TA-16

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*Date:* August 30, 2004
*Refer To:* ER2004-0488

Mr. James Bearzi, Bureau Chief
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

SEP

**SUBJECT: SAMPLING NOTIFICATION, TA-16-340 COMPLEX (FISH LADDER) INTERIM ACTION AT SOLID WASTE MANAGEMENT UNITS (SWMUS) 13-003(a)-99, 16-003(n)-99, 16-003(o), 16-026(j2), AND 16-029(f) AND RCRA FACILITY INVESTIGATION OF THE WASTEWATER PONDS AGGREGATE AT SWMUs 16-007(a) AND 16-008(a), TECHNICAL AREA 16 (TA-16)**

Dear Mr. Bearzi:

The Los Alamos National Laboratory (LANL) Risk Reduction Environmental Stewardship–Remediation Services project is planning to conduct sampling activities associated with the TA-16-340 Complex (Fish Ladder) Interim Action at Solid Waste Management Units (SWMUs) 13-003(a)-99, 16-003(n)-99, 16-003(o), 16-026(j2), and 16-029(f) and Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of the 90s Line and 30s Line (Wastewater Ponds Aggregate) at SWMUs 16-007(a) and 16-008(a), Technical Area 16 (TA-16), LANL.

The sampling activities are scheduled to begin on or about September 13, 2004, and continue through October 12, 2004, although additional sampling to verify nature and extent of contamination may occur after that date. The Investigation Work Plan for the TA-16-340 Complex submitted in March 2004, (LA-UR-04-1466)—as approved with modifications based on responses to the NMED Notice of Disapproval (NOD) on June 17, 2004, (LA-UR-04-3960)—presents recommendations for the investigation activities required to complete the next phase of the RFI for the TA-16-340 Complex as outlined in Attachment 1. In addition, the RFI Work Plan for Operable Unit (OU) 1082 (December 1994 Revision)—as approved with NOD modifications by EPA will be used to guide the sampling of environmental media potentially contaminated by former laboratory operations at the 90s- and 30s-Line Ponds, as summarized in Attachment 2.

If you have any question regarding this sampling notification, or would like to arrange a site visit, please contact the UC Project Leader, Donald Hickmott, at (505) 667-8753.

Sincerely,

for Gabriela Lopez Escobedo
Program Manager, for Complex Remedies

Attachment: 1.) Sampling Estimate for TA-16-340 Complex (Fish Ladder) Interim Action
2.) Sampling Estimate for SWMUs 16-007(a) and 16-008(a), 30s Line and 90s Line Ponds RFI

DM/th

Cy:(w/attach.)
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RRES-RS File, MS M992
IM-5, MS A150
RPF, MS M707

