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Request for Permit Modification

Units Proposed for NFA

March 1995

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ACRONYMS AND ABBREVIATIONS

Some of the acronyms and abbreviations included in the following list require further definitions. In those cases, the definitions are included in parentheses.

AOC	Area of concern (A site that potentially contains hazardous substances, such as radionuclides, but no hazardous constituents defined by the Resource Conservation and Recovery Act.)
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of concern (Any constituent present in environmental media or on structural debris at a concentration that may present a risk to human health or the environment.)
D&D	Decontamination and decommissioning (Decontamination: The removal of unwanted material [especially radioactive material] from the surface of or from within another material. Decommissioning: The permanent removal from service of surface facilities and components necessary for preclosure activities only, after facility closure, in accordance with regulatory requirements and environmental policies.)
DA	Deferred action (Postponement of selection and implementation of corrective measures until a future date, usually following decommissioning of an active site.)
DOE	US Department of Energy
DOT	Department of Transportation
EES	Earth and Environmental Sciences (Division)
EES-1	Geology and Geochemistry Group
EID	(New Mexico) Environmental Improvement Division
EM	Environmental Management (Division)
EM-7	Waste Management Group
EM-8	Environmental Protection Group
EM-9	Health and Environmental Chemistry Group
ENG	Facilities Engineering (Division)
ENG-5	Field Operations Group
ENG-7	Records Management Group
EPA	US Environmental Protection Agency
ER	Environmental restoration (A term used to describe cleanup of federal facility lands according to a process laid out in RCRA. "Restoration" does not

	necessarily imply cleaning up a site to its original or pristine condition; rather, it denotes cleaning up a site to a level suitable for the site's future intended use. In some cases [sites identified as needing no further action], the site is considered restored without any cleanup.)
ERIA	Environmental Restoration Interim Action
GSA	General Services Administration
HE	High explosive
HS-5	Industrial Hygiene and Safety Group
HSE	Health, Safety, and Environment (Division)
HSE-7	Waste Management Group
HSWA	Hazardous and Solid Waste Amendments o f 1984
ICON	Isotopes of carbon, oxygen, and nitrogen
IWP	Installation work plan (A master plan for the ER Project that is updated annually. It contains information mandated in the Laboratory's permit to operate under RCRA, including several plans, one of which is a public involvement plan. Required information that applies projectwide is provided in this document so that it will not need to be repeated in each of the work plans for the 24 operable units.)
JCI	Johnson Controls World Services Inc.
LANL	Los Alamos National Laboratory
LAPRE	Los Alamos power reactor experiment
LASL	Los Alamos Scientific Laboratory
LS	Life Sciences (Division)
M	Dynamic Testing (Division)
M-1	Explosives Technology Group
MASH	Macro Statistical Hydrodynamic Research
MDA	Material disposal area (An area used any time between the beginning of Laboratory operations in the early 1940s and the present for disposing of chemically and/or radioactively contaminated materials.)
MEE	Mechanical and Electronic (Division)
MEE-4	Technical Support Group
MEE-9	Process Engineering Group
NDT	Nondistructive testing facility
NFA	No further action (A decision that no further investigation or remediation is warranted for a PRS, based on risk levels for residential use, recreational use, or industrial use.)

NMED	New Mexico Environment Department
NMEID	New Mexico Environmental Improvement Division
NOD	Notice of deficiency (A notice issued to DOE and the Laboratory by EPA stating that some aspect[s] of a plan or report does not meet EPA requirements. The ER Project must then propose a solution acceptable to EPA before the plan or report will be approved.)
NPDES	National pollutant discharge elimination system
NTS	Nevada Test Site
OU	Operable unit (A discrete action that composes an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration or eliminates or mitigates a release, threat of release, or pathway of exposure. the cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.)
OUPL	Operable unit project leader
PCB	Polychlorinated biphenyl
PCOC	Potential contaminant of concern (A site-specific list of possible human-health-risk contaminants that exceed background and/or screening action levels.)
PHERMEX	Pulsed, High-Energy, Radiographic Machine Emitting X-rays (facility)
PRS	Potential release site (A site suspected of releasing contaminants into the environment. The ER Project has responsibility for investigating and, if necessary, cleaning up such sites on and around the Laboratory site. PRS is a generic term that includes SWMUs [hazardous waste sites listed in the HSWA Module] and sites that have been identified as potentially contaminated by radioactivity.)
PTLA	Protective Technology of Los Alamos
PVC	Polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA facility assessment (The first step in the RCRA corrective action process, generally equivalent to the preliminary assessment/site investigation taken under Superfund Amendments and Reauthorization Act of 1986.)
RFI	RCRA facility investigation (Investigative and analytical studies performed to gather the data necessary to determine the type and extent of contamination at a potential release site.)
SAL	Screening action level (Media-specific concentration levels for constituents derived using conservative intake assumptions and used during the RCRA field investigation, primarily to identify contaminants of concern.)

SAP	Sampling and analysis plan
SOP	Standard operating procedure
SPCC	Spill prevention control and countermeasure
SSA	Satellite storage area (A hazardous-waste storage area that stores up to 1 quart of acutely hazardous waste and up to 55 gallons of hazardous waste.)
SVOC	Semivolatile organic compound (An organic compound that can be extracted from soil or water samples, using the appropriate solvents.)
SWCS	Sanitary wastewater consolidation system
SWMU	Solid waste management unit (Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released.)
TA	Technical area (The Laboratory established technical areas as administrative units for all its operations. There are currently 49 active TAs spread over 43 square miles.)
TAL	Target analyte list (A list of metals specified for analysis under the US EPA Contract Laboratory Program.)
TCA	Trichloroethane
TCL	Target compound list (A list of organic compounds specified for analysis under the US EPA Contract Laboratory Program.)
TCLP	Toxicity characteristic leaching procedure (A test that measures the mobility of organic and inorganic chemical contaminants in wastes. The test, designed by the United States Environmental Protection Agency, produces an estimate of the potential for leachate formation by a waste if it is placed in the ground.)
TPH	Total petroleum hydrocarbons (Hydrocarbons derived from petroleum products.)
TRU	Transuranic (waste) (Waste contaminated with long-lived transuranic elements in concentrations within a specified range established by DOE, EPA, and the Nuclear Regulatory Commission. These are elements shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.)
TSCA	Toxic Substances Control Act
TSTA	Tritium systems test assembly
UHTREX	Ultra-high-temperature reactor experiment
USGS	US Geological Survey
UST	Underground storage tank
VCP	Vitrified clay pipe
VOC	Volatile organic compound (An organic [carbon-containing] compound that evaporates [volatilizes] readily at room temperature.)

WAA	Waste accumulation area (A location where investigation-derived waste is stored.)
WX	Design Engineering (Division)
WX-1	Weapon Engineering Group
WX-3	Fabrication and Assembly Group
X	Applied Theoretical Physics (Division)
X-6	Radiation Transport Group

1.0 INTRODUCTION

The Los Alamos National Laboratory's (Laboratory's) Environmental Restoration (ER) Project has successfully investigated and recommended 367 sites for no further action (NFA) within the Resource Conservation and Recovery Act (RCRA) facility investigation work plans.

As of October 7, 1994, the Environmental Protection Agency (EPA) had reviewed 20 of the 25 work plans submitted. As a result of these reviews, the EPA indicated that the Laboratory may request a Class III permit modification for removal of 89 solid waste management units (SWMUs) from the Hazardous and Solid Waste Amendments (HSWA) Module of the Laboratory's operating permit. The EPA has also reviewed 278 areas of concern (AOCs) that do not warrant further investigation and need not be added to the permit. The removal of these 367 units is a result of both field and archival investigations as well as site cleanups performed by the Laboratory. The ER Project refers to SWMUs and AOCs collectively as potential release sites (PRSs).

This document contains the necessary information to support the request to the EPA for a Class III permit modification removing 89 SWMUs from the HSWA Module. It is also believed to contain sufficient information to justify and receive acceptance from the US Department of Energy (DOE) and other stakeholders for the removal of 278 AOCs from further consideration by the ER Project.

Chapter 1 includes explanations of the criteria used for recommending the PRSs for NFA and two tables providing lists of the PRSs that meet those criteria. Chapter 2 provides a description of each PRS, the rationale for the recommendation, and the date on which the EPA reviewed the Laboratory's decision for NFA. Maps showing the locations of the PRSs are located in Appendix A; the maps are arranged numerically according to technical area. The Laboratory's requested modifications to Tables A and B of the HSWA Module are included in Appendix B. Proposed Tables A, B, and C of the Laboratory's HSWA Module are included in Appendix C. Records pertaining to this modification request are kept on file at the ER Project's Records-Processing Facility and the Laboratory's Reading Room.

1.1 Criteria for Proposing No Further Action

The criteria for proposing no further action for potential release sites within the Laboratory's ER Project are listed below. The designation of NFA is a regulatory term. However, in this instance, the same NFA criteria will be used to delist both the SWMUs identified in the HSWA Module as well as the units not identified in the permit, referred to as AOCs. By using the same criteria, the ER Project can ensure the EPA, the New Mexico Environment Department, the DOE, the public, and other interested stakeholders that the same standards were used in investigating all potentially contaminated sites within the Project.

1.1.1 NFA Criterion 1

The PRS has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents, radionuclides, or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. Also falling under Criterion 1 are those PRSs that cannot be located or may have been found never to have existed, duplicate PRSs, and those that are investigated with another PRS.

Examples/Explanations. For purposes of the HSWA Module of the RCRA permit, units falling under Criterion 1 may have been mistakenly identified as SWMUs in an earlier study. If a unit has only a radionuclide component, then the site may be requested for an NFA determination, and a permit modification request may be submitted to remove it from the HSWA Module. The unit may still be investigated as an AOC by the ER Project.

1.1.2 NFA Criterion 2

No release has occurred from the PRS to the environment.

Definition of release. "Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment.

Examples/Explanations. Units falling under Criterion 2 are those where no release has occurred, or where a release of any hazardous constituents to the environment may be unlikely due to the engineering (secondary containment or overflow prevention) or management (inspection or inventory) controls. A visual inspection of a unit may be satisfactory for documentation of no release. Complete containment of a unit within a building with no route to the environment is another example of a unit falling under Criterion 2. Complete containment should be verified by a visual inspection and examination of engineering drawings if available.

1.1.3 NFA Criterion 3

The PRS is regulated or closed under a different authority which addresses corrective action.

Examples/Explanations. Non-land-based RCRA treatment, storage, and disposal facilities (such as containers or tanks) should not be considered under RCRA corrective action because requirements under interim status, the Laboratory's operating permit, and RCRA generator requirements will adequately address releases from these units.

Temporary storage areas in use since 1980 (less-than-90-day and satellite storage areas) must operate according to 40 CFR 262, which requires that the units be routinely inspected and closed according to 40 CFR 265. To avoid further investigation by the ER Project, engineering and management controls must be present. If there is evidence of a possible release, whether visual staining, vapor releases, or analytical data indicating a release has occurred (and remediation has not been accomplished) and if the unit qualifies under the HSWA Module or under CERCLA, it may undergo corrective action measures within the ER Project.

Releases to surface water through a storm sewer are regulated under the national pollutant discharge elimination system (NPDES) storm water program, and releases through other NPDES-permitted outfalls are also exempt from RCRA. However, an outfall may be permitted under the NPDES program and still be required to be investigated under RCRA corrective action authority. The NPDES permit addresses only the actual water discharge from the outfall and does not address corrective action or remediation of material deposited at the outfall over time. In this instance, the soil at the outfall may need to be sampled.

If a regulated unit is being closed under RCRA authority, then this site will normally not be investigated under the HSWA program, because RCRA closure requirements under state regulations would be more stringent.

Even though it may be more expedient and convenient to address all release pathways under corrective action, the State of New Mexico will ultimately have to approve the closure plan for the regulated unit. The EPA is provided a copy of all closure plans and can provide comments to the State if needed.

1.1.4 NFA Criterion 4

The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants of concern are either not present or are present in concentrations that would pose an acceptable level of risk under the projected future land use.

The determination of acceptable risk and future land use has considered stakeholder involvement.

Examples/Explanations. A one-time spill of a raw material would not normally result in a release that is to be considered under RCRA corrective action. The RCRA process is specifically concerned with routine and systematic releases of hazardous wastes and constituents. However, unless there is documentation that the spill was cleaned up to levels that would be acceptable under RCRA or other applicable standards, the possible area of impact may be an AOC and would remain under consideration in the applicable work plan. In addition, possible future releases are not to be considered under RCRA corrective action.

1.2 Lists of Potential Release Sites Recommended for No Further Action

Table 1-1 contains 89 HSWA units that the Laboratory requests be removed from the HSWA Module of the RCRA Permit. Table 1-2 contains 278 AOCs that require no further investigation by the ER Project. Both tables include the PRS identification number, the operable unit (OU) number, the unit type, the criterion used for recommending NFA, the date on which the EPA reviewed the Laboratory's decision for NFA, and the section number of this document where the PRS description and rationale can be found. The prefix of the PRS number denotes the technical area (TA) where the PRS exists. For example, PRS 35-001 is located at TA-35.

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
0-005	1071	00	Landfill	4	10/16/92	2.1.4.1	1
1-001(h)	1078	01	Septic tank 142	1	1/28/94	2.1.1.1	2
1-001(i)	1078	01	Septic tank 143	4	1/28/94	2.1.4.2	3
1-001(j)	1078	01	Septic tank 149	1	1/28/94	2.1.1.2	4
1-001(k)	1078	01	Septic tank 268	4	1/28/94	2.1.4.3	5
1-001(l)	1078	01	Septic tank 269	1	1/28/94	2.1.1.3	6
1-001(n)	1078	01	Septic tank 276	4	1/28/94	2.1.4.4	7
3-009(b)	1114	03	Surface disposal	4	10/29/93	2.1.4.5	8
3-009(c)	1114	03	Surface disposal	1	10/29/93	2.1.1.4	9
3-009(e)	1114	03	Surface disposal	1	10/29/93	2.1.1.5	10
3-009(f)	1114	03	Surface disposal	1	10/29/93	2.1.1.6	11
3-009(g)	1114	03	Surface disposal	1	10/29/93	2.1.1.7	12
3-012(a)	1114	03	One-time spill	4	10/29/93	2.1.4.6	13
3-018	1114	03	Septic system	1	10/29/93	2.1.1.8	14
3-020(a)	1114	03	Disposal pit	4	10/29/93	2.1.4.7	15
3-039(a)	1114	03	Silver recovery unit	2	10/29/93	2.1.2.1	16
3-043(e)	1114	03	Underground tank	4	10/29/93	2.1.4.8	17

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
8-003(b)	1157	08	Septic system	1	4/5/94	2.1.1.9	18
8-003(c)	1157	08	Septic system	1	4/5/94	2.1.1.10	19
8-006(b)	1157	08	Landfill	1	4/5/94	2.1.1.11	20
8-007	1157	08	Silver recovery unit	2	10/7/94	2.1.2.2	21
9-003(c)	1157	09	Electric manhole	1	4/5/94	2.1.1.12	22
9-003(f)	1157	09	Settling tank	1	4/5/94	2.1.1.13	23
9-005(b)	1157	09	Septic system	1	4/5/94	2.1.1.14	24
9-005(c)	1157	09	Septic system	1	4/5/94	2.1.1.15	25
9-005(e)	1157	09	Septic system	1	4/5/94	2.1.1.16	26
9-005(f)	1157	09	Septic system	1	4/5/94	2.1.1.17	27
9-005(g)	1157	09	Septic system	1	4/5/94	2.1.1.18	28
9-005(h)	1157	09	Septic system	1	4/5/94	2.1.1.19	29
9-007	1157	09	Basket pit	1	4/5/94	2.1.1.20	30
10-006	1079	10	Burn site	1	10/5/92	2.1.1.21	31
11-007	1082	11	Surface disposal	1	7/13/94	2.1.1.22	32
11-011(c)	1082	11	Ind. or san. wastewater treat.	1	7/13/94	2.1.1.23	33
12-002	1085	12	Open burning ground	1	9/2/94	2.1.1.24	34

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
15-004(i)	1086	15	Detonation ground	1	7/26/94	2.1.1.25	35
16-005(o)	1082	16	Septic system	1	7/13/94	2.1.1.26	36
16-006(b)	1082	16	Septic system	1	7/13/94	2.1.1.27	37
16-006(f)	1082	16	Septic system	1	7/13/94	2.1.1.28	38
16-010(g)	1082	16	Wastewater treatment facility	3	7/13/94	2.1.3.1	39
16-012(d)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	40
16-012(i)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	41
16-012(j)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	42
16-012(l)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	43
16-012(m)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	44
16-012(n)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	45
16-012(p)	1082	16	Container storage	3	7/13/94	2.1.3.2	46
16-012(t)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	47
16-012(u)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	48
16-012(x)	1082	16	Satellite storage	3	7/13/94	2.1.3.2	49
21-012(a)	1106	21	Dry well	1	1/9/92	2.1.1.29	50
22-011	1111	22	Disposal pit	1	5/20/94	2.1.1.30	51

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
33-004(e)	1122	33	Seepage pit	1	7/15/93	2.1.1.31	52
33-004(f)	1122	33	Septic system	1	7/15/93	2.1.1.32	53
35-002	1129	35	Material disposal area	4	11/3/93	2.1.4.9	54
35-003(i)	1129	35	Wastewater treatment facility	1	11/3/93	2.1.1.33	55
35-003(p)	1129	35	Wastewater treatment facility	4	11/3/93	2.1.4.10	56
35-004(e)	1129	35	Container storage area	2	11/3/93	2.1.2.3	57
35-006	1129	35	Surface impoundment	4	11/3/93	2.1.4.11	58
35-011(a)	1129	35	Underground storage tank	2	11/3/93	2.1.2.4	59
35-013(a)	1129	35	Sump	2	11/3/93	2.1.2.5	60
35-013(b)	1129	35	Sump	2	11/3/93	2.1.2.5	61
35-013(c)	1129	35	Sump	2	11/3/93	2.1.2.5	62
35-013(d)	1129	35	Sump	2	11/3/93	2.1.2.5	63
36-003(c)	1130	36	Septic system	1	9/23/94	2.1.1.34	64
39-003	1132	39	Incinerator	1	9/22/94	2.1.1.35	65
39-006(b)	1132	39	Septic system	1	9/22/94	2.1.1.36	66
40-001(a)	1111	40	Septic system	1	5/20/94	2.1.1.37	67
46-004(a)	1140	46	Waste line	1	7/15/94	2.1.1.38	68

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
46-008(c)	1140	46	Storage area	1	7/15/94	2.1.1.39	69
48-004(a)	1129	48	Sumps and tanks	2	11/3/93	2.1.2.6	70
48-004(b)	1129	48	Sumps and tanks	2	11/3/93	2.1.2.6	71
48-004(c)	1129	48	Sumps and tanks	2	11/3/93	2.1.2.6	72
52-001(a)	1129	52	UHTREX equip.	4	11/3/93	2.1.4.12	73
52-001(b)	1129	52	UHTREX equip.	4	11/3/93	2.1.4.12	74
52-001(c)	1129	52	UHTREX equip.	4	11/3/93	2.1.4.12	75
52-001(d)	1129	52	UHTREX equip.	4	11/3/93	2.1.4.13	76
52-002(b)	1129	52	Septic system	1	11/3/93	2.1.1.40	77
52-002(c)	1129	52	Septic system	1	11/3/93	2.1.1.41	78
52-002(d)	1129	52	Septic system	1	11/3/93	2.1.1.41	79
52-002(f)	1129	52	Septic system	1	11/3/93	2.1.1.40	80
54-001(c)	1148	54	Storage area	1	4/23/93	2.1.1.42	81
54-007(b)	1148	54	Septic system	1	4/23/93	2.1.1.43	82
54-013(a)	1148	54	Decontamination facility	1	4/23/93	2.1.1.44	83
54-015(h)	1148	54	Storage area	2	4/23/93	2.1.2.7	84
55-008	1129	55	Sumps and tanks	2	11/3/93	2.1.2.8	85

TABLE 1-1

HSWA UNITS RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
55-009	1129	55	Sumps and tanks	1	11/3/93	2.1.1.45	86
59-001	1114	59	Septic system	4	10/29/93	2.1.4.14	87
60-002	1114	60	Storage area	1	10/29/93	2.1.1.46	88
61-004(a)	1114	61	Septic tank	1	1/7/94	2.1.1.47	89

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
0-008	1071	00	Surface disposal site	1	10/16/92	2.2.1.1	1
0-010(a)	1071	00	Surface disposal site	1	10/16/92	2.2.1.2	2
0-015	1071	00	Firing range	3	10/16/92	2.2.3.1	3
0-024	1071	00	Cistern	4	1/6/93	2.2.4.1	4
0-025	1071	00	Landfill	1	1/6/93	2.2.1.3	5
0-026	1071	00	Landfill	1	1/6/93	2.2.1.4	6
0-035(a)	1071	00	Surface disposal	2	1/6/93	2.2.2.1	7
0-040	1071	00	Underground tank	4	1/6/93	2.2.4.2	8
1-001(p)	1078	01	Septic system	1	8/13/92	2.2.1.5	9
1-001(q)	1078	01	Septic system	1	1/28/94	2.2.1.6	10
1-001(r)	1078	01	Septic system	1	8/13/92	2.2.1.7	11
1-001(v)	1078	01	Septic system	1	1/28/94	2.2.1.8	12
1-001(w)	1078	01	Septic system	1	1/28/94	2.2.1.9	13
1-004(a)	1078	01	Incinerator	4	8/13/92	2.2.4.3	14
1-004(b)	1078	01	Incinerator	4	8/13/92	2.2.4.4	15
1-005	1078	01	Incinerator	4	8/13/92	2.2.4.5	16
1-006(f)	1078	01	Drain lines and outfall	1	8/13/92	2.2.1.10	17
1-006(i)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.11	18

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
1-006(j)	1078	01	Drain lines and outfall	1	8/13/92	2.2.1.12	19
1-006(k)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.13	20
1-006(l)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.14	21
1-006(m)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.15	22
1-006(p)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.16	23
1-006(q)	1078	01	Drain lines and outfall	1	8/13/92	2.2.1.17	24
1-006(r)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.18	25
1-006(s)	1078	01	Drain lines and outfall	1	8/13/92	2.2.1.19	26
1-006(t)	1078	01	Drain lines and outfall	1	1/28/94	2.2.1.20	27
1-007(f)	1078	01	Soil contamination area	4	1/28/94	2.2.4.6	28
1-007(g)	1078	01	Soil contamination area	1	1/28/94	2.2.1.21	29
1-007(h)	1078	01	Soil contamination area	4	1/28/94	2.2.4.7	30
1-007(i)	1078	01	Soil contamination area	4	1/28/94	2.2.4.8	31
1-007(m)	1078	01	Soil contamination area	4	1/28/94	2.2.4.9	32
1-007(n)	1078	01	Soil contamination area	4	1/28/94	2.2.4.10	33
1-007(o)	1078	01	Soil contamination area	4	1/28/94	2.2.4.11	34
1-007(p)	1078	01	Soil contamination area	4	1/28/94	2.2.4.12	35
2-001	1098	02	Open burning ground	1	11/16/93	2.2.1.22	36

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
2-002	1098	02	Storage area	4	11/16/93	2.2.4.13	37
2-013	1098	02	Storage area	3	11/16/93	2.2.3.2	38
3-010(b)	1114	03	Operational release	1	10/29/93	2.2.1.23	39
3-010(c)	1114	03	Operational release	2	10/29/93	2.2.2.2	40
3-010(d)	1114	03	Operational release	1	10/29/93	2.2.1.24	41
3-013(d)	1114	03	Operational release	1	10/29/93	2.2.1.25	42
3-013(e)	1114	03	Operational release	1	10/29/93	2.2.1.26	43
3-013(f)	1114	03	Operational release	1	10/29/93	2.2.1.27	44
3-013(g)	1114	03	Operational release	1	10/29/93	2.2.1.28	45
3-013(h)	1114	03	Operational release	1	10/29/93	2.2.1.29	46
3-020(b)	1114	03	Surface disposal site	4	10/29/93	2.2.4.14	47
3-039(b)	1114	03	Silver recovery unit	2	10/29/93	2.2.2.3	48
3-039(c)	1114	03	Silver recovery unit	2	10/29/93	2.2.2.3	49
3-039(d)	1114	03	Silver recovery unit	2	10/29/93	2.2.2.3	50
3-039(e)	1114	03	Silver recovery unit	2	10/29/93	2.2.2.3	51
3-055(b)	1114	03	Outfall	1	10/29/93	2.2.1.30	52
6-003(b)	1111	06	Firing site	2	5/20/94	2.2.2.4	53
6-004	1111	06	Sump	1	5/20/94	2.2.1.31	54

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
C-6-020	1111	06	Building	1	5/20/94	2.2.1.32	55
8-008(a)	1157	08	Storage area	2	4/5/94	2.2.2.5	56
8-008(b)	1157	08	Storage area	2	4/5/94	2.2.2.6	57
8-008(c)	1157	08	Storage area	2	4/5/94	2.2.2.7	58
8-008(d)	1157	08	Storage area	2	4/5/94	2.2.2.8	59
8-009(b)	1157	08	Ind. or san. wastewater treat.	1	4/5/94	2.2.1.33	60
8-010(a)	1157	08	Storage area	3	4/5/94	2.2.3.3	61
8-010(b)	1157	08	Storage area	3	4/5/94	2.2.3.4	62
8-010(c)	1157	08	Storage area	3	4/5/94	2.2.3.5	63
8-011(a)	1157	08	Underground tank	4	4/5/94	2.2.4.15	64
8-011(b)	1157	08	Underground tank	4	4/5/94	2.2.4.16	65
C-8-001	1157	08	Building	1	4/5/94	2.2.1.34	66
C-8-002	1157	08	Building	1	4/5/94	2.2.1.35	67
C-8-003	1157	08	Building	1	4/5/94	2.2.1.36	68
C-8-004	1157	08	Building	1	4/5/94	2.2.1.37	69
C-8-005	1157	08	Building	1	4/5/94	2.2.1.38	70
C-8-006	1157	08	Building	1	4/5/94	2.2.1.39	71
C-8-007	1157	08	Building	1	4/5/94	2.2.1.40	72

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
C-8-008	1157	08	Building	1	4/5/94	2.2.1.41	73
C-8-009	1157	08	Building	1	4/5/94	2.2.1.42	74
C-8-011	1157	08	Building	1	4/5/94	2.2.1.43	75
C-8-012	1157	08	Building	1	4/5/94	2.2.1.44	76
C-8-013	1157	08	Building	1	4/5/94	2.2.1.45	77
C-8-015	1157	08	Building	1	4/5/94	2.2.1.46	78
C-8-016	1157	08	Building	1	4/5/94	2.2.1.47	79
C-8-017	1157	08	Storage area	2	4/5/94	2.2.2.9	80
C-8-018	1157	08	Storage area	2	4/5/94	2.2.2.10	81
C-8-019	1157	08	Storage area	2	4/5/94	2.2.2.11	82
C-8-020	1157	08	Disposal area	1	4/5/94	2.2.1.48	83
9-008(a)	1157	09	Surface impoundment	1	4/5/94	2.2.1.49	84
9-010(c)	1157	09	Storage area	1	4/5/94	2.2.1.50	85
9-011(a)	1157	09	Storage area	3	4/5/94	2.2.3.6	86
9-015	1157	09	Manhole	1	4/5/94	2.2.1.51	87
9-016	1157	09	Underground tank	4	10/7/94	2.2.4.17	88
C-9-002	1157	09	Buildings	4	4/5/94	2.2.4.18	89
C-9-003	1157	09	Buildings	4	4/5/94	2.2.4.19	90

