

TA 36

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: February 28, 1994
IN REPLY REFER TO: EM/ER:94-A076
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34994

Mr. Joseph C. Vozella, Chief
Environment, Safety, and Health Branch
US Department of Energy
Los Alamos Area Office, MS A316
Los Alamos, NM 87544

Dear Mr. Vozella:

**SUBJECT: RESPONSE TO NOTICE OF DEFICIENCY CONCERNING OPERABLE
UNIT 1130 FIELD INVESTIGATION WORK PLAN
ACTIVITY DATA SHEET NUMBER 1130
(WBS #) 1.4.2.6.1.19.1.2**

The Los Alamos National Laboratory's response to the Environmental Protection Agency's Notice of Deficiency concerning the Operable Unit 1130 Field Investigation Work Plan is enclosed. A certification form signed by the appropriate Laboratory official is enclosed, too. The Notice of Deficiency was received at the Los Alamos Area Office on February 8, 1994. A response within thirty days is required by the regulatory agency.

The enclosed response shows the comments from the Notice of Deficiency and proposed text changes with deletions indicated by strike-throughs and additions indicated in bold. A documented quality review of the enclosed response has been performed in accordance with procedure LANL-ER-AP-01.3.

Please let me know if there are questions about this response to the Notice of Deficiency, or contact Ted Norris of my staff at 665-5136. I would appreciate having the response and the signed certification form sent to the Environmental Protection Agency, Region 6, in time to meet the required deadline.

Sincerely,



David J. McInroy
Acting Program Manager
Environmental Restoration Program

DM/vvm

Enclosures: Responses to Notice of Deficiency
Certification form

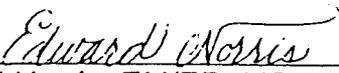


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CRM-4, MS A150, (w/o enclosure)

The attached document, "Response to NOD Concerning Operable Unit 1130 Field Investigation Work Plan" is true and accurate to the best of our knowledge. The document has been through formal reviews, to ensure accuracy and in accordance with the Los Alamos National Laboratory (LANL) Environmental Restoration (ER) Program quality assurance procedure. The formal review comments and the resolutions to these comments are part of the public record and are available in the LANL ER Records Processing Facility. The document is being submitted to the Environmental Protection Agency as part of the requirements under the Hazardous and Solid Waste Amendments Operating Permit.



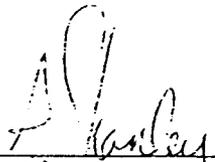
Ted Norris, EM/ER, MS M992
Programmatic Project Leader

March 1, 1994
Date



Gene Gould, ESA-4, MS G787
Operable Unit Project Leader

3/1/94
Date



Pat Shanley, ESH-8, MS K490
EM-8 Representative

3-2-94
Date



David McInroy, EM/ER, MS M992
Acting Environmental Restoration Program Manager

3/1/94
Date

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Document Title:

Response to Notice of Deficiency Concerning Operable Unit 1130 Field

Name:

Dennis Erickson
Dennis Erickson
Division Director
Los Alamos National Laboratory

Date: 3-3-94

Name:

Joseph Vozella, Chief
Environmental Safety & Health Branch
Los Alamos Area Office - DOE

Date: _____

LIST OF DEFICIENCIES, DISCUSSION, AND
PROPOSED TEXT CHANGES
RFI WORK PLAN FOR OPERABLE UNIT 1130

GENERAL COMMENT:

All baseline risk assessments should follow the guidelines set by the Technical Assumptions Task Force, which indicate that a residential scenario should be used unless an agreement as to future land use has been made. This work plan does not need to be revised to change all the risk assessment scenarios. However, it should be noted that any risk assessments conducted should meet the above-mentioned guidelines until future land use determinations have been made.

DISCUSSION:

The Technical Assumptions Task Force guidelines will be followed.