**Attachment 1: Sampling Estimate for TA-16-340 Complex (Fish Ladder) Interim Action**

| Interim Action Component | | Field Screening (Minimum No.of Samples) | | | | Fixed Laboratory [b] (Minimum No.of Samples) | | | | | | | | Intrusive Activites and Subsurface Sampling | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWMU | Type | HE Spot / PID | Radioactivity | XRF | D-Tech [a] | VOCs | SVOCs | Perchlorate | Anions / Nitrate | TAL Metals | Cyanide | Uranium | HE | Backhoe / Excavator (ft) | Hollow-Stem Auger (ft) | Air / Water-Mist Rotary (ft) | Field Screening Approach, Rationale, and Confirmation/Characterization Sampling | |
| 13-003(a)-99 | Septic Line | 12 | | | 7 | 8 | | | | | | | | 6 - 12 | --- | --- | Field screening samples (HE, PID, radioactivity, XRF) will be collected at 10 locations evenly spaced along the length of the SWMU, and one-half of these samples will be D-Tech screened. | Two locations for confirmation sampling will be selected based on the highest D-Tech results. If all HE tests are negative, then two locations will be selected at either end of the SWMU. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and from 2 ft into tuff from the bottom of the excavation. For further characterization, samples will be collected from two locations: a sample will be collected ~5 ft deeper than existing borehole 13-00001 (TD=6.5 ft) and at a second corresponding location within the SWMU. |
| 16-003(n)-99 | (1) Sump | 8 | | | 4 | 4 | | | | | | | | 5 - 10 | --- | --- | Field-screening results will guide the soil removal process. Field screening (HE, PID, radioactivity, XRF) will be biased towards areas of staining or obvious leak points. One-half of these samples will be D-Tech screened. | Field screening results will be used to bias a minimum of two confirmation sampling locations per sump. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. |
| | (1) Drainline | 6 | | | 3 | 4 | | | | | | | | 5 - 10 | --- | --- | Field screening samples (HE, PID, radioactivity, XRF) will be collected at 20-foot intervals and any visible leakage areas along the length of the drainlines to their respective outfall locations. One-half of these samples will be D-Tech screened. | Confirmation sampling will be biased toward joints/couplings, areas of any observed staining and leakage, and highest field screening results. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. |
| | Drainage (16-342 Outfall) | 0 | | | 0 | 7 | | | | | | | | 3 - 6 | --- | --- | No excavation activities are planned for the drainage area of this SWMU, therefore, no field screening samples will be collected. | For further characterization, samples will be collected from two locations in the downslope area within the SWMU boundary and one location in the area outside the SWMU boundary. Characterization samples will be collected from 0 to 6- in. below the ground surface and approximately 2 ft into the tuff. An additional tuff sample will be collected at historical location 16-01530. |
| 16-003(o) | (6) Sumps | 48 | | | 24 | 24 | | | | | | | | 5 - 10 | --- | --- | Field-screening results will guide the soil removal process. Field screening (HE, PID, radioactivity, XRF) will be biased towards areas of staining or obvious leak points. One-half of these samples will be D-Tech screened. | Field screening results will be used to bias a minimum of two confirmation sampling locations per sump. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. |
| | (1) Drainline | 12 | | | 6 | 8 | | | | | | | | 5 - 10 | --- | --- | Field screening samples (HE, PID, radioactivity, XRF) will be collected at 20-foot intervals and any visible leakage areas along the length of the drainlines to their respective outfall locations. One-half of these samples will be D-Tech screened. | Confirmation sampling locations will be biased toward joints/couplings, areas of any observed staining and leakage, and highest field screening results. Confirmation samples will be collected from at least four locations at 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. |
| | Drainage (16-340 Outfall) | 24 | | | 92 | 43 | | | | | | | | 3 - 6 | --- | --- | D-Tech screening results will guide the lateral soil removal process. D-Tech screening samples will be collected every 10 ft along the length of the Fish Ladder, and every 2 ft laterally out from either side of the structure until the screening results obtained are less than the interim action levels. | Confirmation samples will be collected every 20 ft laterally within excavations at SWMU 16-003(o). Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. At least 12 additional surface samples will be collected from locations on the edges of the excavation area. For further characterization, 3 sample pairs will be collected within the SWMU boundary and two sample pairs will be collected farther down the drainage outside of the SWMU boundary. An additional tuff sample will be collected at historical location 16-01540. |
| 16-026(j2) and 16-029(f) | (1) Sump | 8 | | | 4 | 4 | | | | | | | | 5 - 10 | --- | --- | Field-screening results will guide the soil removal process. Field screening (HE, PID, radioactivity, XRF) will be biased towards areas of staining or obvious leak points. One-half of these samples will be D-Tech screened. | Field screening results will be used to bias a minimum of two confirmation sampling locations per sump. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. |
| | (1) Drainline | 2 | | | 1 | 4 | | | | | | | | 5 - 10 | --- | --- | Field screening samples (HE, PID, radioactivity, XRF) will be collected at 20-foot intervals and any visible leakage areas along the length of the drainlines to their respective outfall locations. One-half of these samples will be D-Tech screened. | Confirmation sampling locations will be biased toward joints/couplings, areas of any observed staining and leakage, and highest field screening results. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and from 2 ft into tuff from the bottom of the excavation. |
| | Drainage (16-345 Outfall) | 8 | | | 4 | 9 | | | | | | | | 3 - 6 | --- | --- | Field-screening results will guide the soil removal process, so actual number of samples depends on the size of the excavation. A minimum of eight screening samples (HE, PID, radioactivity, XRF) will be collected and one-half of these samples will be D-Tech screened. | Two locations for confirmation sampling will be selected based on the highest D-Tech results. Confirmation samples will be collected from 0 to 6- in. below the excavated surface and 2 ft into the tuff from the bottom of the excavation. For further characterization, 2 sample pairs also will be collected at the downslope end of the SWMU boundary. An additional tuff sample will be collected at historical location 16-01555. |
| Alluvial & Qbt3/Qbt4 Characterization | (3) shallow boreholes | --- | | | --- | --- | | | | | | | | --- | 20 | --- | Alluvial wells will be sited based on an HRR survey. Alluvial wells will be installed approximately 5 ft into tuff and will be monitored and sampled quarterly when wet. Alluvial wells will will be used to characterize alluvial groundwater upstream and downstream of Fishladder Seep and near the confluence of Fishladder Canyon and Cañon de Valle. | |
| | (2) intermediate boreholes | 10 | | | 10 | 5 | | | | | | | | --- | --- | 200 | Intermediate boreholes will be field screened (D-Tech, PID, radioactivity, and XRF) at 20' intervals. Additional screening will be conducted at any fractures and/or surge beds encountered. | Confirmation samples will be collected every 40 ft and at total depth. Additional samples will be collected at locations that are not on the 40-ft intervals for which field screening results are positive. |
| TOTAL SAMPLES | | 138 | | | 155 | 120 | | | | | | | | | | | | |

[a] D-Tech sample locations are samples screened for HE. The D-Tech detection limit for HE (as RDX) is 1 ppm.