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
C-9-004	1157	09	Building	4	4/5/94	2.2.4.20	91
C-9-005	1157	09	Building	4	4/5/94	2.2.4.21	92
C-9-006	1157	09	Buildings	4	4/5/94	2.2.4.22	93
C-9-007	1157	09	Building	4	4/5/94	2.2.4.23	94
C-9-008	1157	09	Underground tank	1	4/5/94	2.2.1.52	95
C-9-009	1157	09	Non-intentional release	2	4/5/94	2.2.2.12	96
C-9-010	1157	09	Burn site	1	10/7/94	2.2.1.53	97
C-9-011	1157	09	Burn site	1	10/7/94	2.2.1.54	98
10-001(e)	1079	10	Detonation Test Area	1	10/5/92	2.2.1.55	99
11-003(a)	1082	11	Mortar impact area	2	7/13/94	2.2.2.13	100
11-008	1082	11	Surface disposal	1	7/13/94	2.2.1.56	101
11-010(b)	1082	11	Container storage	1	7/13/94	2.2.1.57	102
C-11-003	1082	11	One-time release site	4	7/13/94	2.2.4.24	103
12-003	1085	12	Storage area	1	9/2/94	2.2.1.58	104
C-12-0[illegible]	1085	12	Pole	1	9/2/94	2.2.1.59	105
14-008	1085	14	Landfill and surface disposal	1	9/2/94	2.2.1.60	106
15-004	1086	15	Unit does not exist	1	7/26/94	2.2.1.61	107
15-005(a)	1086	15	Storage area	1	7/26/94	2.2.1.62	108

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AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
15-005(d)	1086	15	Storage area	2	7/26/94	2.2.2.14	109
15-008(e)	1086	15	Surface disposal	1	7/26/94	2.2.1.63	110
15-009(d)	1086	15	Septic tank	1	7/26/94	2.2.1.64	111
15-013(a)	1086	15	Underground tank	1	7/26/94	2.2.1.65	112
15-013(b)	1086	15	Underground tank	1	7/26/94	2.2.1.66	113
15-014(c)	1086	15	Ind. or san. wastewater treat.	1	7/26/94	2.2.1.67	114
C-15-002	1086	15	Surface disposal	1	7/26/94	2.2.1.68	115
C-15-003	1086	15	Surface disposal	1	7/26/94	2.2.1.69	116
C-15-009	1086	15	Underground tank	1	7/26/94	2.2.1.70	117
16-007(b)	1082	16	Surface disposal site	1	7/13/94	2.2.1.71	118
16-008(b)	1082	16	Surface impoundment	4	7/13/94	2.2.4.25	119
16-012(a2)	1082	16	Container storage	3	7/13/94	2.2.3.7	120
18-005(b)	1093	18	Storage area	2	9/23/94	2.2.2.15	121
18-005(c)	1093	18	Storage area	2	9/23/94	2.2.2.15	122
18-009(a)	1093	18	Transformer	4	9/23/94	2.2.4.26	123
18-009(c)	1093	18	Transformer	2	9/23/94	2.2.2.16	124
18-009(d)	1093	18	Transformer	2	9/23/94	2.2.2.17	125
18-009(e)	1093	18	Transformer	2	9/23/94	2.2.2.18	126

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AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
18-010(a)	1093	18	Outfall	1	9/23/94	2.2.1.72	127
18-012(d)	1093	18	Drain line	1	9/23/94	2.2.1.73	128
C-18-001	1093	18	Laboratory	4	9/23/94	2.2.4.27	129
C-18-002	1093	18	Building	2	9/23/94	2.2.2.19	130
C-18-003	1093	18	Storage area	3	9/23/94	2.2.3.8	131
21-025(a)	1106	21	Operational facility	2	1/9/92	2.2.2.20	132
21-025(b)	1106	21	Operational facility	2	1/9/92	2.2.2.20	133
21-028(b)	1106	21	Container storage	2	1/9/92	2.2.2.21	134
21-028(e)	1106	21	Container storage	2	1/9/92	2.2.2.22	135
C-21-002	1106	21	Non-intentional release area	4	1/9/92	2.2.4.28	136
C-21-003	1106	21	Non-intentional release area	4	1/9/92	2.2.4.28	137
C-21-004	1106	21	Non-intentional release area	4	1/9/92	2.2.4.28	138
C-21-008	1106	21	One-time spill	4	1/9/92	2.2.4.28	139
C-21-010	1106	21	Systematic leak	4	1/9/92	2.2.4.28	140
C-21-011	1106	21	One-time spill	4	1/9/92	2.2.4.28	141
C-21-013	1106	21	Disposal pit	1	1/9/92	2.2.1.74	142
C-21-014	1106	21	Warehouse	1	1/9/92	2.2.1.75	143
C-21-015	1106	21	Building	4	1/9/92	2.2.4.28	144

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
C-21-016	1106	21	Storage area	4	1/9/92	2.2.4.28	145
C-21-017	1106	21	Storage area	4	1/9/92	2.2.4.28	146
C-21-018	1106	21	Storage area	4	1/9/92	2.2.4.28	147
C-21-019	1106	21	Storage area	4	1/9/92	2.2.4.28	148
C-21-020	1106	21	Storage area	4	1/9/92	2.2.4.28	149
C-21-021	1106	21	Storage area	4	1/9/92	2.2.4.28	150
C-21-022	1106	21	Laboratory	4	1/9/92	2.2.4.28	151
C-21-023	1106	21	Laboratory	4	1/9/92	2.2.4.28	152
C-21-024	1106	21	Warehouse	4	1/9/92	2.2.4.28	153
C-21-025	1106	21	Building	4	1/9/92	2.2.4.28	154
C-21-026	1106	21	Building	4	1/1/92	2.2.4.28	155
C-21-028	1106	21	Tank	4	1/9/92	2.2.4.28	156
C-21-029	1106	21	Aboveground tank	4	1/9/92	2.2.4.28	157
C-21-030	1106	21	Aboveground tank	4	1/9/92	2.2.4.28	158
22-014(c)	1111	22	Unit does not exist	1	5/20/94	2.2.1.76	159
27-004	1093	27	Building	4	3/7/94	2.2.4.29	160
30-001	1114	30	Surface disposal and landfill	1	10/29/93	2.2.1.77	161
C-31-001	1079	31	Buildings	1	10/5/92	2.2.1.78	162

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
C-32-001	1079	32	Buildings	2	10/5/92	2.2.2.23	163
33-004(l)	1122	33	Outfall	1	7/15/93	2.2.1.79	164
33-004(n)	1122	33	Septic system	1	7/15/93	2.2.1.80	165
33-012(b)	1122	33	Satellite storage	3	7/15/93	2.2.3.9	166
33-012(c)	1122	33	Satellite storage	3	7/15/93	2.2.3.9	167
33-012(d)	1122	33	Satellite storage	3	7/15/93	2.2.3.9	168
35-001	1129	35	Material disposal area	2	11/3/93	2.2.2.24	169
35-004(c)	1129	35	Storage areas	2	11/3/93	2.2.2.25	170
35-004(d)	1129	35	Container storage area	2	11/3/93	2.2.2.26	171
35-004(f)	1129	35	Container storage area	2	11/3/93	2.2.2.26	172
35-004(k)	1129	35	Container storage area	2	11/3/93	2.2.2.26	173
35-004(l)	1129	35	Container storage area	2	11/3/93	2.2.2.26	174
35-004(n)	1129	35	Container storage area	2	11/3/93	2.2.2.26	175
35-005(a)	1129	35	Surface impoundment	4	11/3/93	2.2.4.30	176
35-005(b)	1129	35	Surface impoundment	4	11/3/93	2.2.4.30	177
35-007	1129	35	Waste oil treatment	2	11/3/93	2.2.2.27	178
35-011(b)	1129	35	Underground storage tank	3	11/3/93	2.2.3.10	179
35-011(c)	1129	35	Underground storage tank	2	11/3/93	2.2.2.28	180

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
35-011(d)	1129	35	Underground storage tank	4	11/3/93	2.2.4.31	181
35-012(a)	1129	35	Underground storage tank	4	11/3/93	2.2.4.32	182
35-012(b)	1129	35	Inactive storage tank	1	11/3/93	2.2.1.81	183
35-017	1129	35	Soil contamination from reactor	4	11/3/93	2.2.4.33	184
C-35-005	1129	35	Operational release	1	11/3/93	2.2.1.82	185
C-35-006	1129	35	Operational release	1	11/3/93	2.2.1.82	186
C-35-008	1129	35	Leaking transformer	2	11/3/93	2.2.2.29	187
36-003(d)	1130	36	Septic system	1	9/23/94	2.2.1.83	188
36-004(f)	1130	36	Firing site	2	9/23/94	2.2.2.30	189
36-007(a)	1130	36	Storage area	2	9/23/94	2.2.2.31	190
36-007(b)	1130	36	Storage area	2	9/23/94	2.2.2.31	191
36-007(c)	1130	36	Storage area	2	9/23/94	2.2.2.31	192
36-007(d)	1130	36	Storage area	2	9/23/94	2.2.2.31	193
36-007(e)	1130	36	Storage area	2	9/23/94	2.2.2.31	194
36-007(f)	1130	36	Storage area	2	9/23/94	2.2.2.31	195
C-36-002	1130	36	Surface disposal	1	9/23/94	2.2.1.84	196
37-001	1082	37	Septic system	1	7/13/94	2.2.1.85	197
39-002(g)	1132	39	Storage area	2	9/22/94	2.2.2.32	198

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AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
39-007(b)	1132	39	Storage area	1	9/22/94	2.2.1.86	199
39-007(c)	1132	39	Storage area	2	9/22/94	2.2.2.33	200
39-007(e)	1132	39	Storage area	4	9/22/94	2.2.4.34	201
39-009	1132	39	Outfall	1	9/22/94	2.2.1.87	202
C-40-001	1111	40	Usage site	1	5/20/94	2.2.1.88	203
41-004	1098	41	Container storage	2	11/16/93	2.2.2.34	204
C-41-001	1098	41	Sump	1	11/16/93	2.2.1.89	205
C-41-002	1098	41	Underground tank	4	11/16/93	2.2.4.35	206
C-41-003	1098	41	Underground tank	1	11/16/93	2.2.1.90	207
C-41-005	1098	41	Underground tank Mvsterv tank	1	11/16/93	2.2.1.91	208
42-004	1129	42	Canyon disposal	4	11/13/93	2.2.4.36	209
43-001(b1)	1136	43	Outfall	1	8/8/94	2.2.1.92	210
43-003	1136	43	Carcass Storage	1	8/8/94	2.2.1.93	211
43-004	1136	43	Waste Storage	1	8/8/94	2.2.1.94	212
43-005	1136	43	Radioactive liquid Storage	2	8/8/94	2.2.2.35	213
46-001	1140	46	Aboveground tank	3	7/15/94	2.2.3.11	214
46-004(i)	1140	46	Outfall	1	7/15/94	2.2.1.95	215
46-004(j)	1140	46	Outfall	1	7/15/94	2.2.1.95	216

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
46-004(k)	1140	46	Outfall	1	7/15/94	2.2.1.95	217
46-004(l)	1140	46	Outfall	1	7/15/94	2.2.1.95	218
46-004(n)	1140	46	Outfall	1	7/15/94	2.2.1.95	219
46-004(o)	1140	46	Outfall	1	7/15/94	2.2.1.95	220
46-006(e)	1140	46	Surface Disposal	1	7/15/94	2.2.1.96	221
46-008misc	1140	46	Storage area	1	7/15/94	2.2.1.97	222
46-010(a)	1140	46	Storage area	3	7/15/94	2.2.3.12	223
46-010(b)	1140	46	Storage area	3	7/15/94	2.2.3.13	224
46-010(c)	1140	46	Storage area	3	7/15/94	2.2.3.14	225
46-010(e)	1140	46	Storage area	3	7/15/94	2.2.3.15	226
46-010(f)	1140	46	Storage area	3	7/15/94	2.2.3.16	227
46-010misc	1140	46	Storage area	1	7/15/94	2.2.1.97	228
48-002(d)	1129	48	Container storage	2	11/3/93	2.2.2.36	229
48-004(d)	1129	48	Sumps and tanks	1	11/3/93	2.2.1.98	230
48-006	1129	48	Septic system	1	11/3/93	2.2.1.99	231
48-008	1129	48	Transformer leak	2	11/3/93	2.2.2.37	232
50-003(b)	1147	50	Storage area	2	9/9/92	2.2.2.38	233
50-003(c)	1147	50	Storage area	3	9/9/92	2.2.3.17	234

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
50-003(d)	1147	50	Storage area	3	9/9/92	2.2.3.18	235
50-003(e)	1147	50	Storage area	1	9/9/92	2.2.1.100	236
50-005	1147	50	Waste treatment facility	2	9/9/92	2.2.2.39	237
50-006(b)	1147	50	Operational release	4	9/9/92	2.2.4.37	238
50-006(e)	1147	50	Aboveground tank	4	9/9/92	2.2.4.38	239
51-002(a)	1148	51	Usage site	1	4/23/93	2.2.1.101	240
51-002(b)	1148	51	Usage site	1	4/23/93	2.2.1.101	241
C-51-001	1148	51	Storage area	1	4/23/93	2.2.1.102	242
C-51-002	1148	51	Buildings	2	4/23/93	2.2.2.40	243
52-002(g)	1129	52	Septic system	1	11/3/93	2.2.1.103	244
52-003(b)	1129	52	Industrial waste line	4	11/3/93	2.2.4.39	245
52-004	1129	52	Evaporator	1	11/3/93	2.2.1.104	246
54-001(f)	1148	54	Storage area	1	4/23/93	2.2.1.105	247
54-008	1148	54	Underground tank	1	4/23/93	2.2.1.106	248
54-010	1148	54	Underground tank	1	4/23/93	2.2.1.107	249
54-015(g)	1148	54	Storage area	2	4/23/93	2.2.2.41	250
54-015(i)	1148	54	Storage area-forklift battery	2	4/23/93	2.2.2.42	251
54-016(a)	1148	54	Sump	2	4/23/93	2.2.2.43	252

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
54-021	1148	54	Aboveground tanks (6)	4	4/23/93	2.2.4.40	253
54-022	1148	54	Transformer spill (PCB)	4	4/23/93	2.2.4.41	254
55-001	1129	55	Cement plant	2	11/3/93	2.2.2.44	255
55-002(a)	1129	55	Rad waste storage area	2	11/3/93	2.2.2.45	256
55-002(b)	1129	55	Rad waste storage area	2	11/3/93	2.2.2.45	257
55-003	1129	55	Containment area	1	11/3/93	2.2.1.108	258
55-004	1129	55	Evaporator	2	11/3/93	2.2.2.44	259
55-005	1129	55	Filtration Unit	2	11/3/93	2.2.2.44	260
55-006	1129	55	Glass Breaker	2	11/3/93	2.2.2.46	261
55-007	1129	55	Thermal combustion unit	2	11/3/93	2.2.2.47	262
55-013(a)	1129	55	Storage area	2	11/3/93	2.2.2.48	263
55-013(b)	1129	55	Storage area	2	11/3/93	2.2.2.48	264
59-002	1114	59	Container storage area	1	10/29/93	2.2.1.109	265
59-003	1114	59	Sump	1	10/29/93	2.2.1.110	266
60-001(a)	1114	60	Storage area (Active storage)	3	10/29/93	2.2.3.19	267
60-001(b)	1114	60	Storage area (Active Storage)	1	1/7/94	2.2.1.111	268
60-001(d)	1114	60	Storage area Pesticide Shed	1	10/29/93	2.2.1.112	269
60-003	1114	60	Oil-water separator	1	10/29/93	2.2.1.113	270

TABLE 1-2

AREAS OF CONCERN RECOMMENDED FOR NO FURTHER ACTION

PRS Number	OU	TA	Unit Type	Criterion Used	EPA Review Date	Document Section	Count
60-004(a)	1114	60	Storage area	1	10/29/93	2.2.1.114	271
60-005(b)	1114	60	Mud pit/drilling	1	10/29/93	2.2.1.115	272
60-006(b)	1114	60	Septic system	1	10/29/93	2.2.1.116	273
60-006(c)	1114	60	Septic tank	1	10/29/93	2.2.1.117	274
61-003	1114	61	Burn sites	1	10/29/93	2.2.1.118	275
64-001	1114	64	Storage area	3	10/29/93	2.2.3.20	276
69-002(a)	1157	69	Septic system	1	4/5/94	2.2.1.119	277
69-002(b)	1157	69	Septic system	1	4/5/94	2.2.1.120	278

2.0 JUSTIFICATION FOR NO FURTHER ACTION

The justifications for the PRSs listed in Tables 1-1 and 1-2 are presented in Subsections 2.1 and 2.2. These justifications and descriptions were taken directly from the RFI work plans and addenda for the operable units (OUs) where the PRSs are located. **The references, figures, tables, and document sections cited within each excerpt are located in the applicable work plans or addenda listed in Table 2-1.**

TABLE 2-1

SOURCES FOR PRS JUSTIFICATIONS AND DESCRIPTIONS

Operable Unit	Title of Document	Date of Document	Text Reference
OU 1071	RFI Work Plan for Operable Unit 1071	May 1992	(LANL 1992, 0781)
OU 1078	RFI Work Plan for Operable Unit 1078	May 1992	(LANL 1992, 0782)
	Addendum I to RFI Work Plan for Operable Unit 1078	July 1993	
OU 1079	RFI Work Plan for Operable Unit 1079	May 1992	(LANL 1992, 0783)
OU 1082	RFI Work Plan for Operable Unit 1082	July 1993	(LANL 1993, 1094)
	RFI Work Plan for Operable Unit 1082, Addendum 1	May 1994	(LANL 1992, 1158)
OU 1085	RFI Work Plan for Operable Unit 1085	May 1994	(LANL 1994, 1156)
OU 1086	RFI Work Plan for Operable Unit 1086	July 1993	(LANL 1993, 1087)
OU 1093	RFI Work Plan for Operable Unit 1093	May 1993	(LANL 1993, 1085)
OU 1098	RFI Work Plan for Operable Unit 1098	June1993	(LANL 1993, 1086)
OU 1106	TA-21 Operable Unit RFI Work Plan for Environmental Restoration, Volumes I–III	May 1991	(LANL 1991, 0689)
OU 1111	RFI Work Plan for Operable Unit 1111	August 1993	(LANL 1993, 1091)
OU 1114	RFI Work Plan for Operable Unit 1114	July 1993	(LANL 1993, 1090)

TABLE 2-1, Continued

Operable Unit	Title of Document	Date of Document	Text Reference
OU 1122	RFI Work Plan for Operable Unit 1122	May 1992	(LANL 1992, 0784)
OU1129	RFI Work Plan for Operable Unit 1129	May 1992	(LANL 1992, 0785)
OU 1130	RFI Work Plan for Operable Unit 1130	June 1993	(LANL 1993, 1088)
OU 1132	RFI Work Plan for Operable Unit 1132	June 1993	(LANL 1993, 1089)
OU 1136	RFI Work Plan for Operable Unit 1136	May 1994	(LANL 1994, 1158)
OU 1140	RFI Work Plan for Operable Unit 1140	August 1993	(LANL 1993, 1093)
OU 1147	RFI Work Plan for Operable Unit 1147	May 1992	(LANL 1992, 0787)
OU 1148	RFI Work Plan for Operable Unit 1148	May 1992	(LANL 1992, 0788)
OU 1157	RFI Work Plan for Operable Unit 1157	July 1993	(LANL 1993, 1092)

The 89 HSWA units are described in numerical order in Subsection 2.1 according to the criterion used; the AOCs are described in Subsection 2.2, following the same format. The OU numbers for the PRSs are provided in parentheses in the headings for the exerpts. Bolded or underlined text indicates revisions of the original text. The revisions have been added to elaborate on or further clarify the original text. Complete references for the work plans and addenda are provided at the end of this chapter. These documents and the EPA review letters and notices of deficiency (NODs) cited at the ends of the excerpts are located at the Records-Processing Facility and the Laboratory's Reading Room.

2.1 HSWA Units Recommended for No Further Action

2.1.1 NFA Criterion 1. The PRS has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents, radionuclides, or other CERCLA hazardous substances. Also falling under Criterion 1 are those PRSs that cannot be located or may have been found never to have existed, duplicate PRSs, and those that are investigated with another PRS.

2.1.1.1 PRS 1-001(h)—Septic Tank 142 (OU 1078)

Septic Tank 142 served Building 118, which was a latrine for Zia Company townsite shop personnel responsible for maintaining townsite residences. The Zia Company consisted of two units: one was responsible for support of operations inside the TA-1 security fence (these occurred in R Building), and the other Zia unit was responsible for the townsite facilities and

residences. The latter operations occurred in the warehouses listed below, and these personnel would have been the predominant users of the latrine.

The septic tank was located at the east end of TA-1 near what is currently the U.S. West Communications building. The latrine and septic tank operated from approximately 1946 until they were abandoned in place in April 1953 or earlier. The area around the latrine was occupied by Zia Company service buildings (primarily warehouses), all of which were located outside the TA-1 security fence. Building 118 was totally separated from all the warehouse buildings in the area. Zia Company warehouses in the area stored materials used to maintain townsite facilities and residences only and included the following: Warehouse 23 - furniture repair shop and storage; Warehouse 22 - carpenter shop and storage; Warehouse 21 - paint shop and storage; Warehouse 7 - materials storage; Warehouse 15 - materials storage; Warehouse 13 - materials storage; and Warehouse 16 - materials storage. No laboratories or other operations where hazardous or radioactive materials may have been used were attached to Building 118 or to Septic Tank 142. The tank was removed by Ahlquist et al. in 1976. At that time, the tank and its sludge were tested for radioactivity, and none was detected. Therefore, the tank was removed and disposed at Area G in TA-54, the disposal site which received all septic tanks from TA-1, whether they were contaminated or not.

Based on the use of Septic Tank 142 exclusively for domestic sewage, the lack of contamination sources, and the removal of the tank in 1976, no further action is proposed for this septic tank.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.1.2 PRS No. 1-001(j)—Septic Tank 149 (OU 1078)

Septic Tank 149 was incorrectly identified in the SWMU Report as a septic tank located between U and W Buildings. This discrepancy was probably the result of Laboratory engineering drawings that did not always use different structure designations for tanks and septic tanks. The "septic tank" was later determined to be Tank 149, a steel aboveground tank for the storage of a dielectric gas used in the Van de Graaff generators located in W Building. This determination resulted from review of engineering drawings, discussions with a former site worker and Laboratory Director, and review of an area photograph, all referenced below. As portions of TA-1 were being decommissioned in 1953, Tank 149 was relocated in February 1953 to the Van de Graaff building in TA-3, thereby confirming its integrity.

Based on the misidentification of Tank 149, its exclusive use for storage of a dielectric gas, and the lack of contamination sources and releases, no further action is proposed for this tank.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.1.3 PRS 1-001(l)—Septic Tank 269 (OU 1078)

Septic Tank 269 served S-1 Building from the mid-1940s until the building was removed in August 1954. S-1 Building was located outside the TA-1 security fence in the northeastern portion of TA-1. Text in the RFI Work Plan identifying S-1 Building as a service garage for vehicles was based on a misinterpretation of a site photograph. As a result, assumptions were made about the potential release of small quantities of petroleum products to the septic tank. After reviewing the same photograph, and recently found floor plans for the building, it is clear that S-1 Building was not a vehicle service garage and that it in fact housed a shop and stockroom. Several former TA-1 staff interviewed during the 50th Reunion activities on June 9, 1993, thought that plumbers worked in S-1 Building. Septic Tank 269 is clearly shown as serving only the bathroom located in the southwest corner of the building.

The tank itself consisted of three 3-foot sections of vitrified clay pipe with a diameter of 2 feet, and was not large enough to handle large quantities of waste. Ahlquist et al. reported that one set of records reviewed prior to the mid-1970s remediation effort indicated that Septic Tank 269 had been removed, but there was no record of removal in another set of records (see Attachment F).

The Ahlquist et al. report lists the date of removal of Septic Tank 269 as August 1954. The Index Sheet for the Structure Location Plan for TA-1 (ENG-R2405, Attachment G) shows that Septic Tank 269 was removed in 1954. Engineering drawing ENG-R3621 (Attachment G) provides the utility distribution of TA-1, and shows that Septic Tank 269 is no longer present. Because of its location outside the TA-1 security fence (where laboratory radioactive and hazardous constituents were not typically handled), and the fact that it served a men's room, Ahlquist et al. made no attempt to find the tank during the mid-1970s remediation effort. The area where the tank was located has been the site of considerable surface disturbance and backfilling, and is presently located in a parking lot between several commercial buildings.

Based on the use of Septic Tank 269 exclusively for domestic sewage, and the lack of contamination sources and releases, no further action is proposed for this tank.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.1.4 PRS 3-009(c)—Surface Disposal (OU 1114)

SWMU 3-009(c) is described as a "disturbed area" south of Sigma Building, TA-3-66, on the north rim of Mortandad Canyon. The Release Site Database, Task 20, Record 56, states that "The area appears to be only soil fill " (LANL 1989, 17-017). The only visible debris is four concrete cylinders approximately 10 in. in diameter and 16 in. long that appear to be footings for metal posts removed during relocation of the nearby security fence (Griggs 1992, 17-752). There is no archival or visible indication of TAL, TCL, or radioactive material discarded in this area.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.5 PRS 3-009(e)—Surface Disposal (OU 1114)

SWMU 3-009(e) is a fill area located at the head of Mortandad Canyon southeast of the CMR Building, TA-3-29. The face of the fill is about 35 ft high and contains some concrete and cured asphalt debris. The fill was created between 1950 and 1952 during site preparation prior to building the present TA-3. LASL aerial photo 32074, dated March 23, 1955, shows the 250 x 300-ft area level and bare. Aerial photo 1372MCSUSAF #284 (1958) shows a parking lot built adjacent to the northwest corner of the level area. Subsequent LASL aerial photos 24-155 (1974), EG&G 1285 (1977), RN79042021 (1979), RN83-124-50 (1983), and RN86048014 (1986) show the area unused and the face of the fill undisturbed and covered with low shrubs. LANL/ER aerial photo of September 29, 1991 #5-27 shows a new parking lot constructed over most of the level area and the old parking lot at the northwest corner converted to a construction-staging area. The face of the fill is still undisturbed. By the time of Environmental Restoration surveys in spring of 1992, the area at the top of the fill was being used as a construction yard for parking-lot and road-reconfiguration projects.

The SWMU Report describes SWMU 3-009(e) as follows: "A soil fill area is located in Upper Mortandad Canyon, southeast of TA-3-29" (LANL 1990, 0145). Based on the aerial photo history, this fill was created during site preparation for TA-3. It has no history as a disposal area and was left undisturbed until construction activities began between 1986 and 1991. Cured asphalt and concrete debris are a result of the new construction.

