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ER Record I.D.# 59685

ER ID NO. 59685 Date Received: 9/17/98 Processor: DIC Page Count: 52

Privileged: (Y/N) N Record Category: P Record Package No: 306

FileFolder: FY 98 PERFORMANCE MEASURES RECORDS PACKAGE #306
ADDITION SUBMITTAL #17/LETTER WITH ENCLOSURES

Correction: (Y/N) N Corrected No. 0 Corrected By Number: 0

Administrative Record: (Y/N) Y

Refilmed: (Y/N) N Old ER ID Number: 0 New ER ID Number: 0

Miscellaneous Comments:

N/A

THIS FORM IS SUBJECT TO CHANGE. CONTACT THE RPF FOR LATEST VERSION. (JUNE 1997)



14328

September 11, 1998

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Mr. Ted Taylor
EM/ER:98-317

Enclosures: (1) Functional Area A.2 Performance Measure
(2) Table 1, HSWA NFA PRSs
(3) Table 2, Non-HSWA NFA PRSs
(4) Draft Letter to Dr. Robert Dinwiddie
(5) Rewrite of Chapter 6 for RFI Work Plan for OU 1082, Addendum 2

Cy (w/ encs.):

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EM/ER, MS M992

Enclosure 1

Functional Area A.2. Continued work on No Further Action (NFA) recommendations from work conducted prior to FY98. Weight 13%

Unsatisfactory	Submit fewer than 140 potential release sites (PRSs) for NFA recommendation in FY98 from previous years' work.
Marginal	Submit 170 PRSs for NFA recommendation in FY98 from previous years' work.
Good	Submit 200 PRSs for NFA recommendation in FY98 from previous years' work.
Excellent	Submit 230 PRSs for NFA recommendation in FY98 from previous years' work.
Outstanding	Submit 260 PRSs for NFA recommendation in FY98 from previous years' work.

Assumptions

1. The number of NFA recommendations to obtain a "good" rating is based on the number in the ER Project Baseline (see General Assumption 1).
2. The work performed in FY98 for NFA recommendations will include an evaluation of each PRS for surface water [following the ER Project Administrative Procedure (AP) 4.5, *Evaluation of Potential Surface Water Concerns at Environmental Restoration Sites*], other applicable regulations and standards [following guidance received from the New Mexico Environment Department (NMED) regarding acceptance of NFA recommendations (Letter from Ed Kelley, Director Water and Waste Management Decisions to T.J. Taylor, DOE-LAO and J. Jansen, LANL, Re: No Further Action Determinations Los Alamos National Laboratory NM0980010515, dated March 10, 1997), and an ecological risk evaluation [following Environmental Protection Agency Guidance (*Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments*, Interim Final Draft, USEPA 1997)]. The surface water assessment, applicable regulations and standards assessment and ecological risk evaluation will all lead to a final no further action recommendation.
3. The NFA recommendations will be documented in one or more reports by the end of FY98. This(ese) report(s) will list each PRS, the NFA criteria under which the PRS was recommended for NFA based on the human health evaluation (work conducted prior to FY98), document the results of the surface water screen, any other applicable regulations evaluation, and the ecological risk evaluation.
4. Credit for completion will be obtained when the NFA recommendation and any appropriate supporting information are submitted to and accepted by (following General Assumption 5) DOE-LAO.

Table 1
 HSWA Module Potential Release Sites Proposed for No Further Action

NFA Criteria	PRS Number	PRS Description	Former OU	NFA Document	Document Date	NFA Justification
1	16-026(l)	Outfall	1062	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	16-028(e)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	16-029(f)	Outfall	1062	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	16-030(c)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-016(d)	Surface disposal site	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-016(e)	Surface disposal site	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(a)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(a2)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(b)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(b2)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(f)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(f2)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(g)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(g2)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(h)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(k)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(l)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(x)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(y)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-026(z)	Outfall	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-030(b)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-030(e)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-030(f)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-031(e)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-031(f)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-031(h)	Ind. or san. waste water treatment	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-034(i)	Soil contamination area	1062	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-034(k)	Soil contamination area	1062	Workplan	7/5/95	No release has occurred or is likely
3	16-025(e2)	Abandoned building & appurtenances	1062	Workplan	7/5/95	No release has occurred or is likely
3	16-025(f2)	Abandoned building & appurtenances	1062	Workplan	7/5/95	No release has occurred or is likely
3	16-025(h2)	Abandoned building & appurtenances	1062	Workplan	7/5/95	No release has occurred or is likely

Table 2
 Non-HSWA Module Potential Release Sites Proposed for No Further Action

NFA Criteria	PRS Number	PRS Description	Former OU	NFA Document	Document Date	NFA Justification
1	16-003(g)	Sump	1082	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	16-037	Aboveground tank	1082	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	C-16-049	Building	1082	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	C-16-071	One-time spill	1082	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
1	C-16-072	Tank	1082	Workplan	7/5/95	Site not located, duplicate, or part of another PRS
2	16-021(b)	Systematic leak	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(c)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(d)	Tank and/or assoc. equip	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(f)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(g)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(h)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(i)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	16-033(j)	Underground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-001	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-008	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-009	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-010	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-012	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-013	Storage area	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-014	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-015	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-016	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-018	Aboveground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-020	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-034	Aboveground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-035	Aboveground tank	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-036	Septic system	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-041	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-044	Manhole	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-046	Manhole	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-050	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-051	Building	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-062	Generation area	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-063	Generation area	1082	Workplan	7/5/95	Site never used for RCRA solid or haz waste; or CERCLA substances
2	C-16-070	Underground tank	1082	Workplan	7/5/95	No release has occurred or is likely
3	16-027(b)	Transformer	1082	Workplan	7/5/95	No release has occurred or is likely
3	16-027(d)	Transformer	1082	Workplan	7/5/95	No release has occurred or is likely
3	C-16-019	Building	1082	Workplan	7/5/95	Site characterized/remediated under another authority
4	16-022(a)	Underground tank	1082	Workplan	7/5/95	Site characterized/remediated under another authority
4	16-027(a)	Transformer	1082	Workplan	7/5/95	Site characterized/remediated under another authority
4	16-027(c)	Transformer	1082	Workplan	7/5/95	Site characterized/remediated under another authority



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DRAFT

Date:
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Dr. Robert Dinwiddie
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**SUBJECT: REPLACEMENT CHAPTER 6 FOR RFI WORK PLAN FOR
OU 1082, ADDENDUM 2**

Dear Dr. Dinwiddie:

Enclosed please find a replacement Chapter 6 [Units Proposed for No Current Resource Conservation and Recovery Act Facility Investigation (RFI)] for the RFI Work Plan for Operable Unit (OU) 1082 Addendum 2. Because this work plan has yet to be reviewed by your staff, the Los Alamos National Laboratory has taken this opportunity to revisit Chapter 6 and apply what we know now about successful no further action (NFA) petitions. This chapter has been modified to reflect the five NFA criteria adopted by your Bureau. The Laboratory's Environmental Restoration (ER) Project has reevaluated all of the sites originally proposed for NFA in the 1995 delivery against those criteria as well as ecological risk and other applicable requirements such as surface and ground water assessments and Underground Storage Tank (UST) Bureau requirements.

As a result of this exercise we have removed 8 sites from being recommended for NFA within this chapter. These sites will require ecological evaluations prior to identifying the need for additional corrective actions or petitioning them for NFA. These sites include:

- 16-016(f), a construction debris site;
- 16-016(g), a surface disposal area;
- 16-022(b), former location of underground storage tank;
- 16-033(a,b), former location of underground storage tanks;
- C-16-047, decommissioned oil switch;
- C-16-051, decommissioned oil switch; and
- C-16-058, decommissioned oil switch.

No attempt was made to format the NFA proposals within this chapter to the new Hazardous and Radioactive Materials Bureau format. This was an intermediate step to hopefully aid your Bureau in their review. Upon your concurrence with our

Dr. Robert Dinwiddie
EM/ER:98-

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recommendations, the Laboratory ER Project will format a Permit Modification request to include all relevant information and documentation. This approach was discussed with Mr. John Kieling of your staff.

Executive Summary

**Chapter 1
Introduction**

**Chapter 2
Background Information
for Operable Unit 1082**

**Chapter 3
Environmental Setting**

**Chapter 4
Technical Approach**

**Chapter 5
Evaluation of Potential
Release Site Aggregates**

**Chapter 6
Units Proposed for No
Current RCRA Facility
Investigation**

Chapter 6

RFI Work Plan (1993)

- HSWA PRSs—No Further Action
- Non-HSWA PRSs—Deferred Action/
No Further Action
- HSWA/Non-HSWA—Deferred
Action-migration

Addendum 1 (1994)

- HSWA—Deferred Action/No Further
Action
- Non-HSWA—No Further Action

Addendum 2 (1995)

- HSWA—No Further Action
- Non-HSWA—No further Action
- PRS Recommended for
Voluntary Corrective Action

Addendum 2, Rev. 1 (1998)

- HSWA—No Further Action
- Non-HSWA—No Further Action

Annexes

Appendices

NOTE: THE POTENTIAL RELEASE SITES (PRSs) LISTED IN TABLE 6.11 AND SUBSEQUENTLY DESCRIBED BELOW ARE PART OF THE JULY 1995 ADDENDUM 2 TO THIS WORK PLAN. ALL THE SITES PROPOSED FOR NFA HAVE BEEN EVALUATED ACCORDING TO THE FIVE "No Further Action (NFA) Proposals Criteria" in NMED RCRA Permits Management Program Document Requirement Guide (NMED 1998, ER ID 57897).

THOSE PRSs PROPOSED FOR NFA CRITERIA 1, 2, AND 3 POSE NO THREAT AND REQUIRE NO ASSESSMENTS FOR HUMAN HEALTH RISK, FOR ECOLOGICAL RISK, OR FOR SURFACE OR GROUND WATER IMPACTS. WHEN A PRS IS PROPOSED FOR NFA UNDER CRITERION 4, IT HAS BEEN REMEDIATED UNDER ANOTHER AUTHORITY THAT ADEQUATELY ADDRESSES RCRA CORRECTIVE ACTION REQUIREMENTS AND ALSO NEEDS NO FURTHER ASSESSMENT. FOR SITES BEING PROPOSED UNDER CRITERION 5, ASSESSMENTS OF HUMAN AND ECOLOGICAL RISKS AND COMPLIANCE WITH OTHER NMED BUREAU REQUIREMENTS, SUCH AS SURFACE WATER QUALITY PROTECTION, MAY BE REQUIRED.