[b] One field duplicate will also be collected per 10 samples from the SWMUs (i.e., 10 percent frequency).

**List of Acronyms/Abbreviations**

SWMU = Solid Waste Management Unit.
VOC = Volatile Organic Compound.
SVOC = Semivolatile Organic Compound.
HE = High Explosives.
XRF = X-ray fluorescence.
PID = Photoionization detector
Qbt3/Qbt4 = Bandelier Tuff, Tshirege Members Unit 3/Unit 4
TAL = Target Analyte List.

**Attachment 2: Sampling Estimate for SWMUs 16-007(a) and 16-008(a), 30s Line and 90s Line Ponds RFI**

| Interim Action Component | | Field Screening (Minimum No.of Samples) | | | | Fixed Laboratory [b] (Minimum No.of Samples) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SWMU | Type | HE Spot / PID | Radioactivity | XRF | D-Tech [a] | VOCs | SVOCs | TAL Metals | Gamma Spectroscopy | Uranium | HE | Hollow-Stem Auger (feet) | Air / Water-Mist Rotary (feet) | Field Screening Approach, Rationale, and Confirmation/Characterization Sampling | |
| 16-007(a) | Waste Pond #1 | 36 | | | | 9 [c] | | | | | | 45 [d] | --- | The following intervals will be screened in each borehole:<br><br>1. the 6-inch intervals at the surface, at 3 ft, at 5 ft, at 7 ft, at 13 ft,<br>2. segments bracketing the bottom of the pond, (estimated at 8 to 10 ft deep),<br>3. at the bottom of the borehole (15 ft).<br><br>If the bottom of the pond is at a depth other than 8 to 10 ft, the bottom of the pond will be bracketed with 6 samples and the additional screening sample(s) will be taken with a spacing of 2 ft. Any segments with visible evidence of HE will also be screened.<br><br>If the deepest interval in any 15-foot borehole yields a positive HE or PID reading, then screening and laboratory sampling will be continued every 2 ft until negative results are obtained. | Confirmation samples will be collected at the following locations:<br><br>1. the shallowest positive screening sample,<br>2. the deepest positive screening sample, and<br>3. 2 ft deeper than the deepest positive screening sample.<br><br>For each pond, if no samples yield positive field screening results, one confirmation sample will be submitted from each core from within the 3-ft interval bracketing the bottom of the pond. |
| | Waste Pond #2 | 36 | | | | 9 [c] | | | | | | 45 [d] | --- | | |
| | Waste Pond #3 | 36 | | | | 9 [c] | | | | | | 45 [d] | --- | | |
| | Waste Pond #4 | 36 | | | | 9 [c] | | | | | | 45 [d] | --- | | |
| 16-008(a) | Waste Pond | 48 | | | | 12 [c] | | | | | | 60 [e] | --- | The following intervals will be screened in each borehole:<br><br>1. the 6-inch intervals at the surface, at 3 ft, at 5 ft, at 7 ft, at 13 ft,<br>2. segments bracketing the bottom of the pond, (estimated at 8 to 10 ft deep),<br>3. at the bottom of the borehole (15 ft).<br><br>If the bottom of the pond is at a depth other than 8 to 10 ft, the bottom of the pond will be bracketed with 6 samples and the additional screening sample(s) will be taken with a spacing of 2 feet. Any segments with visible evidence of HE will also be screened.<br><br>If the deepest interval in any 15-foot borehole yields a positive HE or PID reading, then screening and laboratory sampling will be continued every 2 ft until negative results are obtained. | Confirmation samples will be collected at the following locations:<br><br>1. the shallowest positive screening sample,<br>2. the deepest positive screening sample, and<br>3. 2 ft deeper than the deepest positive screening sample.<br><br>If any core yields less than two positive screening samples, additional samples will be selected for that borehole from within the intervals bracketing the bottom of the pond. |
| Qbt3/Qbt4 Characterization | (2) intermediate boreholes | 10 | | | | 5 | | | | | | --- | 200 | Intermediate boreholes will be field screened (D-Tech, PID, radioactivity, and XRF) at 20-ft intervals. Additional screening will be conducted at any fractures and/or surge beds encountered. | Confirmation samples will be collected every 40 ft and at total depth. Additional samples will be collected at locations that are not on the 40-ft intervals for which field screening results are positive. |
| TOTAL SAMPLES | | 202 | | | | 53 | | | | | | | | | |

[a] D-Tech sample locations are samples screened for HE. The D-Tech detection limit for HE (as RDX) is 1 ppm
[b] One field duplicate will also be collected per 10 samples from the SWMUs (i.e., 10 percent frequency).
[c] Two samples from each borehole will be submitted for laboratory analysis (shallowest and deepest positive intervals) in addition to one sample collected 2 ft beneath the deepest positive screening sample.
[d] Three boreholes will be drilled into each pond; three five-foot cores are expected per borehole.
[e] Four boreholes will be drilled; three five-foot cores are expected per borehole.

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