In 1974, an accidental release of radioactive liquid from the TA-3 industrial drain line flowed through a storm drain into upper Mortandad Canyon. A small earthen dam was built about 35 ft upstream from SWMU 3-009(e). The dam contained the spill; about 142 cu ft of contaminated soil was removed and the area cleaned to levels less than 25 pCi/g. In 1991, preconstruction Environmental Restoration interim action investigations indicated that all contaminants were below action levels (Fresquez 1991, 17-297). The dam site is now filled for an access road crossing Mortandad Canyon to the TA-3-66 complex. This spill is not part of SWMU 3-009(e) nor is it a separate PRS. It is mentioned here as an adjunct to the history of the site.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.6 PRS 3-009(f)—Surface Disposal (OU 1114)

SWMU 3-009(f) is mentioned in the SWMU Report as follows: "There have been reports of a landfill north of TA-3-16" (LANL 1990, 0145). The only feature in the area is a narrow strip of rocks along the roadside north of the Van de Graaff Building. A 1954 LASL aerial photograph (32074) indicates that the road was originally constructed in 1951 when the Van de Graaff facility was built. The area below the road is grassy and slopes from the road southwest to the rim of Twomile Canyon. Aerial photographs indicate that a fill area was never located between this road fill and TA-3-16. An aerial photograph of 1984 (RN 84-188103) shows fresh rock fill along the road. The PRS appears to be road fill with a few concrete pieces visible along the bank. There is no indication of TAL, TCL, or radioactive material in the fill or elsewhere in the area.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.7 PRS 3-009(g)—Surface Disposal (OU 1114)

SWMU 3-009(g) is an unimproved storage and disposal area located approximately one-quarter mile south of Twomile Canyon Bridge. The PRS is located in a level, 100 x 300-ft excavated area surrounded by trees. Placement of the site and 1979 aerial photographs indicate that this was a borrow pit for material to build the Twomile Canyon Bridge, which actually is a causeway of fill that spans the canyon. The PRS contains two large piles of broken tuff and soil, one pile on the west and the other on the east. A few concrete and asphalt chunks are in the piles. Tractor-trailers are parked at the site. There is no evidence of TAL, TCL, or radioactive material in this area, nor has the area a history as a release site.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.8 PRS 3-018—Septic System (OU 1114)

SWMU 3-018 is a cesspool installed in 1952 during the original construction of the Van de Graaff Building, TA-3-16, as illustrated in Engineering Drawings ENG-C 1890 and ENG-C 7400. The cesspool is located directly south of the building and was constructed of concrete with a height of approximately 5 ft and a manhole approximately 4 ft in diameter. It is currently located beneath an asphalt parking lot.

The cesspool was never connected to sewer lines or acid waste lines. When the facility began operating in 1952, the building was connected to both a sanitary sewer line to the TA-3 waste water treatment plant and an industrial waste line to TA-45 and subsequently to TA-50, as illustrated by Engineering Drawings ENG-C 7384, ENG-C 7389, ENG-C 7398, and ENG-C 7400. The Laboratory and Pan Am History Book maintained by ENG-7 indicates that the cesspool was never used and was subsequently filled with soil and abandoned in place in July 1964 (LASL no date, 0402). Therefore, no releases occurred.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.9 PRS 8-003(b)—Septic System (OU 1157)

Septic Tank TA-8-64 was installed in early 1949 to serve an office building, TA-8-9, also known as Building 11 and AW-9. These alternate designations caused some confusion on the part of the authors of the SWMU Report (LANL 1990, 0145), and the association of this septic tank with Building AW-11 in that report is in error. At the time that the tank was installed, Building AW-9 (TA-8-9) was located north of the now-abandoned TA-8 bunkers. In December 1949, the building was moved onto the Gun-Firing Site to make way for the construction of Building TA-8-21. Septic tank TA-8-64 was abandoned in place at that time. According to H. Milton Peek, who worked in Building AW-9 in 1950, it then housed offices for administrative and drafting work (Jones 1992, 12-0105). The original engineering drawings do not show any floor drains or sinks that would be associated with photo-processing or other activities involving the use of chemicals and, in fact,

indicate that, from the time the building was erected until the time it was moved, it only housed offices (LASL 1964, 12-0106).

Inactive Septic Tank TA-8-64, PRS 8-003(b), is recommended for NFA under Criterion 1. There is no reason to believe that hazardous or radioactive constituents ever existed in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.10 PRS 8-003(c)—Septic System (OU 1157)

Septic Tank TA-8-67 was installed in early 1950 to serve office Building AW-9 (TA-8-9) when it was moved onto the TA-8 Gun-Firing Site. Early in 1968, the tank was filled with tamped earth and abandoned in place. Although a 28 September 1971 memo, from the Engineering Department to F. C. Sander, (LASL 1971, 12-0107) suggests the possibility of chemical and radionuclide contamination, there are two reasons for believing that such contamination could not have occurred. First, it is known that, in 1950, AW-9 was used solely as an office building, and there is no indication that it was later modified to house any other activities. Second, an 18 April 1967 memo from Barnett to Russo (Barnett 1967, 12-0013) indicates that the alleged contamination of Septic Tank TA-8-67 (if any) would have been due to "small amounts of uranium which were used in TA-8-1 and which might have reached the septic system," There is no indication of any connection between Building TA-8-1 and Septic Tank TA-8-67 and, even if there were any connection, the septic tank is uphill from Building TA-8-1.

Inactive Septic Tank TA-8-67, PRS 8-003(c), is recommended for NFA under Criterion 1. There is no reason to believe that hazardous or radioactive constituents ever existed in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.11 PRS 8-006(b)—Landfill (OU 1157)

Potential Release Site 8-006(b) is described in the SWMU Report (LANL 1990, 0145) as a disposal area near Building TA-8-21. There is a material disposal area known as MDA Q [PRS 8-005(a)] located south of Building TA-8-21. The postulated existence of a second burial site arises from an erroneous Weston interpretation of a 14 June 1956 memo from G. H. Tenney to D. D. Meyer (Tenney 1956, 12-0009). Tenney's memo was a response to an 11 June 1956 inquiry from Meyer about the location of contaminated waste burial grounds (Tenney 1956, 12-0009). Tenney replied that, although he knew of no official burial ground at TA-8, he had a distinct recollection that the construction crews who built the modern TA-8 buildings in 1949 and 1950 discovered buried material that they then immediately covered up. Tenney then stated that, having checked with people who had worked at the site during the war, the crews had stumbled upon "junk collected by the old gun crew located at Anchor Ranch." He enclosed a map with his memo, indicating the location of the burial to the best of his knowledge. An interpretation of this information is that the construction crew had partially uncovered MDA Q [PRS 8-006(a)]. Unfortunately, Tenney's map has disappeared and that fact, coupled with the following subtleties about construction of TA-8 (GT Site), led to a misinterpretation by Weston.

The critical point about the construction of GT Site is that, although, as Weston states, the new buildings were erected north of the Gun-Firing Site and, hence, north of MDA Q, in December 1949 wartime office Building AW-9 (TA-8-9) was moved onto the Gun-Firing Site in order to make way for new Building TA-8-21. As part of the move, a parking lot was cleared to the south and west of the new location, and a vehicle track was created that bypassed the abandoned bunker area and the old access road that climbed up from the bunker area onto the Gun-Firing Site. Both the new parking lot and, in particular, the new vehicle track passed very close to MDA Q. A LANL photograph (see Figure 7-1), taken in 1950, shows the relevant features of the area (LASL 1950, 12-0104). Currently, four inert projectiles can be seen on the surface at MDA Q. A memo from W. C. Courtright (Courtright 1964, 12-0008) refers to two exposed projectiles. These are either evidence of disturbance by the construction crews or evidence of the prior 1947 excavation to remove one of the buried guns, evidence which was then noticed by the 1949-50 crews. In

Courtright's draft memo detailing the prior day's visit to the site with Thurman Hargett to locate the gun-site burial, there is no suggestion of a second burial. Hargett worked at the site during World War II and was present at the time the guns were buried, and it seems likely that he would have mentioned a second burial of "junk collected by the old gun crew" had there been one (Courtright 1964, 12-0008). It is concluded that PRS 8-006 (a) and 8-006(b) are both MDA Q.

The possible disposal area near TA-8-21, PRS 8-006(b), is recommended for NFA under Criterion 1. **PRS 8-006(b)** is the same as PRS 8-006(a).

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.12 PRS 9-003(c)—Electric Manhole (OU 1157)

Structure TA-9-85 was an electrical control manhole built in 1943. The SWMU Report misidentified this as a sump (LANL 1990, 0145). The manhole was made of brick and served Building TA-9-14, a laboratory. The manhole was abandoned in place in September 1962. In 1965, the top was removed 24 in. below the surface and the structure was filled and covered with dirt. During a utility upgrade in 1985, this structure was found and removed.

Electric Control Manhole TA-9-85, PRS 9-003(c), is recommended for NFA under Criterion 1. The PRS is no longer in place, and was never used as a site for the generation, treatment, or disposal of hazardous or radioactive wastes.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.13 PRS 9-003(f)—Settling Tank (OU 1157)

Structure TA-9-199 was a settling tank, not a sump, as was stated in the SWMU Report (LANL 1990, 0145). It was installed in 1950 to serve Building TA-9-51 and was removed when the building was modified later that year (LASL 1950, 12-0113). The SWMU Report also incorrectly states that this structure served Building TA-9-2. Building TA-9-51 is an environmental test chamber containing ovens in which sealed weapons' components are cycled. There is no laboratory work or hazardous waste generated in this building. The use and operations in this building have not changed since its construction. Therefore, this settling tank would not have been contaminated (Harris 1993, 12-0140).

Settling Tank TA-9-199, PRS 9-003(f), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated or disposed of in this settling tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.14 PRS 9-005(b)—Septic System (OU 1157)

Structure TA-9-105 is an inactive, 1500-gal. reinforced-concrete sanitary septic tank (11-ft long by 3.5-ft wide by 4-ft deep) that received only sanitary liquid waste from Buildings TA-9-21, -28, and -29 (LASL 1957, 12-0115). **Building 9-21 contains high-explosives laboratories and offices. Building 9-28 is a machine shop. Building 9-29 is used for chemical equipment storage. These buildings were purposely designed so that the toilets and sanitary sinks are located in the nonhazardous area (out of the industrial work places) of the facility. Each laboratory with the potential to generate hazardous waste has its own industrial waste drain and/or sink for the disposal of hazardous materials. The septic tank** was constructed in August 1952 and abandoned in place in 5 December 1988. This septic tank has a concrete slab cover and is located northwest of Building TA-9-32. There are no documented records of contamination of this tank. Figure 7-2 shows that this tank was connected only to sanitary lines from these buildings.

Inactive sanitary Septic Tank TA-9-105, PRS 9-005(b), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.15 PRS 9-005(c)—Septic System (OU 1157)

Structure TA-9-106, a 750-gal. inactive septic tank estimated to be 5-ft wide by 8-ft long by 3-ft 6-in. deep, is located slightly north of Building TA-9-40 on the other side of a fence and near a road that runs behind and around the present TA-9 (LASL 1956, 12-0073). It was installed in August 1952 and abandoned in place in December 1988 (LANL 1944 to present, 12-0003). This septic tank received only sanitary waste from Buildings TA-9-21, -33, -34, -37, and -38. **Building 9-21 contains high-explosives laboratories and offices. Buildings 9-33, -34, -37, and -38 are used for high-explosives processing. These buildings were purposely designed so that the toilets and sanitary sinks are located in the nonhazardous area (out of the industrial work places) of the facility. Each laboratory with the potential to generate hazardous waste has its own industrial waste drain and/or sink for the disposal of hazardous materials.** Figure 7-2 shows that this tank was connected only to sanitary waste lines from these buildings.

Inactive sanitary Septic Tank, TA-9-16, is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.16 PRS 9-005(e)—Septic System (OU 1157)

Structure TA-9-107, a reinforced-concrete 750-gal. sanitary septic tank, estimated to be 5-ft wide by 8-ft long by 3-ft 6-in. deep, was installed in 1952 (Santa Fe Engineering 1991, 12-0019) and became inactive in December 1992 when the site-wide sanitary wastewater systems consolidation line was installed. This tank received only sanitary waste from Buildings TA-9-41, -42, -43, -45, and -46. **Building 9-41 is a comfort station. Buildings 9-42, -43, -45, and -46 are high-explosives processing buildings. These buildings were purposely designed so that the toilets and sanitary sinks are located in the nonhazardous area (out of the industrial work places) of the facility. Each laboratory with the potential to generate hazardous waste has its own industrial waste drain and/or sink for the disposal of hazardous materials.** Water from this tank flowed to NPDES outfall LA-03. Figure 7-3 shows that this tank was connected only to sanitary waste lines from these buildings (LASL 1956, 12-0073; LASL 1956, 12-0109; LASL 1956, 12-0110; LASL 1975, 12-0111; LASL 1973, 12-0057; LANL 1991, 12-0112).

Sanitary Septic Tank TA-9-107, PRS 9-005(e), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.17 PRS 9-005(f)—Septic System (OU 1157)

Structure TA-9-108, a reinforced-concrete 750-gal. sanitary septic tank, estimated to be 5-ft wide by 8-ft long by 3-ft 6-in. deep, was installed in 1952 (Santa Fe Engineering 1991, 12-0019) and became inactive in December 1992 when the site-wide sanitary wastewater systems consolidation line was installed. This tank received only sanitary waste from Building TA-9-48, **which is a high explosives machining building. This building was purposely designed so that the toilets and sanitary sinks are located in the nonhazardous area (out of the industrial work places) of the facility. Each laboratory with the potential to**

generate hazardous waste has its own industrial waste drain and/or sink for the disposal of hazardous materials. Figure 7-4 shows that this tank was connected only to sanitary waste lines from these buildings.

Sanitary Septic Tank TA-9-109, PRS 9-005(f), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.18 PRS 9-005(g)—Septic System (OU 1157)

Structure TA-9-109, a reinforced-concrete 750-gal. sanitary septic tank, estimated to be 5-ft wide by 8-ft long by 3-ft 6-in. deep, was installed in 1952. It is located northeast of Building TA-9-50 (LASL 1956, 12-0123) and receives only sanitary waste from that building. Outflow from this tank formerly combined with the industrial sewer from Building TA-9-50 at manhole TA-9-145. However, the sanitary drain line was rerouted in 1989 to bypass the industrial waste line, and it now flows to unpermitted buried outfall LA-05 (Santa Fe Engineering 1991, 12-0019). Figure 7-4 shows that this tank was connected only to sanitary waste lines from this building.

Sanitary Septic Tank TA-9-109, PRS 9-005(g), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.19 PRS 9-005(h)—Septic System (OU 1157)

Structure TA-9-110, a 320-gal. steel prefabricated septic tank, was installed in 1951 and became inactive in December 1992 when the site-wide sanitary wastewater systems consolidation line was installed. It is located northeast of TA-9-51 (LASL 1956, 12-0141). This tank received only sanitary waste from Building TA-9-51. Building TA-9-51 is an environmental test chamber containing ovens in which sealed weapons' components were cycled. These operations did not produce any laboratory work or hazardous waste. The building is currently used only for storage of nonhazardous materials. Figure 7-4 shows that this tank was connected only to sanitary waste lines from this building.

Sanitary Septic Tank TA-9-110, PRS 9-005(h), is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this septic tank.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.20 PRS 9-007—Basket Pit (OU 1157)

Structure TA-9-202 is an inactive basket pit, made of reinforced concrete with a hinged steel lid 4-ft 3-in. long by 3-ft 8-in. wide by 7-ft deep. It was built in 1952 as a replacement to a settling tank [TA-9-199, PRS 9-003(f)], which was removed to accommodate the addition of a bathroom to Building TA-9-51. The building, an environmental test chamber, houses ovens in which weapons' components were cycled at various temperatures. Operations in this building did not employ hazardous materials and would not have created liquid or solid hazardous waste. The use and operation of this building did not change since its construction, other than the fact that it is currently used only for storage of nonhazardous materials. This structure would not have the potential for contamination (LANL 1944 to present, 12-0003; Harris 1993, 12-0140).

Basket Pit TA-9-202, PRS 9-007, is recommended for NFA under Criterion 1. There is no reason to believe hazardous or radioactive wastes were ever generated, treated, or disposed of in this structure.

EPA Review: OU 1157 NOD dated 4/5/94.

2.1.1.21 PRS 10-006—Burn Site (OU 1079)

Various burning operations were conducted at TA-10, primarily during the 1950s and early 1960s. In 1955, ^{238}U solutions were deposited on plywood and burned for unknown reasons (H-Division 1955, 0673). The fate of the ash, which emanated 20 mR/h of gamma radiation on contact, is also unknown. In 1956, a Laboratory work order (LASL 1956, 06-0024) was issued to initiate construction of a burning pit for combustibles. The ash was to be disposed of in MDA-C at TA-50. While the creation of this pit coincided with the excavation and burning of waste from the surface disposal site (SWMU 10-005) in 1957, it is not definitely known what the burn pit was used for, or where it was located (Figure 4.1-1) (LANL 1990, 0145).

As decommissioning of TA-10 began, many of the structures were burned either in place, or in other locations at the site such as the stream channel and open areas around the site. Overall, the records concerning open burning activities are incomplete, and details concerning location, type of combustible material, and disposition of the ash are largely unknown. Based upon reported radiation doses of a few mR/h in the ash, it is likely that contaminated ash was transported to either MDA-C at TA-50 or MDA-G at TA-54 (LANL 1990, 0145).

Contaminants associated with open burning activities would have included uranium (natural and depleted), ^{90}Sr, and high explosives. The quantities of contaminants associated with the open burning operations is unknown (LANL 1990, 0145).

SWMU 10-006 is proposed for no further action as an individual unit because **its location is unknown and** any residual surface contamination from SWMU 10-006 will be encountered during the sampling activities associated with the Firing Sites SWMU Aggregate (see Chapter 5).

The location of this PRS is not shown on a map in Appendix A of this document.

EPA Review: OU 1079 NOD dated 10/5/92.

2.1.1.22 PRS 11-007—Surface Disposal (OU 1082)

SWMU 11-007 is a surface disposal area containing large blocks of concrete and some road-building debris. This surface disposal area is at the head of the small canyon drainage that borders the south side of the major developed area at TA-11. At this location the drainage has been filled for the access road. On the east-facing slope of this fill, several 12 x 12 ft x 12 in. concrete blocks, which first served as targets for the air gun in TA-11-24, have been laid for erosion control. These blocks and their use are described in Subsection 5.14.1.1. Other concrete scraps are scattered about; to the south, several sections of concrete culvert are scattered near the road. Some road-building debris (asphalt, rebar, gravel, etc.) is also in evidence in the immediate area.

Over the years, as the concrete targets from the air gun facility were used for erosion control, it became expedient to use other concrete debris for erosion control in the immediate area. The small amount of road-building debris has likewise accumulated over the years (Griffin 1992, 15-11-052).

SWMU 11-007 is recommended for NFA and delisting from the SWMU Report and the HSWA Module because there is no reasonable basis for characterization of the site based on considerations of human health and environmental risk, community concern, Laboratory operations, and value of information (LANL 1992, 0768).

The history of the air gun facility targets associated with this SWMU is found in Subsection 5.14.1.1. Based on interviews with site personnel and a review of post-test photographs, no evidence has been found that the outer envelope of any of the test devices containing hazardous materials launched into these targets was breached. Therefore, the targets associated with this SWMU contain no hazardous or radioactive constituents as a result of mortar impacts. No

archival information has been found that would indicate that the road-building debris contains RCRA hazardous or radioactive constituents.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.23 PRS 11-011(c)—Industrial or Sanitary Wastewater Treatment (OU 1082)

SWMU 11-011(c), described as the outfall from the boiler steam vent pipe associated with building TA-11-24. The SWMU is the area where condensates may collect on the asphalt adjacent to the building. TA-11-24 formerly housed the air-gun facility and is currently used as an office and light machine shop. Possible contaminants from this SWMU are unknown. Current treatment chemicals for water in boilers do not produce hazardous constituents; however, it is not known if past water treatments might have produced surface contamination on the asphalt.

The steam condensate that may soak into the asphalt presents no current human health or environmental risk.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.24 PRS 12-002—Open Burning Ground (OU 1085)

SWMU 12-002 is an area used on one occasion to burn scrap HE. It encompassed a few square feet at most and was located in the roadbed just east of TA-12-4. In October 1962, during a survey of GMX-7 property at TA-12 workers found a can containing about one-half pound of HE. The material was covered with dry excelsior, doused with kerosene, and destroyed by burning. After burning, the fire department wet down the area to prevent any fire from spreading to adjacent flammable materials (Anderson 1962, 21-0012).

Based on available documentation, SWMU 12-002 was the site of a onetime event and was not a waste disposal area. Since 1962 the roadbed has been regraded many times redistributing and diluting any combustion byproducts. The area immediately surrounding the area was the site of many years of uncontained explosives testing and this area will be investigated under SWMU 12-001(b) in Subsection 5.1 of this work plan. Any possible contamination arising from SWMU 12-002 will be commingled with and indistinguishable from contamination associated with SWMU 12-001(b).

EPA Review: OU 1085 NOD dated 9/2/94.

2.1.1.25 PRS 15-004(i)—Detonation Ground (OU 1086)

A single report (Linschitz 1944, 0790) has been located that states that two test blasts were conducted in 1944 in "The Gulch," approximately 1 mile below R-site at an unknown precise location. Because the location of the site **could not be found, based on available information,** and only two tests were performed we recommend NFA.

The location of this PRS is not shown on the map of TA-15 in Appendix A of this document.

EPA Review: OU 1086 NOD dated 7/26/94.

2.1.1.26 PRS 16-005(o)—Septic System (OU 1082)

SWMU 16-005(o) is identified as a septic tank in the Laboratory Technical Area Structure Location Plan as TA-16-420. According to the 1990 SWMU Report it was removed in 1962 (LANL 1990, 0145). However, the Laboratory Technical Area Structure Location Plan indicates that it was abandoned in 1962, Engineering drawing ENG-R 5111, sheet 2 of 7. Joe Bustos of the Field Operations Group (ENG-5) has stated that while trenching in the area in the late 1980s, a section of clay sewer pipe was unearthed (Palmer 1992, 15-16-373). This septic tank, which served

building TA-16-101 (a guard house), had a drain field associated with it, Engineering drawing ENG-C 2674. There is no information that suggests handling or storage of hazardous substances in TA-16-101.

There is no documentation to indicate that this septic tank received anything other than sanitary waste from its associated guard house and, in the absence of hazardous constituents, there is no potential for a release to the environment. Septic tanks that manage only domestic waste are excluded from being SWMUs under 40 CFR 261.4(a)(1)(i).

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.27 PRS 16-006(b)—Septic System (OU 1082)

SWMU 16-006(b) is a reinforced concrete septic tank with a capacity of 380 gal., designated TA-16-178, and built in 1952. This septic tank serves TA-16-210, an inactive guard house. The tank overflows to a leach field. Its NMED number is LA-39 (LANL 1990, 0145).

There is no documentation that would indicate that this septic tank received anything other than sanitary waste from its associated guard house.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.28 PRS 16-006(f)—Septic System (OU 1082)

This SWMU is a 1 000 gal. septic tank, TA-16-1153, that was constructed in 1987 (LANL 1990, 0145). This tank was installed to service new toilet facilities on the first floor of TA-16-370. An absorption field with a double branch, each approximately 45 ft long, is located 20 ft southwest of the septic tank. The tank is connected to a lavatory and water closets (Palmer 1992, 15-16-373).

This septic tank was placed in service after March 1987, receives only sanitary waste, and has been covered under the authority of the Clean Water Act.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.1.29 PRS 21-012(a)—Dry Well (OU 1106)

The SWMU Report (LANL 1990) states that "there is a dry well inside the steam plant (TA-21-357) that receives liquids from the steam plant."

The former steam plant (TA-21-9) was constructed in 1945 and was removed in 1985. A dry well associated with this steam plant is identified as SWMU 21-012(b) and is addressed in Sec. 17.4. The new steam plant, TA-21-357, was put on line in 1985.

Two site visits on May 11, 1990, and August 8, 1990 (Roy F. Weston 1990a, 1990b), verified that there is not a dry well associated with the new steam plant.

It is recommended that no further action be taken in the investigation of a dry well at the new steam plant because no dry well exists.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

2.1.1.30 PRS 22-011—Disposal Pit (OU 1111)

The SWMU Report (LANL 1990, 0145) describes 22-011 as a pit prepared in 1946 for the disposal of discarded objects and shapes and associates this pit with a disturbed area south of Building TA-22-1. The disturbed area is posted with signs warning of explosives. The documentation referred to for this SWMU in the SWMU Report appears to be a 1946 memorandum from Norris Bradbury (Bradbury 1946, 19-0048). The memorandum refers to TD

Site, but our best current information is that all disposal pits on Two-Mile Mesa were dug in the area of Material Disposal Area (MDA) F (Section 5.1) (Van Vessem 1992,19-0045). Therefore, sampling of the area referred to in the memo is described in Section 5.1.

A disturbed area south of Building TA-22-1, which has signs warning of explosives, was located during a field survey (Rofer and Guthrie 1992, 19-0006). W. H. Meyers (1993, 19-0102) states that this pit was filled with gravel to filter solid explosives from contaminated wash water from Room 108 of TA-22-1 and to allow the water to percolate into the soil. This drain outfall from Room 108 is listed in the SWMU Report as 22-015(d) (LANL 1990, 0145). Therefore, sampling of the disturbed area is described under 22-015(d) (Section 5.3).

The documentation of a disposal pit is being investigated under MDA F [7-001(a), Section 5.1], and the disturbed area south of Building TA-22-1 is being investigated under 22-015(d) (Section 5.3). No independent documentation or features exist for 22-011. **Because the exact location of this site is not known and it is expected to be included under the investigation of PRS 7-001(a) or PRS 22-015(d), PRS 22-011 is proposed for NFA.**

EPA Review: OU 1111 NOD dated 5/20/94.

2.1.1.31 PRS 33-004(e)—Seepage Pit (OU 1122)

In the 1980s an L-shaped transportable building (TA-33-169) was located just south of water tank TA-33-28, and across the west road from TA-33-114 at Main Site. TA-33-169 was managed as office space. The drain exited TA-33-169 at the northwest corner to septic tank TA-33-161, approximately 20 ft west of the building. Overflow went to a seepage pit, TA-33-188, approximately 20 ft west of the tank. No known hazardous material was used in the building (LANL 1990, 0145).

TA-33-169 and the septic tank were removed in 1989. The location is now cleared and cleaned. The seepage pit is covered.

A seepage pit is all that remains of this septic system. Discharges to the septic system were only sanitary wastes from an office building where no known hazardous materials were used. No corrective action is required.

EPA Review: OU 1122 RFI review letter dated 7/15/93.

2.1.1.32 PRS 33-004(f)—Septic System (OU 1122)

This septic tank is located near TA-33-23 along the west road south of Main Site. The "Solid Waste Management Units Report" (LANL 1990, 0145) states that SWMU 33-004(f) is: "The tank north of the building, TA-33-23, was constructed in 1987. It consists of 1000-gallon fiberglass septic tank that serves a residential trailer, TA-33-181. The tank is pumped and has no discharges to the environment. This system has EID Permit Number LA-124."

