple chemical evaluation (MCE) should be presented using the concentrations of chemicals which were found above their background levels.

Assurances should be provided that the site has been evaluated to determine if measures should be taken to prevent offsite transport of contaminants.

21-013(c) Surface Disposal Area

The site appears to be suitable for NFA.

21-013(d) Surface Disposal Area

The site appears to be suitable for NFA.

Appendix B, Paragraph 1 and MCE Table

The maximum concentration of mercury reported in paragraph 1 is 0.87 mg/kg. The concentration used in the MCE table is 0.34. The difference does not materially change the normalized sum.

21-013(e) Surface Disposal Area

The site appears to be suitable for NFA.

21-024(d) TA-21 Septic Tank

The site does not appear to be appropriate for NFA.

Page 2, under **RESULTS, Septic Tank Contents**, last line "These results (analysis of toxicity characteristic leachate) confirm the absence of RCRA hazardous constituents in the VCA waste." To the contrary, analysis of toxicity characteristic leachate provides very little information regarding the presence or absence of RCRA hazardous constituents. (See attached memorandum from Tim Michael to Ron Kern dated May 6, 1996.)

Statements like the one above leads a reviewer to wonder whether the plutonium-238 referred to in paragraph 3 under **RESULTS** was detected through analysis of an extract or leachate. Assurances should be provided that the analyses for plutonium-238 and all other results used for comparisons to background or SALs, are

from the total sample, and not from an extract or leachate.

Also, please provide a justification for a clean up level for plutonium of 75 pCi/g, since the level is above the LANL SAL.

Assurances should be provided that the site, particularly the drainage area, has been evaluated to determine if measures should be taken to prevent offsite transport of contaminants.

21-024(e) TA-21 Septic Tank

The site does not appear to be appropriate for NFA.

See comments on 21-024(d)

21-024(h) TA-21 Septic Tank

The site does not appear to be appropriate for NFA.

See comments on 21-024(d)

31-001 Septic System Outfall

The site appears to be appropriate for NFA.

Assurances should be provided that the site has been evaluated to determine if measures should be taken to prevent transport of sediment down the canyon walls.

FU-1 NON-HSWA

C-00-036(a) Borrow Pit #1

The site does not appear to be appropriate for NFA.

Page 6, Paragraph 1, last sentence "Samples were analyzed or gross alpha and beta by EPA method 900...and TCLP metals by SW 846 method 1311. Method 1311 may be an EPA method, and it may be a SW-846 method. However, analysis of an extract or leachate is not acceptable for use in making comparisons to background or SALs. Therefore there are apparently no appropriate metals results which can be compared to PRG levels or background levels or SALs.

C-00-036(b) Borrow Pit #2

The site does not appear to be appropriate for NFA.

See comments for C-00-036(a)

C-00-036(c) Borrow Pit #3

The site does not appear to be appropriate for NFA.

A full suite (TAL list), not just lead, should be run and analyzed for totals.

Page 16, next-to-last sentence ...nor does it (the waste) contain metals above RCRA regulatory concentrations.". What is meant by this - RCRA/HSWA SALs, or background concentrations, or RCRA waste disposal trigger levels?

C-00-036(d) Borrow Pit #4

The site does not appear to be appropriate for NFA.

Additional documentation should be provided to substantiate the statement that "there was no indication that RCRA constituents were present", which was used for justification for no need for confirmatory sampling.

Also, we make the following additional comment: The first two sentences of the paragraph under CORRECTIVE ACTION refer 1) to a VCA Plan and then 2) to toxicity characteristic leaching procedure metals. VCA plans should not be approved based on site characterization and verification sampling using toxicity characteristic leaching procedures.

09-010(a) Waste Container Storage Area

This section, pages 25-28 are missing. This PRS is described in a FU-5 report.

09-010(b) Waste Container Storage Area

This section, pages 29-32 are missing. This PRS is described in a FU-5 report.

C-0-041 Former Asphalt Batch Plant Site

The site appears to be appropriate for NFA.

Table 2 compares water sample results to New Mexico Water Quality Standards. Additional appropriate standards for water are found in New Mexico *Standards for Interstate and Intrastate Streams* as amended by the New Mexico Water Quality Control Commission, 20 NMAC 6.1, December 23, 1994, effective January 23, 1995. The standard for total mercury listed in this document based on possible bioaccumulation affects is 0.012 $\mu\text{g}/\text{l}$.