CLEANUP DOCUMENTATION FOR PRSs IN SUBSECTIONS 6.6.3, 6.7.2, 6.7.3, AND 6.7.4 CAN BE FOUND IN ATTACHMENT A TO CHAPTER 6. ATTACHMENT A IS PUBLICLY AVAILABLE AT THE LOS ALAMOS NATIONAL LABORATORY (LANL) READING ROOM AND RECORDS PROCESSING FACILITY.

**TABLE 6-11
 PRSs RECOMMENDED FOR NO CURRENT RCRA FACILITY
 INVESTIGATION IN ADDENDUM 2, Rev. 1**

PRS AGGREGATE(S), DESCRIPTION(S)	EVALUATION STEP CRITERION*	SUBSECTION
16-026(l), 16-028(e), 16-030(c) outfalls; 16-029(l), active sump	First	6.6.1.1
16-016(d,e), surface disposal	Second	6.6.2.1
16-026(a.1.2), outfalls	Second	6.6.2.2
16-026(a2), outfall	Second	6.6.2.3
16-026(y) outfall	Second	6.6.2.4
16-031 (h), outfall	Second	6.6.2.5
16-031(e), active outfall cooling tower; and 16-031(f), inactive outfall cooling tower	Second	6.6.2.6
16-026(d2,e2,f2,g2,h,k,x) and 16-030(b,e,f) outfalls	Second	6.6.2.7
16-026(f) outfall	Second	6.6.2.8
16-026(g) outfall	Second	6.6.2.9
16-034(i,k), soil contamination at decommissioned buildings	Third	6.6.2.10
16-025(e2,f2,h2), soil contamination at decommissioned storage buildings	Third	6.6.3.1
16-037, industrial waste tank	First	6.7.1.1
C-16-072, fuel tank	First	6.7.1.2
16-003(g), active HE sump and C-16-071, hydraulic oil spill	First	6.7.1.3
C-16-049, decommissioned office and shop	First	6.7.1.4
C-16-062 and C-16-063, decommissioned electrical manholes	Second	6.7.2.1
C-16-018, decommissioned water storage tank	Second	6.7.2.2
C-16-020, decommissioned office building	Second	6.7.2.3
C-16-034 and C-16-035, decommissioned water tanks	Second	6.7.2.4
C-16-061, decommissioned latrine	Second	6.7.2.5
C-16-041, decommissioned hose house	Second	6.7.2.6
C-16-044 and C-16-046, decommissioned steam manholes	Second	6.7.2.7
C-16-050, decommissioned storage building	Second	6.7.2.8
C-16-008, implement shed; C-16-009, mess hall; C-16-010, storage building; C-16-012, decommissioned blacksmith shop; C-16-013, decommissioned lumber storage area; C-16-014, decommissioned equipment room; C-16-015, decommissioned hose house; C-16-016, decommissioned fire house; C-16-036, decommissioned latrine	Second	6.7.2.9
C-16-070, underground fuel tank	Second	6.7.2.10
C-16-001, crossover platform	Second	6.7.2.11
16-033(f-j) underground storage tanks	Second	6.7.2.12
16-033(c,d), decommissioned aboveground fuel tanks	Second	6.7.2.13
16-021(b), operational release	Second	6.7.2.14
16-027(b,d), transformers	Third	6.7.3.1
C-16-019, decommissioned pump house	Third	6.7.3.2
16-022(a), soil contamination	Fourth	6.7.4.1
16-027(a,c), transformers	Fourth	6.7.4.2

* All evaluation criteria are based on the "No Further Action (NFA) Proposals Criteria" in NMED RCRA Permits Management Program Document Requirement Guide (NMED 1998, ER ID 57897)

6.6 Solid Waste Management Units Listed in the Hazardous and Solid Waste Amendments (HSWA) Module VIII Recommended for No Further Action

6.6.1 Solid Waste Management Units Recommended for No Further Action Under Criterion One of the NFA Proposals Criteria

NFA CRITERION ONE The Solid Waste Management Unit/Area of Concern (SWMU/AOC) cannot be located, does not exist, or is a duplicate SWMU/AOC.

6.6.1.1 Outfall, SWMU 16-026(l), Outfall, SWMU 16-028(e); Active Sump, SWMU 16-029(l); Outfall SWMU 16-030(c)

6.6.1.1.1 Background

SWMU 16-026(l) is soil associated with outfalls from TA-16-220. TA-16-220 is an x-ray facility for HE components. It was built in 1952 along with seven similar buildings in the radiography area. This SWMU consists of drains from the east wall and the northeast and southeast corners of TA-16-220. The outfalls could not be located in the field during site visits. Engineering drawing ENG-C 15660 shows that roof drainage is from the northeast and southeast corners of the building and that the east wall contains a steam pit drain. The only other drain is a permitted floor drain outfall covered under SWMU 16-028(c) of Addendum 2. The physical isolation of the steam pit drain from the rest of the building makes contamination highly unlikely. The SWMU Report states that the steam pit drain was located on the south side of the building, but field investigation found the drain to be on the east wall (LANL 1990, 0145).

SWMU 16-028(e) is potentially contaminated soil associated with a permitted outfall, Environmental Protection Agency (EPA) 04A091, from the sump at Technical Area (TA) 16-450. This sump is addressed as Solid Waste Management Unit (SWMU) 16-029(g) in Subsection 5.2 of the 1993 RCRA Facility Investigation (RFI) Work Plan for Operable Unit (OU) 1082 (LANL 1993, 1094). Additional information on TA-16-450 is provided in Subsections 5.2.1.1 and 5.5.1.1.

SWMU 16-029(l) is a sump that serves TA-16-342. This sump is addressed as SWMU 16-003(n) in Subsection 5.2 of the 1993 RFI Work Plan for OU 1082 (LANL 1993, 1094). Additional information on TA-16-342 is provided in Subsection 5.2.1.1.

SWMU 16-030(c) is soil associated with an outfall from TA-16-222. TA-16-222, built in 1953, is an x-ray film-processing lab located in the center of the radiography area in TA-16. The outfall originates from a roof drain downspout located on the northwest side of the building. ENG-R 855 shows four drains exiting from the corners of TA-16-222. The drawing indicates that they are roof drains. Upon site visit, the outfall could not be located. This drawing also shows the sanitary sewer lines and the

only other building drain, a chemical drain that was covered under SWMU 16-020 of the 1993 RFI Work Plan.

6.6.1.1.2 Recommendation

SWMUs 16-028(e) and 16-029(i) are recommended for no further action (NFA) under Criterion 1 because they are duplicates; SWMUs 16-026(l) and 16-030(c) are recommended for NFA under Criterion 1 because they could not be located.

6.6.1.1.3 Rationale for Recommendation

SWMU 16-028(e) was covered in the 1993 RFI Work Plan as SWMU 16-029(g) (LANL 1993,1094). SWMU 16-029(g) addresses the sump and permitted outfall (EPA 04A091) associated with TA-16-450. There is only one sump and permitted outfall associated with TA-16-450. Therefore, SWMU 16-028(e) and SWMU 16-029(g) are identical.

SWMU 16-029(i) was covered in the 1993 RFI Work Plan as SWMU 16-003(n) (LANL 1993,1094). SWMU 16-003(n) is designated as an active sump outfall. SWMU 16-029(i) designates this outfall as an inactive sump outfall. Because there is only one sump attached to this building, SWMUs 16-029(i) and 16-003(n) must be identical.

SWMUs 16-026(l) and 16-030(c) are listed as outfalls originating from a roof drains at TA-16-220 and TA-16-222. They could not be located during field site visits. Furthermore there are no documented releases of hazardous wastes and/or constituents to the roofs of any of these buildings.

6.6.2 Solid Waste Management Units Recommended for No Further Action Under Criterion Two of the NFA Proposals Criteria

NFA CRITERION TWO The SWMU/AOC has never been used for the management (i.e., generation, treatment, storage, or disposal) of Resource Conservation and Recovery Act (RCRA) hazardous waste and/or constituents and/or constituents, or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances.

6.6.2.1 Surface Disposal, SWMUs 16-016(d,e)

6.6.2.1.1 Background

SWMU 16-016(d) is a small debris area at TA-16-222. The most hazardous item observed was a paint can that had been used to mix a small amount of cement. Other items included a few segments of corrugated metal pipe, some cable, and rebar. All material appears to be waste associated with the construction of the building rather than operational waste. These materials were field screened for

radioactivity and high explosives (HE) and removed to the burning grounds by the operating group under work order LN 05057 on March 27, 1995.

SWMU 16-016(e) is located among graded soil and tuff 150-ft southeast of TA-16-360. The SWMU Report describes the item as a white fibrous mass, possibly asbestos (LANL 1990, 0145). Photographs taken by Weston during the original SWMU investigations also show a white fibrous mass visible in the photograph (LANL photograph RN88-109-070).

6.6.2.1.2 Recommendation

SWMUs 16-016(d,e) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.1.3 Rationale for Recommendation

The items seem to be construction debris. Field observation suggests that the remnants are not of a hazardous nature or extent. HE spot tests were conducted at both locations on various pieces of debris, and none of the materials was found to be HE- or RAD-contaminated (Watanabe 1994, 15-16-569). SWMU 16-016(d) was found to be nonhazardous and the debris was removed. The white fibrous mass southeast of TA-16-360 (SWMU 16-016(e)) was analyzed by x-ray diffraction and found to be fiberglass insulation, not asbestos (Hickmott 1994, 15-16-567). Further evaluation of the proximity of this site reveals that the debris is not in a water course.

6.6.2.2 Outfalls, SWMUs 16-026(a,t,z)

6.6.2.2.1 Background

SWMU 16-026(a) is soil associated with two outfalls from TA-16-370. TA-16-370, built in 1953 as a barium nitrate grinding facility, was converted to a metal forming shop in the late 1950s (Tidwell 1989, 15-16-097). The two outfalls in question serve a roof drain on the east side of the building and a steam pit condensate drain from the south side of the building. The two other outfalls from the building, a sanitary drain and a permitted outfall, are covered as SWMU 16-006(c) in the 1993 RFI Work Plan and SWMU 16-028(b) of Addendum 2, respectively. The east outfall is listed on various maps and drawings as a downspout draining rainwater (ENG-C 15856-7, ENG-C 15857). The east outfall is 6-in. cast iron pipe and daylights 29 ft southeast of the building. The steam pit drain is 4-in. cast iron pipe and daylights 70 ft south of TA-16-370. The steam pit is physically isolated from the building and is located just north of the door in the southeast corner of the building. The physical isolation of the steam pit drain from the rest of the building makes contamination highly unlikely, since

the building itself is the only source of contaminated material. Effluent from both outfalls drains south into Water Canyon down a steep, rocky grade.