The "Solid Waste Management Units Report" (LANL 1990, 0145) states SWMU 33-004(n) "TA-33-206 (33-004[n]) was installed in 1987 and has a capacity of 1,000 gallons. It serves a trailer and discharges to a holding tank."

It is assumed by Operable Unit 1122 project team members that these SWMUs are the same septic tank.

The residential trailer, now removed, once housed a 24-hour attendant for Group EES-1, Geology and Geochemistry. The septic tank is pumped and has no discharges to the environment.

Discharges to this septic tank were sanitary wastes from a residential trailer. No hazardous materials are present. No corrective action is required.

EPA Review: OU 1122 RFI review letter dated 7/15/93.

2.1.1.33 PRS 35-003(i)—Wastewater Treatment Facility (OU 1129)

SWMU No. 35-003(i) is the site of two steel surge tanks that were used to accommodate gas pressure excursions from the gas laser facility in TA-35-29 (see Section 3.3.2.1). Helium and nitrogen gases were the only substances handled by these tanks. In 1974 the tanks were moved from inside TA-35-27. (The surge tanks were never associated with the wastewater treatment plant, which is implied by their designation as a subunit of SWMU No. 35-003.) This SWMU is recommended for NFA because the tanks never handled RCRA hazardous wastes or radioactive wastes.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.1.34 PRSs 36-003(c)—Septic System (OU 1130)

This septic system was built in 1985 to receive sanitary waste from guard station TA-36-70. The system comprises a 500-gal. reinforced-concrete septic tank (TA-36-69) and a 628-cu-ft seepage pit (LANL 1985, 13-0061; NMED 1989, 13-0088); these and the guard station are connected by pipes (LANL 1990, 0145; NMED 1989, 13-0088).

Environmental monitoring apparently has not been performed on this septic system. However, contaminants of concern are not likely to be present. The guard station is not directly associated with activities that generate hazardous waste, and it has never been used as a laboratory (NMED 1989, 13-0088). There is no evidence that this septic system has ever received anything other than sanitary waste.

EPA Review: OU 1130 RFI review letter dated 9/23/94.

2.1.1.35 PRS 39-003—Incinerator (OU 1132)

From about 1955 to 1977 a small incinerator (3 ft x 3 ft x 4 ft high) was located between the south wall of Building TA-39-2 and the south perimeter security fence. It was used primarily to burn office waste, and there is no indication that it was ever used for disposal of hazardous materials. In 1977, when an addition was built onto the south end of Building TA-39-2, necessitating relocation of the perimeter security fence about 60 ft south of the addition, the incinerator was removed and buried in one of the TA-39 landfill pits. (Francis [1992, 18-0004] believes that it was probably buried in Pit 2 of 39-001(b), which was in use in 1977.) The SWMU Report (LANL 1990, 0145) states that the incinerator was checked for radioactivity at that time and found to be clean; and that the incinerator site was cleaned. The area between the new addition and the relocated fence—which includes the former incinerator site—was backfilled to a new elevation several feet higher. The new access road was capped with 4 in. of gravel.

There is no evidence that hazardous materials were disposed of in the incinerator. If any were, however, checking for the presence of residual contamination would be very expensive and difficult, because the exact location of the former incinerator site is not known and several feet of compacted fill now cover the entire area, prohibiting extensive field screening. Moreover, it should be noted that because the incinerator itself is buried in the TA-39 landfill, the RFI investigations for the landfills will include the incinerator.

EPA Review: OU 1132 RFI review letter dated 9/22/94.

2.1.1.36 PRS 39-006(b)—Septic System (OU 1132)

This active septic system serves Building TA-39-111 (the Pulsed Power Assembly Building) and was part of the original construction of the building in 1989. It is located northwest of TA-39-111 and consists of a 1000-gal. reinforced-concrete septic tank (TA-39-132), a distribution box, and a leach field. This system was designed for sanitary waste disposal only.

The only potentially hazardous materials used in Building TA-39-111 have been small quantities of acetone and ethyl alcohol, used to wipe clean various components. Administrative procedures for disposal of hazardous materials in proper containers have been in place since the building's inception (the waste would consist almost exclusively of paper or cloth wipes used with the solvents). Dumping of hazardous liquids down drains is forbidden, and signs stating this appear above all sinks. It is highly unlikely that anything other than sanitary waste has been disposed of in this system.

EPA Review: OU 1132 RFI review letter dated 9/22/94.

2.1.1.37 PRS 40-001(a)—Septic System (OU 1111)

The SWMU Report lists a septic tank, TA-40-22, but it also indicates that no structure number appears on original drawings (LANL 1990, 0145). A septic tank or this structure number are not listed on specific drawings of septic tanks. Drawing ENG-C-12275 (LASL 1949, 19-0118) shows a pipe from the TA-40-1 roof drains going to the area where the structure sign for TA-40-22 is now located. Drawings ENG-C-12174 (LASL 1949, 19-0120) and ENG-C-12179 (LASL 1949, 19-0119) also show vitreous clay pipe, apparently fed by the roof drains, going to this area. Field reconnaissance found a drain pipe but no septic system (Rofer and Guthrie 1992, 19-0006). Recent drain tracing indicates that this outlet is fed only by drains from the roof of Building TA-40-1 (Santa Fe Engineering 1991, 19-0109).

We have found no evidence in the archives or in the field that a septic system ever existed in this area.

EPA Review: OU 1111 NOD dated 5/20/94.

2.1.1.38 PRS 46-004(a)—Waste line (OU 1140)

SWMU 46-004(a) is a drain line from Building TA-46-31. This line is determined to be a part of SWMU 46-004(c), a dry well system described in Chapter 5, Subsection 5.1.1 of this work plan. Rationale for recommendation of NFA for the redundant SWMU 46-004(a) relies on the sampling plan to detect all potential contaminants of concern (PCOCs) developed for SWMU 46-004(c).

EPA Review: OU 1140 NOD dated 7/15/94.

2.1.1.39 PRS 46-008(c)—Storage Area (OU 1140)

SWMU 46-008(c) is identified in the SWMU Report as a site where barrels, cans, and drums are located "in a fenced area" (LANL 1990, 0145). The SWMU location is not provided in the maps supplied with either the 1988 or the 1990 SWMU Report. There is no explicit reference in the RCRA facility assessment (RFA) to such a storage area. A diligent search of TA-46 aerial photographs failed to target a candidate area for this SWMU. Since 1986, drum storage areas at TA-46 have been consolidated. In addition, TA-46 has undergone programmatic changes resulting in relocation of fences throughout the site. It is now impossible for the technical team to locate this site from the description.

Despite the efforts of the TA-46 technical team, verification of SWMU 46-008(c) is impossible from the available information. In addition, an extensive sampling plan, described in Chapter 5, Subsections 5.3.4 and 5.4.4 of this work plan, has been developed for surface SWMUs and outfalls, and a broad surface area is addressed in relation to stack emissions described in

Subsection 5.6. This sampling will detect any contaminants remaining from this storage area. If contaminants are detected, either they will be incorporated into the data base for an identified PRS or a new PRS will be created.

The location of this PRS is not shown on the map of TA-46 in Appendix A of this document.

EPA Review: OU 1140 NOD dated 7/15/94.

2.1.1.40 PRSs 52-002(b and f)—Septic Systems (OU 1129)

SWMU Nos. 52-002(b and f) are active septic systems that were installed in the early 1980s and have served only office buildings in which hazardous or radioactive materials have never been managed (see Section 3.6.2.1). These SWMUs are recommended for NFA because no contaminant source term exists and there is no reason to suspect releases of COCs from these septic systems.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.1.41 PRSs 52-002(c and d)—Septic Systems (OU 1129)

SWMU Nos. 52-002(c and d) represent septic systems that apparently were planned but never constructed (see Section 3.6.2.1). These SWMUs are recommended for NFA because the septic systems do not exist and were never used for the management of hazardous or radioactive materials.

The locations of these PRSs are not shown on the map of TA-52 in Appendix A of this document.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.1.42 PRS 54-001(c)—Storage Area (OU 1148)

When the SWMU Report (LANL 1990, 0145) was written, a portable, inflatable temporary berm with a 20-ft by 12-ft by 5-ft steel tank inside of it was proposed to be used to store waste oil and hazardous materials at MDA L. It was designated SWMU 54-001(c). The tank was never used to store waste oil or hazardous materials; it collected only rain water. The inflatable berm and tank have been removed (Weston, 1992 08-0044).

EPA Review: OU 1148 NOD dated 4/23/93.

2.1.1.43 PRS 54-007(b)—Septic System (OU 1148)

A septic tank (TA-54-28) is listed in the SWMU Report (LANL 1990, 0145) as a septic system and seepage pit that has a State of New Mexico license number LA-61. The SWMU [54-007(b)] is a septic system that is scheduled for removal in 1992. The septic system served office building TA-54-22. The building and the septic system are located outside of MDA G, approximately 300 ft west of the perimeter fence. Documentation of scheduled removal date is pending.

EPA Review: OU 1148 NOD dated 4/23/93.

2.1.1.44 PRS 54-013(a)—Decontamination Facility (OU 1148)

At the time the SWMU Report was written, the Laboratory planned to build a truck washing pit at TA-54 West, and it was designated as SWMU 54-013(a) in anticipation of its construction. Plans to build the facility were subsequently canceled, and no such area exists (IT Corporation 1992, 08-0021).

EPA Review: OU 1148 NOD dated 4/23/93.

2.1.1.45 PRS 55-009—Sumps and Tanks (OU 1129)

SWMU No. 55-009 is an inactive monitoring sump located outside TA-55-6 (see Section 3.7.2.1). The sump was used to monitor sanitary waste liquids from TA-55 for radioactivity before they are discharged to the TA-35 sewage treatment lagoons. Radioactivity was never detected, but the waste stream may have contained small quantities of hazardous wastes. The sump is no longer used and has been abandoned in place. This SWMU is recommended for NFA because hazardous wastes were not generated, treated, stored, or disposed of at the site and radioactivity was never detected in the waste stream.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.1.46 PRS 60-002—Storage Area (OU 1114)

SWMU 60-002 consists of three storage areas on Sigma Mesa. [This PRS is designated 3-009(h) in the Module VIII listing.] The first area is approximately 900 ft southeast of TA-60-2 and lies on the north side of the unimproved road traversing the level mesa. The 200 x 300 ft PRS is a crescent-shaped area containing piles of materials such as large concrete blocks, piles of cured asphalt chunks, cables, and other similar types. A large mound, mainly soil with some asphalt and concrete, extends to the north. This mound appears to be debris from leveling the TA-60-2 construction site.

The second area on Sigma Mesa is 120 ft northwest of TA-60-29. It is a 50-ft diameter mound of soil approximately 10 ft high containing soil, rocks, concrete fence post supports, pipe, metal strips, wood, and similar debris. The materials appear to have been accumulated from several activities including fence relocation, mesa leveling, and decommissioning of a temporary water line that supported drilling at the east end of Sigma Mesa. There is no evidence of TAL, TCL, or radioactive material. The site is inactive.

The third area is on the south side of the unimproved road about 100 ft west of a drilling-mud pit near the end of the mesa [see SWMU 60-005(b)]. Approximately 50 piles of broken cured-asphalt chunks were deposited here by Johnson Controls in anticipation of recycling. The asphalt is scheduled to be moved to the Los Alamos municipal landfill for disposal (Martell 1992, 17-750). **This SWMU is recommended for NFA because hazardous wastes were not generated, stored, or disposed of at the site and radioactivity is not present.**

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.1.47 PRS 61-004(a)—Septic Tank (OU 1114)

SWMU 61-004(a) is reported to be an inactive septic system located northeast of the radio repair shop, TA-61-23 (LANL 1990, 0145). The existence of the system is questionable, but would logically be on the downslope, southeast side. The septic system is not included on Laboratory engineering drawings for TA-61-23 (formerly TA-3-282). There is no record of a septic system being removed or abandoned in place at this location. What were initially believed to be septic system clean-out pipes located south of the building were pipes installed to clean an adjacent sewer line when tree roots interfered with operation of that line (LANL 1992, 17-747).

Building TA-61-23, currently known as the radio repair shop, was occupied by Motorola in the 1950s for radio repairs. During the 1960s, small models of various Laboratory operations were assembled out of wood and plastic for inclusion in museum exhibits and project planning. Since the early 1970s, radio and audio repair operations have been performed in the building (LANL 1992, 17-732). **PRS 61-004(a) is recommended for NFA because** there is no record of hazardous or radioactive material being used at TA-61-23.

EPA Review: OU 1114 RFI review letter dated 1/7/94.

2.1.2 NFA Criterion 2. No release has occurred from the PRS to the environment.

Definition of release: "Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment.

2.1.2.1 PRS 3-039(a)—Silver Recovery Unit (OU 1114)

SWMU 3-039(a) **is the site of** photographic processing **operations that began in 1957 or 1958 at TA-3-43. In 1979** silver recovery units which capture silver in resin-containing canisters **began being used.** Rinse water circulating through the processor discharges to the sanitary sewer system through a floor drain. Laboratory analyses indicate that typical effluent flow contains about 0.29 mg/L of silver (LANL 1992, 17-727). The SAL for silver is 240 mg/L. The recovery canisters **were** collected by the Waste Management Group (EM-7) and either stored or processed at TA-54. **The only photographic processing operations remaining at TA-3-43 are microfilming operations. The silver recovery unit continued being used there until 1994 when it was removed and the fixer solution, which contains silver, began being disposed of as hazardous waste.** Several types of silver recovery units have been used at the Laboratory. A newer type, used at the Laboratory since 1989, deposits silver onto a metal drum by means of an electrolytic reaction. Older units collected silver onto a "steel wool" material which was sent to Albuquerque for recovery.

Prior to 1979, waste solutions from these PRSs were discharged to the sanitary sewer system serving the TA-3 waste water treatment facility, SWMUs 3-014(a-z), discussed in Subsection 5.5. Drain lines that transported silver wastes will be addressed during decontamination and decommissioning (D&D) of each building. The TAL element, silver, is now collected and removed from active sites. **This** recovery unit **is** recommended for NFA because the only hazardous material, silver, had no credible pathway to the environment except via the waste water treatment plant. Subsections 5.5.1.1.2 and 5.5.1.1.4 discuss monitoring of the effluent from lines in TA-3 into the sewer system, and states that no RCRA-required analytes over detection limits were found. Consequently, it is believed that **this** PRS poses no threat.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.2.2 PRS 8-007—Silver Recovery Unit (OU 1157)

Building TA-8-22 was built in 1950 to house several x-ray machines that are used to radiograph various items. Radiography is used to produce an image on a radiosensitive surface, such as photographic film, by radiation such as x-rays. After an object is radiographed, the silver halide film is sent through a developer and then a fixer solution (Harris 1993, 12-0001). Some excess silver, in the form of soluble salts, was left behind in the fixer solution and was reclaimed in resin recovery beds that were located inside the building. **Discharge from the recovery beds went to the outfall at PRS 8-009(d), which is being sampled under this work plan.** The silver recovery beds, which consisted of 5-gal. plastic cans filled with iron/carbon fibers (steel wool), are no longer in place. The cans were fitted with inlet and outlet valves for receiving and dispelling the fixer solution. Fixer solution flowed from the film bath through the steel wool where the silver replaced some of the iron and remained behind. The delivered fixer solution then flowed into a dedicated drain and then into EPA-permitted outfall 06A074. The fixer solution is currently being discharged directly to the outfall [PRS 8-009(d)], which is monitored bimonthly by the Laboratory's Environmental Surveillance Group (EM-8) and has been continuously in compliance. A visual inspection of the area where the beds were located showed no signs of spills or leaks, and none have been recorded.

The silver recovery resin bed, PRS 8-007, is recommended for NFA under Criterion 2. The beds no longer exist, and there were no reported spills or leaks associated with the plastic cans used for storage of the silver.

EPA Review: OU 1157 RFI review letter dated 10/7/94.

2.1.2.3 PRS 35-004(e)—Container Storage Area (OU 1129)

SWMU Nos. 35-004(d and e) are container storage areas located inside buildings throughout TA-35 (see Section 3.3.2.1). In August 1991 a site inspection revealed no evidence of spills. These SWMUs are recommended for NFA because even if spills have occurred at these storage areas, site design precludes COCs from migrating to the environment.

EPA Review: OU 1129 review letter dated 11/3/93.

2.1.2.4 PRS 35-011(a)—Underground Storage Tank (OU 1129)

SWMU No. 35-011(a) consists of two active aboveground fiberglass tanks located in the basement of TA-35-2 (see Section 3.3.2.1). The tanks receive potentially contaminated wastewater. The tanks and the surrounding floor were inspected in August 1991, and no evidence of spills was observed. If a spill were to occur, the wastewater would flow into the floor drains that are tied in to the sanitary waste lagoons east of TA-35 (SWMU No. 35-010). This SWMU is recommended for NFA because a direct release to the environment is precluded by containment within the basement or by diversion through floor drains to the sanitary-waste lagoons.

EPA Review: OU 1129 review letter dated 11/3/93.

2.1.2.5 PRSs 35-013(a, b, c, and d)—Sumps (OU 1129)

SWMU Nos. 35-013(a through d) consist of several sumps, drains, and catch basins that are located within TA-35-2, TA-35-27, TA-35-85, and TA-35-213 (see Section 3.3.2.1). The sumps and drains receive contaminated sanitary and industrial wastewater. Catch basins included in SWMU No. 35-013(a) and one pair of floor drains included in SWMU No. 35-013(d) reportedly have never been used. Potential contamination cannot be adequately addressed without removing the floors, and no potential exists for this contamination to migrate to the environment. Any contamination beneath the buildings is considered to be under institutional control until the buildings undergo D&D. These SWMUs are recommended for NFA because site design precludes COCs from migrating to the environment.

EPA Review: OU 1129 review letter dated 11/3/93.

2.1.2.6 PRSs 48-004 (a, b, and c)—Sumps and Tanks (OU 1129)

SWMU Nos. 48-004(a, b, and c) consist of several sumps and tanks that were abandoned in place in TA-48-1. The sumps and tanks are considered to be under institutional control. No mechanism for release of COCs to the environment can be determined. Archival information documents no spills or releases. The sumps and tanks have been inspected, and no physical evidence exists of releases or external contamination. These SWMUs are recommended for NFA because site design and conditions preclude COCs from migrating to the environment.

EPA Review: OU 1129 review letter dated 11/3/93.

2.1.2.7 PRS 54-015(h)—Storage Area (OU 1148)

A drum storage area, SWMU 54-015(h), is located in TA-54-38. The Nondestructive Testing Facility (NDT) at TA-54-38 was opened for a brief period of time in 1990, but operations have been discontinued until safety assessment requirements are met (LANL 1991, 08-0025). The facility

will handle containerized TRU wastes that contain transuranic radionuclides at >100 nCi/g of waste and may contain mixed waste constituents. Because the facility is used for the NDT of TRU wastes that are already containerized, releases to the environment are considered unlikely. Discussions with Laboratory personnel indicate that no releases have occurred during the brief period since the facility was completed (IT Corporation 1992, 08-0021).

EPA Review: OU 1148 NOD dated 4/23/93.

2.1.2.8 PRS 55-008—Sumps and Tanks (OU 1129)

SWMU No. 55-008 consists of several sumps and tanks that are located in the basement of TA-55-4 (see Section 3.7.2.1). If COCs have seeped through the floors of the building, contamination cannot be adequately addressed without removing the floors, and no potential exists for this contamination to migrate. Any contamination beneath the building is considered to be under institutional control and will be addressed when the building undergoes D&D. This SWMU is recommended for NFA because even if primary releases from the sumps and tanks would occur, site design would preclude COCs from migrating to the environment.

EPA Review: OU 1129 review letter dated 11/3/93.

2.1.3 NFA Criterion 3. The PRS is regulated or closed under a different authority which addresses corrective action.

2.1.3.1 PRS 16-010(g)—Wastewater Treatment Facility (OU 1082)

SWMU 16-010(g) is a carbon filter/treatment unit, TA-16-363 (previously designated as structure TA-16-228). This unit was constructed in 1988 to treat waste water draining from the pressure filter tanks (TA-16-401 and TA-16-406). The drainage from the tanks enters the filtering system through a common drain line that originates at a manhole located approximately 75 ft north of building TA-16-363. The waste water is filtered and monitored before discharge from national pollutant discharge elimination system (NPDES) Outfall 05A055 located on the southeast side of the building.

SWMU 16-010(g) is recommended for delisting from the SWMU Report and the HSWA Module because it was built after 1987 and has always operated under an NPDES permit (LANL 1992, 0768).

SWMU 16-010(g) was built in 1988 and operates under an NPDES permit (LANL, 1990, 0145).

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.3.2 PRSs 16-012(d, i, j, l, m, n, p, t, u, and x)—Satellite Storage (OU 1082)

Satellite, less-than-ninety-day, and interim storage areas listed in Table 6-4 are active units that are currently regulated under 40 CFR 262, Standards Applicable to Generators of Hazardous Waste. The Laboratory conducts training classes for the operation of these areas. It also inspects and has institutional controls governing the closure of these units. The New Mexico Environment Department (NMED) also performs annual inspections.

SWMUs 16-012(d, i, j, l, m, n, t ,u ,x), 16-012(p), and 16-012(a2) are recommended for NFA and delisting from the SWMU Report and the HSWA Module [SWMU 16-012(a2) is not on the HSWA Module] because they are either satellite storage areas, less-than-ninety-day storage areas, or interim storage areas [SWMU 16-012(a2)] (LANL 1992, 0768).

If a release occurred at one of these areas, it would be cleaned up immediately in accordance with the Laboratory's Contingency Plan, Spill Prevention Countermeasures and Control Plan, and/or administrative requirements. Because any releases will be cleaned up immediately, these units do not have the potential to become historical release sites. Therefore, these areas will continue to be regulated under 3004(a) of the RCRA and not 3004(u) of the Hazardous and Solid Waste Amendments.

EPA Review: OU 1082 NOD dated 7/13/94.

2.1.4 NFA Criterion 4. The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants of concern are either not present or are present in concentrations that would pose an acceptable level of risk under the projected future land use. The determination of acceptable risk and future land use has considered stakeholder involvement.

2.1.4.1 PRS 0-005—Landfill (OU 1071)

SWMU 0-005 (Mortandad Canyon "Landfill") is located on land owned by the Department of Energy (DOE). It is listed in Table A of the Hazardous and Solid Waste Amendments (HSWA) Module of Los Alamos National Laboratory's (the Laboratory's) permit to operate under the Resource Conservation and Recovery Act.

A small fenced area designated as SWMU 0-005 (Mortandad Canyon "Landfill") is located approximately 1.6 km west of the Los Alamos/Santa Fe County line (Figure 3-6). The fenced area is posted with signs that indicate the presence of radioactivity.

The 117-m^2 enclosure, which is located on alluvial sediments, was used to examine the transport of radioactive particulates from the ground surface to plants as a result of rain splash (LANL 1990, 0145). Because tomato plants were used as the recipients of the particulates, the waste site was referred to as a garden. These studies occurred between 1976 and the early 1980s. Soil from within the fenced area was put in 55-gal. drums and transported to TA-50, where four radionuclides, all with half-lives less than 115 days [^{182}Ta (half-life 115 days), ^{141}Ce (33 days), ^{124}Sb (60 days), and ^{46}Sc (84 days)] were mixed into the soil by rotating the drums. The drums of contaminated soil were then taken back to the study plot, and the soil was returned to the enclosure.

Several of the empty drums were stacked inside and one outside the fence (Aldrich 1991, 05-0154). These drums were still located at the fence line in 1986 at the time of the CEARP field survey but were removed before the CEARP team visited the site in November 1988 (DOE 1987, 05-0035; LANL 1990, 0145; Aldrich 1991, 05-0154).

Because the radionuclide transport experiments were discontinued in the early 1980s, the species involved have long since decayed to negligible levels. The fenced area, therefore, does not contain any hazardous materials that would pose a threat to human health or the environment. Additionally, the drums reported at the study plot in the 1980s were empty drums that had been used to transport soil containing the same four radionuclides and therefore did not release anything that could pose a hazard today. It is recommended that no further action be taken at this site.

EPA Review: OU 1071 NOD dated 10/16/92.

2.1.4.2 PRS 1-001(i)—Septic Tank 143 (OU 1078)

Septic Tank 143 served the former J-Division Annex, also known as Warehouse 3, until the building was removed in 1965. Records show that the tank was removed in 1965. Engineering drawings clearly show a 4-inch vitrified clay pipe (VCP) coming off the west side of the J-Division Annex/Warehouse 3 to Septic Tank 143, located on the canyon rim to the north (see Attachments B, C, and D). It is clear from these drawings that the TU Building was not served by Septic Tank 143, as was indicated in the RFI Work Plan for OU 1078. (TU Building was served by Septic Tank 268.) J-Division Annex was one of the main warehouses in the General Warehouse area formerly located in the western portion of TA-1, and was the only warehouse in this area served by a sanitary system of any kind. The tank itself had a 475-gallon capacity.

Septic Tank 143 was shown as abandoned on a 1964 engineering drawing, but later documents indicate that it was removed in October 1965. During the remediation effort of the mid-1970s,

Ahlquist et al. removed an unidentified, uncontaminated septic tank during the excavation of uranium-contaminated soil in the vicinity of the TU and TU-1 Buildings. The metal septic tank measured 1.22 meters high by 1.22 meters in diameter, and contained sludge which was found to be free of radioactive contamination. The tank was in the approximate map location of Septic Tank 143.

Although Septic Tank 143 was on the perimeter of an extensive soil removal area, the source of contamination in the soil was not the septic tank. TU Building was used for processing natural uranium, and was found to be moderately contaminated at the time of its demolition in July 1964. Drums of tuballoy (enriched uranium turnings) were stored outside of TU Building. The drums would spontaneously ignite. Fire control procedures consisted of flooding the drums until they overflowed, causing contamination of surrounding soils. During the remediation effort of the mid-1970s, approximately 3,700 cubic yards of soil were removed from this area, and follow-up samples were collected to confirm the cleanup.

The area where the tank was located has been the site of considerable surface disturbance and backfilling, and is presently the location of townhouses and associated common areas.

Based on the use of Septic Tank 143 exclusively for domestic sewage, the apparent removal of the tank in 1975 as part of the TU Building excavation, and the lack of radioactivity in the tank sludge, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.4.3 PRS 1-001(k)—Septic Tank 268 (OU 1078)

Septic Tank 268 served the former TU Building from August 1945 until the building was removed in 1964. Records show that the tank was removed in 1964 along with the TU Building. (TU Building was removed on July 27, 1964; however, the May 21, 1964 drawing shows both the TU Building and the abandoned Septic Tank 268, which may have led to the confusion.) Engineering drawings (Attachments B and C) clearly show the location of the tank with respect to the TU Building, and an 8-inch vitrified clay pipe (VCP) coming off the northwest corner of the TU Building to Septic Tank 268, located near the canyon rim to the northwest. A sanitary line is also evident from the tank to the outfall, which was located in the drainage of a side canyon of Los Alamos Canyon.

The engineering drawing in Attachment B shows the sanitary waste line coming from the area of the shower room (see Attachment D). The janitor's closet was located south of the shower room, and both are typical sources of sanitary wastewater.