PROPOSED TEXT CHANGES:

4.2 Approaches to Site Characterization

The ER Program has adopted a risk-based approach to making corrective action decisions during the RCRA facility investigation/corrective measures study (RFI/CMS) process. In this work plan, the Data Quality Objectives [Chapter 4 and Appendix H of the IWP (LANL 1992, 0768)] are used to identify site-specific risk-based decisions or risk-related questions, to identify and, in some cases, quantify risk-based decision errors, and to specify sampling designs to support the risk-based decisions or risk-related questions. **All baseline risk assessments will follow the guidelines set by the Technical Assumptions Task Force.**

.....

SPECIFIC COMMENTS:

1. *LANL shall provide a detailed schedule of field work dates, and report dates for this work plan.*

DISCUSSION:

Los Alamos National Laboratory (LANL) is providing a detailed schedule of field work and reporting dates for this operable unit and other operable units with field activities as part of the Department of Energy's (DOE) baseline process. LANL and DOE personnel have discussed this process previously with the Environmental Protection Agency's (EPA) Region 6 personnel. A baseline with major revisions has been developed, incorporating both DOE's current funding limits and the site prioritization rankings that were developed with the cooperation of Region 6. This revised baseline was delivered to DOE on March 1. After DOE approves the LANL baseline, the field work and reporting schedules will be transmitted to Region 6 for all operable units. A formal permit modification request will be submitted if previously approved schedules are adversely impacted by fiscal constraints.

PROPOSED TEXT CHANGES:

None.

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2. 3.5.1.2 Infiltration of Surface Water, p. 3-23

Figure 3.7 does not show the location of the discharge sink in Potrillo Canyon as mentioned in the text. LANL should provide a revised figure showing the location of this sink.

DISCUSSION:

Figure 3-7 has been revised to show the location of the discharge sink in Potrillo Canyon.

PROPOSED TEXT CHANGES:

Substitute revised Figure 3-7.

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3. 4.2.3 Voluntary Corrective Actions, p. 4-8

The ER program will not formally solicit EPA approval for VCAs until it requests final approval of the cleanup. WRONG. Still SWMUs and as such they are under a schedule for investigation, and approval of work conducted is still up to EPA not DOE.

DISCUSSION:

The work will follow proposed Subpart S regulations.

PROPOSED TEXT CHANGES:

~~VCAs may be proposed at any stage of the RFI as an expeditious alternative to the complete RCRA program with a formal CMS phase. A VCA may be proposed for a PRS if contaminants of concern have been identified, and if an obvious and effective remedy is available that meets treatment and disposal restrictions and other limiting criteria. Implementing a VCA requires submission of a change control for DOE approval. VCAs on sites that contain mixed or land disposal restricted wastes may not proceed without a plan for storage and/or disposal that has been approved by DOE and the appropriate regulatory agencies. VCAs will be described in technical quarterly reports to EPA, and the public will be informed of VCAs in quarterly meetings, but the ER Program will not formally solicit EPA approval for VCAs until it requests final approval of the cleanup.~~

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4. 4.4.1 Criteria for Recommending NFA, p. 4-28

Criterion 3 should be changed to indicate that for a baseline risk assessment for carcinogens a risk of 10^{-6} , and a hazard index less than 1 for noncarcinogens is required for a NFA recommendation.

DISCUSSION:

Agree.