The steam pit drain joins an EPA permitted outfall [SWMU 16-028(b)] as it drains into Water Canyon. Soil samples were taken from this drainage in a study of SWMU 16-028(b) described in Subsection 5.28.1.2 of Addendum 2. Three samples were collected below the confluence of SWMU 16-028(b) and SWMU 16-026(a). Preliminary XRF measurements of various machining metals are shown in Table 6-12 along with the background range of these metals in Los Alamos soil (Longmire et al. 1993, 0958). The XRF results show that almost all the metals are within background. SWMU 16-028(b) is being sampled for metals as described in Subsection 5.28.3.1. At least one laboratory sample will be collected below the confluence of the two outfalls and tested for metals.

SWMU 16-026(t) is soil associated with an outfall from TA-16-207. TA-16-207, built in 1954 in the administration area of S-Site, was a secure storehouse that contained small quantities of depleted uranium (Paige 1994, 15-16-586). In 1993 it was decontaminated and converted into a packaging test facility (Paige 1994, 15-16-565). Engineering drawing ENG-C 7162 shows two roof drains, which carry only rainwater, joining on the north end of the building and flowing east. The drains are 8-in. vitrified clay pipes. This outfall daylights near the security fence about 80-ft southeast of the building and drains into a drainage ditch along old Anchor Ranch Road. According to ENG-C 46139, the only other drains in the building are sanitary drains.

SWMU 16-026(z) is soil associated with an outfall from TA-16-306. TA-16-306 is a plastics component development facility that has been operational since 1953. According to ENG-R 879, the building has one sanitary drain, four sump drains that were covered under SWMU 16-003(g) of the 1993 RFI Work Plan, and the outfall covered under SWMU 16-026(z). This outfall flows from a roof drain downspout near the southeast side of TA-16-306. The SWMU Report states that the outfall was located on the south side of the building, but field investigation located the outfall on the southeast corner (LANL 1990, 0145). The outfall leads directly into a paved drainage ditch located next to the building. This drainage ditch carries rainwater to a culvert and eventually into Water Canyon.

6.6.2.2.2 Recommendation

SWMUs 16-026(a,t,z) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now. Also, they are roof drains from buildings that have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.2.3 Rationale for Recommendation

These SWMUs are recommended for NFA because none of them is contaminated or poses environmental risk. The steam pits and drains at building TA-16-370 are completely isolated from the process buildings that they serve. It is highly unlikely that the steam pits are contaminated.

There have been no process-related hazardous wastes and/or constituents introduced into the roof drains or the steam pit drains and no documented releases of contaminants to the roof of any building associated with each SWMU. It is doubtful that any of the roof downspouts are carrying any type of contamination to the environment.

6.6.2.3 Outfall, SWMU 16-026(a2)

6.6.2.3.1 Background

SWMU 16-026(a2) is soil associated with an outfall from TA-16-200. The outfall is a 12-in. corrugated metal drain that flows from the south end of TA-16-200. The outfall daylights 200 ft southeast of TA-16-200 near TA-16-202. The outfall receives effluent from thirteen roof drains and two floor drains. The floor drains, which receive floor washings and compressor condensate, are located in basement equipment rooms. The floors show some oil or dirt stains. The equipment rooms contain building wiring, ductwork, sprinkler system pipes, and small pumps containing less than one gallon of oil.

6.6.2.3.2 Recommendation

SWMU 16-026(a2) is recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.3.3 Rationale for Recommendation

TA-16-200, in operation since 1952, has always been designated as the administration building at S-Site. Historical evidence confirms that no hazardous processes occurred in this building and no hazardous materials were generated (Martin and Hickmott 1994, 15-16-549).

6.6.2.4 Outfall, SWMU 16-026(y)

6.6.2.4.1 Background

SWMU 16-026(y) is soil associated with an outfall on the east side of TA-16-411. TA-16-411, built in 1951, is used as an assembly building for finished HE components. In 1976 and 1977, modifications were made to the building in order to house special nuclear materials weapons components. A vault

and a temperature and humidity control room were added to regulate the environment of the components. According to the former site safety officer, the building has always been used as an assembly station. Components to be assembled arrive in a finished condition. No forming, machining, or washing has ever been done at this facility (Martin and Hickmott 1994, 15-16-549). The outfall from this building has several sources. An isolated utility room containing pumps and compressors has a floor drain that receives condensate. The pumps and compressors are small and contain less than one gallon of oil. Within the building an eyewash station, drinking fountain, and sink drain contribute effluent to the line. Externally, two roof drains and a steam pit also connect to the outfall. The 4-in. vitrified clay pipe daylights 2 ft south of a double security fence, approximately 100 ft south of TA-16-411. The effluent drains down a very steep, rocky, canyon edge. Effluent volume averages 600 gal./month, 500 gal. as a result of precipitation (LANL 1992, 15-16-534).

6.6.2.4.2 Recommendation

SWMU 16-020(y) is recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.4.3 Rationale for Recommendation

TA-16-411 is used for storage and assembly of finished components only. No forming, machining, or washing is done at this facility (Martin and Hickmott 1994, 15-16-549). Site workers use the sink to clean their hands prior to assembly to avoid contaminating the components (Paige 1994, 15-16-576). Solvents and chemicals were not extensively used in any processes that occur at TA-16-411. Administrative controls restrict dumping any chemicals into the sink. Finally, the pumps and compressors in the isolated utility room are small (less than one gallon of oil) and have not had any known leaks.

6.6.2.5 Outfall, SWMU 16-031(h)

6.6.2.5.1 Background

SWMU 16-031(h) is soil associated with an outfall from a utility room in TA-16-478. The outfall receives effluent from a floor drain in the utility room on the northwest corner of the building. The drain, which consists of 4-in. vitrified clay pipe, daylights approximately 30 ft from the building. TA-16-478, originally P-4, was initially part of TA-13, and was used as a bunker for photographing explosive testing. In 1950 the building was modified to be a facility for testing the effects of machining on HE products. The utility room was an addition to the building during this modification. Engineering drawing ENG-C 14851 shows a drain in the utility room that serves a sink and floor drain. A site visit

confirmed that the drain received floor wash down water and sink drainage. The site visit also revealed a vacuum line connected to a vacuum pump in the utility room marked "Caution - Contains HE." The water-sealed/water-cooled vacuum pump drained cooling water into the floor drain.

6.6.2.5.2 Recommendation

SWMU 16-031(h) is recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.5.3 Rationale for Recommendation

Interviews with past site workers indicate that the utility room is not contaminated with HE because it was located adjacent to the control room that employees were careful not to contaminate (Martin and Hickmott 1994, 15-16-549; Paige 1994, 15-16-557). Engineering drawing ENG-C 14852 shows a natural gas-powered hot water boiler with an automatic pilot and push-button electric ignition that was installed in 1949 in the utility room. The boiler remained until approximately 1962. The open flame associated with this natural gas system supports the claim that employees were careful not to contaminate the utility room with HE.

According to a former building manager for TA-16-478, the vacuum system was used to hold HE pieces for machining. HE dust and chip production during machining was minimized with use of liberal amounts of water, which drained to the sump. A water filter is incorporated into the vacuum line to prevent HE from traveling down the line. The former building manager stated that it is unlikely that any HE got into the vacuum pump water lines (Paige 1994, 15-16-566).

6.6.2.6 Active Outfall Cooling Tower, SWMU 16-031(e); Inactive Outfall Cooling Tower, SWMU 16-031(f)

6.6.2.6.1 Background

SWMU 16-031(e) is soil associated with an outfall at TA-16-560. TA-16-560 is the chlorination station for TA-16. It was built in 1952 in Water Canyon and was later moved to its present site on West Jemez Road near the entrance to TA-16. The building measures 11 ft long x 17 ft wide x 9 ft high. The outfall receives effluent from a concrete trench and a floor drain on the southeast corner of the building. The trench carries possible leakage from water inlet and outlet lines. The outfall also receives drainage from a beam scale sump. The beam scale is used to measure the amount of chlorine gas added to the water. The cast iron drain line daylights approximately 40 ft southeast in the drainage ditch along West Jemez Road.

SWMU 16-031(f) is soil associated with an outfall from decommissioned chlorination station TA-16-21. TA-16-21 was a wooden building built in 1944 measuring 18 ft long x 18 ft wide x 10 ft high. It was located in the old administration area of S-Site approximately 90 ft southeast of the old cafeteria, TA-16-16. The building was stripped of usable equipment in 1953 when the new chlorination station (TA-16-560) came on-line. TA-16-21 was removed in 1992 for the construction of TA-16-1374. This outfall received effluent from a line draining from the southeast corner of the building. Engineering drawing ENG-R 868 shows a 4-in. vitrified clay pipe leaving the southeast corner and daylighting 26 ft to the southwest.

6.6.2.6.2 Recommendation

SWMUs 16-031(e) and 16-031(f) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.6.3 Rationale for Recommendation.

SWMUs 16-031(e) and 16-031(f) are both outfalls that received drainage from concrete trenches within chlorination stations. The trenches are designed to drain leakage from water inlet and outlet lines. The chlorinator adds chlorine to the water as a gas, making any releases to the environment airborne. Any water that might leak into the trench would be chlorinated drinking water or pump condensate. No known historical releases were associated with either chlorination station.

6.6.2.7 Outfalls, SWMUs 16-026(d2,e2,f2,g2,h,k,x) and 16-030(b,e,f)

6.6.2.7.1 Background

SWMUs 16-026(d2,e2,f2,g2,h,k,x) and 16-030(b,e,f) are soil associated with outfalls that originated in utility rooms of rest houses. The rest houses associated with each SWMU are listed in Table 6-12. A rest house is an HE component storage building connected to an assembly, process, or machining building. Each rest house has an isolated 4 ft long by 8 ft wide utility room that houses condensate pumps used to move condensed steam from building to building and air compressors used for heating and ventilating the building. Pump oil is a mineral oil that contains no hazardous constituents. Limited staining from drips is visible, but there is no documentation of release other than occasional drips. In addition there are no visible stains in the soil where the pipes daylight. The total volume of oil used in each of these pumps is less than one gallon. A floor drain in each room carries condensate to an outfall. These outfalls typically drain through 4-in. vitrified clay pipe to daylight 20 ft to 90 ft from their associated structures. Many of the outfalls could not be located, probably due to low flow volume.