TU Building was used for processing natural uranium, and was found to be moderately contaminated at the time of its demolition in July 1964. Drums of tuballoy (natural uranium) were stored outside of TU Building. The drums would spontaneously ignite. Fire control procedures included flooding the drums with water until they overflowed, causing contamination of surrounding soils. During the remediation effort of the mid-1970s, Ahlquist et al. removed approximately 3,700 cubic yards of soil from the TU Building area because of the sewer lines, steam lines, storm sewers, and other pipe sections, and the radioactivity discovered in the initial survey. All potentially contaminated areas were excavated to a minimum depth of 2 feet, while areas with sewer lines (septic lines) were excavated to a depth of 5 feet. The two veins of uranium contamination were found at depths of 4 and 10 feet, respectively. Additionally, Ahlquist et al. did find Septic Tank 143 in this excavation; therefore, if Septic Tank 268 were still in place, it would have been found. Follow-up soil samples were collected and analyzed to confirm the cleanup (see Attachment E). The septic tank was not found during this cleanup, although its location was included in the area excavated. The TU Building excavation was determined to be decontaminated when no phoswich-detectable activity remained (except for the two known veins of uranium contamination), and when 30 of 31 samples exhibited gross alpha activity of less than 20 pCi/g, with the only positive sample being 40 pCi/g (see Attachment E).

The area where the tank was located has been the site of considerable surface disturbance and backfilling, and is presently the location of townhouses and associated common areas.

Based on the use of Septic Tank 268 exclusively for domestic sewage, the documented removal of the tank in 1964 along with the TU Building, and the subsequent remediation of the entire TU Building area which encompassed the former tank location, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.4.4 PRS 1-001(n)—Septic Tank 276 (OU 1078)

Septic Tank 276 served Theta Building from 1944 to 1946. This building was a warehouse with no known history of radioactivity, and was removed in 1946. The tank was listed in one record as having been abandoned in 1946, in a later record as having been removed, and in another as not being located during the TA-1 demolition of the 1960s. (Engineering drawings provided in Attachments D, E, and F indicate that the tank was most likely abandoned in place). Because of this uncertainty, Ahlquist et al. made a concerted effort to find the tank during the remediation effort of the mid-1970s (see Attachment E). The tank was found approximately four meters east of the mapped location. The tank was cast-in-place concrete with a cast-iron inlet line. No contamination was found in or around the tank and line. The tank and pipe were disposed at MDA G, in accordance with the standard practice for septic tank removal from TA-1.

The area where the tank was located has been the site of considerable surface disturbance, and is presently located on the Mike Harris Property, where access agreements will not be obtained.

Based on the use of Septic Tank 276 exclusively for domestic sewage, the lack of contamination sources and releases, and the removal of the tank in 1977, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.1.4.5 PRS 3-009(b)—Surface Disposal (OU 1114)

SWMU 3-009(b) is described as follows: "Concrete and building debris are located in an approximately 1/2 acre fill area adjacent to the South Mesa fire station (TA-3-41)" (LANL 1990, 0145). Repeated searches did not located such debris adjacent to the building. The reference may be to a surface disposal area northeast of the South Mesa Fire Station, TA-3-41. The PRS is bounded on the east by the parking lot at the corner of Diamond Drive and West Jemez Road. On the west is a 3-ft-deep drainage ditch draining to the north. North of the PRS is the 300-ft-deep south wall of Los Alamos Canyon. The PRS consists of a pile of soil, natural tuff rubble, some road-construction debris including concrete blocks and asphalt chunks, plus a few pieces of PVC piping. The disposal site is about 100 x 200 ft and 5 ft high. A narrow band of rubble containing concrete curbing chunks is located at the north edge of the parking lot.

The SWMU Report speculates that this disposal area may contain decommissioned buildings from the original TA-3. The SWMU Report is incorrect. LASL aerial photo 32074, dated 1955, shows that no debris pile was located at the PRS after site preparation activities removed the original buildings for construction of the present TA-3 complex. Subsequent aerial photographs through 1986 show that a succession of shrubs, trees, and grass filled the area. The pile that is now the SWMU appears in 1991 aerial photographs as a new feature. Its placement indicates that the pile resulted from site preparation to construct the adjacent parking lot.

The PRS is currently under consideration as the site of a parking lot for a Laboratory industrial partnership center. As part of an ERIA survey, three composite soil surface samples consisting of

five subsamples were collected and analyzed for TAL elements. All concentrations were below EPA action levels (Fresquez 1993, 17-787), which are equivalent to Laboratory SALs.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.4.6 PRS 3-012(a)—One-Time Spill (OU 1114)

SWMU 3-012(a) is located approximately 100 ft southeast of the Sigma Building on the north slope of Mortandad Canyon. A temporary holding dam was built, then destroyed after an operational release. The site has since been disturbed by construction of the Laboratory sanitary waste system consolidation pipeline.

The release was not a spill but a controlled operational pipe-cleaning procedure. In the fall of 1972, the recirculating chilled water system at Sigma Building was scheduled for treatment with ammonium bifluoride to remove scale deposits. A week or so before the cleaning, a small earthen dam was built to form a holding pond to catch effluent resulting from flushing the system (Hoard 1992, 17-650). The operation proceeded as planned. Lime (calcium oxide) was put in the pond at the time of release to form fluorite (calcium fluoride), an inert, unreactive, insoluble compound. After the liquid evaporated or soaked into the soil, the dam was destroyed.

Analysis of waste water in the pond on November 8, 1972, indicated a concentration of 20 ppm fluoride in 5 000 gal. of effluent, a total of 0.83 lb of fluoride (Garde 1972, 17-175). This amount spread over a 50 ft square area 6 in. deep would increase the fluoride content of the soil only by 5 ppm. Concentrations of fluoride in normal soils in the United States range from 100 to 400 ppm (Pendias and Pendias 1984, 17-760). Fluoride in soil is not a TAL material (see Appendix J of the IWP) (LANL 1992, 0768). Lime effectively nullified the corrosive effects of dissolved fluoride (Fragment memo 1972, 17-651). Ammonium ion, the second product of the degradation of ammonium bifluoride, is a common fertilizer.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.4.7 PRS 3-020(a)—Disposal Pit (OU 1114)

SWMU 3-020(a) was described as a covered pit on the east side of TA-3-287 containing a buried 32-gal. drum filled with gravel and fitted with a screen. "There is a pipe running into the pit with the screen and pebbles below it. The area around the pit appeared oily. An employee indicated that the pit was used to discharge liquids from the air compressor system at TA-3-287. This pit has been inactive since 1989, when the drum, pebbles, and surrounding soil was [sic] removed by the user group" (LANL 1990, 0145). Further investigation by Laboratory personnel indicates that the pit was actually on the north side of the building, rather than the east. The pit was used to bleed condensate and seal oil leakage from the air compressor tank. The air intake for the compressor system was outside the building, so the only substances in the bleed-off were water and seal oil. The air compressor uses a pure petroleum-based (no detergent or additives) oil as the seal fluid. This oil is equivalent to a 30W viscosity-type motor oil. The pit was removed by Johnson Controls in 1990 (Laboratory construction project No. 12545-03). In 1991 the area was graded and paved as part of a parking lot constructed between TA-3-105 and TA-3-287.

Substances deposited by the following operations included only oils and water. No activity associated with these pits used TAL, TCL, or radioactive materials or products. These pits present no threats to on-site or off-site workers, the public, or the environment.

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.4.8 PRS 3-043(e)—Underground Tank (OU 1114)

SWMU 3-043(e) was TA-3-36-1, an underground tank located at the service station, TA-3-36. The tank was removed under RCRA regulations in 1989 and cut up for scrap (McInroy 1989, 17-630). **All work was performed in compliance with New Mexico UST regulations.**

EPA Review: OU 1114 NOD dated 10/29/93.

2.1.4.9 PRS 35-002—Material Disposal Area (OU 1129)

SWMU No. 35-002, MDA-X, is the site of the Los Alamos Power Reactor Experiment No. 2 (LAPRE-II) reactor, which was buried in place after it was decommissioned in 1959 (see Section 3.3.2.1). This site was remediated in 1991 as an Environmental Restoration Interim Action (ERIA). This SWMU is recommended for NFA because all reactor-related equipment and contaminated soils were removed. Confirmatory soil sampling was conducted to verify the removal of all COCs including radionuclides and hazardous chemicals.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.4.10 PRS 35-003(p)—Wastewater Treatment Facility (OU 1129)

SWMU No. 35-003(p) is the site of the former air filter building (TA-35-7). This building was decontaminated and decommissioned in 1979 and 1980. The building housed air-filtering equipment for treating contaminated air from the original laboratory/office building (TA-35-2) that was completed in 1951. The removal of the building along with the material associated with the phase separator pit has been requested. This SWMU is recommended for NFA because the building previously underwent D&D activity, no evidence of a release exists following the 1980 D&D activity, and the building is currently scheduled for D&D and removal.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.4.11 PRS 35-006—Surface Impoundment (OU 1129)

SWMU No. 35-006 is an unlined waste-oil impoundment that was replaced by AOC No. 35-005(a) in 1985. (Because SWMU No. 35-006 and AOC No. 35-005[a] occupied the same site, all remedial actions undertaken for AOC No. 35-005[a] also pertain to SWMU No. 35-006.) In 1989 the contents of both impoundments, the concrete liners, and contaminated soils were removed; and the excavated pits were backfilled following verbal approval of a closure plan by the New Mexico Environment Department (NMED). However, post-closure verification samples collected in 1990 revealed that above regulatory threshold concentrations of total petroleum hydrocarbons (TPH) were present in surface samples at AOC No. 35-005(a); and above regulatory threshold concentrations of volatile organic compounds (VOCs), TPH, and alpha activity were present in the subsurface at AOC No. 35-005(b). In January 1992 final closure reports for these sites were submitted to the Environmental Protection Agency (EPA) and the NMED. This SWMU and these AOCs are currently awaiting resolution of an NMED notice of deficiency regarding sampling sufficiency.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.4.12 PRSs 52-001(a, b, and c)—Uthrex Equipment (OU 1129)

SWMU Nos. 52-001(a through c) consist of equipment that was associated with the filter and cooling systems of the UHTREX reactor (see Section 3.6.2.1). These sites underwent D&D in 1989 and were decontaminated to levels below DOE guidelines for radioactivity. No process-related source for nonradioactive hazardous constituents exists at these sites; therefore, no hazardous contaminant source term exists. These SWMUs are recommended for NFA

because the sites have undergone remediation and COCs are not present at levels that pose a threat to human health or the environment.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.4.13 PRS 52-001(d)—UHTREX Equipment (OU 1129)

SWMU No. 52-001(d) is the site of contaminated equipment inside TA-52-1 that was associated with the UHTREX reactor (see Sections 3.6.2.1 and 3.6.2.4). The contaminated equipment was removed in 1989, and the building was decontaminated to levels below DOE guidelines for radioactivity. This SWMU is recommended for NFA because the site has undergone remediation and COCs are not present at levels that pose a threat to human health or the environment. In addition, site conditions preclude a release of COCs to the environment.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.1.4.14 PRS 59-001—Septic System (OU 1114)

SWMU 59-001 was a septic system, now removed, that included a tank with two compartments and a drain field (previously referred to as structure TA-3-239 and later as TA-59-04) that was part of the original design and construction of TA-59-1. The system was disconnected in 1979 when the building was tied into a sanitary sewer line as illustrated in Engineering Drawing ENG-C 43442. Since construction in 1964, an industrial waste line has transported laboratory wastes from the building to the treatment facility located at TA-50, indicating that the septic system handled only sanitary waste. A photograph processing laboratory was located on the first floor of Building TA-59-1 and wastes from this lab may have been discharged to the septic system, although there are no documented instances of such discharges. The photograph processor has been used sparingly since its initial operation in 1977. Sludge was removed with the septic tank in 1979 (LANL 1991, 17-727).

Engineering Drawing ENG-C 43442 illustrates excavation plans for the parking lot and road to the Occupational Health Office Building, TA-59-3, including locations of the septic tank and associated drain field. The drawing indicates that the septic tank and associated manhole were removed and the excavation filled with earth from the adjacent embankment. The drawing also indicates that approximately 7 ft of overburden was excavated at the site of the drain field. There are no records of EM-8 sampling and analyzing sludge or surrounding soils when the tank was removed in 1979 (LANL 1992, 17-693). Additionally, there are no records documenting where soil from the parking lot and road excavation was taken, but it is assumed that it was used as fill under TA-59-3 and associated structures. The area presently consists of an asphalt-paved parking lot 10 ft to 15 ft below the grade of the former septic tank.

EPA Review: OU 1114 NOD dated 10/29/93.

2.2 Areas of Concern Recommended for No Further Action

2.2.1 NFA Criterion 1. The PRS has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents, radionuclides, or other CERCLA hazardous substances. Also falling under Criterion 1 are those PRSs that cannot be located or may have been found never to have existed, duplicate PRSs, and those that are investigated with another PRS.

2.2.1.1 PRS 0-008—Surface Disposal Site (OU 1071)

SWMU 0-008 (North Mesa Surface Disposal area) is located on Los Alamos County land.

The North Mesa Surface Disposal Area (SWMU 0-008) is a small, open disposal area containing building debris that appears to have come from a demolished weather hutment called "Point Weather." The hutment, which was located on Kwage Mesa (an eastern arm of North Mesa) either near the eastern end of the mesa or approximately 1.25 mi east of the rodeo grounds (Figure 3-4) (Aldrich 1991, 05-0153), housed a generator and served as a weather station used in connection with shots fired at Bayo Canyon (IT Corporation 1991, 05-0149; DOE 1987, 0264). No Laboratory testing activities were conducted on North Mesa or Kwage Mesa.

Available site information indicates that SWMU 0-008 does not pose a threat to human health or the environment for the following reasons:

- no known laboratory activities occurred at the site,
- the generator was probably removed before the building was demolished in accordance with standard operating procedures for demolition,
- the debris observed by the CEARP field survey team in 1986 is consistent with the type of debris that would be expected from demolition of the weather station hutment, and
- no hazardous materials were used at the weather hutment (Aldrich 1991, 05-0153).

It is therefore recommended that no further action be taken.

EPA Concurrence: OU 1071 NOD dated 10/16/92.

2.2.1.2 PRS 0-010(a)—Surface Disposal Site (OU 1071)

SWMU 0-010 is a surface disposal area located on DOE property.

A surface disposal area (SWMU 0-010) was observed on a small mesa west of Materials Disposal Area B (MDA B), TA-21 (Figure 3-2) (LANL 1990, 0145). According to the SWMU report (LANL 1990, 0145), the area prompted suspicion because "an area in which soil was piled above the natural contour" was observed and a 1948 aerial photograph "appeared" to have trenches on it. Later examinations of the aerial photograph taken in 1946 (Los Alamos County circa 1946, 05-0147) and of another photograph taken in 1946 (Sandia Laboratories 1946, 05-0167) show that the features described in the SWMU report are not trenches but an open storage area in which supplies were stockpiled in rows. Photogrammetric analysis of the stockpiles shows that the supplies consist of 10-ft-long objects that are not drums. In the early 1950s, the small mesa became a playground for a trailer court (Limbaugh Engineering & Aerial Surveys, Inc., 1963, 05-0177).

Because it is concluded that the objects in the photographs are rows of supplies stored in containers that are considerably larger than 55-gal. drums and because these containers have no

characteristics that indicate that they are associated with potentially hazardous materials, it is recommended that no further action be taken at this site.

The location of this PRS is not shown on the map of TA-0 in Appendix A of this document.

EPA Concurrence: OU 1071 NOD dated 10/16/92. Typographical error in the NOD listed the PRS as 0-010.

2.2.1.3 PRS 0-025—Landfill (OU 1071)

SWMU 0-025 is the Tank Mesa "Landfill."

Tank Mesa "Landfill" (SWMU 0-025) is listed as a possible waste disposal area (LANL 1990, 0145). Tank Mesa, currently known as Otowi Mesa on topographic maps (LASL circa 1950, 05-0062; USGS 1984, 05-0126), is located between Barrancas and Bayo canyons at the east end of Barranca Mesa (Figure 3-4). It is a residential area.

Examination of Engineering File 1757 (Russo, no date, 05-0178), which was evaluated by the CEARP, did not reveal documentation that Tank Mesa was the site of a landfill. The only reference to Tank Mesa occurred in what appeared to be reminder notes from a meeting. Although the notes include a few references to disposal areas, the words "Tank Mesa" are distinctly separate from those references. There is no reason to assume that Tank Mesa is associated with the disposal areas. The archive search uncovered no additional information on this SWMU.

Re-examination of available site information shows that the reference cited for a landfill on Tank/Otowi Mesa in the SWMU report (LANL 1990, 0145) contains no documentation that such a site ever existed. Based on this information and on the fact that Otowi Mesa is an extremely narrow arm of Barranca Mesa, whose surface consists of undisturbed bedrock, there is no reason to suspect that a landfill exists on the mesa. Therefore, it is recommended that no further action be taken at the site.

EPA Concurrence: OU 1071 RFI review letter dated 1/6/93.

2.2.1.4 PRS 0-026—Landfill (OU 1071)

SWMU 0-026 is the Gun Mount "Landfill" on North Mesa. The location of this SWMU is unknown.

According to the SWMU report (LANL 1990, 0145) The Gun Mount "Landfill" (SWMU 0-026) consists of a buried gun mount, radio poles, hutments, and similar miscellaneous structures. A CEARP interviewee reported that a uranium-contaminated gun mount, approximately 5 by 5 by 6 ft, was disposed on North Mesa in 1946 (DOE 1987, 0264). The bolt-down, Navy-style gun mount was reportedly used at the Laboratory (DOE 1987, 0264). It is difficult to determine whether the gun mount was actually disposed on North Mesa. Interviews with another former Laboratory employee and a Zia employee who had knowledge of such operations indicate that the gun mount is probably not on North Mesa but may be somewhere on Laboratory property or was perhaps shipped to Idaho or some other location (IT Corporation 05-0148; Francis 1991, 05-0038).

The radio poles and hutments are shown on a 1948 topographic map (DOE 1987, 0264) at a location that is now in the vicinity of the Los Alamos Middle School (USGS 1948, 05-0124). The radio poles were used for radio communications to Fort Sam Houston in Texas (IT Corporation 05-0149). The exact function of the hutments is unknown; however, they may have housed generators (IT Corporation 05-0149). The disposition of the decommissioned structures is unknown. The SWMU report (LANL 1990, 0145) speculates that the gun mount and remains of two structures are in a "landfill" but provides no basis for the speculation.

If the gun mount is buried on North Mesa, its exact location is unknown. The best information available indicates that it is not on North Mesa; however, even if it were buried there, the associated uranium would not be in a form that could migrate in the environment, nor would it be biologically available in the event the structure were uncovered.

The disposition of the decommissioned structures associated with radio communications is unknown. However, because no known Laboratory activities occurred at the site, any debris associated with the hutments should not pose a hazard to human health or the environment. Any contamination resulting from the single generator would be minimal. It is therefore recommended that no further action be taken.

EPA Concurrence: OU 1071 RFI review letter dated 1/6/93.

2.2.1.5 PRS 1-001(p)—Septic System (OU 1078)

SWMU 1-001(p) was mistakenly identified as a sanitary waste line in the International Technology Corporation SWMU Description Report (International Technology Corporation 1991, 09-0003). An engineering drawing correctly identifies the conveyance between the Q and ML buildings as a steam tunnel. The steam tunnel (LASL 1947, 09-0010) originated at Boiler House No. 2. For this reason, SWMU 1-001(p) is recommended for NFA.

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.6 PRS 1-001(q)—Septic System (OU 1078)

SWMU 1-001(q) consists of three lateral sanitary waste lines, which served the former PX Building in TA-1 during the early days of the Manhattan Project. This SWMU is part of the Northern Sanitary Waste SWMU Aggregate described in the RFI Work Plan for OU 1078, and is located north of Trinity Drive between Ashley Pond and 24th Street. All of the former TA-1 buildings have been removed, and the area is currently occupied by Los Alamos County offices and a park surrounding Ashley Pond.

Engineering drawings (Attachments B and C) illustrate that the three laterals served the former PX Building, and tied into the sanitary waste line which served the former P Building. The lateral lines consisted of 4-inch vitrified clay pipe (VCP), and came off the north, west, and east sides of the building. The PX Building functioned as the post exchange in the early years of the Laboratory. A later engineering drawing (dated September 1, 1954) shows that the PX Building was no longer present, and an addition to the P Building is shown at this location. The same drawing does not show the formerly displayed PX Building lateral lines, but shows the curb for a widened 24th Street over the alignment of the westernmost lateral, and most of the trace of the easternmost lateral as being under the addition of the P Building. It is not known whether the lines were removed or abandoned in place, but the expanded P Building was connected to the Eastern Sanitary Sewer [SWMU 1-001(w)]. The sanitary sewer line [SWMU 1-001(v)] that received wastewater from the PX Building was apparently abandoned when P Building was expanded. PX Building did not manage any hazardous or radioactive materials or waste. With no source of contamination, no releases could have occurred to or from the three lateral sanitary lines.

Based on the exclusive use of the three lateral sanitary lines for domestic sewage, and the lack of contamination sources and releases, no further action is proposed for this SWMU.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.7 PRS 1-001(r)—Septic System (OU 1078)

SWMU No. 1-001r served E Building, which was located adjacent to and southwest of Ashley Pond outside TA-1's security fence. E Building was completed in July 1944 and was used only as office space for administrative staff and theoretical physicists (Ahlquist et al. 1977, 0016; Kennedy 1987, 09-0007). It is highly unlikely that radioactive or hazardous materials were ever

used in E Building and that SWMU No. 1-001r carried any radioactive or hazardous constituents. For this reason, this sanitary waste line is not a health risk and is a candidate for NFA.

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.8 PRS 1-001(v)—Septic System (OU 1078)

SWMU 1-001(v) consists of a sanitary waste line that served the former P Building (before expansion) and the PX Building (via three lateral lines) during the early days of the Manhattan Project. This SWMU is part of the Northern Sanitary Waste SWMU Aggregate described in the RFI Work Plan for OU 1078, and is located north of Trinity Drive between Ashley Pond and 24th Street. All of the former TA-1 buildings have been removed, and the area is currently occupied by Los Alamos County offices and a park surrounding Ashley Pond.

Engineering drawings illustrate that the sanitary waste line served the former P Building, and was tied into the lateral sanitary waste lines which served the former PX Building. The line consisted of a 6-inch vitrified clay pipe (VCP) and came off the west end of the building. The P Building functioned as an office for laboratory personnel, and PX Building was the Postal Exchange. A later engineering drawing (Engineering Drawing C25675, Attachment E) shows that the PX Building was removed when the P Building was expanded, and a new sanitary waste line is shown extending from the north side of P Building to Manhole 195. SWMU 1-001(v) was apparently abandoned when the P Building addition was completed. The P Building was connected to E Building, which also housed Laboratory administrative offices. E Building was served by the sanitary waste line designated as SWMU 1-001(r), which has been approved for NFA.

An H-Division Progress Report, which described the filling of a large toluene tank in Room S2, P Building (Attachment G), is not consistent with the designated use of P Building in TA-1 as an office building. Inferences made regarding this tank in preparing the RFI Work Plan for OU 1078 are not supported by a re-examination of archival information. The Progress Report provided in Attachment G was dated October 1954. The "security" addition (Attachment H) was constructed on the west end of P Building in late 1949 or early 1950. At that time, a basement and additional first- and second- floor offices were added to the west of the fire walls. First-floor rooms in both portions of the building (original construction to the east of the fire walls, and post-1949 construction to the west of the fire walls) were numbered using the 100 series, and second-floor offices were numbered using the 200 series. There was no basement in the original P Building. Basement rooms in the security addition were numbered using single digits without the "S" prefix, and with no Room 2 or S2. The H-Division Progress Report did not specify at which Technical Area the "P Building" referred to was located. The engineering drawing provided in Attachment I shows the designated use of each room in the security addition basement, and there were no uses congruent with the scintillation counters mentioned in the H-Division Progress Report. This re-examination of the archival information concludes that the earlier inferences regarding toluene in P Building were incorrect. Therefore, with no source of contamination, no releases could have occurred to or from the sanitary line.

Based on the use of the sanitary line exclusively for domestic sewage, and the lack of contamination sources and releases, no further action is proposed for this SWMU.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.9 PRS 1-001(w)—Septic System (OU 1078)

SWMU 1-001(w) consists of a sanitary waste line that served the former AP, P, and P Prime Buildings outside the security fence in TA-1. This SWMU is part of the Northern Sanitary Waste SWMU Aggregate described in the RFI Work Plan for OU 1078, and is located north of Trinity Drive between Ashley Pond and 24th Street. All of the former TA-1 buildings have been removed, and the area is currently occupied by Los Alamos County offices and a park surrounding Ashley Pond.

The sanitary waste line extended southeast from AP Building and connected with the sanitary line from the expanded P Building before extending to Manhole 195. P Prime Building sanitary line extended east directly to Manhole 195, approximately 7 feet away. The lines consisted of 6-inch vitrified clay pipe (VCP). The AP Building, built at the same time as the extension of P Building, served originally as barracks, then as an office building. P Prime Building functioned as a supply and office building, and P Building housed offices for Laboratory personnel. Neither the AP Building nor the P Prime Building managed any hazardous or radioactive materials or waste.

An H-Division Progress Report, which described the filling of a large toluene tank in Room S2, P Building (Attachment D), is not consistent with the designated use of P Building in TA-1 as an office building. Inferences made regarding this tank in preparing the RFI Work Plan for OU 1078 are not supported by a re-examination of archival information. The Progress Report provided in Attachment D was dated October 1954. The "security" addition (Attachment E) was constructed on the west end of P Building in late 1949 or early 1950. At that time, a basement and additional first- and second- floor offices were added to the west of the fire walls. First-floor rooms in both portions of the building (original construction to the east of the fire walls, and post-1949 construction to the west of the fire walls) were numbered using the 100 series, and second-floor offices were numbered using the 200 series. There was no basement in the original P Building. Basement rooms in the security addition were numbered using single digits without the "S" prefix and with no Room 2 or S2. The H-Division Progress Report did not specify at which Technical Area the "P Building" referred to was located. The engineering drawing provided in Attachment F shows the designated use of each room in the security addition basement, and there were no uses congruent with the scintillation counters mentioned in the H-Division Progress Report. This re-examination of the archival information concludes that the earlier inferences regarding toluene in P Building were incorrect. Therefore, with no source of contamination, no releases could have occurred to or from these sanitary lines.

Based on the use of the sanitary line exclusively for domestic sewage, and the lack of contamination sources and releases, no further action is proposed for this SWMU.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.10 PRS 1-006(f)—Drain Lines and Outfall (OU 1078)

SWMU No. 1-006f consists of the storm drain that served the northwest corner of Warehouse 4 in the western sector of TA-1 and discharged just southwest of the TU-1 Building. Warehouse 4 was used only for storage and there is no indication that any radioactive or hazardous constituents were stored there.Therefore, it is unlikely that the SWMU No. 1-006f storm drain would have carried any chemical or radioactive constituents. Its discharge point was near TU-1 Building where radioactive soil contamination resulted from operations in the TU or TU-1 Buildings. The area around the TU-1 Building was excavated (see Section 2.5.15). Because it is doubtful that discharges from this storm drain would have been contaminated and the area into which this storm drain discharged (TU-1 Building vicinity) has been excavated, refilled, and is already a designated SWMU; there is no reason for the storm drain itself to be retained as a SWMU. This SWMU is a candidate for NFA.