Based on the table, in 3 water samples mercury was detected at concentrations of 0.46, 0.47, and 0.55 $\mu\text{g}/\text{l}$. Although the source may not be known, the detection of mercury in water in any measurable quantity is notable. See memorandum from Tim Michael to Ron Kern date May 20, 1996.

Assurances should be provided that the erosion controls will continue to operate properly and be monitored.

C-10-001 Radioactive Soil Contamination Bayo Canyon

The site appears to be suitable for NFA.

C-21-027 TA-21 Cooling Tower

The site appears to be suitable for NFA.

An explanation should be provided regarding why the detection limit of the method used for analysis of strontium-90 was greater than the upper tolerance limit of background and the process baseline level.

0-032 Former Zia Motor Pool Storm Water Drainline

The site appears to be appropriate for NFA.

This report is arranged differently than some of the other reports. There were no results or conclusions section. Does this report "...serve as the formal request for DOE concurrence to approve no further action...?"

The report does not contain a signed CERTIFICATION OF COMPLETION page.

1-001(f) Hillside 140 Septic Outfall

This site may be suitable for NFA. However, it should be noted for the record that the cleanup level used for this site was a recreational level of 4970 ppm. The LANL SAL for uranium is 160 ppm.

Also for the record, according to the information presented, the only contaminant of concern was uranium. Nine discrete and two composite samples were analyzed by fixed laboratory and correlated to screening instruments (Ludlum 2221 with a 44-40 shielded Geiger-Mueller probe). Using these instruments and the correlation, the site was cleaned using a recreational cleanup standard of 4970 ppm uranium. No verification samples were collected because "verification sampling was not required at Hillside 140 as site cleanup activities were driven by the use of real-time radiological screening data."

Assurances should be provided regarding the adequacy of storm water and sediment transport control measures, and the monitoring of potential impacts to ground water.

3-022 Dielectric Oil Containment Sump

Depending on the adequacy of storm water and sediment transport control measures, and the monitoring of potential impacts to ground water, this site may be suitable for NFA.

However, we make the following notes for the record. (1) The COC for this site was total petroleum hydrocarbon (TPH). It is not clear what regulatory authority has jurisdiction of a cleanup where the only COC is TPH, particularly, middle distillate petroleum. (2) A cleanup level was calculated based on a long-term worker exposure scenario. (3) Samples were analyzed using EPA Method SW-846 8015 for TPH and 8260 for BTEX at the on-site mobile chem van. No samples were analyzed off-site, nor were there any analyses for a full range of RCRA hazardous constituents.

03-003(p) Transformer Storage Area

The site appears to be suitable for NFA.

The first paragraph under corrective action, makes the statement "Field screening also eliminated the need for analysis of ...semi-volatile organic compounds...". The field screening instrument or technique that was used to eliminate the need for analysis of semi-volatile organic compounds should be described. We are not aware of field screening methods which can be used to screen a broad suite of semi-volatile compounds.

03-047(d) Drum Storage Area

The site does not appear to be acceptable for NFA.

On page 8, the last paragraph, the statement is made "A review of field screening data for metals and volatile and semi-volatile organic compounds indicated that there were no metal concentrations above their respective background upper tolerance levels (UTLs) and no volatile organic compounds above their PRGs."

The field screening data for metals and volatile and semi-volatile organic compounds should be provided. Note that field screening data based on the ERM Mobile Laboratory x-ray fluorescence technique may not be appropriate for eliminating COCs. Also, note that a multiple constituent evaluation should be performed for all metals and volatile and semi-volatile compounds which are found above background. (Single constituent comparisons to PRGs may not be adequate for elimination of a constituents from investigation at sites involving multiple COCs.)

Page 11, Table 2 shows analytical results for beryllium and lead. Were analyses conducted for other metals?

03-051(c) Vacuum Pump Exhaust Area

The site does not appear to be appropriate for NFA.

Page 15, the first sentence states "Analyses for VOCs was eliminated because verification screening results indicted VOCs were not detected above their PRGs."

The verification screening data and a description of how it was compared to PRGs should be provided. An explanation should be provided regarding how data can be both verification and screening.

Page 16, paragraph 4 states "Samples were analyzed for ...TAL metals by SW-846 method 6010 and 7471...". Page 18, Table 3, shows analytical results for beryllium and lead. Analytical results for the other TAL metals should be included.