**TABLE 6-12
REST HOUSES AND REST HOUSE UTILITY ROOM DRAINS**

SWMU	ASSOCIATED REST HOUSE
16-026(d2)	TA-16-435
16-026(e2)	TA-16-415
16-026(f2)	TA-16-413
16-026(g2)	TA-16-285
16-026(h)	TA-16-281
16-026(k)	TA-16-221
16-026(x)	TA-16-437
16-030(b)	TA-16-343
16-030(e)	TA-16-225
16-030(f)	TA-16-223

6.6.2.7.2 Recommendation

SWMUs 16-026(d2,e2,f2,g2,h,k,x) and 16-030(b,e,f) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor have they ever been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.7.3 Rationale for Recommendation

The oils were nonhazardous mineral oils and the volume of oil present in the utility room equipment is less than one gallon. The only entrance to each utility room is an outside door so that the room is completely isolated from the HE storage area in each rest house. This isolation makes the possibility of HE contamination highly unlikely. The condensate drainage is of such low volume that it is unlikely that any environmentally damaging amounts of oil contamination could be carried down the outfall. Currently, condensate is collected in buckets and no oil is present. There is no documented case of a release to the environment involving a utility room for a rest house.

6.6.2.8 Outfall, SWMU 16-026(f)

6.6.2.8.1 Background

SWMU 16-026(f) is the soil associated with two outfalls from TA-16-308. TA-16-308, built in 1953, was initially used as a drying building for nitrocellulose explosives. After the 1960s, the building was

used to store detonators and squibs (HE initiators). TA-16-308 has a utility basement, which houses compressors, and condensate pumps and is accessed by ladder only. Currently, basement access requires a confined space permit. Maintenance work in the basement is conducted annually or biennially. According to the building manager of the past fifteen years, no explosives or hazardous materials were ever stored or used in the basement and there is no water line to the building other than the sprinkler system (Paige 1994, 15-16-577). The outfall on the northeast corner of the building drains from a downspout that carries rainwater from the roof. The 4-in. vitrified clay pipe daylights approximately 20 ft northeast of the building. The outfall on the southeast corner of the building receives effluent from two basement floor drains that carry condensate from steam lines and pumps. The pipe opening could not be visually located; however, there is a shallow trench extending southeast that is believed to be the outfall's drainage (LANL 1992, 15-16-526).

6.6.2.8.2 Recommendation

SWMU 16-026(f) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.8.3 Rationale for Recommendation

Activities associated with building TA-16-308 had no direct link to the basement. The northeast outfall received effluent from a roof downspout. There is no documented knowledge of a release from the building that contaminated the roof; therefore, it is unlikely that any contaminants were released to the environment. There are no floor drains on the first floor and no significant water source for drainage from the basement drains. The first floor and basement are not connected to each other and have separate entrances. HE and other hazardous materials were never stored in the basement, partly due to inconvenient access. The equipment located in the basement typically contains less than one gallon of oil. Therefore, no contaminants could have been carried through the basement drains.

6.6.2.9 Outfall, SWMU 16-026(g)

6.6.2.9.1 Background

SWMU 16-026(g) is soil associated with an outfall from TA-16-280. TA-16-280, built in 1951, is an HE physical inspection building. Both HE and natural and depleted uranium components are handled and inspected on the first floor of this facility (Voelz 1979, 15-37-003). Engineering drawing ENG-C 4115 shows the outfall receiving effluent from four equipment drains and five floor drains in the basement. A site visit showed that the floor drains are now plugged. The basement is used as a utility room. The first floor and basement are not connected to each other and have separate entrances. No hazardous

materials are stored in the basement. The 6-in. vitrified clay drain line daylights 300 ft to the northeast of TA-16-280.

6.6.2.9.2 Recommendation

SWMU 16-026(g) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.9.3 Rationale for Recommendation

According to the current building manager for TA-16-280, the basement has always been used as a utility room for pumps and compressors. No components were inspected in the basement (Paige 1994, 15-16-551). The only likely contaminant that could enter the drain would be pump oil, typically mineral oil that contains no hazardous constituents. At most, there are a few gallons of oil contained in the equipment located in the basement of TA-16-280. Generally, unless there is a spill, the amount of oil leakage from the compressors and pumps is insignificant. There is no record of oil spills from this drain. The basement of the building was kept free of contamination because it also functions as an emergency fallout shelter. In addition, the basement and first floor processing area are not connected.

6.6.2.10 Soil Contamination at Decommissioned Buildings, SWMUs 16-034(l,k)

6.6.2.10.1 Background

SWMUs 16-034(l,k) were two buildings, built in 1944 and 1945, as part of a Zia Company satellite maintenance station used for the upkeep of S-Site buildings. This maintenance station was near the decommissioned S-Site fire station, whose foundation still exists. The maintenance station was removed by 1995. The area is now a field covered with grass and small trees. There is no documented release at these sites; they were protectively included in the SWMU Report.

The maintenance station is west of West Road, the only entry to S-Site prior to 1951. This road, which was fenced on the east side, formed the boundary of the HE exclusion zone. HE was not allowed beyond the boundary of the exclusion zone. Thus, the maintenance station was protected from exposure to HE by administrative control.

The former Zia maintenance manager during most of the life of the station stated that methods and policies insured that no HE would enter the maintenance station and that contamination would be insignificant (Miller 1994, 15-16-552). A former worker at the site during World War II also claims that the area was not contaminated (Martin 1993, 15-16-477; Martin and Hickmott 1994, 15-16-549).

Conversations with two site workers indicate that both of these buildings were removed, not destroyed by burning as documented by Blackwell in 1983 (Blackwell 1983,15-16-076) which further suggests that HE contamination was not present.

SWMU 16-034(l) was TA-16-141, a small, portable wooden building 16 ft square and 9 ft high, previously numbered S-146. It was used originally for storage at the Zia satellite maintenance station, but was later moved to TA-35 for use as a construction shack.

SWMU 16-034(k) was storage building TA-16-140, previously numbered S-145. It was 16 ft square and 9 ft high. The exact location of TA-16-140 has not been determined from available photos. It is not known what was stored in the structure.

6.6.2.10.2 Recommendation

SWMUs 16-034(i,k) are recommended for NFA under Criterion 2 because no hazardous waste and/or constituents are present at these sites now, nor they have never been used for the management, generation, treatment, storage, or disposal of hazardous waste and/or constituents.

6.6.2.10.3 Rationale for Recommendation

Extensive information from former site workers familiar with the operations of the Zia maintenance station indicates that there is no HE contamination at this site. It is unlikely that any other significant types of contamination would be associated with these structures. One of the storage buildings [SWMU 16-034(i)] was considered clean enough to permit moving the building off site. There is no reason to believe that these storage buildings were contaminated and pose a threat to the environment.

6.6.3 SWMUs Recommended for No Further Action Under Criterion Three of the NFA Proposals Criteria

NFA CRITERION THREE No release to the environment has occurred or is likely to occur in the future from the SWMU/AOC.

6.6.3.1 Soil Contamination at Decommissioned Storage Buildings, SWMUs 16-025(e2,t2,h2)

6.6.3.1.1 Background

SWMUs 16-025(e2,t2,h2) are the soil and remnants of three small (6 ft x 6 ft) wood frame storage buildings. TA-16-106, TA-16-107, and TA-16-109, originally A-1, A-2, and A-4, were built in mid-1944 on the western edge of S-Site and removed in 1950. The structures resembled magazines with earthen berms on three sides and a door on the fourth. According to a former site safety officer, they

were largely used for the storage of non-HE materials such as aluminum powder, lead oxide, and barium nitrate but there is a possibility that small quantities of HE might have been stored there (Martin and Hickmott 1994, 15-16-549). An associated building, TA-16-108 [SWMU 16-025(g2)], was recommended and approved for NFA in Subsection 6.4.3.5 of the RFI Work Plan for OU 1082, Addendum 1 (LANL 1994, 1160).

6.6.3.1.2 Recommendation

SWMUs 16-025(e2,l2,h2) are recommended for NFA under Criterion 3 because no release to the environment has occurred or is likely to occur in the future.

6.6.3.1.3 Rationale for Recommendation

TA-16-106, TA-16-107, and TA-16-109 were small, lightly used buildings for product storage. If HE was stored at this location, it would have been stored in a containerized or packaged until it was taken to other facilities for processing (Martin and Hickmott 1994, 15-16-549). None of these buildings was located in the HE exclusion zone. No HE processing was done at any of these locations, and there are no documented cases of a release to the environment. In February 1945 construction began on four large HE storage magazines on the southeast side of S-Site that replaced TA-16-106, TA-16-107, and TA-16-109 (Martin and Hickmott 1994, 15-16-549). All three former buildings were either near or under State Road 501, which is elevated and fully graded for drainage. Construction of the road involved moving quantities of soil that would have been beneath the structures preventing the ability to locate or characterize any potential contaminants. A memorandum titled "Destruction of Building A-1 at S-Site" states that TA-16-106 was intentionally blown up with more than 125 lb of explosives in August 1949 (Drake 1949, 15-16-144). As a result, minimal residual materials remain at this particular building site.

6.7 SWMUs and Areas of Concern (AOCs) Not Listed in the HSWA Module That Are Recommended for No Further Action

6.7.1 PRSs Not Listed in the HSWA Module Recommended for No Further Action Under Criterion One of the NFA Proposals Criteria

NFA CRITERION ONE The Solid Waste Management Unit/Area of Concern(SWMU/AOC) cannot be located, does not exist, or is a duplicate SWMU/AOC.

6.7.1.1 Industrial Waste Tank, SWMU 16-037

6.7.1.1.1 Background

SWMU 16-037 is listed in the SWMU Report as an industrial waste tank, structure TA-16-215 (LANL 1990, 0145).

6.7.1.1.2 Recommendation

SWMU 16-037 is recommended for NFA under Criteria 1 because it does not exist.