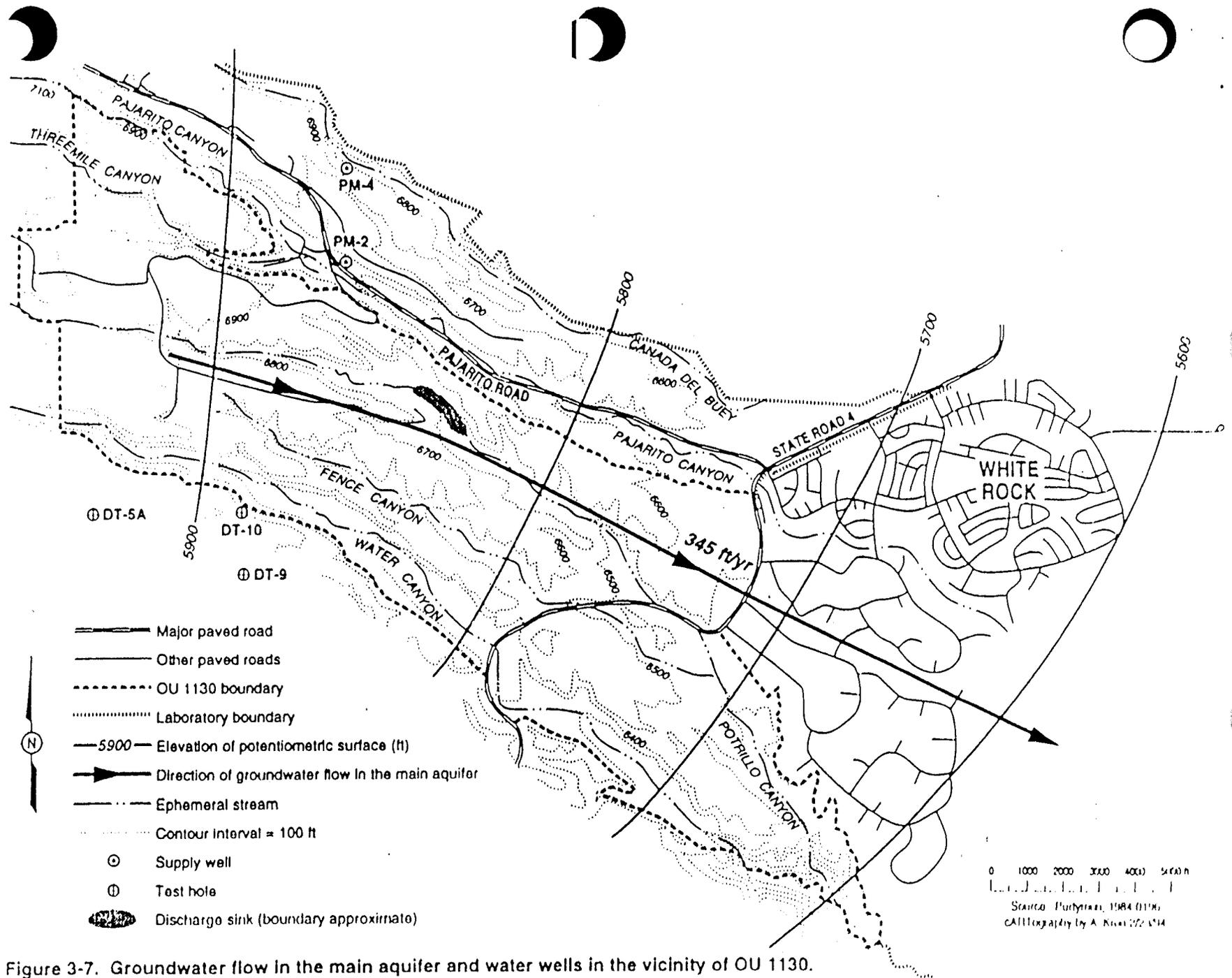


Figure 3-7. Groundwater flow in the main aquifer and water wells in the vicinity of OU 1130.

PROPOSED TEXT CHANGES:

Criterion 3: The risk, as determined by a baseline risk assessment, is less than 10^{-4} to 10^{-6} or less for carcinogens, and the hazard index is less than 1 for noncarcinogens. These NFA recommendations will also consider ALARA criteria for radioactive contaminants.

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5. 5.2.5.3 Sampling Sump, p. 5-20

Should boreholes be required for this unit then at least one of the outer holes should be located on the down gradient side.

DISCUSSION:

Agree.