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.11 PRS 1-006(i)—Drain Lines and Outfall (OU 1078)

The TA-1-50, -54 Storm Drain and Outfall line originated at the northeast corner of R Building, passed through a retaining well, under the patrol road, and drained to an outfall located south of S-1 Building. The drain line consisted of a 12-inch diameter corrugated metal pipe (closed system). R Building was segregated into a glass shop, a cryogenics lab, a model shop, and a carpentry shop. S-1 Building was located outside the TA-1 security fence, was upslope from the storm drain outfall area, and housed a shop and storeroom. The inlet to the storm drain was located between a retaining wall and the north wall and carport of the R Building, upgradient from the building. TA-1 storm drains were designed and built solely to carry storm water runoff away

from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since waste from the mesa top was discharged to septic, sanitary, or acid waste systems, not to the mesa top. The R Building was also served by a sanitary sewer line, thereby negating the necessity of taking waste outside the building for disposal.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that "in general, the storm drains could have received materials in TA-1," without substantiating this statement. Neither the Work Plan nor the SWMU Report referenced any potential contaminant of concern associated with this storm drain. Additionally, neither this storm drain or any of the others in TA-1 managed solid, hazardous, or radioactive waste.

Although there is no documentation describing the removal of this particular storm drain, the area has been subject to significant construction activity. The previous location of the western portion of the line is occupied by an office building, and the remainder of the old line location and outfall is now located under construction debris and fill material. The collection area for this storm drain was north of R Building, and isolated from potential releases of hazardous constituents.

SWMU 1-006(i) was proposed for NFA in section 2.5.17 of the RFI Work Plan. The NOD did not respond to this section; however, this SWMU was not among the SWMUs listed in the general comment section (6) (NOD page 3), and so further documentation or sampling was required to support an NFA decision. In the NOD Response, Responses to General Comments, Section 6 (page 5), additional archival information was to be provided in the mesa top subsurface Sampling and Analysis Plan (SAP). This document is to replace the material provided in section 2.3 of the SAP.

Based on the use of Storm Drain TA-1-50, -54 exclusively for storm water collection and discharge, and the lack of contamination sources and releases, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.12 PRS 1-006(j)—Drain Lines and Outfall (OU 1078)

SWMU No. 1-006(j)is comprised of two storm drains that served TA-1's S Building (TA-1-53). One followed the north side of the building; the other followed the south side of the building. Both storm drains discharged into the drainage east of Los Alamos Inn. S Building functioned as a general stock warehouse. Radioactive or hazardous constituents are not documented as having been handled there.

Because oil drums were stored along the south side of the building, the most likely contaminant source from S Building would have been run-off of any oil spilled or washed from the surface of the oil drums. S Building was removed 32 years ago and it is highly unlikely that any traces of contaminants from S Building could still be found. Residual contaminants are unlikely because of the tremendous amounts of fill brought into the drainage below this outfall as well as physical forces, including evaporation, photolysis, movement by water, and biological degradation, that would have minimized any organic chemicals discharged long ago. NFA should be taken for SWMU No. 1-006(j).

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.13 PRS 1-006(k)—Drain Lines and Outfall (OU 1078)

The TA-75, -76 Storm Drain and Outfall served the former Warehouse 4 and J-Division Annex (also identified as Warehouse 3). The drain originated approximately 25 feet northwest of J-Division Annex, and extended north-northwest for approximately 25 feet. It was the conduit for moving storm water beneath the east-west roadway that was the main artery in that area. J-Division Annex was used for materials storage and film calibration, and Warehouse 4 was used for materials

storage. The J-Division Annex had some Ra^{226} contamination from dust out of a source storage pig; however, a final radiation survey performed in 1964 found the building to be free of contamination. This storm drain served the area between the two buildings and had an outfall located just south of the TU Building. The drain line consisted of a 12-inch corrugated metal pipe.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that, "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to low-level uranium as a potential contaminant of concern was attributed to the location of the TU Building near the drain outfall. However, neither this storm drain or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste. TA-1 storm drains were designed and built solely to carry storm water runoff away from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since waste from the mesa top was discharged to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top. This drain carried storm water toward the TU Building, not away from it. Sampling of the J-Division Annex and the area of the storm drain by Ahlquist et al. during the mid-1970s remediation effort revealed radioactivity associated with the TU Building. Radiological surveys of the warehouse slabs and surrounding areas found no elevated levels of radioactivity around the former J-Division Annex that could have run off into the storm drain. TU Building was used for processing normal uranium and was found to be contaminated at the time of its demolition in July 1964. Drums of tuballoy (normal uranium) were stored outside of TU Building. The drums would spontaneously ignite. Fire control procedures consisted of flooding the drums until they overflowed, causing contamination of surrounding soils. During the remediation effort of the mid-1970s, approximately 3,700 cubic yards of soil were removed from this area and follow-up samples were collected to confirm the cleanup.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although there is no documentation describing the removal of this particular storm drain, the area in the vicinity of the drain was excavated in the mid-1970s and has been subsequently subject to significant construction activity. The previous location of this line is occupied by condominiums and townhouses. The two buildings located adjacent to the area served by this storm drain (Warehouse 4 and J-Division Annex) did not house hazardous constituents; therefore, there is no source of potential contamination.

Based on the use of Storm Drain TA-1-75, -76 exclusively for storm water channeling and discharge, and the lack of contamination sources and releases, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.14 PRS 1-006(l)—Drain Lines and Outfall (OU 1078)

The TA-74, -75 Storm Drain and Outfall served the former Warehouse 2 and J-Division Annex (also identified as Warehouse 3). The drain originated approximately 10 feet northeast of J-Division Annex and extended north-northwest for approximately 25 feet. J-Division Annex was used for materials storage and film calibration, and Warehouse 2 was used for materials storage. The J-Division Annex had contained radium contaminated dust from a source storage pit. This storm drain served the area between the two buildings and had an outfall located just south of the former paint shop. Storm water collected and channeled by this drain flowed north toward the paint shop, and, in fact, the drain ended before reaching the shop area. The drain line consisted of a 12-inch corrugated metal pipe.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to solvents as a potential contaminant of concern was attributed to the location of the former paint shop near the drain outfall. However, neither this storm drain or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste, TA-1 storm drains were designed and built solely

to carry storm water runoff away from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since waste from the mesa top was discharge to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top. This drain carried storm water toward the paint shop, not away from it. Sampling of the J-Division Annex and the area of the storm drain by Ahlquist et al. during the mid-1970s remediation effort revealed no radioactivity.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although there is no documentation describing the removal of this particular storm drain, the area in the vicinity of the drain was excavated in the mid-1970s and has been subsequently subject to significant construction activity. The previous location of this line is occupied by condominiums and townhouses. The two buildings located adjacent to the area served by this storm drain did not house hazardous constituents; therefore, there is no source of potential contamination.

Based on the use of Storm Drain TA-1-74, -75 exclusively for storm water channeling and discharge, and the lack of contamination sources and releases, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.15 PRS 1-006(m)—Drain Lines and Outfall (OU 1078)

The TA-56, -74 Storm Drains and Outfalls served the area to the north of the Sigma Building. The storm drain farthest to the west was located outside the security fence, between former Warehouses 1 and 2. This storm drain channeled storm water north under the roadway toward the canyon rim. The middle storm drain originated at the northwest corner of former Warehouse 1, also outside the fence, and discharged to the north under the roadway. The third storm drain was oriented east-west on the north side of the Sigma Building, and extended to the west for approximately 55 feet as a closed metal pipe, then became an open drain that extended to the west for another 90 feet parallel to the roadway and discharged to a closed drain located at the northwest corner of the Sigma Building. The drain channeled storm water under the roadway to the northwest. The Sigma Building was expanded to the west in 1950 (Attachment D, page 126), at which time inlets to two of the closed corrugated metal pipe portions of the drain lines were under the building addition (Attachment E). Re-engineering of the ground surface to control storm water would have been one solution to the disruption of the initial storm drain system. Warehouse 1 was also removed to accommodate the addition.

The assessment that originally identified these storm drains as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that, "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to radioactive materials, solvents, and metals as potential contaminants of concern was attributed to the location of the storm drains with regard to the Sigma Building. However, none of these storm drains or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste. TA-1 storm drains were designed and built solely to carry storm water runoff away from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since waste from the mesa top was discharged to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top.

Radiological surveys made by Ahlquist et al. while cleaning up surface debris during the mid-1970s remediation identified spots of uranium contamination on pipe shards and in soil in the outline of the former Sigma Building. Because of the pipe shards, which probably came from the break-up of laterals to the industrial waste line during the demolition of the building in 1965, exploratory trenches were excavated to determine whether the laterals had actually been removed. The trench locations, soil sampling locations, and results are shown in Figures 113 and 114 on pages 105 and 106 of Attachment D. Contamination uncovered during the trenching operations was only found inside of what appeared to be a portion of the easternmost storm drain (12-inch corrugated metal pipe) on the north side of Sigma Building. Samples taken in soils in the

immediate vicinity of this pipe showed no radioactivity above 20 pCi/g (see Figure 114 in Attachment D). If this contamination had originated from the industrial waste line, soils in the vicinity of the storm drain should have been contaminated.

Descriptions of the easternmost storm drain in the engineering drawings provided in Attachments B and C show that the closed portion of the drain consisted of an 8-inch-diameter pipe. However, Figures 113 and 114 on pages 105 and 106 of Attachment D, and the Progress Report included in Attachment F, indicate that the contaminated pipe found in trench #2, consistent with the location of the easternmost storm drain, was 12 inches in diameter. Since the majority of the storm drains in TA-1 consisted of 12-inch-diameter corrugated metal pipe, an error may have been in the initial engineering diagrams regarding the easternmost storm drain formerly located north of the Sigma Building.

The contaminated materials were removed to below phoswich-detection limits. The uranium contamination found can be attributed to contamination from a fire which occurred in the east portion of the Sigma Building in late 1952 or 1953 (Attachment G). According to a former worker from the Sigma Building, a large fire started when a graphite mold broke open while 2 tons of molten tuballoy (natural uranium) was being poured into the mold from a crucible in one of the building furnaces. The molten uranium started a fire and ran out of the furnace onto the floor, and the building was evacuated. The fire department responded and flooded the entire area with water. This would have further dispursed the uranium, some going into building drains and some possibly escaping the building. The majority of the uranium contamination remaining in the building was cleaned up when the building was demolished in December 1965 (Attachment D, page 126). The building and some of the concrete slab were hauled to the contaminated dump. The remaining concrete (either clean or having an activity level of less than 2500 counts per minute) was disposed in Bailey's Canyon and covered with dirt.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although documentation describes the specific removal of portions of only two of these storm drains (Attachment F), the area in the vicinity of the Sigma Building remediation has been subject to significant construction activity, and is currently the location of Ridge Park Village townhomes and associated support structures.

Based on the use of Storm Drains TA-1-56, -74 exclusively for stormwater channeling and discharge, and the fact that the drains did not manage hazardous waste, no further action is proposed for these storm drains.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.16 PRS 1-006(p)—Drain Lines and Outfall (OU 1078)

The TA-29, -98 Storm Drain and Outfall served the south and west sides of HT Building. An open drain collected storm water from the area south and west of HT Building, channelled water to the west, and then to the north to a storm drain inlet, which transported the storm water under a roadway in a closed drain and discharged it toward Los Alamos Canyon. After the K-1 Building was constructed in approximately 1950, the drain was re-routed to continue along the west side of HT Building to a catch basin and closed drain, which channeled the stormwater under the roadway, then continued its discharge toward Los Alamos Canyon on the north end of K-1 Building (Attachment C). HT Building was used by the shops department for heat treatment and machining of natural and enriched uranium. K-1 Building was used for graphite machining.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to uranium as a potential contaminant of concern was attributed to the location of the HT Building near the drain inlet. However, neither this storm drain or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste. TA-1 storm drains were designed and built solely to carry storm water runoff away from building areas and driveways to help control mud and erosion. They

were not designed to carry wastewater discharges, since waste from the mesa top was discharged to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top. This drain initially carried storm water toward the K-1 Building, and later around the K-1 Building.

Radiological surveys and sampling of the HT Building area by Ahlquist et al. during the mid-1970s remediation effort revealed normal uranium contamination associated with the HT Building location. HT Building was found to be contaminated at the time of its demolition in December 1965. Approximately 35 cubic yards of soil and a slab of tuff were removed from the area in 1975; the remaining soil was found to be free of contamination. The outfall of this storm drain was found to be free of contamination.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although there is no documentation describing the removal of this particular storm drain, the area in the vicinity of the drain was excavated in the mid-1970s and has been subsequently subject to significant construction activity. The previous location of this line is occupied by condominiums and townhouses. Based on the reports prepared by Ahlquist et al. (Attachments D and E), the two buildings located adjacent to the area served by this storm drain did not manage hazardous constituents; therefore, there is no source of potential hazardous waste contamination.

Based on the use of Storm Drain TA-1-29, -98 exclusively for storm water channeling and discharge, and fact that the drain did not manage hazardous waste, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.17 PRS 1-006(q)—Drain Lines and Outfall (OU 1078)

The SWMU No. 1-006q storm drain served the area southeast of T Building (TA-1-64), continued northeast, and discharged into TA-1's main east/west thoroughfare (currently Trinity Drive). T Building, which housed the Theoretical Division, was one of the first structures built at Los Alamos during the Manhattan Project. There was no known hazardous or radioactive constituent storage in T Building nor is it likely that any would have been stored in Theoretical Division Offices.

Storm drainage from this building, therefore, would not be expected to have carried any contaminants. There is no pathway for a potential contaminant to cause a health risk. SWMU No.1-006q is a candidate for NFA.

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.18 PRS 1-006(r)—Drain Lines and Outfall (OU 1078)

The TA-34, -79 Storm Drain and Outfall served the area between J and X Buildings in TA-1. The drain, a 6-inch corrugated metal pipe, originated 50 feet from either building and extended west for approximately 15 feet. J Building housed offices and laboratories where sealed sources were handled. X Building was used for induced activity in the cyclotron, and some radioactive targets were used. Storm water collected and channeled by this drain flowed to the west to an outfall just south of the J-7 Building.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to radioactive targets and metals as potential contaminants of concern was attributed to the location of the X Building with respect to the storm drain. However, neither this storm drain or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste. TA-1 storm drains were designed and built solely to carry storm water runoff away from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since

waste from the mesa top was discharged to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top. Sampling of the area around the storm drain and outfall by Ahlquist et al. during the mid-1970s remediation effort revealed no surface radioactivity in the area.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although there is no documentation describing the removal of this particular storm drain, the area in the vicinity of the drain has been subject to significant construction activity. The previous location of this line is occupied by condominiums and townhouses. The two buildings located adjacent to the area served by this storm drain did not house hazardous constituents; therefore, there is no source of potential contamination.

Based on the use of Storm Drain TA-1-34, -79 exclusively for storm water channeling and discharge, and the lack of contamination sources and releases, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.19 PRS 1-006(s)—Drain Lines and Outfall (OU 1078)

The SWMU No. 1-006s open storm drain served the northwest side of P Building (TA-1-46), which was located southwest of Ashley Pond outside TA-1's security fence. P Building was used for personnel and general office space. SWMU No. 1-006s discharged along TA-1's main east/west thoroughfare (currently Trinity Drive).

SWMU No. 1-006s is being nominated for NFA for the same reasons as SWMU No. 1-006q (see Section 2.5.19). Its origination, P Building, has no record of storage for radioactive or hazardous constituents and the storm drain discharged into TA-1's main east/west thoroughfare (currently Trinity Drive). It is doubtful that SWMU No. 1-006s poses any health risk and is a candidate for NFA.

EPA Concurrence: OU 1078 NOD dated 8/13/92.

2.2.1.20 PRS 1-006(t)—Drain Lines and Outfall (OU 1078)

The Storm Drain and Outfall was located at the base of a steep terrace south of the former C Building. The drain channeled storm water under a roadway, protecting it from erosion and preventing muddy conditions. The drain, an 8-inch corrugated metal pipe, originated at the base of a 14-foot slope south of a concrete slab that surrounded the perimeter of the C Building, and extended approximately 55 feet to the south-southwest underneath a roadway to an outfall east of the southeast corner of the Sigma Building.

The assessment that originally identified this storm drain as a SWMU was incomplete. The entire assessment listed every storm drain and outfall and stated that "in general, the storm drains could have received materials in TA-1," without substantiating this statement. The reference to radioactive targets and metals as potential contaminants of concern was attributed to the location of the C Building. C Building housed a normal machine shop, with a uranium machine shop in the southeast corner. However, neither this storm drain or any of the other storm drains in TA-1 managed solid, hazardous, or radioactive waste. TA-1 storm drains were designed and built solely to carry storm water runoff away from building areas and driveways to help control mud and erosion. They were not designed to carry wastewater discharges, since waste from the mesa top was discharged to septic, sanitary, or acid waste systems and directed out of the TA-1 mesa top area, not to the mesa top. Before C Building's removal in 1964, it was found free of contamination, with the exception of the concrete foundation pad. Sampling of the area around the storm drain by Ahlquist et al. during the mid-1970s remediation effort revealed no surface radioactivity in the area.

All storm drains found during the remediation effort were removed, since they were typically close to or located at the surface. Although there is no documentation describing the removal of this particular storm drain, the area in the vicinity of the drain has been subject to significant construction activity, and is currently located on the Mike Harris property where access agreements will not be obtained.

Based on the use of Storm Drain TA-1-5 exclusively for storm water channeling and discharge, and the lack of contamination sources and releases, no further action is proposed for this storm drain.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.21 PRS 1-007(g)—Soil Contamination Area (OU 1078)

SWMU 1-007(g) is an area of suspected subsurface soil contamination that was located south of former Warehouse 19 and southwest of the former Sheet Metal Shop in TA-1. Warehouse 19 was used for materials storage, and the Sheet Metal Shop was the site of metal fabrication. Both buildings were served by Septic Tank 134, and there were no storm drains or outfalls located in the vicinity of this SWMU.

During the surface cleanup and survey effort conducted by Ahlquist et al. during the mid-1970s, radioactivity was observed south of the Warehouse 19 slab. Streaks of yellowish-green uranium oxide were found at a depth of approximately 10 inches. The uranium was identified as normal uranium by mass spectrometry. Approximately 390 cubic yards of soil were removed and 11 follow-up samples were taken. The source of the uranium contamination was not determined.

At a meeting on November 4, 1975, the Warehouse 19 excavation was determined to be decontaminated because no detectable phoswich activity remained; only 3 of 11 soil samples from the excavation had levels of gross alpha activity greater than 20 pCi/g, with the maximum being 64 pCi/g. The entire area was subsequently restored using clean fill and soil from new construction sites, and the surface was recontoured (see page 36 of Attachment C). The area of the Warehouse 19 remediation is currently the location of a park and common area for surrounding condominiums and townhouses.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, was incorrectly designated a SWMU based solely on the former presence of radioactivity, and lacked contamination sources and releases, no further action is proposed for this SWMU.

EPA Concurrence: OU 1078 NFA review letter dated 1/28/94.

2.2.1.22 PRS 2-001—Open Burning Ground (OU 1098)

SWMU no. 2-001 may have consisted of a former burn pit for disposal of combustible materials from TA-2 (LANL 1990, 0145). A 1945 memorandum recommended that drums be provided at the burning pit for trash that could not be burned. Archival research shows that the past location of the site is unknown. In addition, in an interview, Glen Neely (an employee of TA-2 from 1960 to 1976) stated that he and his co-workers do not know the location of the site, and cannot confirm that the site ever existed.

No Phase I activities are planned for this SWMU because there have been no known releases of hazardous and radioactive materials for SWMU no. 2-001 and, in fact, SWMU no. 2-001 may have never existed.

The location of this PRS is not shown on the map of TA-2 in the Appendix of this document.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.1.23 PRS 3-010(b)—Operational Release (OU 1114)

SWMU 3-010(b) is the site of the vacuum pump on the north side of Wing 5 of TA-3-29. The pump was installed in the mid-1950s and was used for evacuating a nearby horizontal cylinder used for storing inert gases. The pump is a Kinney vacuum pump with a 10-horsepower motor. According to the manufacturer, this model of vacuum pump used a pure (no detergents or additives), low vapor pressure, medium-weight (30W) petroleum-based oil for the seal (LANL 1992, 17-734). The pump and motor are housed in a small metal shed (approximately 5 x 6 ft base) mounted on a concrete foundation that is approximately 3 to 4 in. higher than the surrounding asphalt paving. The pump has been inactive since 1982 and removal of the pump and shed are in progress.

Visual inspection of the vacuum pump by Laboratory personnel found oil stains inside the shed, on the pump, and on the concrete floor below the pump. No oil stains were evident outside the shed on either the concrete or asphalt, indicating that none of the seal oil leaks extended beyond the shed. A review of operations within TA-3-29 supported by this vacuum pump indicates that no radioactive materials, solvents, PCBs, or heavy metals were present in the gas stream entering the vacuum pump. Thus, there is no reason to suspect that the seal oil was contaminated with any TAL, TCL, or radioactive constituents.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.24 PRS 3-010(d)—Operational Release (OU 1114)

SWMU 3-010(d) is identified in the SWMU Report as "two vacuum pumps for the beryllium processing system in TA-3-141... located on the east side of the building" (LANL 1990, 0145). The pumps were mounted on the concrete floor of a 5 x 12 ft metal shed. The surrounding area is paved with asphalt. The two vacuum pumps in question were belt-driven Kinney vacuum pumps, models KC-46 and KC-15. These models used a pure petroleum-based seal oil (LANL 1992, 17-734) comparable to the one discussed above. The two belt-driven vacuum pumps were removed and replaced with a new direct-drive vacuum pump in 1991 (LANL 1992, 17-737). Investigations by Laboratory staff determined that these vacuum pumps were installed in the mid-1970s and were used in conjunction with a tungsten spray chamber. The air from the spray chamber was vented through these pumps directly to the main venting system for TA-3-141. Beryllium processing in TA-3-141 is self-contained; these pumps were not connected to beryllium processing systems. No radioactive materials, PCBs, solvents, or heavy metals were used in the spray chamber serviced by these vacuum pumps

Although the two vacuum pumps have been replaced by a new vacuum pump, there remains visual evidence of leakage from the old pumps. The concrete foundation within the pump shed is covered with oil stains. The asphalt paving has an oil plume extending from the shed north along the foundation of TA-3-141 for approximately 9 ft, with a lateral (east-west) spread of 1 to 3 ft. These oil stains are from seal oil, a pure petroleum product, not included on the TCL.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.25 PRS 3-013(d)—Operational Release (OU 1114)

SWMU 3-013(d) is the site of metal-working equipment. This PRS includes surface stains and plume from a hydraulic bender, now removed, and an active hydraulic shearer. Both were located in the JCI storage yard 125 to 150 ft southwest of TA-3-379. Drainage from the site is to the southeast toward the storm drain described above.

The bender was installed in 1952 when the area was first developed for use as a storage yard (LANL 1992, 17-739). It sat on a 50 sq. ft concrete pad surrounded by asphalt pavement. The shearer was installed in 1968 by cutting two rectangular (8 x 2 ft) areas through the asphalt and pouring concrete footings. Both units are visible in a 1974 aerial photograph, 34-155.

Both pieces of equipment were used in parts fabrication. The bender was used to shape steel plates, bars, etc., and the shearer was used to cut sheet steel. The bender was removed in May 1992 and sent to salvage after being tested by EM-8. The concrete pad remains. The shearer continues in active operation. The hydraulic fluids in both the bender and the shearer were tested by EM-8 and determined to be uncontaminated by PCBs. Randahl AC-32 hydraulic fluid is currently used in the shearer. The only other substance in this PRS is associated with sheet metal. Sheet metal is steel stock which often has a thin film of a light lubricating oil on the surface.

Both the bender and shearer leaked hydraulic fluids that stained the areas under and around their locations. Inspection of the areas also found an oil stain that extends about 35 ft southeast of the shearer. Storm runoff from this area flowed southeast toward the same storm drain discussed above. These petroleum products are not TCL materials.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.26 PRS 3-013(e)—Operational Release (OU 1114)

SWMU 3-013(e) is the site of a one-time antifreeze spill in the fenced, paved, storage yard west of the service station, TA-3-36. The service station and yard are in active service. In March 1989 an estimated 60 gal. of a 50/50 mix of ethylene glycol (antifreeze) and water spilled to an area about 8 ft square on the asphalt pavement west of TA-3-36. Most of the solution drained into a storm drain about 60 ft to the south of the spill area. There were no standing pools of the fluid, nor are there any sediment pockets in the area. The constituents, ethylene glycol and water, are not TCL materials.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.27 PRS 3-013(f)—Operational Release (OU 1114)

SWMU 3-013(f) is an area of stained soil on the east side of TA-3-66 that was the temporary location of a tar-melting pot and hopper. The site is currently overgrown with native grasses and weeds. Only a few pieces of roofing tar/gravel aggregate are visible. The area of the spill was less than 10 ft square and is located 18 ft east of the building. The tar/gravel aggregate does not appear to have penetrated into the soil.

The area of stained soil that forms this PRS resulted from tar spills that occurred when TA-3-66 was reroofed in the late 1970s. The tar congealed quickly upon contact with the ground. Most of the material was cleaned up when the spills occurred, but some pieces, approximately 1 to 4 in. in diameter, are still visible. Cured tar is not a TCL material.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.28 PRS 3-013(g)—Operational Release (OU 1114)

SWMU 3-013(g) is the site of a dumpster that was located in an unpaved parking area at the northeast corner of the High Voltage Test facility, TA-3-3161. The dumpster has been removed and the area was subsequently paved.

For at least ten years (1978 to 1988), the dumpster was used for disposal of oil-soaked Sorb-all. Spills occurred during disposal of the Sorb-all and oil stains were evident on the soil (LANL 1990, 0145). Between 1988 and 1990 the dumpster was removed as part of the construction of buildings TA-3-2003 through TA-3-2010, located just east of TA-3-316. During this project, the area was graded, leveled, and paved. The stained soil was either excavated and removed or paved over. Although there were a number of capacitor banks and power supplies in TA-3-316, testing of the oil has shown that few of the power supplies and none of the capacitors contained

PCBs. The probability of PCB contamination in any of the oil that escaped the dumpster is low (LANL 1992, 17-736). The oils were petroleum-based and not regulated as TCL constituents.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.29 PRS 3-013(h)—Operational Release (OU 1114)

SWMU 3-013(h) is oil stains associated with a 4 x 8 ft storage area located on the asphalt pavement south of TA-3-39. This area has been paved since the early 1950s and was repaved in the mid 1980s. Old or obsolete equipment is brought here for testing before disposal. Fluids (oils) are sampled by pumping from the top of tanks or reservoirs on the equipment, never by opening petcocks, drains, or other parts that could cause spills. Samples are collected by EM-8. Most of the fluids are light lubricating oils. Samples of possible PCB-containing oil are sent to the Health and Environmental Chemistry Group (EM-9) for analyses. Samples of possible asbestos-containing insulating materials are sent to the Industrial Hygiene Group (HS-5) for analyses. If there are no hazardous constituents associated with the fluids or insulation, the equipment is taken to the Johnson Controls salvage/redistribution center. If contaminated, equipment is sent to TA-54 for disposal (LANL 1992, 17-735).