6.7.1.1.3 Rationale for Recommendation

After a field investigation and archival search by field team members, it appears that SWMU 16-037, industrial waste tank TA-16-215, does not exist. In 1982 TA-16-215 was proposed to be installed. However, no lab jobs or work orders are listed for this structure. In 1983, the tank is mentioned on structure location index sheet ENG-R 5111, but there is no information about the structure. It appears that this tank was never installed and the SWMU Report incorrectly identifies the existence of the SWMU. Interviews with former site workers provided no further information.

6.7.1.2 Fuel Tank, C-16-072

6.7.1.2.1 Background

C-16-072 is listed in the SWMU Report as a fuel tank, TA-16-216 (LANL 1990, 0145). The tank is referenced on 1983 Engineering drawing ENG-R 5111 structure location index sheet as not shown. Other structure indexes from earlier years list the area as reserved. The historical structure list at ENG-7 lists TA-16-216 as proposed. Interviews with site personnel indicated no location for the tank. Evidence indicates that the tank was never installed.

6.7.1.2.2 Recommendation

C-16-072 is recommended for NFA Criterion 1 because it does not exist.

6.7.1.2.3 Rationale for Recommendation

The existence of this area of concern (AOC) cannot be verified based on the information in the SWMU Report or as a result of an extensive archival search. Because the existence and location of C-16-072 cannot be established, it is impossible to develop an applicable sampling plan.

6.7.1.3 Active HE Sump, SWMU 16-003(q); Hydraulic Oil Spill, C-16-071

6.7.1.3.1 Background

16-003(q) is listed in the SWMU Report as an active HE sump that serves TA-16-450, a materials testing facility (LANL 1990, 0145). This sump is addressed as SWMU 16-029(g) in Subsection 5.2.1.1 of the 1993 RFI Work Plan for OU 1082 and additional information on TA-16-450 is provided in Subsections 5.2 and 5.5 (LANL 1993, 1094).

C-16-071 is listed as a hydraulic oil spill associated with TA-16-430, an HE pressing facility. There was a spill of hydraulic fluid in this facility in the late 1980s. This spill is addressed as SWMU 16-021(b) in Subsection 6.7.4.2 of Addendum 2.

6.7.1.3.2 Recommendation

SWMU 16-003(q) and C-16-071 are recommended for NFA under Criterion 1 because they are duplicates.

6.7.1.3.3 Rationale for Recommendation

SWMU 16-003(q) is a duplicate of SWMU 16-029(g). SWMU 16-029(g) addresses the sump and NPDES permitted outfall (04A091) associated with TA-16-450. There is only one sump and permitted outfall associated with TA-16-450. Therefore, SWMUs 16-028(e) and 16-029(g) are identical. SWMU 16-029(g) was addressed in the 1993 RFI Work Plan (LANL 1993, 1094) and SWMU 16-021(b) is currently addressed in Addendum 2.

C-16-071 is a duplicate of SWMU 16-021(b). SWMU 16-021(b) is an operational release of hydraulic fluid from TA-16-430. C-16-071 is a hydraulic fluid spill from TA-16-430. Only one hydraulic fluid leak has been reported at TA-16-430. Therefore, C-16-071 and SWMU 16-021(b) are identical. SWMU 16-021(b) is addressed as noted above.

6.7.1.4 Decommissioned Office and Shop, C-16-049

6.7.1.4.1 Background

C-16-049 is the soil associated with TA-16-475, a 24 ft x 75 ft structure that was built in 1944 and removed in 1951. The building, located at P-Site approximately 250 ft east of TA-16-343, consisted of a workshop addition containing workbenches and shelving; a middle section housing a generator and storage area; and a northern section containing an office, a lab, a workroom, a bathroom, and a darkroom. Because the building was situated on a concrete slab floor, the most likely source of potential soil contaminants is the northern section of the building containing drain lines. A plumbing diagram (ENG-C 1643) shows that the only drain lines in the building were from a lead sink in the darkroom and the sanitary facilities in the lavatory that connected to a septic tank, TA-16-486, located north of TA-16-475. The septic tank was located at the end of a 100-ft drain line from the lavatory in TA-16-475. Septic tank TA-16-486 and its drain field are a separate site covered under SWMUs 13-003(a,b) in Subsection 5.4.1.1 of the 1993 RFI Work Plan for OU 1082 (LANL 1993, 1094). These SWMUs will be sampled for HE, barium, metals, radionuclides, organics, silver, and cyanide.

6.7.1.4.2 Recommendation

C-16-049 is recommended for NFA under Criterion 1 because it is a duplicate.

6.7.1.4.3 Rationale for Recommendation

Because TA-16-475 was situated on a concrete slab, it is unlikely that potential soil contamination could have reached the footprint of the building under the concrete. The most likely source of contamination would have been through drain lines, and the only septic system and drain field associated with this building are already being sampled as 13-003(a,b) under Subsection 5.4.1.1 of the 1993 RFI Work Plan for OU 1082 (LANL 1993, 1094).

6.7.2 PRSs Not Listed in the HSWA Module Recommended for No Further Action Under Criterion Two of the NFA Proposals Criteria

NFA CRITERION TWO The SWMU/AOC has never been used for the management (i.e., generation, treatment, storage, or disposal) of Resource Conservation and Recovery Act (RCRA) SOLID WASTE OR hazardous waste and/or constituents, or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances.

6.7.2.1 Decommissioned Electrical Manholes, C-16-062 and C-16-063

6.7.2.1.1 Background

C-16-062 and C-16-063 are decommissioned electrical manholes, TA-16-889 and TA-16-888, used to access underground electrical conduits at P-Site. They were installed in 1950 and removed in 1972. A site visit confirmed that they were removed. No hazardous materials were ever associated with these structures (Blackwell 1983, 15-16-076).

6.7.2.1.2 Recommendation

C-16-062 and C-16-063 are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.1.3 Rationale for Recommendation

There were no hazardous materials used at these locations (Blackwell 1983, 15-16-076).

6.7.2.2 Decommissioned Water Storage Tank, C-16-018

6.7.2.2.1 Background

C-16-018 was a 30 000-gal. water tank, TA-16-172, that was located in the area along Jomez Road across from the current entrance to TA-16. It was located approximately 125 ft north of water tank TA-16-171 and 100 ft west of water tank TA-16-247. TA-16-172 was 48 ft long and 10.5 ft in diameter. It was used from 1945 until 1959 when it was moved to TA-49 and renumbered FM-66. It was later moved to TA-3 and renumbered SM-178.

6.7.2.2.2 Recommendation

C-16-018 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.2.3 Rationale for Recommendation

There were no hazardous constituents associated with this water tank (Blackwell 1983, 15-16-076), and the movement of the structure to another technical area indicates that it was free of contamination.

6.7.2.3 Decommissioned Office Building, C-16-020

6.7.2.3.1 Background

C-16-020, TA-16-22, was originally a 20 ft wide x 70 ft long x 9 ft high office building built in 1944 near the old cafeteria, TA-16-16, in the administration area of S-Site. The structure was moved to the Los Alamos ice rink in 1961.

6.7.2.3.2 Recommendation

C-16-020 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.3.3 Rationale for Recommendation

This structure was not used for the handling or storage of hazardous constituents (Blackwell 1983, 15-16-076). The relocation of the structure to a public area indicates that it was free of contamination at the time it was moved.

6.7.2.4 Decommissioned Water Tanks, C-16-034 and C-16-035

6.7.2.4.1 Background

C-16-034 and C-16-035 were 50 000-gal. water tanks, TA-16-1130 and TA-16-1131. The 15 ft high, 23.3 ft diameter tanks were located along Jemez Road near the current location of the 1 000 000-gal. water tank, TA-16-171, at the entrance to S-Site. The water tanks were used from 1944 until 1949. Engineering drawing ENG-R 793 shows the tanks connected to the site water supply via the pump station, TA-16-20, located in the central administration area of S-Site. These structures had no hazardous materials associated with them (Blackwell 1983, 15-16-076), and the area is physically isolated from the HE facilities at S-Site.

6.7.2.4.2 Recommendation

C-16-034 and C-16-035 are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.4.3 Rationale for Recommendation.

These structures were not used for the handling or storage of hazardous materials (Blackwell 1983, 15-16-076), and they were isolated from the HE or other operational facilities at S-Site.

6.7.2.5 Decommissioned Latrine, C-16-061

6.7.2.5.1 Background

C-16-061 is potential soil contamination associated with TA-16-396, the latrine for the burning grounds at TA-16. TA-16-396 was a 4 ft long x 4 ft wide x 7.5 ft high wooden frame building located approximately 80 ft east of TA-16-390, the central basket wash facility for the burning grounds. At TA-16-390, HE baskets were washed down in troughs that drained to filter beds (Engineering drawing ENG-R 790). The latrine was built in 1951 and removed in 1968. It contained no plumbing. According to the structure list, all materials from the removal were disposed of at the Area P landfill. No evidence of it remains. No hazardous materials were ever associated with the latrine (Blackwell 1983, 15-16-076). Given its size and distance from TA-16-390, it is unlikely that HE contaminated the facility.

6.7.2.5.2 Recommendation

C-16-061 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.5.3 Rationale for Recommendation

This structure was not used for the handling or storage of hazardous constituents (Blackwell 1983, 15-16-076). It contained no hand washing facilities and due to its distance from TA-16-390, is extremely unlikely to have inadvertently been contaminated with HE.

6.7.2.6 Decommissioned Hose House, C-16-041

6.7.2.6.1 Background

C-16-041 was a small hose house, TA-16-198, built in 1945 on the driveway into the old burning area along Anchor Ranch Road north of the administration area at S-Site. The 6.5 ft long x 3.5 ft wide x 7.5 ft high wooden building was used to store and protect lengths of fire hose. The building tested free of radioactive contamination in 1967 (Buckland 1967, 15-16-131). According to a 1983 memo, the structure had no hazardous materials associated with it (Blackwell 1983, 15-16-076). The removal date of TA-16-198 is uncertain. Although the engineering structure list indicates that it was removed in 1958, according to other documentation the building was monitored for radioactivity in 1967 (Buckland 1967, 15-16-131). In either case, the building is no longer present.

6.7.2.6.2 Recommendation

C-16-041 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.6.3 Rationale for Recommendation

This structure was not used for handling or storage of hazardous materials (Blackwell 1983, 15-16-076). It specifically tested free of radioactive contamination (Buckland 1967, 15-16-131).