PROPOSED TEXT CHANGES:

After the excavation is completed and sludge samples are collected, the samples will be taken to a laboratory and analyzed for potential contaminants of concern. If samples are detected to have potential contaminants of concern above screening action levels, a hollow-stem auger drill rig with a core barrel (or similar rig) will be used to drill three interior boreholes (inside the excavated 4-ft diameter sump), and three exterior boreholes (outside the perimeter). ~~The locations of the holes will be selected randomly.~~ **Locations for the three interior boreholes will be based on visual indicators of contamination; if visual indicators do not exist, the locations will be selected randomly. At least one of the exterior boreholes will be located on the downgradient side of the sump. The remaining exterior boreholes will be located randomly.** The boreholes will be drilled to depths of approximately 5 ft below the bottom of the sump in order to determine whether potential contaminants of concern are migrating out of the sump.

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6. 5.3.5.1.3 Sampling, p. 5-31

LANL shall place at least one of the boreholes to be drilled in the leachfield where the line from the septic tank enters the leachfield. The rest of the boreholes may be randomized.

DISCUSSION:

Agree.

PROPOSED TEXT CHANGES:

~~A total of six boreholes will be drilled at random locations within the leach field using a hollow-stem auger drill rig with core barrel (or similar rig).~~ **A total of six boreholes will be drilled into the leachfield using a hollow-stem auger drill rig with core barrel (or similar rig). One hole will be located where the outfall from the septic tank discharges into the leachfield; the remaining five boreholes will be located randomly within the leachfield.** Continuous cores will be collected from each of the six boreholes, and three samples will then be taken from each core, so a total of eighteen samples will be collected. One of the three samples will be from the depth of the tiles, one from the fill/tuff interface, and one from

the underlying tuff. Core and sample collection will be conducted in accordance with protocols established in LANL-ER-SOP-06.10, Hand Auger and Thin-Wall Tube Sampler and/or LANL-ER-SOP-06.24, Sample Collection from Split-Spoon Samplers and Shelby Tube Samplers (LANL 1992, 0688).

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7. 5.4.1.3 PRS 36-0049(c): Minie Firing Site, p. 5-38

The second paragraph of this section indicates that there is a permitted open burning (detonation) site within this firing site. Is the text referring to TA-36 building 8 which has interim status? If not then what is the unit text referring to?

DISCUSSION:

There is a RCRA interim status open burning open detonation (OBOD) area for high explosives (HE) at the Minie firing site firing platform.

PROPOSED TEXT CHANGES:

The construction of this firing site began in July 1949 and was completed in June 1950 (LANL 1992, 13-0065). Many armor-piercing experiments, which use various metal penetrators, are conducted at this site. The penetrator jets are directed at the canyon wall to the west; most of the penetrators are stopped by metal plates located behind the targets (Kelkar 1992, 13-0001). ~~Permitted Open burning- detonation of waste, scrap explosives, and unstable gas cylinders has been conducted under RCRA interim status at the Minie firing site -at the explosives destruction area within this firing site.~~ Emergency detonation of leaking gas cylinders has occurred at this site at very infrequent intervals (LANL 1990, 0145; Kelkar 1992, 13-0050; DOE 1988, 13-0043).

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7. 5.4.1.4 PRS 36-004(d): Lower Slobbovia Firing Site, p. 5-38

LANL shall provide more information on the Skunk Works site, such as type of activities and contaminants from this site. All other firing sites appear to be used for their intended purpose which is research, and as long as they are active they are not SWMUs. However, Skunk Works has been inactive since the mid-1950s and should be addressed as a SWMU now. LANL should submit a sampling schedule for this site along with the other requested information.

DISCUSSION:

Experiments with gas (acetylene and oxygen), liquid (tetranitromethane), and solid (Comp B) explosives were performed at the Skunk Works. Tetranitromethane is extremely poisonous and volatile; however, it was tightly controlled. If there were spills, no traces should still exist. Aluminum and copper residue from shots remain. There are no records indicating that beryllium, plutonium, or other radioactive materials were used in the shots.