21-022(j) TA-21 Sump

The site does not appear to be appropriate for NFA.

Page 3, first paragraph states "The sum of the ratios of maximum analyzed value to cleanup levels is less than one...". Please explain why the maximum analyzed values (of radionuclides) are compared to cleanup values, and are not compared to SALs. Note that if a comparisons made to SALs, then the sum of the ratios is greater than one, and further investigation may be needed to determine the extent of the contamination. If cleanup levels for radionuclides are based on a less-than-conservative scenario, justification for the scenario should be provided.

FU-2 HSWA

18-001(a) Former TA-18 Sewage Lagoons

The site appears not to be appropriate for NFA.

Analytical results for all COPCs should be presented in the report. For those constituents detected above background and below SALs, a multiple constituent evaluation should be presented.

Assurances have not been provided that potential impacts to groundwater have been adequately investigated, and that storm water controls and site revegetation have been completed.

It appears that this proposal for NFA should have more appropriately been included in the RFI Report for PRS 18-001(a).

39-007(a) Waste Container Storage Area

The site appears to be appropriate for NFA.

Page 2, paragraph 4 states "The final set of confirmatory samples was collected on September 22, 1995...TAL metals results were not presented because there were no inorganics driving the cleanup and all results were below their respective PRGs."

All confirmatory sampling results should be provided. It should be noted that PRGs are *preliminary remediation goals*, and are not intended to be levels at which cleanup will finally be concluded. Conclusion of a cleanup should depend on a comparison of all detected analytes to background and SALs. Those found in excess of background should be subject to a multiple constituent evaluation to determine if site cleanup has been achieved.

Depending on the adequacy of storm water and sediment transport control measures, and the monitoring of potential impacts to ground water, this site may suitable for NFA.

FU-2 NONHSWA

C-36-001 Test Containment Vessel

The site appears to be appropriate for NFA.

39-002(c) Waste Container Storage Area

The site appears to be appropriate for NFA.

20-003(c) Navy Gun Site

The site appears to be appropriate for NFA.

53-010 Bermed Mineral Oil Storage Area

The site appears to be appropriate for NFA.

FU-3 HSWA

16-016(b) Former Surface Disposal Area

The site appears to be appropriate for NFA.

33-016 Sump With Outfall

The site does not appear to be appropriate for NFA.

Page 1, Section 2.0, paragraph 2, "All samples were collected for waste characterization and are compared to RCRA limits".

It is not clear which analysis were used to make RCRA decisions. If waste characterization analysis (TCLP) was used, additional sampling and analysis should be performed using SW846 methods without TCLP (i.e. totals).

"The soil at the outfall was sampled but revealed no contamination." Analytical results of this sampling should be provided. Also, documentation should be provided stating that the sump did not release hazardous constituents, in excess of background or SALs, to the environment, either through the outfall(s) or through leaks.

This report gives the impression that the major concern of ER investigators is the composition and disposition of the material in the sump. If this is the major focus of these investigators, then the investigators need some course correction. The primary focus of the investigation should be whether or not there was a release of hazardous constituents to the environment. The major concern of ER investigations should not be the disposal of wastes in sumps.

16-016(f) Former Surface Disposal Area

The site appears to be appropriate for NFA.

16-011 Former Incinerator

The site appears not to be suitable for NFA.

Page 3, Section 2.0, paragraph 2

"The samples were analyzed for metals, volatile organic compounds (VOCs), and semi volatile organic compounds (SVOCs) using EPA methods 6010 (TCLP), 8260, and 8270, respectively."

Please see comment for site 33-016

FU-5 HSWA

C-09-001 Stained Soil

The site appears to be appropriate for NFA.

69-001 Two Mile Mesa Incinerator Pond Bed

The site appears not to be appropriate for NFA.

As is stated in the conclusions section on page 8, additional site investigation and remediation should take place before this site is removed from the HSWA Module.

8-005 Former Waste Storage Vessel

The site appears to be appropriate for NFA.

06-007(f) Surface Disposal Area

The site appears to be appropriate for NFA.

FU-5 NONHSWA

57-006 A Buried Chemical Waste Vessel

The site appears to be appropriate for NFA.

09-010(a) Waste Container Storage Area

The site appears to be appropriate for NFA.

09-010(b) Waste Container Storage Area

The site appears to be appropriate for NFA.