6.7.2.7 Decommissioned Steam Manholes, C-16-044 and C-16-046

6.7.2.7.1 Background

C-16-044 was a steam manhole, TA-16-1079, made of reinforced concrete with a wooden cover. It was located along Anchor Ranch Road near the decommissioned fire station, TA-16-142. The manhole was built in 1945, and decommissioned at an unknown date, and then filled with gravel. A site visit confirmed that the manhole has been decommissioned. It contained pipes that carried only distilled steam vapor or cool condensate water to and from the steam plant. There were no hazardous materials associated with the manhole (Blackwell 1983, 15-16-076).

C-16-046 was a steam manhole, TA-16-1090, constructed of 5-ft diameter corrugated metal pipe. The manhole was 9 ft deep with a gravel bottom and sheet metal cover. Its exact location is not known; however, it was near TA-16-460, southeast of the present administration area. The manhole contained pipes that carried only distilled steam vapor or cool condensate water to and from the steam plant. No hazardous materials were ever associated with TA-16-1090 (Blackwell 1983, 15-16-076). Engineering drawing ENG-R 5111 indicates that the manhole was removed in 1970.

6.7.2.7.2 Recommendation

C-16-041 and C-16-046 are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.7.3 Rationale for Recommendation

These decommissioned steam manholes carried only steam or condensate to the steam plant and have never had any hazardous materials associated with them (Blackwell 1983, 15-16-076). There is no record of any releases associated with either of these steam manholes. Chromates were used to

prevent corrosion in the main steam plant cooling tower through the late 1960s, but they were not used in steam systems.

6.7.2.8 Decommissioned Storage Building, C-16-050

6.7.2.8.1 Background

C-16-050 was a wooden frame storage building, TA-16-482, located near TA-16-475. It measured 16 ft long x 16 ft wide x 8 ft high. It was constructed in 1944 at TA-30 and was moved from TA-30 to TA-16 in July 1947. It was subsequently moved and designated TA-11-9 in July 1949. It is not known what was stored in this structure. However, a site worker with 35 years of experience reported that no hazardous materials were associated with the structure (Paige 1995, 15-16-600; Blackwell 1983, 15-16-076).

6.7.2.8.2 Recommendation

C-16-050 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.8.3 Rationale for Recommendation

No hazardous materials were ever associated with this structure (Blackwell 1983, 15-16-076).

6.7.2.9 Implement Shed, C-16-008; Mess Hall, C-16-009; Storage Building, C-16-010; Decommissioned Blacksmith Shop, C-16-012; Decommissioned Lumber Storage Area, C-16-013; Decommissioned Equipment Room, C-16-014; Decommissioned Hose House, C-16-015; Decommissioned Fire House, C-16-016; Decommissioned Latrine, C-16-036

6.7.2.9.1 Background

C-16-008, C-16-009, C-16-010, C-16-012, C-16-013, C-16-014, C-16-015, C-16-016, and C-16-036 were part of a cluster of buildings that were used by The Zia Company for storage of equipment and tools used for utilities maintenance in the World War II era S-Site (Table 6-13). All the buildings were removed in 1955, although the foundation of TA-16-142 (C-16-016) remains. The area is now a field covered with grass and small trees. The buildings were located west of West Road, the only entry to S-Site prior to 1951. No unpackaged HE was allowed west of West Road, so this group of buildings did not handle or store unpackaged HE. A 1983 memo lists each of the structures associated with the above areas of concern as having no association with hazardous materials (Blackwell 1983, 15-16-076), and a former site worker with 35 years of tenure at S-Site specifically states that TA-16-139 through TA-16-146 were not HE contaminated (Martin and Hickmott 1994, 15-16-549). The most

likely source of HE contamination to any of these structures would have occurred as a result of personnel and equipment inadvertently introducing HE particles or chunks into the area. A former site worker states that the possibility of HE contamination by these means would be limited because The Zia Company took precautions to prevent HE contamination of this area (Miller 1994, 15-16-552). Other hazardous constituents are not likely at any of these units based on knowledge of the processes that occurred in them.

**TABLE 6-13
DECOMMISSIONED ZIA MAINTENANCE FACILITY STRUCTURES**

AOC NUMBER	STRUCTURE NUMBER	FUNCTION	OPERATIONAL DATES	DIMENSIONS LENGTH X WIDTH X HEIGHT (FT)
C-16-008	TA-16-136	Implement shed	1944-1955	18 x 32 x 9
C-16-009	TA-16-134	Mess hall	1944-1955	32 x 52 x 10
C-16-010	TA-16-135	Storage building	1944-1955	16 x 16
C-16-012	TA-16-138	Decommissioned blacksmith shop	1944-1955	8 x 10 x 9
C-16-013	TA-16-133	Lumber storage area	1944-1955	18 x 69 x 10 open on one long side
C-16-014	TA-16-144	Decommissioned equipment room	1945-1955	20 x 45 x 10
C-16-015	TA-16-143	Decommissioned hose house	1945-1955	12 x 55 x 10
C-16-016	TA-16-142	Decommissioned fire hose	1945-1955	56 x 74 x 13
C-16-036	TA-16-145	Decommissioned latrine	1945-1955	7 x 7 x 9

6.7.2.9.2 Recommendation

C-16-008 through C-16-010, C-16-012 through C-16-016, and C-16-036 are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.9.3 Rationale for Recommendation

The historical use of each structure for product storage is well documented, and there were no known hazardous materials used at these locations and no release to the environment has occurred

(Blackwell 1983,15-16-076). Further, the group of buildings was physically isolated from work involving HE.

6.7.2.10 Underground Fuel Tank, C-16-070

6.7.2.10.1 Background

C-16-070 is TA-16-391, a 3 063-gal. underground propane tank that was installed at the burning grounds in 1951. This tank provided fuel to heat and dry the sand in filter tanks TA-16-401 and TA-16-406 before the sand was burned to remove HE (Martin and Hickmott 1994, 15-16-549). The tank was 24 ft long by 5 ft in diameter and lay approximately 50 ft northeast of TA-16-390. It had a manhole to access tank valves and a 6-in. corrugated metal drain from the manhole (ENG-C 1098 and ENG-R 790). The tank was abandoned in place in 1970. Although there is no record of its removal, the tank is no longer present. The building manager recalls that it was removed in 1989 (Paige 1994, 15-16-563). There is only a level, cleared, pebble-covered area where the tank was located. A vitrified clay pipe was discovered approximately 50 ft east of the tank but it is not known if this is associated with the tank or with another structure.

This structure had no hazardous materials associated with it (Blackwell 1983, 15-16-076). In addition, it has been specifically cleared of both HE and radioactive contamination (Brooks 1970, 15-16-002; Buckland 1970, 15-16-005).

6.7.2.10.2 Recommendation

C-16-070 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.10.3 Rationale for Recommendation

C-16-070 is underground propane tank TA-16-391, which is no longer in place, and was never associated with any hazardous materials and no release to the environment has occurred (Blackwell 1983, 15-16-076). It is assumed that the former location of the tank also contains no COPCs.

6.7.2.11 Crossover Platform, C-16-001

6.7.2.11.1 Background

C-16-001 is a T-shaped, elevated, crossover platform, TA-16-384, that runs across the three HE slurry drain troughs [SWMUs 16-010(h,m,n)] coming out of TA-16-390 at the burning grounds of TA-16. The platform is made of steel, with an open crosshatched floor and is approximately 7 ft long x 9 ft

wide x 3 ft high. The platform was built in 1962 to allow workers to cross over the trough area instead of walking around it. Laboratory records indicate that the structure was intended for removal in 1970 (Russo 1970, 15-16-015; Blackwell 1983, 15-16-076). However, it remains in place. There is some debate as to whether or not the platform was ever HE contaminated. While an engineering department memo lists the structure as HE contaminated (Russo 1970, 15-16-015), a former site worker includes the structure on a list of structures removed from TA-16 and states that it was not associated with hazardous materials (Blackwell 1983, 15-16-076; Paige 1995, 15-16-000). The crossover platform is presently inactive, but will probably be used when the drain trough area is sampled as planned in Subsection 5.8.4 of the 1993 RFI Work Plan for OU 1082 (LANL 1993, 1094).

6.7.2.11.2 Recommendation

C-16-001 is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.11.3 Rationale for Recommendation

The crossover platform [C-16-001] presents no current human health or environmental risk on or off site. The only COPC associated with the platform itself would be HE. Because the crossover platform is made of open, crosshatched steel, HE would not collect on the top of the platform. It is unlikely that HE would splash up from the troughs located one foot below the platform. The environmental risk at this site is limited to what is already being considered for the HE slurry troughs.

6.7.2.12 Underground Storage Tanks, SWMUs 16-033(f,g,h,i,j)

The USTs described below were removed from TA-16 prior to 1988. The USTs only contained product fuel and their use was in no way related to building activities or processes. The common practice of closing USTs prior to 1988 consisted of removing obviously contaminated soil and collecting samples for analysis of extraction procedure (EP) toxicity test levels of lead, benzene, toluene, and xylene prior to regrading the excavation (Barr 1988, 15-16-589).

According to the New Mexico UST Regulation §803, Applicability To Previously Closed UST Systems, the owner and operators of the UST are not obligated to assess the excavation zone of USTs closed prior to December 22, 1988, if releases from the decommissioned UST pose no current or potential threat to human health or the environment. For all these tanks, depth to groundwater is greater than 1 000 ft with no private wells within 1 000 ft or municipal water wells within one mile (LANL 1993, 1094). Table 6-14 provides an overview of these removed USTs.

**TABLE 6-14
UNDERGROUND STORAGE TANKS REMOVED FROM TA-16**

PRS NO.	STRUCTURE NO.	DESCRIPTION	INSTALLATION DATE	REMOVAL DATE
16-033(f)	TA-16-512	1 000-gal. Oil tank; served TA-16-502	1944	1968
16-033(g)	TA-16-1138	Sizes unknown; served TA-16-260	1951	
16-033(h)	TA-16-1139			
16-033(i)	TA-16-1341	Two 5 000-gal. Leaded gas tanks; served TA-16-195	Early 1950's	1980
16-033(j)	TA-16-1342			

*Unknown

SWMU 16-033(f) is a 1 000-gal. oil tank once located at T-Site approximately 750 ft northeast of TA-16-54. In 1960 the tank was found to be free of radioactivity and toxic contamination (Blackwell 1960, 15-16-114). According to a 1983 memo, no hazardous wastes and/or constituents were found to be associated with TA-16-512 (Blackwell 1983, 15-16-076).