The sampling schedule to be presented in response to Comment 1 will include field sampling for 1995. The Skunk Works will be sampled at that time if budget constraints do not delay the sampling activities.

PROPOSED TEXT CHANGES:

None.

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8. 5.4.5.4 Burning Pit Sampling, p. 5-49

Sampling of these burning pits is not deferred and LANL shall submit a sampling schedule.

DISCUSSION:

Burn Pit sampling is presented in the OU 1130 RFI Work Plan (Section 5.4.5.4). Sampling will be conducted during the spring and summer of 1995 if budget constraints do not delay the sampling activities.

PROPOSED TEXT CHANGES:

None.

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9. 5.7.4 Data Needs and Data Quality Objectives, Photo Outfall, p. 5-67

LANL shall sample closer to the outfall than 170 feet. Even though the side of the canyon are steep and there may not be an accumulation point closer to the outlet, contaminates may have infiltrated sediment closer to the outlet. LANL should make an effort to sample in the drainage path as close to the outlet as possible. In addition, this unit should be added to the permit as a SWMU as it has not been under an NPDES permit for the entire time of operation.

DISCUSSION:

It is not necessary to add this unit as a SWMU because the process generating discharge has never changed during its entire operation. The building that this outfall services was initially constructed to process photographs and has not been used for anything else.

PROPOSED TEXT CHANGES:

The goal of Phase I of the RFI at this site is to determine if silver, cyanide, and organic solvents contaminants are present in surface soils and sediments on the slope below the outfall at levels exceeding screening action levels. ~~Because the slope of the ground under the outfall is quite steep, there are not many places where soils and sediments, together with potential contaminants, accumulate and remain trapped. Suitable sampling locations may therefore start as far as 170 ft down the slope below the outfall. The soils and sediments in the drainage channel below the outfall and the discharge water from the outfall will be sampled.~~ A geomorphological survey will be performed to identify catchments where soils, sediments, and potential contaminants may accumulate. Additional sampling locations will be selected if visual indicators of contamination are identified in the field.

Analytical results will be used to compare the largest observed concentration of each constituent with screening action levels. If these levels are exceeded, a baseline risk assessment of this site will be performed. If Phase I data are

insufficient to conduct a baseline risk assessment, or do not adequately characterize the extent of contamination, a Phase II investigation will be initiated.

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10. Many of the sites mention analysis for mercury, but it is not listed (checked) on the Summary of Sampling and Analyses for PRS's Tables 5-3, 5-5, 5-7, 5-9, and 5-10. The analytical method for mercury should also be indicated. LANL shall resubmit revised tables showing all analyses.

DISCUSSION:

Mercury is identified as a PCOC for several of the firing sites. Therefore, all samples associated with the firing site aggregate will be analyzed for mercury using EPA Method SW 7471. The text and Table 5-7 have been modified to reflect the addition of the mercury analysis. Mercury is not a PCOC for any of the other OU 1130 PRSs. Mercury was mistakenly included as one of the metals detected by EPA Method SW 6010 in Sections 5.1.5.4, 5.2.5.4, 5.3.5.1.4, 5.5.5.4, and 5.7.5.4. The text has been modified to correct the error.

PROPOSED TEXT CHANGES:

Substitute revised Table 5-7.

5.4.5.5 Laboratory Analyses

Samples will be analyzed for gross gamma, total uranium, heavy metals (silver, barium, beryllium, cadmium, chromium, ~~mercury~~, nickel, lead, antimony, and zinc), **mercury [as per EPA Method 7471 (EPA 1986)]**, VOCs [as per EPA Method 8260 (EPA 1986, 0291)], semivolatile organic compounds (SVOCs) [as per EPA Method 8270 (EPA 1986, 0291)], and explosives.