The oil stains associated with this PRS are the result of drips and small leaks from the old equipment. From at least 1987 to the present, all equipment has been tested for possible PCB contamination before disposal, and no PCB-contaminated equipment has been found (LANL 1992, 17-735). The oils associated with this equipment are light lubricating oils for bearings and seals, and do not contain TCL material.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.30 PRS 3-055(b)—Outfall (OU 1114)

SWMU 3-055(b) is an inactive outfall located west of TA-3-30. It was the discharge point for an emergency shower in warehouse TA-3-30. The outfall drained into the upper end of a small tributary that drops steeply into the main branch of Twomile Canyon. The channel has eroded to bedrock tuff.

A battery charging and refilling shop was located in the northwest corner of Building 30 from 1968 to 1975. Batteries were filled with virgin sulfuric acid, which often was spilled during the operation. A fume hood and emergency shower were installed for worker safety but have since been deactivated (LANL 1990, 0145). Only clean sulfuric acid was used to fill batteries with a low liquid content. Spent battery acid was not handled in this shop (Sobojinski 1992 17-721). The small amounts of spilled acid were diluted by the rinse water and quickly neutralized in the alkaline environment of Los Alamos (Martell 1992, 17-759). This unit does not present any hazard to human health or to the environment.

There is no evidence that any PRS listed in Table 6-11 contained material that might present a threat to human health or the environment. No operations conducted at these buildings or their vicinity generated hazardous waste. The following PRSs meet the criteria for a Step 4 evaluation: they present no danger to potential receptors.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.31 PRS 6-004—Sump (OU 1111)

No documentation of a sump, separate from Septic Tank TA-6-41 (6-002), has been found for wastewater from Buildings TA-6-19 and TA-6-10. No construction drawings of a sump have been found, but an engineering drawing does show a septic tank in this area (LASL 1944, 19-0017). Memorandums describing the decommissioning of Septic Tank TA-6-41 (6-002) (Courtright 1965, 19-0009) do not mention a separate sump. A single memorandum refers to a sump (Reider

1950, 19-0007), but this is probably a reference to the septic tank rather than to a separate structure.

The archival information is consistent with the conclusion that the only structure in this area was Septic Tank TA-6-41, which was removed in 1965 (Courtright 1965, 19-0009). No evidence has been found that a sump ever existed as a separate structure. Sampling for any residual contamination in this area is discussed in Section 5.8.

EPA Concurrence: OU 1111 NOD dated 5/20/94.

2.2.1.32 PRS C-6-020—Building (OU 1111)

The SWMU Report lists TA-6-49 as a building and ramp destroyed by burning in 1960 (LANL 1990, 0145). No other information on this building has been found. We conjecture that this building and ramp may have been a concrete batch plant located just south of the concrete bowl (TA-6-37). A ramp-like structure still exists in this location.

No information has been found to substantiate the location of this building or the storage, treatment, or release of hazardous materials from it. If TA-6-49 was the concrete batch plant south of the concrete bowl, it is unlikely that hazardous waste was managed there.

EPA Concurrence: OU 1111 NOD dated 5/20/94.

2.2.1.33 PRS 8-009(b)—Industrial or Sanitary Wastewater Treatment (OU 1157)

Building TA-8-70 was built in 1960 and houses a tomographic system with an attached x-ray unit and a small machine shop (LANL 1944 to present, 12-0003; Harris 1993, 12-0097). Tomography is used to make x-ray pictures of a predetermined plane section of a solid object by blurring out the images of other planes. Water is used to cool an oil chiller which, in turn, cools the x-ray head of the instrument. The water does not come into contact with any material inside the equipment. This noncontact cooling water is discharged into Pajarito Canyon through EPA-permitted outfall 04A NPDES No. 115-076. The nature of the operations performed in this building has not changed over the years and does not result in the production of hazardous waste (Harris 1993, 12-0097). There are no records of spills or other sources of contamination that could have reached the outfall.

The outfall serving Building TA-8-70, PRS 8-009(b), is recommended for NFA under Criterion 1. The outfall has never been used for disposal of any hazardous constituents.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.34 PRS C-8-001—Building (OU 1157)

This AOC is the former location of one of two moveable gun buildings mounted on rails used to cover gun mounts at the old Anchor West (TA-8) Gun-Firing Site. It was built before 1947 and removed in 1950 (DOE 1989, 0078;Weston 1989, 12-0049). Depleted uranium, lead, and copper were determined to be potential contaminants in this area (Jones 1992, 12-0047).

The sampling strategy for PRS 8-002 (see Section 5.2.1.1) will include AOC C-8-001. The gun building, C-8-001, is proposed for no further action.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.35 PRS C-8-002—Building (OU 1157)

This AOC is the former location of the second moveable gun building mounted on rails used to cover gun mounts at the old Anchor West (TA-8) Gun-Firing Site. It was built before 1947 and

removed in 1950 (DOE 1987, 0264; Weston 1989, 12-0049). Depleted uranium, lead, and copper were determined to be potential contaminants in this area (Jones 1992, 12-0047).

The sampling strategy for PRS-8-002 will include AOC C-8-002. The gun building, C-8-002, is proposed for no further action.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.36 PRS C-8-003—Building (OU 1157)

This AOC is the former location of the carpenter's shop, Building TA-8-6. The carpenter's shop was built before 1947, moved in 1948 to T Site (outside of OU 1157), and later removed from that location (DOE 1987, 0264; Weston 1989, 12-0049). T Site is the former TA-24, which became part of TA-16 (LANL 1944 to present, 12-0003). While at TA-8, this building was in the area of the Gun-Firing Site. No known hazardous materials were used in Building TA-8-6 (Blackwell 1983, 12-0118). The OU 1157 team's investigation did not reveal evidence of any contamination associated with this building; however, the sampling strategy for PRS-8-002 will also include the location of this AOC.

No further action is proposed for AOC C-8-003 based on the fact that the area will be sampled under PRS 8-002 and based on Criterion 1. There is no evidence of the management of hazardous or radioactive waste in this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.37 PRS C-8-004—Building (OU 1157)

This AOC is the former main ranch house, which had an ice storage vault in the basement. The building and vault were removed in 1950. (DOE 1987, 0264; Weston 1989, 12-0049) The site is located west of the main Anchor Site West (TA-8) facility. No known hazardous materials were used in Building TA-8-10 (Blackwell 1983, 12-0118). An association with an ice house at TA-1, which stored radioactive materials, has been made with this former ranch house. However, there is no evidence that any radioactive materials were ever stored here, and storage of radioactive materials in an ice house in one area of the Laboratory does not justify the assumption that all ice houses were used to store radioactive materials. Radioactive screening data were collected at this location and did not reveal any activity above background levels (19,000 cpm was recorded where background in Los Alamos ranges from 16,000 to 20,000 cpm) (Weston 1989, 12-0049).

It has been remarked that the aforementioned activity values are high for the beta-gamma instrument cited in the Weston report. An interview was conducted with P. Zelle, who was responsible for the radiological survey work performed for the ER Program (Starmer 1993, 12-0142). Mr. Zelle stated that the value of 19,000 cpm was typical background for a 2 in by 2 in sodium iodide (NaI) scintillation counter which was their measurement instrument of choice. He also stated that a reading of 19,000 cpm beta-gamma, measured with a pancake GM probe, would have required immediate corrective action. Beta-gamma background at the Laboratory, measured with an Eberline pancake GM probe is usually on the order of a few hundred cpm.

The former main ranch house, AOC C-8-004, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.38 PRS C-8-005—Building (OU 1157)

This AOC is the location of a guest house at Anchor Ranch, which was removed in 1950. The site is located west of the main Anchor Site West (TA-8) facility (DOE 1987, 0264; Weston 1989, 12-0049). No known hazardous or radioactive materials were used in Building TA-8-11 (Blackwell 1983, 12-0118).

This former guest house, AOC C-8-005, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.39 PRS C-8-006—Building (OU 1157)

This AOC is the location of a guest house at Anchor Ranch, which was removed in 1950. The site is located west of the main Anchor Site West (TA-8) facility (DOE 1987, 0264; Weston 1989, 12-0049). No known hazardous or radioactive materials were used in Building TA-8-12 (Blackwell 1983, 12-0118).

This former guest house, AOC C-8-006, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.40 PRS C-8-007—Building (OU 1157)

This AOC is the location of a bunk house at Anchor Ranch, which was removed in 1950. The site is located west of the main Anchor Site West (TA-8) facility (DOE 1987, 0264; Weston 1989, 12-0049). No known hazardous or radioactive materials were used in Building TA-8-13 (Blackwell 1983, 12-0118).

The former bunk house, AOC C-8-007, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.41 PRS C-8-008—Building (OU 1157)

This AOC is the location of a ranch barn at Anchor Ranch, which was removed in 1950. The site is located west of the main Anchor Site West (TA-8) facility (DOE 1987, 0264; Weston 1989, 12-0049). No known hazardous or radioactive materials were used in Building TA-8-15 (Blackwell 1983, 12-0118).

This former ranch barn, AOC C-8-008, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.42 PRS C-8-009—Building (OU 1157)

This AOC is the location of another ranch barn at Anchor Ranch, which was removed in 1950. The site is located southwest of the main Anchor Site West (TA-8) facility (DOE 1987, 0264; Weston 1989, 12-0049). No known hazardous or radioactive materials were used in Building TA-8-18 (Blackwell 1983, 12-0118).

This former ranch barn, AOC C-8-009, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.43 PRS C-8-011—Building (OU 1157)

This AOC is the location of a storage building, TA-8-7, associated with the Gun-Firing Site. The building was located north of Building TA-8-1. It was built before 1947 and sent to T Site and later

removed (DOE 1987, 0264; Weston 1989, 12-0049). T Site is the former TA-24, which became part of TA-16 (LANL 1944 to present, 12-0003). No known hazardous or radioactive materials were used in Building TA-8-7 (Blackwell 1983, 12-0118).

Storage Building TA-8-7 (AOC C-8-011) is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.44 PRS C-8-012—Building (OU 1157)

This AOC is the location of a carpenter shop, Building TA-8-8, associated with the Gun-Firing Site. The building, which was built before 1947, was located north of Building TA-8-1. In 1968, it was transferred to the Zia Company and moved to the New Mexico State Penitentiary (DOE 1987, 0264; Weston 1989, 12-0049). All debris was cleaned up, and the work was completed 22 March 1968 (LASL 1968, 12-0119). No known hazardous or radioactive materials were used in Building TA-8-8 (Blackwell 1983, 12-0118).

Building TA-8-8 (AOC C-8-012) is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.45 PRS C-8-013—Building (OU 1157)

This AOC is the location of an office building, TA-8-9. This building, built before 1947, was originally located northeast of TA-8-2 and was relocated north of the former gun building, TA-8-5, when Building TA-8-21 construction began. This building and Building TA-8-8 were transferred to the Zia Company on 25 January 1968, and later moved to the New Mexico State Penitentiary (Weston 1989, 12-0049). All debris was cleaned up and work was completed 22 March 1968. (LASL 1968, 12-0119). No known hazardous materials were used in Building TA-8-9 (Blackwell 1983, 12-0118).

Building TA-8-9, AOC C-8-013, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.46 PRS C-8-015—Building (OU 1157)

This AOC is an HE magazine. Currently, the building is in the possession of WX-3 but is not being used and is empty. There is no indication that HE contamination ever occurred in this structure. Standard Operating Procedures, currently and historically, have required that no production take place in HE storage areas.

Structure TA-8-31, AOC C-8-015, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.47 PRS C-8-016—Building (OU 1157)

This AOC is an HE magazine. Currently, Protective Technology of Los Alamos (PTLA) is using the building for ammunition storage. There is no indication that HE contamination ever occurred in this structure. Standard Operating Procedures, currently and historically, have required that no production take place in HE storage areas.

Structure TA-8-32, AOC C-8-016, is proposed for NFA based on Criterion 1. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.48 PRS C-8-020—Disposal Area (OU 1157)

The SWMU Report states that this is buried material in Old Anchor West (TA-8) (Weston 1989, 12-0049). A 14 June 1956 memo from G. H. Tenney to D. D. Meyer gave rise to an erroneous Weston interpretation that more than one burial site exists at TA-8 (Tenney 1956, 12-0009). This AOC is the same as PRS 8-006(a), and is discussed in Section 5.2.1.2.

The possible disposal area, AOC C-8-020, is recommended for NFA under Criterion 1. There is no evidence to assume that this disposal area was ever present.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.49 PRS 9-008(a)—Surface Impoundment (OU 1157)

This PRS is described in the SWMU Report (LANL 1990, 0145) as a waste water lagoon near Old Anchor East. In the same area is the waste water oxidation pond (Structure TA-9-212), which has been separately identified in the SWMU Report as PRS 9-008(b); however, there is only one such pond/lagoon facility in this area. This pond has been described as a lagoon in some archival materials, which is believed to have led the authors of the SWMU Report to the erroneous conclusion that two separate facilities had existed. Potential Release Site 9-008(a) did not exist as a separate facility and is the same as PRS 9-008(b).

The lagoon, PRS 9-008(a), is recommended for NFA under Criterion 1. This lagoon is the same as PRS 9-008(b) which is discussed in Section 5.5.1.14.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.50 PRS 9-010(c)—Storage Area (OU 1157)

This waste can shelter was listed in the SWMU Report as being north of Building TA-9-48. Another PRS, 9-010(a), was the only waste can shelter found near this building. There is no evidence of two shelters in the area. It is concluded that waste can shelters PRS 9-010(a) and 9-010(c) are the same structure.

This container storage area, PRS 9-010(c) is recommended for NFA under Criterion 1. This storage area is the same as PRS 9-010(a).

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.51 PRS 9-015—Manhole (OU 1157)

This PRS is listed in the SWMU Report (LANL 1990, 0145) as Structure TA-9-178, an industrial waste manhole. Structure TA-9-178 is an electrical control manhole that served Building TA-9-21 and is not contaminated.

This PRS is recommended for NFA under Criterion 1. It was never used for the management of hazardous waste or radionuclides.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.52 PRS C-9-008—Underground Tank (OU 1157)

The SWMU Report states that this AOC is an UST that stored petroleum products. The SWMU Report indicates the same structure number (TA-9-182) and physical description as that of PRS 9-016, and it is concluded that this AOC is the same as PRS 9-016.

This AOC is the same as PRS 9-016 (see Section 7.2.5.4) and, therefore, is proposed for NFA under Criterion 1.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.53 PRS C-9-010—Burn Site (OU 1157)

The SWMU Report states that this AOC is a burning pit within Old Anchor East but at an unknown location. Potential contaminants are HE and radionuclides. Attempts to locate this site have been unsuccessful (Weston 1989, 12-0049).

Due to the unlikelihood of ever finding the exact location of this site and the fact that the site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area, AOC C-9-010 is proposed for NFA.

The location of this PRS is not shown on the map of TA-9 in Appendix A of this document.

EPA Concurrence: OU 1157 RFI review letter dated 10/7/94.

2.2.1.54 PRS C-9-011—Burn Site (OU 1157)

This AOC is a burn area associated with decommissioning of Building TA-9-1 at Anchor Site East (TA-9). Weston stated that the combustible parts of the site were piled up and burned in an area east of the site (Weston 1989, 12-0049).

Because the exact location of the AOC is not known but will also be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area, AOC C-9-011 is proposed for NFA.

EPA Concurrence: OU 1157 RFI review letter dated 10/7/94.

2.2.1.55 PRS 10-001(e)—Detonation Test Area (OU 1079)

An area adjacent to the firing sites [SWMUs 10-001(a-d)] was used for sand pile detonation tests, reportedly to develop procedures for containing shot debris. This site, which has been designated as SWMU 10-001(e), was thought to be located in the vicinity of the firing sites shot pads (Figure 4.1-1; Figure A-10-1, Appendix A). However, the SWMU is not documented in any of the original site maps and contained no aboveground structures (LANL 1990, 0145).

SWMU 10-001(e) is proposed for no further action as an individual unit because any potential residual surface contamination from SWMU 10-001(e) will be encountered during the sampling activities associated with the Firing Sites SWMU Aggregate (see Chapter 5). Due to this SWMU's proximity to the firing sites, it is probable that the extensive surface soil removal in the vicinity of the firing sites during the 1963 decontamination and decommissioning of TA-10 included the area that comprises SWMU 10-001(e) (Figure A-10-4, Appendix A).

The location of this PRS is not shown on a map in Appendix A of this document.

EPA Concurrence: OU 1079 NOD dated 10/5/92.

2.2.1.56 PRS 11-008—Surface Disposal (OU 1082)

SWMU 11-008 is a surface storage area. The 1990 SWMU Report describes this area as a boneyard south of the old air-gun target area. When the SWMU Report was tabulated, the boneyard contained scrap concrete, iron, equipment, and other debris (LANL 1990, 0145).

The Release Site Database, Task 12, Record 25, which was published in August 1989, states that during the Environmental Restoration (ER) Program site reconnaissance, it was learned that only unused materials are stored at this site. As an example, raw materials (steel, etc.) are bought when prices are low and stored for future use (LANL 1989, 15-16-361).

This boneyard lies south of the major developed area at TA-11. The area is east of and adjacent to the paved road leading to TA-11-36. The area was once cleared but is now grown to grasses. No specific information has been found regarding when the area was cleared or if any controls were placed on the movement of material to and from the site. On March 2, 1992, the 1082 OUPL found the surface of the area to be clean with the exception of small pieces of concrete and wood. A stack of steel plates for future use at the drop tower is stored nearby.

All available information indicates the site was used for the storage of unused and nonhazardous materials; no evidence of any release has been noted.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.1.57 PRS 11-010(b)—Container Storage (OU 1082)

SWMU 11-010(b) is described as a wooden pallet contained in an exterior, asphalt-paved, 10 x 20 ft container storage area located under a steel canopy at the northeast corner of TA-11-24. TA-11-24 formerly housed the air-gun facility and is currently used as an office and light machine shop. At the time this SWMU was identified, a wooden pallet was being used as a storage platform for suspected hazardous waste (LANL 1990, 0145). There is no documentation as to what, if any, hazardous materials might have been stored here. The pallet is now gone and the area is an active Laboratory satellite storage area. There is visual evidence of what appears to be a small oil spill on the asphalt.

There is no documentation that hazardous wastes were stored at this location or a spill has occurred that would be a risk to human health or the environment. The location is now a satellite storage area from which no known prior release has occurred.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.1.58 PRS 12-003—Storage Area (OU 1085)

SWMU 12-003 is a former gas cylinder storage area located on the south side of the unimproved road and about one mile east of the TA-12-4 firing pit. The unit is in a small clearing covered with low shrubs and there are no visual indications that any activity took place. The area was used in 1968 for laser-based mortar-point-of-launch locator experiments. An acetylene gas gun was used to propel the inert mortar rounds. In 1989 HSE-7 removed two gas cylinders from the area. The waste disposal form for this unit, dated June 15, 1989, lists oxygen and acetylene cylinders and an empty firing chamber as having been sent to gas cylinder storage (Jackson 1989, 21-0051).

SWMU 12-003 is recommended for NFA and delisting from the SWMU Report because there is no reasonable basis for characterization of the site based on considerations of human health and environmental risk, community concern, laboratory operations, and value of information (LANL 1993, 1017). There exists no documentation or physical evidence that RCRA hazardous waste was ever handled at SWMU 12-003. The mortar rounds used in the experiment were inert, non explosive rounds, propulsion was provided by oxygen/acetylene combustion rather than conventional gun propellant (Watanabe 1993, 21-0091). The gas cylinders were removed from

the area and taken to the empty cylinder storage area. No documentation has been found that would indicate that any of the activities generated hazardous waste.

EPA Concurrence: OU 1085 NOD dated 9/2/94.

2.2.1.59 PRS C-12-006—Pole (OU 1085)

C-12-006 is described as a tall pole with a plastic tube near TA-12-8 that became contaminated with HE and strontium-90 as a result of a release during a radiation experiment in 1950. C-12-006 is an example of an error in Appendix C of the SWMU Report: C-12-006 is a duplicate reporting of one of the elements of SWMU 12-004(a).

Based on field investigation and a review of the existing documentation (SWMU Reports) (LANL 1990, 0145) this unit is a duplicate of SWMU 12-004(a) which is being recommended for sampling in Subsection 5.2 of **the RFI work plan for OU 1085.**

EPA Concurrence: OU 1085 NOD dated 9/2/94.

2.2.1.60 PRS 14-008—Landfill and Surface Disposal (OU 1085)

SWMU 14-008 is listed as a landfill/surface disposal near TA-14 where a long-time employee recalls placing some classified material in a drainage channel and covering it. The employee does not remember the location of the burial and does not believe that the material contained hazardous waste. **The location of this PRS is totally unknown and because there is no reasonable basis for indication that hazardous materials were disposed at the site NFA is recommended.**

SWMU 14-008 is recommended for NFA.

The location of this PRS is totally unknown and because there is no reasonable basis for indiciation that hazardous materials were disposed at the site (LANL 1993, 1017).

EPA Concurrence: OU 1085 NOD dated 9/2/94.

2.2.1.61 PRS 15-004(e)—Unit Does Not Exist (OU 1086)

SWMU 15-004(e) is not a firing site; it is a manhole bunker for electric cables. It was wrongly identified (see Figure 5.3-3). Engineering drawing ENG-R 703, 1955, places Firing Point D [SWMU 15-004(e)] 140 ft south and 115 ft east of the southwest corner of building TA-15-41. This location is a manhole/bunker (TA-15-34/98) (ENG-C and ENG-C 39), from which electrical cables changed from above ground to below. The manhole/bunker was partially below ground and covered with a berm.

A surface sample (PF-15D) was taken and analyzed as part of the Sanitary Wastewater Systems Consolidation (SWSC) project (Fresquez 1991, 10-0003) (see Figure 5.3-3). Gross alpha, beta, and gamma activity were at background levels, and toxicity characteristic leaching procedure (TCLP) (Ag, As, Ba, Cd, Cr, Hg, Pb, and Se) metals were below EPA guidelines. Also, no semivolatile organic compounds (SVOCs) were detected. Total beryllium and uranium levels were at background levels. This SWMU is recommended for NFA.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.62 PRS 15-005(a)—Storage Area (OU 1086)

The storage area, SWMU 15–005(a), is located in room ER126 of building TA-15-20. It was reported to have been used for storing lead. It is, in fact, a boiler room containing a boiler,

compressor, and air ventilation equipment. The room was inspected in May 1993. There were no signs of lead bricks. We recommend this SWMU for NFA.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.63 PRS 15-008(e)—Surface Disposal (OU 1086)

The Laboratory's SWMU report (LANL 1990, 0145) lists a dirt mound [SWMU 15-008(e)] being present over the leach field of septic system TA-15-195. The ER site reconnaissance visit (LANL 1989a, 0861; LANL 1989b, 0862; LANL 1989c, 0863) describes the mound as 10 ft x 10 ft x 4 ft with concrete and pipe debris. This mound was a construction mound during the construction of the leach field, and was removed after construction was completed.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.64 PRS 15-009(d)—Septic Tank (OU 1086)

This drain, on the north side of building R-40, drains that part of R-40 which contains offices only (and auxiliary rooms, such as conference rooms, coffee rooms etc). There have never been any laboratories associated with this part of R-40 and therefore no hazardous wastes. We recommend NFA.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.65 PRS 15-013(a)—Underground Tank (OU 1086)

This tank had a structure designation TA-15-192. It was an aboveground 1036- gal. propane tank, which was removed from TA-15 in December 1959 (Francis 1992, 10-0002). The tank was relocated at TA-49 and renumbered as TA-49-56. There is no documentation concerning leakage from this tank while it was located at TA-15. Like butane, propane is not hazardous. We recommend NFA for this SWMU.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.66 PRS 15-013(b)—Underground Tank (OU 1086)

An underground 15 000-gal. tank, containing mineral oil designated TA-15-287, was located immediately north of building TA-15-184 (PHERMEX facility) (ENG-C 43075 1976, 10-0021). This tank was installed in 1977 by the Zia Company as part of the PHERMEX Enhancement Program. This tank has also been mislabeled with a second number TA-15-266 [SWMU 15-013(b)].

The necessary permits and work order were obtained and this underground storage tank was removed in October 29, 1992. Soil samples were collected from around the site and analyzed for total petroleum hydrocarbons, which were found to be 15 ppm or less (Tiedman 1992, 10-0041). Because this tank contained mineral oil, a nonhazardous material under RCRA, NFA is recommended.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.67 PRS 15-014(c)—Industrial or Sanitary Wastewater Treatment (OU 1086)

SWMU 15-014(c) is a sink drain exiting building TA-15-242 at the rear and emptying on the ground on the north side of the building.

Building TA-15-242 is used to store HEs and to assemble HEs around the experimental firing system. No machining of HEs, however, occurs in this building and the HEs are never in solution, making spills unlikely. The sink, now deactivated, was used for simple operations such as washing

hands. Because no measurable quantities of HEs are expected in this drain area, this SWMU is recommended for NFA.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.68 PRS C-15-002—Surface Disposal (OU 1086)

Between 1978 and 1980, the area, where building R-285 was later constructed, was excavated in order to lay the foundations for building R-285. The dirt from the excavations was piled (Mason 1993, 10-0040) at the location that became C-15-002. The main mound is about 15 ft high and 100 ft long. There are four smaller mounds just to its south, about 5 ft by 5 ft. There is no reason to expect contamination in these mounds and NFA is recommended.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.69 PRS C-15-003—Surface Disposal (OU 1086)

Examination of this pile of black granular material located approximately 500 ft east of shaft TA-15-264 [SWMU 15-007(c)] confirmed that it is magnetite. Magnetite is an iron oxide that occurs naturally in great abundance and is not considered a hazardous material. This magnetite was put here as backfill material used in the shaft experiments (Subsection 5.3.5.1).

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.70 PRS C-15-009—Underground Tank (OU 1086)

An underground fuel tank (butane), TA-15-48 (AOC C-15-009), is currently located a few feet north and west of building TA-15-8 (see EXEC 3 and topographical map Appendix A). This tank, although marked at the site, is not on the Laboratory's Underground Tank List. Because butane is not hazardous, we recommend NFA for this AOC.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.1.71 PRS 16-007(b)—Surface Disposal Site (OU 1082)

The 1990 SWMU Report describes a small earth pond west of TAs 16-89, 16-90, 16-91, 16-92, and 16-93, into which floor drains emptied (LANL 1990, 0145). This appears to have been based on a 1970 memo that states, "Buildings TA-16-89 through 93 floor drains discharged into earth tank west of buildings. Water sample collected from tank contain no detectable gross alpha emitters and only a trace of gross beta emitters. As a result of our survey there appears to be no environmental hazard due to radioactivity" (Kennedy 1970, 15-16-006).

A thorough review of aerial photographs, topographic maps, and engineering drawings coupled with extensive field reconnaissance by the Operable Unit (OU) 1082 Project Leader (OUPL) have failed to find any evidence of an earthen tank west of this series of buildings. Furthermore, engineering drawings and field observations by the OUPL indicate that the drains in TAs 16-89, 16-90, and 16-91 empty into HE sumps attached to the buildings. These sumps then drain to a pond to the northeast of the buildings. TA-16-92 and TA-16-93 have similar systems that drain to a small tributary of Cañon de Valle on the northwest.