SWMUs 16-033(g,h) consist of two tanks, TA-16-1138 and TA-16-1139, that were located west of TA-16-260. The Comprehensive Environmental Assessment Response Program (CEARP) Report lists these structures as possibly being aboveground (DOE 1987, 0264); however, after examination of Engineering drawing ENG-C 3556, it is apparent the tanks were underground. Construction started on the tanks in 1949 and was completed in February 1951. According to the Engineering structure list, the tanks were abandoned in place in July 1951 when the main steam line was connected to TA-16-260. The tanks were found to be free of radioactive and toxic contamination before removal (date unknown) (Buckland 1967, 15-16-131). This survey presumably occurred after the tanks had been excavated prior to removal.

It is assumed the tanks were used temporarily for heating during the construction of building TA-16-260. There was no visible evidence indicating that the tanks are still present. A preliminary site screening with a metal detector did not locate the tanks. It is presumed that they have been removed, probably in 1967 when the contamination survey was conducted.

SWMUs 16-033(i,j) are leaded gasoline tanks, TA-16-1341 and TA-16-1342, that once served the TA-16 service station, TA-16-195. The installation dates for the tanks are unknown but it is estimated to be the early 1950s when TA-16-195 was constructed. The tanks were located on the west side of the building and were removed in 1980 with no record of historical releases (LANL 1990, 0145).

6.7.2.12.1 Recommendation

SWMUs 16-033(f,g,h,i,j) are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.12.2 Rationale for Recommendation

NFA is proposed for SWMUs 16-033(f,g,h,i,j) because these USTs managed product fuel and historical information suggests that no potential threat to human health or the environment exists.

6.7.2.13 Decommissioned Aboveground Fuel Tanks, SWMUs 16-033(c,d)

6.7.2.13.1 Background

SWMU 16-033(c) was a 52 000-gal. Above ground fuel oil storage tank, TA-16-29, constructed of metal and mounted in concrete saddles. The 62 ft long x 12 ft diameter tank was located approximately 50 ft north of the cafeteria, TA-16-16. It was installed in 1945 and removed in 1956. According to a former site worker with 35 years of tenure at S-Site, the piping went directly from the tank to the pump house, TA-16-19, and then to the steam plant, TA-16-7 (Martin and Hickinott 1994, 15-16-549). During a site visit, no obvious soil staining was observed, and archival research reveals no record of any releases. There is a chance that filling the tank could have resulted in minimal spills down the side of the tank and caused some surface contamination. However, because all but one of the berms around the tank has been removed, it is unlikely that any surface contamination could presently be found.

SWMU 16-033(d) was an aboveground propane tank, TA-16-1140, that once served the cafeteria, TA-16-16. The tank was installed in 1946 and removed in 1956. It was located 50 to 60 ft west of TA-16-16, near transportable TA-16-1407. The exact size of the tank is not known. The two saddles that held the tank still remain and are positioned seven feet apart. There are no records of any releases from this tank. A 1983 memo reports no hazardous materials were associated with the tank (Blackwell 1983, 15-16-076).

6.7.2.13.2 Recommendation

SWMUs 16-033(c,d) are recommended for NFA under Criterion 2 because they have never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.13.3 Rationale for Recommendation

NFA is proposed for SWMUs 16-033(c,d) because these tanks managed product fuel and historical information suggests that no potential threat to human health or the environment exists. Furthermore, no visible soil stains were found during site visits and there are no records of any releases at either SWMU. Any oil spills small enough not to have been reported would probably be dispersed and very difficult to trace because the tanks (TA-16-29 and TA-16-1140) and three of the four berms around TA-16-29 have been removed. 6.7.13.

6.7.2.14 Operational Release, SWMU 16-021(b)

6.7.2.14.1 Background

SWMU 16-021(b) is the soil associated with a leak of hydraulic fluid of glycol/water-based Texaco Safety Oil from TA-16-430. A leak of approximately 500 gal. of hydraulic fluid occurred in Bay 1 of TA-16-430 June 6, 1986. The exact volume of hydraulic fluid that reached the environment is not known. The incident was reported immediately after the leak occurred. Analysis of the fluid indicated that no PCBs or HE were present (Nylander 1986, 15-16-590). The spill area was bermed and trenched to avoid spreading contamination into the canyon. Although the spill documentation states that the spill was not cleaned up further, a site visit shows that the outfall area has been cleaned up. The rock surface at the outfall has been chipped off, removing contaminated material.

6.7.2.14.2 Recommendation

SWMU 16-021(b) is recommended for NFA under Criterion 2 because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of hazardous waste and/or constituents and/or constituents.

6.7.2.14.3 Rationale for Recommendation

The hydraulic fluid used at the time of the leak was a glycol/water mixture. This leak was a one-time release of a substance and was contained and cleaned up immediately after it occurred (Nylander 1986, 15-16-590; LANL 1993, 1017). Because the spill was cleaned up immediately after the release, management or disposal of waste at this site never occurred. The spilled material involved did not contain PCBs or HE; this outfall does not pose a risk to human health or environment. An evaluation of the erosion potential at this site revealed low or no potential (matrix score 17.5).

6.7.3 PRSs Not Listed in the HSWA Module Recommended for No Further Action Under Criterion Three of the NFA Proposals Criteria

NFA CRITERION THREE No release to the environment has occurred or is likely

to occur in the future from the SWMU/AOC.

6.7.3.1 Transformers, SWMU 16-027(b,d)

6.7.3.1.1 Background

SWMU 16-027(b) is a leak from a transformer (PCB ID #5020) located on the second floor of TA-16-540, a steam plant. The transformer contained 100 to 500 gal. of PCB-containing dielectric oil listed at concentrations greater than 500 000 ppm. The SWMU Report characterizes the transformer as being 31 to 35 years old and having a moderate leak (LANL 1990, 0145). According to a memo from the Environmental Protection Group (ESH-8), the transformer at this location had a slow leak, but never spilled onto surfaces that required cleanup (Sandoval 1994, 15-16-546). The leak was contained in a metal can, so no spill records exist. The transformer began a retrofill process July 15, 1988, and was reclassified as non-PCB containing on September 6, 1990. Disposal of the PCB-containing and retrofill fluids is documented (Sandoval 1994, 15-16-546).

SWMU 16-027(d) is listed in the SWMU Report as a leak from a transformer, TA-16-569, located approximately 100 ft north of TA-16-430. The SWMU Report states that the slow leak, discovered in 1987, was oil with a 25 000 ppm PCB content (LANL 1990, 0145). Extensive archival research revealed no record of any releases from TA-16-569. Further, records on the transformer indicate that it never contained oil with a 25 000 ppm PCB concentration (Wechsler 1994, 15-16-595), but rather it contained a mineral oil dielectric fluid which, according to 40 CFR 761.123, must be assumed to contain 50 to 499 ppm PCBs. Based on these records, the spill listed in the SWMU Report probably refers to a nearby transformer, TA-16-563, that did contain oil with a 25 000 ppm PCB content and that did have a reported release in 1987. TA-16-563 is discussed as SWMU 16-027(c) in Subsection 6.7.4.1 in Addendum 2. Transformer TA-16-569 has no record of releases and was dechlorinated in 1992 and reclassified February 3, 1993, as a non-PCB transformer containing 2 ppm PCBs (Wechsler 1994, 15-16-595). In addition, a soil sample was collected from the area around the transformer April 28, 1994, with a result of 7.3 ppm PCBs (LANL 1994, 15-16-562), which places it within PCB limits of 25 ppm mandated by 40 CFR 761.125.

6.7.3.1.2 Recommendation

SWMUs 16-027(b,d) are recommended for NFA under Criterion 3 because no release to the environment has occurred or is likely to occur in the future.

6.7.3.1.3 Rationale for Recommendation

The PCB-containing dielectric oil units have been replaced with non-PCB units as noted above (Sandoval 1994, 15-16-546). There have been no known releases to the environment from these transformers. The spill described at 16-027(d) actually refers to a spill at a nearby transformer, TA-16-563, which is PRS 16-027(c) described in Subsection 6.7.4.1.

6.7.3.2 Decommissioned Pump House, C-16-019

6.7.3.2.1 Background

C-16-019 was a small wooden pump house, TA-16-19, previously numbered S-16, located in the old administration area of S-Site. The 10 ft x 10 ft building, built in 1945 and removed in 1956, was located approximately 50 ft northeast of the former cafeteria, TA-16-16. The concrete foundation remains in place. The pump house moved fuel from nearby tank TA-16-29 across Anchor Ranch Road via overhead pipes to TA-16-7 to fuel steam boilers (Martin and Hickmott 1994, 15-16-549). There is no record of any fuel spills occurring in the area during the eleven years it was in use and no stained soil is visible in the area.

While a 1983 memo cites this pump house as HE contaminated (Blackwell 1983, 15-16-076), based on archival review it is unlikely that any HE would have come into contact with the pump house. The only possible source of HE contamination in this structure would have been from the movement of people between HE-contaminated areas and the administration area. Former site workers have stated that special care was taken to prevent contamination of the administration area, including TA-16-19 (Martin and Hickmott 1994, 15-16-549).

6.7.3.2.2 Recommendation

C-16-019 is recommended for NFA under Criterion 3 because no release to the environment has occurred or is likely to occur in the future.

6.7.3.2.3 Rationale for Recommendation

The historical use of TA-16-19, as well as its location, do not support the conclusion that the pump house was HE contaminated. Former site workers have stated that special care was taken to prevent contamination of the administration area in which the structure was located (Martin and Hickmott 1994, 15-16-549). Given the proximity of pump house TA-16-19 to the cafeteria and other commonly used buildings, and the distance of the structure from facilities associated with HE, it seems clear that workers would not only have good cause to keep TA-16-19 clear of HE contamination, but also the ability to do so. Further, any possible HE contamination would have been in such small amounts that it would be untraceable nearly 40 years after removal of the building.

There are no records of any fuel spills at the pump house and no evidence of any spills. Any spills that may have occurred would have spilled onto the concrete foundation that is still in place. In addition, the soil in this area has been highly disturbed due to redistribution of soil from the berms surrounding nearby tank TA-16-29. This would make detection of spill residues highly unlikely.