5.1.5.4 Laboratory Analyses

Samples will be analyzed for total uranium, explosives, and heavy metals (silver, barium, beryllium, cadmium, chromium, ~~mercury~~, nickel, lead, and zinc). If uranium is detected above natural background levels, the sample will be analyzed for isotopic uranium. If a field laboratory is available and meets Quality Analysis/Quality Control (QA/QC) criteria, these samples may be analyzed onsite. Otherwise, an offsite laboratory will be used.

5.2.5.4 Laboratory Analyses

Samples will be analyzed for total uranium, heavy metals (silver, barium, beryllium, cadmium, chromium, ~~mercury~~, nickel, lead, and zinc), explosives, VOCs [as per EPA Method 8260 (EPA 1986, 0291)], SVOCs [as per EPA Method 8270 (EPA 1986, 0291)], and explosives. If uranium is detected above natural background levels in any sample, the sample will be analyzed for isotopic uranium. If a field laboratory is available and meets Quality Analysis/Quality Control (QA/QC) criteria, these samples may be analyzed onsite. Otherwise, an offsite analytical laboratory will be used.

TABLE 5-7

SUMMARY OF SAMPLING AND ANALYSIS FOR PRS 36-004 (A, B, C, D, AND E), ACTIVE FIRING SITES

Description	Samples				Field Screening				Laboratory Analyses																	
	Sampled Media				Structure		Surface		Subsurface		Beta-gamma	Alpha	Organic Vapor	Combustible gas/oxygen	Explosives (Spot Test)	Gross Gamma	Gamma spectroscopy	Total uranium	Isotopic uranium	Plutonium	Metals (SW 6010/7000)*	Mercury (SW 7471)*	Cyanides	VOCs (SW 8260)*	SVOCs (SW 8270)*	Explosives (SW 8320)*
	soil/sediments	water	ash/debris	soil/tuff	primary	duplicate	primary	duplicate	primary	duplicate																
Canyons	x						12	1			x	x	x		x	x	z	x	z	y	x	x		x	x	x
Canyons		x					12	1			x	x	x		x	x	z	x	z	y	x	x		x	x	x
Burn Pits			x						6	1	x	x	x		x	x	z	x	z		x	x		x	x	x
Burn Pits				x					6	1	x	x	x		x	x	z	x	z		x	x		x	x	x

x : All samples
y : Selected samples (see text)
z : Samples will be analyzed if total potential contaminants of concern are detected above screening action levels.
Note: Actual number of samples will depend upon how many burn pits are found.
* : Applicable EPA SW 846 methods.

5.3.5.1.4 Laboratory Analyses

Samples will be analyzed for total uranium, heavy metals (silver, barium, beryllium, cadmium, chromium, mercury, nickel, lead, and zinc), VOCs [in accordance with EPA Method 8260 (EPA 1986, 0291)], SVOCs [in accordance with EPA Method 8270 (EPA 1986, 0291)]. If a field laboratory is available and meets Quality Analysis/Quality Control (QA/QC) criteria, these samples may be analyzed onsite. Otherwise, an offsite analytical laboratory will be used.

5.5.5.4 Laboratory Analyses

Samples will be analyzed for total uranium, heavy metals (silver, barium, beryllium, cadmium, chromium, mercury, nickel, lead, and zinc), VOCs [in accordance with EPA Method 8260 (EPA 1986, 0291)], SVOCs [in accordance with EPA Method 8270 (EPA 1986, 0291)], and explosives. If laboratory analysis indicates the presence of gamma radioactivity and/or uranium above natural background levels for any particular sample, gamma spectroscopy analysis and/or isotopic uranium analysis will be performed on the sample.

5.7.5.4 Laboratory Analyses

Samples will be analyzed for heavy metals (silver, barium, beryllium, cadmium, chromium, mercury, nickel, lead, and zinc), cyanide, and SVOCs [in accordance with EPA Method 8270 (EPA 1986, 0291)]. If a field laboratory is available and meets QA/QC criteria, these samples may be analyzed onsite. Otherwise, an offsite analytical laboratory will be used.