6.7.4 PRSs Not Listed in the HSWA Module Recommended for No Further Action Under Step Four of the NFA Proposals Criteria

NFA CRITERION FOUR A release from the SWMU/AOC to the environment has occurred, but the SWMU/AOC was characterized and/or remediated under another authority (such as the New Mexico Environment Department's Underground Storage Tank or Ground Water Quality Bureau), which adequately addressed RCRA corrective action, and documentation, such as a closure letter, is available.

6.7.4.1 Soil Contamination, SWMU 16-022(a)

6.7.4.1.1 Background

SWMU 16-022(a) is an area where a steel underground storage tank (UST) containing diesel fuel was once located. The tank had a 560-gal. capacity and was 6 ft in length and 4 ft in diameter. The UST served TA-16-205, the tritium processing building. According to the SWMU Report, the tank was installed in 1984 and was located near the northwest corner of the building (LANL 1990, 0145). Upon removal of the UST September 22, 1993, no visual soil contamination was noted beneath the tank. However, according to a letter from LANL's Environmental Management Division Office to the New Mexico Environment Department (NMED), a faint odor of diesel fuel was noticed in the soil. Because the tank had no evidence of leaks and passed a tightness test, it was assumed that the odor came from past surface spills that might have occurred when refilling the UST (Gunderson 1993, 15-16-544).

Pursuant to Part XII, Section 1205 of the New Mexico Underground Storage Tank Regulations, LANL must determine the extent of the diesel fuel contamination; therefore, beginning on September 22, 1993, samples were collected from the excavation in accordance with Appendix C, Part XII. All samples were analyzed for total petroleum hydrocarbons (TPH) using EPA SW-846, Analytical Method 418.1. On August 5, 1994, borehole one was resampled. Sample locations and results are listed in Table 6-15.

TABLE 6-15

ANALYTICAL RESULTS FROM BOREHOLE SAMPLES AT TA-16-205

TA-BOREHOLE NUMBER-DEPTH	TPH (ug/g)	DATE COLLECTED
16-BM (bls) ^a	3 881	9/22/93
16-BM-S/C (10 ft bls)	9 062	9/22/93
16-ES (7 ft bls)	2 086	9/22/93
16-1 (10 ft bls)	1 898	10/14/93
16-B (10.5 ft bls)	20 067	10/14/93
16-W	3 716	10/14/93
16-E	399	10/14/93
16-S	1 325	10/14/93
16-1-5	1 000	11/16/93
16-1-10	960	11/16/93
16-1-15	230	11/16/93
16-2-5	14	11/16/93
16-2-10	2	11/16/93
16-2-15	12	11/16/93
16-3-5	2	11/16/93
16-3-10	2	11/16/93
16-3-15	<1	11/16/93
16-4-5	<1	11/16/93
16-4-10	<1	11/16/93
16-4-15	4	11/16/93
16-1-10 ^b	3	8/5/94
16-1-15 ^b	10	8/5/94
16-1-20 ^b	<1	8/5/94
16-1-25 ^b	<1	8/5/94

^a bls = below land surface

^b Resampled determined to be 12 ft laterally and 20 ft vertically (Garvey 1994, 15-16-574).

The soil beneath the tank at TA-16-205 was not found to be highly contaminated. The results of the resampled boreholes show no TPH >100 µg/g. According to New Mexico UST Regulation §1209, soil must be excavated until TPH values are <100 µg/g. The extent of contamination was determined to be 12 ft laterally and 20 ft vertically (Garvey 1994, 15-16-574).

Cook, P., May 2, 1995. Personal communication (FAX transmittal) to Margo Buksa (CST-18), pertaining to drilling results at TA-16-1465, Los Alamos National Laboratory, Los Alamos, New Mexico. (Cook 1995, 15-16-607)

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Geo-Test, Inc., March 13, 1995. "Additional Subsurface Exploration and Laboratory Analysis Service Station Building #195 S-Site, TA-16," Geo-Test Job No. 1-50203 prepared for Johnson Controls, Inc., Albuquerque, New Mexico. (Geo-Test 1995, 15-16-602)

Gunderson, T., November 4, 1993. "Thirty Day Notification Report to NMED UST Bureau," Letter from Tom Gunderson (LANL/EM-DO) to Anthony Moreland (NMED), Los Alamos, New Mexico. (Gunderson 1993, 15-16-544)

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- Carmichael, J., November 2, 1994. "Gasoline Spill Waste Drums at TA-16," Los Alamos National Laboratory Memorandum ESH-19/HSWS-94-0399 to H. Nunes (FSS-6) from J. Carmichael (ESH-19), Los Alamos, New Mexico. (Carmichael 1994, 15-16-588)

During the cleanup process, the concrete floor under the transformer was scabbled, sampled, and encapsulated. The concrete floor and sump under the pump and drums were cleaned using various cleaning agents, including the Capsur® cleaning method. The sump lid was taken to Area G at TA-54. After ascertaining that all grid points were below the 100 µg/100 cm² required by 40 CFR 761.125, the entire floor of the room was encapsulated using two-tone epoxy coating. Post-cleanup sampling, based on Midwest Research Institute guidelines, was conducted after each cleanup effort. Surface samples were taken using gauze, cyclohexane, and 100 cm² templates (LANL 1990, 15-16-386). The transformer was drained, removed, and replaced with a non-PCB-containing unit on July 9, 1990 (Sandoval 1994, 15-16-546).

SWMU 16-027(c) is a leak from a transformer, TA-16-563, that contained 100 to 500 gal. of 25 000 ppm PCB-containing oil. The outside, fenced, pad-mounted transformer was located approximately 100 ft north of TA-16-430. It was built in 1952 and was also known as Station 9. A moderate leak of 0.5 to 1 gal. was detected July 28, 1987, and the surrounding soil and concrete pad on which the transformer was mounted underwent immediate cleanup. The concrete was cleaned with the double-wash/double-rinse method, and the soil was removed to a depth of approximately 2.5 ft, drummed, and taken to Area G at TA-54. In 1989 inspection and sampling revealed a need for further cleanup. Several sampling and cleanup efforts followed, including removal of the transformer and concrete pad, excavation of the contaminated soil underneath the pad, and replacement of the transformer and pad with a non-PCB transformer and a new pad (Bailey 1993, 15-16-547; Sandoval 1994, 15-16-546). A total of 691 ft³ of soil was removed from TA-16-563. The site cleanup was completed November 12, 1992, when samples revealed PCB levels below the 25 ppm Toxic Substances Control Act (TSCA) mandated cleanup levels for low-contact outdoor electrical substations (Bailey 1993, 15-16-547).

6.7.4.2.2 Recommendation

SWMU 16-027(a,c) are recommended for NFA under Criteria 4 because a release has occurred but was characterized and/or remediated under another authority which adequately addressed RCRA Corrective Action with documentation.

6.7.4.2.3 Rationale for Recommendation

Each of these transformer leaks has been remediated in accordance with the Toxic Substances Control Act regulations found in 40 CFR 761. The PCB containing dielectric oil units have been replaced with non PCB units as noted above (Sandoval 1994, 15-16-546). Residual contamination remaining at depth has no pathway of exposure to ecological receptors.

LANL has determined that there is no immediate threat to human health and the environment from the diesel fuel contamination at SWMU 16-022(a). Depth to the main aquifer beneath TA-16 is approximately 1 000 ft. There are no private water supply wells within a 1 000 ft radius or municipal water wells within a one mile radius of this UST removal site. Additionally, there are no surface water courses within 500 ft of this site. Thus, there is no pathway to sensitive ecological systems. The nearest utility corridor is approximately 20 ft away; however, no diesel fuel or potentially explosive vapors have been detected in this corridor or in the vicinity of this UST removal (Gundersen, 1993, 15-16-544).

6.7.4.1.2 Recommendation

SWMU 16-022(a) is recommended for NFA under Criteria 4 because a release has occurred but was characterized and/or remediated under another authority which adequately addressed RCRA Corrective Action with documentation.

6.7.4.1.3 Rationale for Recommendation

The NMED reviewed a status report received June 24, 1994, for the above-referenced SWMU. The NMED determined that the site does not pose an immediate public health or environmental threat for the following reasons: the horizontal and vertical extent of soil contamination has been adequately defined and is greater than 900 ft above high static water; and, the depth to groundwater at the site is greater than 1 000 ft. Based on this information, the department required that no additional work was needed (Morland 1994, 15-16-568).

6.7.4.2 Transformers, SWMU 16-027(a,c)

6.7.4.2.1 Background

SWMU 16-027(a) is a leak from a transformer in TA-16-260, an HE processing building. Located in equipment room 110 (PCB ID #5607, 5608), the transformer was estimated to be 31 to 35 years old and contained 100- to 500-gal. of PCB-containing dielectric oil listed at concentrations greater than 500 000 ppm (LANL 1990, 0145). May 17, 1990, a spill characterized as a high-concentration spill involving a nonreportable release occurred. Contaminated materials were nonimpervious solid surfaces: the concrete floor, a concrete sump, and an impervious metal sump cover. Cleanup was initiated immediately using the double-wash/double-rinse method. The cleanup was completed on the following day using the scabbler concrete removal system. There were subsequent cleanup efforts four other times in 1990. These cleanup efforts employed the Penetone® double-wash/double-rinse method and the Capsur® foam method. Final cleanup was November 13, 1990 (LANL 1990, 15-16-386).

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LANL (Los Alamos National Laboratory), November 1993. "Installation Work Plan for Environmental Restoration," Revision 3, Los Alamos National Laboratory Report LA-UR-93-3987, Los Alamos, New Mexico. (LANL 1993, 1017)

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ATTACHMENT A TO CHAPTER 6, Addendum 2, Rev. 1

This attachment contains cleanup documentation for SWMUs recommended for no further action under step 2, 3 or 4 of the five-step criteria.

The SWMU, its location in Chapter 6, and associated documentation are listed below:

SWMU	Subsection	Documentation
16-021 (b)	6.7.2.14	15-16-590
16-022(a)	6.7.4.1	15-16-568
16-025(e2,f2,h2)	6.6.3.1	15-16-144
16-027(a,c)	6.7.4.2	15-16, 547,15-16-386
16-27(b)	6.7.3.1	15-16-546
16-033(f-j)	6.7.3.2	15-16-076, 15-16-114, 15-16-131