Based on field observations and a review of the existing documentation of the drainage system for TAs 16-89 through 16-93, there is no evidence of a pond west of these buildings. It is more likely that the water sampled in 1970 came from the pond to the northeast of TAs 16-89, 16-90, and 16-91. That pond is still in existence as SWMU 16-008(a), which is covered in Chapter 5, Subsection 5.12.

The location of this PRS is not shown on the map of TA-16 in Appendix A of this document.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.1.72 PRS 18-010(a)—Outfall (OU 1093)

This storm sewer system drains water from the roof of Building TA-18-30 through a series of roof drains located on the west side of the building. It outfalls south of the southwest corner of the building (Figure 2-7). This site is designated as an AOC because there is no evidence to suggest that any waste materials or contaminants are present in the discharge.

According to an engineering drawing (LASL 1955, 16-0002), the only sources of water handled by this AOC are rainwater or melting snow from the roof of Building TA-18-30. This AOC, along with other storm sewer outfalls, was apparently included in the SWMU Report because of its presumed potential for draining areas where radioactive or hazardous materials had been stored. However, the drain serves only the roof of Building TA-18-30, where no storage has occurred. Because no contaminants could have been introduced into this outfall, NFA is proposed.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.1.73 PRS 18-012(d)—Drain Line (OU 1093)

The SWMU Report (LANL 1990, 0145) indicates that "drains of unknown origin and purpose are located behind Building TA-18-129 and are marked with a cement post." These drains satisfy the definition of a SWMU (Section 1.1) and are so designated.

A June 1992 site inspection did not locate the drains or the post. An engineering drawing (LASL 1969, 16-0045) does not show any drains in Building TA-18-129. It is possible that the posts marking the drains [AOC 18-012(c)] from nearby Building TA-18-141 were mistakenly identified as a separate drain. Because this drain does not appear to exist as a separate drain from those drains already identified, NFA is proposed.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.1.74 PRS C-21-013—Disposal Pit (OU 1106)

The third subdivision includes a possible waste storage pit, TA-21-331, adjacent to Building TA-21-212. This area of concern is numbered C-21-013. This unit was intended to be a plywood test pit with an earthen floor and covered access, but engineering records indicate that construction of this pit was cancelled, and it is probable that this pit was never built. Subsequent reconnaissance investigations have failed to locate this pit. Therefore, this unit does not merit further investigation.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.1.75 PRS C-21-014—Warehouse (OU 1106)

A currently operational equipment warehouse used by HSE-1, -6, -7.

Records show that either no documented release has occurred or that a release has occurred but cleanup has been conducted and documented (Table 19 II).

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.1.76 PRS 22-014(c)— Unit Does Not Exist (OU 1111)

The SWMU Report states, under "Notes" for 22-014, that "SWMU Nos. 22-014(a) and (b) were formerly SWMU Nos. 22-004(a) and (b), respectively. SWMU No. 22-014(c) was formerly SWMU

No. 22-005" (LANL 1990, 0145). The section for 22-004 states that 22-004(a and b) were renumbered to 22-014(a), and the section for 22-005 states that it was renumbered to 22-014(b) (LANL 1990, 0145). No other references to 22-014(c) appear in the SWMU Report, and it is not identified with a structure number.

On the basis of this lack of description, we conclude that the single reference to 22-014(c) is a typographical error.

The location of this PRS is not shown on the map of TA-22 in Appendix A of this document.

EPA Concurrence: OU 1111 NOD dated 5/20/94.

2.2.1.77 PRS 30-001—Surface Disposal and Landfill (OU 1114)

SWMU 30-001 was TA-30, a small site now abandoned, approximately 500 ft north of the intersection of West Road and West Jemez Road and about 15 ft north of the intersection of West Road and the old Anchor Ranch Road. It was established in 1945 as an electronics test area. An area approximately 40 x 80 ft was cleared to erect a single electronics test building 16 ft square. Engineering Drawing A5-R35 from 1947 indicates that the building contained only a bench and an oil stove. There was no sink. An oil storage tank was located outside of the building. Aerial photographs show that the site was cleared before December 1947. The site is now covered with grasses, a few ponderosa pines, and a small scrub oak thicket. Only a few pieces of gravel indicate that the site was ever used. About 150 ft to the north is a pile of gravel that contains cured asphalt chunks; this may be the "landfill uphill from the site" as mentioned in the SWMU Report (LANL 1990, 0145).

There is no indication that hazardous materials were used at this site. Fuel oil is not a TCL material. While small amounts of volatile solvents may have been used to clean electronic components, the building contained no sink to release solvents to the environment. Solvents evaporate quickly in use. Concerning the potential of a landfill, visual inspection of the pile of gravel reveals that it contains only small pieces of cured asphalt less than 3 in. in diameter. There is no evidence of any material that might present a threat to human health or the environment.

The location of this PRS is not shown on a map in the Appendix of this document.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.78 PRS C-31-001—Buildings (OU 1079)

AOC C-31-001 consists of the soil beneath former structure locations and the paved parking area, and is considered an AOC based on the potential for surface spills during past operation of TA-31 (Figure 4.2-1). The structures at TA-31 included six warehouses, a roofed receiving dock, a small virgin oil drum storage area (less than 100 ft^2), a transformer station, and a septic tank system (SWMU 31-001). No chemicals were routinely stored at TA-31 during its operation. Hazardous chemicals, when received by the Laboratory, were transported to the chemical storage area at TA-21. The only liquid storage documented at TA-31 was the virgin oil products (likely fuel oil).

The storage yard AOC was paved with asphalt soon after TA-31 was opened, which protected the underlying soils from liquid spills. Possible contamination on the asphalt and soil immediately under it would have been removed or disturbed beyond the point at which the site could be characterized when the site was decommissioned (exact date unknown). The storage site has been occupied by the Eastern Area residential development since 1955 (Figure A-31-2, Appendix A). No further action is proposed for the AOC because there are no records of any hazardous materials being stored at the site or any documented spills of hazardous material.

EPA Concurrence: OU 1079 NOD dated 10/5/92.

2.2.1.79 PRS 33-004(l)—Outfall (OU 1122)

A perforated, corrugated metal pipe exits TA-33-89 and runs south to an outfall on the rim of White Rock Canyon within SWMU 33-010(b).

TA-33-89 was completed in June 1955. Implosion testing activity never occurred at East Site, so the unit was never used. There is no record of radioactive or hazardous materials being used or stored in this building (LANL 1990, 0145). Nor, was shot debris scattered over this site. TA-33-89 is not used at this time.

There is no record of any potential hazardous materials being released to TA-33-89 or the outfall. No corrective action is required.

EPA Concurrence: OU 1122 RFI review letter dated 7/15/93.

2.2.1.80 PRS 33-004(n)—Septic System (OU 1122)

This septic tank is located near TA-33-23 along the west road south of Main Site. The "Solid Waste Management Units Report" (LANL 1990, 0145) states that SWMU 33-004(f) is: "The tank north of the building, TA-33-23, was constructed in 1987. It consists of 1000-gallon fiberglass septic tank that serves a residential trailer, TA-33-181. The tank is pumped and and has no discharges to the environment. This system has EID Permit Number LA-124."

The "Solid Waste Management Units Report" (LANL 1990, 0145) states SWMU 33-004(n) "TA-33-206 (33-004[n]) was installed in 1987 and has a capacity of 1,000 gallons. It serves a trailer and discharges to a holding tank."

It is assumed by Operable Unit 1122 project team members that these SWMUs are the same septic tank.

The residential trailer, now removed, once housed a 24-hour attendant for Group EES-1, Geology and Geochemistry. The septic tank is pumped and has no discharges to the environment.

Discharges to this septic tank were sanitary wastes from a residential trailer. No hazardous materials are present. No corrective action is required.

EPA Concurrence: OU 1122 RFI review letter dated 7/15/93.

2.2.1.81 PRS 35-012(b)—Inactive Storage Tanks (OU 1129)

AOC No. 35-012(b) consists of two aboveground siege tanks (TA-35-278 and TA-35-279) located near the canyon edge southwest of TA-35-207. The tanks were installed but reportedly were never used. This AOC is recommended for NFA because the tanks were never used for the management of hazardous constituents.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.82 PRSs C-35-005 and C-35-006—Operational Release (OU 1129)

AOC No. C-35-005 is the site of a spill of 100 gal. of non-PCB-contaminated dielectric oil; AOC No. C-35-006 is the site of a spill of 5 gal. of organic waste solvent (see Section 3.3.2.1). Spills at these two sites were cleaned up immediately following the incidents (in 1986 and 1988, respectively). Trace amounts of the dielectric oil and organic waste solvent remained. These AOCs are recommended for NFA because they involved one-time spills that were immediately cleaned up and the amounts of spilled materials remaining after cleanup do not pose a threat to human health or the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.83 PRS 36-003(d)—Septic System (OU 1130)

This septic system was built in 1988 to handle sanitary waste from three buildings in the TA-36 office lab complex: transportable office structures TA-36-81 and TA-36-84, and security structure TA-36-22. This system consists of a 1,000-gal. reinforced-concrete septic tank (TA-36-100), a distribution box, a leach field, and pipes connecting the various parts of the system (LANL 1990, 0145).

Contaminants of concern are not likely to be present, because the system serves office and security structures not directly associated with activities that generate hazardous waste, and there is no evidence that these buildings have ever been used as laboratories. Nor is there evidence that this septic system has ever received anything other than sanitary waste.

EPA Concurrence: OU 1130 RFI review letter dated 9/23/94.

2.2.1.84 PRS C-36-002—Surface Disposal (OU 1130)

This site was listed as a suspected waste disposal site in the 1988 SWMU Report (LANL 1990, 0145). Formerly designated as 36-006(b), it is located on the mesa west of Lower Slobbovia near Laboratory coordinates E200+00, S85+00. A field inspection of the site, documented in the 1990 SWMU Report (LANL 1990, 0145), found that it is only a borrow pit from which material was being excavated for use as fill. The site is proposed for NFA on the basis of Criterion 1 (Section 4.4.1), because it has never contained any contaminants of concern.

EPA Concurrence: OU 1130 RFI review letter dated 9/23/94.

2.2.1.85 PRS 37-001—Septic System (OU 1082)

SWMU 37-001 is a septic tank, TA-37-28, that serves TA-37-1, an inactive guard house. The tank has a capacity of 540 gal. and overflows into a 2 400-sq-ft drain field. Its NMED registration number is LA-43 (LANL 1990, 0145).

This septic tank received only sanitary waste from its associated guard house and, in the absence of hazardous constituents, there is no potential for a release to the environment. Septic tanks that manage only domestic waste are excluded from being SWMUs under 40 CFR 261.4(a)(1)(i).

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.1.86 PRS 39-007(b)—Storage Area (OU 1132)

Building TA-39-4 was identified as an inactive storage area in the SWMU Report. In fact, this building is not a storage area, but is used for assembling explosives experiments. Unboxed components are permitted to be stored when necessary for operations, and certain specified items may be kept in the building when it is not in use for experiments (Shock Wave Physics Group 1990, 18-0013, and 1991, 18-0014).

The SWMU Report states that this building has residual HE contamination, although the CEARP Report (DOE 1987, 0264) stated that it did not. Our inquiry revealed that technical staff at TA-39 consider anything that has come into contact with HE to be "contaminated with residual HE," even though the contamination is confined to the work benches and these are cleaned after each job (Wheat 1993, 18-0019). This building, with its original benches, has been in use since 1953; there are no current plans to discontinue its use.

EPA Concurrence: OU 1132 RFI review letter dated 9/22/94.

2.2.1.87 PRS 39-009—Outfall (OU 1132)

This is a line from Building TA-39-69 that drains water used for cooling three pieces of equipment (a LASER power supply used, as required, with temporary hook-ups; a "Stokes" vacuum pump; and a diffusion pump). The latter two devices are permanently installed in an equipment room on the east side of the building.

The cooling water, which comes from a potable water supply (Francis 1992, 18-0009), circulates through cooling coils that are in contact with the three pieces of equipment. It is then discharged via the drainline onto the asphalt parking lot east of the building.

This outfall is permitted under NPDES number EPA-04A-41.

Because the water is potable and has no direct contact with any of the equipment, there is no opportunity for contamination.

EPA Concurrence: OU 1132 RFI review letter dated 9/22/94.

2.2.1.88 PRS C-40-001—Usage Site (OU 1111)

The SWMU Report states that herbicide was used to remove vegetation from a 50-ft radius around structures TAs-40-3, -6, -11, and -14 in 1961 (LANL 1990, 0145). No further information on this area of concern has been found, and plants are now growing in these areas.

We have found no evidence that these areas were subject to any action beyond normal application of herbicides. No information has been found to indicate that herbicides were stored in these buildings.

The location of this PRS is not shown on the map of TA-40 in Appendix A of this document.

EPA Concurrence: OU 1111 NOD dated 5/20/94.

2.2.1.89 PRS C-41-001—Sump (OU 1098)

According to the SWMU report on the AOC, the sump in question here is the sump already addressed in SWMU no. 41-003 (structure TA-41-10) (Figure 8.6-1). See Section 7.16 for further details. Engineering drawings and structure location maps show no other sumps for TA-41. This AOC is recommended for NFA, based on criterion 1, since there is no evidence that an AOC unique from SWMU no. 41-003 (which is being investigated) exists.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.1.90 PRS C-41-003—Underground Tank (OU 1098)

The industrial waste tank, TA-41-W45, approximately 13 ft by 11 ft, was noted as located 50 ft southwest of Building TA-41-4 (Figure 8.6-1). This tank was noted as part of the new tritium facility that was built in the early 1950s (Laboratory Job no. 5783-41). Subsequent structure location maps from the 1950s and 1960s for TA-41 do not identify this tank's location or acknowledge its existence. The tank was assigned a structure number in 1981, and on a 1983 structure location map the tank is listed with its structure number; however, its location is listed as unknown. Since the location and existence of this AOC are unknown, according to NFA criterion 1, this AOC is recommended for NFA.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.1.91 PRS C-41-005—Underground Tank (OU 1098)

The fuel tank, TA-41-W46, is a 41 ft by 6 ft tank located 5 ft southwest of building TA-41-4 (Figure 8.6-1). The structure history notebook in Facilities Engineering Division, group ENG-7 describes this tank as a diesel fuel tank, associated with laboratory job number 5783-41. This is the same laboratory job number to which the industrial waste tank is associated. It was assigned a structure number in 1981, together with the industrial waste tank. The fuel tank's exact location is not documented on any engineering drawings, and it is unclear whether the tank ever existed. Since the location and existence of this AOC are unknown, according to NFA criterion 1, this AOC is recommended for NFA.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.1.92 PRS 43-001(b1)—Outfall (OU 1136)

PRS 43-001(b1) is described in the SWMU Report as a pipe at the back of TA-43-24 (a transportable building) that discharges from a drinking fountain (LANL 1990, 0145). A field visit to this building has found that the original drinking fountain has been replaced by a sink that is used for washing hands. The TA-43 building manager states that TA-43-24 has always functioned as an office and that there have never been any hazardous materials stored in the building. The health protection technician for TA-43 has conducted a swipe test at TA-43-24, found no readings significantly above background, and considers the area free of radioactive contamination (Watanabe 1993, 23-0074) (Figure 6-1).

PRS 43-001(b1) is recommended for NFA and removal from the SWMU Report because no hazardous waste or constituents were managed at the unit and there is no evidence of a release. Hence, category 1 applies for recommending NFA.

No documentation has been found that would indicate that there is any risk associated with this PRS.

EPA Concurrence: OU 1136 NOD dated 8/8/94.

2.2.1.93 PRS 43-003—Carcass Storage (OU 1136)

PRS 43-003 is described as two separate areas: a small area within TA-43-1 that is used as a satellite storage area where materials are kept in a locked closet in Room B-127; and a photoprocessing laboratory storing chemical waste (LANL 1990, 0145).

Further investigation of the first of these two areas as part of the RFI work plan process has revealed that B-127 was used for several years as a break room for animal colony workers but in the late 1980s was converted to a storage room for miscellaneous items. Currently the room houses a freezer used to store materials used in experiments. Bud Whaley, LS-2 Group Leader and a long-time employee in TA-43-1, believes that B-127 was mis-identified as a satellite storage area and that the "locked closet" was B-236. B-236 was initially used as a clean chemical storage room and five or six years ago was designated as a satellite storage area for waste products. B-236 remained a satellite storage area until 1990 when the area was moved to a dock located on the south side of TA-43-1 (Watanabe 1993, 23-0057).

Photoprocessing is done in Rooms B-235 and B-245. Before 1990, the photoprocessing wastes were disposed of into the sanitary sewer system. Beginning in 1990, the developer and fixer were collected for recycling, and in 1992 the process was formalized and is currently conducted under a standard operating procedure (SOP) (Wilson 1992, 23-0043) (Figure 6-1).

PRS 43-003 is recommended for NFA and removal from the SWMU Report because no hazardous waste constituents were managed at the unit, and there is no evidence of a release. Hence, category 1 applies for recommending NFA.

Both locations associated with PRS 43-003 are within building TA-43-1, and no documentation has been found to indicate that there is any risk associated with this PRS. Under Subsection 6.1 of this work plan the sanitary sewer line that received the photoprocessing chemicals will be investigated upon the decommissioning of TA-43.

EPA Concurrence: OU 1136 NOD dated 8/8/94.

2.2.1.94 PRS 43-004—Waste Storage (OU 1136)

PRS 43-004 is described in the SWMU Report as the freezers in TA-43-1 in which animal carcasses are stored before being drummed for shaft disposal at Material Disposal Area G (LANL 1990, 0145). The freezer is currently located in Hallway B-100B, although in the past it may have been located elsewhere within TA-43-1. (Figure 6-1)

PRS 43-004 is recommended for NFA and removal from the SWMU Report because no hazardous waste or constituents were managed at the unit, and there is no evidence of a release. Hence, category 1 applies for recommending NFA.

The location associated with PRS 43-004 is within TA-43-1, and no documentation has been found to indicate that there were any hazardous wastes or consituents managed at this unit or any evidence of a release associated with this PRS.

EPA Concurrence: OU 1136 NOD dated 8/8/94.

2.2.1.95 PRSs 46-004(i, j, k, l, n, o)—Outfalls (OU 1140)

SWMUs 46-004(i, j, k, n, o) are outfalls from active cooling towers currently regulated under NPDES permits. SWMU 46-004(i) includes Outfalls D and E, located north of Building TA-46-87. Outfall D served cooling tower TA-46-86. Engineering drawing ENG-C 38764 shows that Outfall E, directly above D, served a holding tank located east of the tower. The tank held dilute lithium hydroxide solutions discarded during the Rover Project from the arc jet test facility in Building TA-46-31. At release, the hydroxide solution was diluted by blowdown water to about 96 ppm (Stratton 1969, 11-061). Engineering drawing ENG-C 38763 shows a second, valved, unlocated outfall north of TA-46-31 serving the feed line to the holding tank; this outfall may have been removed when the line was decommissioned. Neither the blowdown water nor dilute lithium hydroxide solution contained regulated substances; the three outfalls are recommended for NFA in this work plan.

SWMU 46-004(l) was a commercial, free-standing cooling unit located on the south side of Building TA-46-24. It has been removed (Griggs 1993, 11-218). Blowdown discharged to Outfall NN is described in Chapter 5, Subsection 5.4.1.1.2.

Two of these outfalls were established after passage of the Clean Water Act in 1972 and have always been regulated and tested: SWMU 46-004(k) in 1983 and SWMU 46-004(o) in 1985 (see also Step 2 rationale, Subsection 6.1.2). Engineering drawings indicate that none of these outfalls have any source other than cooling tower effluent (McCulla 1992, 11-203). Since no chromates were used at TA-46 and other additives are benign (Radzinski 1992, 11-188), these outfalls meet all criteria under Step 4 of Appendix I, Subsection 4.1 of the IWP; the PRSs present no threat to workers, the public, or the environment.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.1.96 PRS 46-006(e)—Surface Disposal (OU 1140)

SWMU 46-006(e) is described in the SWMU Report as follows: "TA-46-1 released effluent from metallurgical polishing into Cañada del Buey." This SWMU is a duplicate of SWMU 46-004(g), described as follows: "TA-46-1 ...uranium... possible release into Cañada del Buey." SWMU 46-

004(g) (Outfall N) is discussed in Chapter 5, Subsection 5.4.1.1.1; sampling points are shown in Fig. 5-4-6.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.1.97 PRS 46-008(misc.) and 46-010(misc.)—Storage Areas (OU 1140)

SWMUs 46-008(misc.) and 46-010(misc.) are not sufficiently described in the SWMU Report to make a determination on their whereabouts and nature.

The locations of these PRSs are not shown on the map of TA-46 in Appendix A of this document.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.1.98 PRS 48-004(d)—Sumps and Tanks (OU 1129)

SWMU No. 48-004(d) is a small tank that was installed below the hot cell in the basement of TA-48-1 but has never been used (see Section 3.5.2.1). This SWMU is recommended for NFA because the tank was never used and site design and conditions preclude COCs from migrating to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.99 PRS 48-006—Septic System (OU 1129)

AOC No. 48-006 is an active septic system that was installed in the early 1980s and has served only office buildings in which hazardous or radioactive materials have never been managed (see Section 3.5.2.1). This AOC is recommended for NFA because no contaminant source term exists and there is no reason to suspect releases of COCs from this septic system.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.100 PRS 50-003(e)—Storage Area (OU 1147)

The SWMU Report (LANL 1990, 0145) mentions four barrels (size unknown) under a tarp adjacent to a small metal shed (structure TA-50-125) located near the perimeter fence south and west of Building TA-50-69. There is no indication in the report whether the barrels contained anything or whether spillage was noted.

Visual inspection of this possible SWMU yielded no evidence of the barrels nor any indication of a spill in the area. The building engineer for TA-50-69 had no knowledge of these barrels ever being present. It is possible that what the SWMU Report was referring to were empties awaiting use in the volume reduction facility.

No source of contamination could be found in the reported location.

No evidence of this SWMU could be found.

EPA Concurrence: OU 1147 NOD dated 9/9/92.

2.2.1.101 PRS 51-002(a and b)—Usage Sites (OU 1148)

Environmental research site caissons are located at TA-51-38 [SWMU 51-002(a)] and TA-51-39 [SWMU 51-002(b)]. The structures were constructed in 1980, but only TA-51-38 was used for research. TA-51-39 is inactive and is currently sealed with steel plates to prevent if from collecting water during precipitation (Weston 1991, 08-0045). Each structure consists of radial clusters of 12 vertical steel caissons that surround a central caisson for sampling and measurement. The structures are largely underground. The caissons are 20 ft deep.

Six of the caissons on each structure are 10 ft in diameter and six are 18 inches in diameter. The design of the structures is shown on Figure 6.5-2. Research was conducted in structure TA-51-38 from 1981 to 1986. The individual large-diameter caissons in the structure are designated with the letters A through F (see Figure 6.5-2). Research was never conducted in Caisson F or in the six small-diameter caissons; they remain empty.

The research involved filling Caissons A through E with natural earth materials such as crushed tuff and crushed tuff mixed with bentonite, sand, and coarse gravel. Measurements were taken over time to characterize the flow of water and the transport of chemical tracers through the vertical columns. Tracers used in the research included stable isotopes of chemicals that are not listed as hazardous waste. No radioactive isotopes were used in the research. Experiments in Caisson E did not use tracers. Chemical tracers used in the research are listed in Table 6.5-1.

Each caisson is a closed system with a drain that collects water flowing vertically through the soil column. The drains collect to a central sump. Water in the sumps was discharged periodically to land that sloped off the mesa to Cañada del Buey. There is no specific information on the volume of water that was discharged periodically or the concentrations of tracers that were present in the discharge. However, the chemical constituents used as tracers are not a concern for environmental contamination. Therefore, SWMUs 51-002(a,b) are recommended for NFA.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.1.102 PRS C-51-001—Storage Area (OU 1148)

At the time the SWMU Report was written, drums of clean soil were present at research caisson TA-51-38. The soil was used in research at the caissons. The drums of soil were listed as AOC C-51-001 in the 1990 SWMU Report (Weston, 1991, 08-0045). There were no drums present at the site during a visit on August 22, 1991 (Weston 1991, 08-0045). There is no reason to suspect that the drums of soil contained hazardous waste constituents. Therefore, AOC C-51-001 is recommended for NFA.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.1.103 PRS 52-002(g)—Septic System (OU 1129)

SWMU No. 52-002(g) is not an active septic system as designated in the 1990 SWMU report but simply a sewage holding tank that was installed in 1989 or 1990 (see Section 3.6.2.1). The holding tank serves offices in a new building in which hazardous and radioactive materials have never been managed. This SWMU is recommended for NFA because it has never been used for the management of hazardous or radioactive materials.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.104 PRS 52-004—Evaporator (OU 1129)

SWMU No. 52-004 is an inactive outfall from which only noncontact cooling water associated with a simulated fuel rod cooling process was discharged (see Section 3.6.2.1). A radiological survey conducted in the area of the outfall during a 1988 ER Program site reconnaissance did not detect levels above background. This SWMU is recommended for NFA because the outfall was never used for the management of hazardous or radioactive materials.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.105 PRS 54-001(f)—Storage Area (OU 1148)

When the SWMU Report was written, the equipment storage area [SWMU 54-001(f)] east of the transuranic (TRU) storage pads 1-4 were included in a hazardous waste container storage area,

but no information on waste handling was available. Since then, Laboratory personnel at EM-7 have confirmed that no waste was ever handled or stored at this area (IT Corporation 1992, 08-0005).

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.1.106 PRS 54-008—Underground Tank (OU 1148)

Three septic tanks at MDA L are used to hold sanitary wastes. The tanks are emptied by pumping wastes to a truck-mounted tank. The tanks have no seepage trenches or beds. The capacity of the first tank (TA 54-43) (SWMU 54-008) is 1,700 gal. It was installed within MDA L in 1988 and serves TA-54-39, the PCB Storage Facility. No releases have been identified from this tank. The NMED registration number for this tank is SF 880257.

The second septic tank (TA 54-80), installed outside of MDA L, serves building TA-54-37. Its capacity is 1,500 gal. The tank was installed in 1989 (IT Corporation 1991, 08-0028). Releases have occurred at least three times due to tank overflow. The septic tank receives sanitary waste from office facilities, and it is unlikely that hazardous waste enters the tank. Procedures have been revised since the overflows occurred, and scheduled removal of the waste has been increased to three times per week. This tank is not a listed SWMU. The NMED registration number is SF 89034R.

The third septic tank (TA-54-150), also outside of MDA L, serves building TA-54-117. Its capacity is 600 gal. The tank was installed in 1990 after the more stringent waste-removal schedule had been implemented. As an extra precaution, the new tank was equipped with an overflow alarm system. No releases have been identified from this tank. This tank is not a listed SWMU. The NMED registration number is SF 880260.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.1.107 PRS 54-010—Underground Tank (OU 1148)

A tank is listed in the SWMU Report (LANL 1990, 0145) as a 600-gal tank used to hold wash water from decontamination activities of items from the waste compaction operations in TA-54-2, and shower water from TA-54-11. Since then, Laboratory personnel at EM-7 have confirmed that this tank (SWMU 54-010) actually holds supply wash water instead of waste water (IT Corporation 1992, 08-0005). As such, this tank is not part of a waste stream.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.1.108 PRS 55-003—Containment Area (OU 1129)

AOC No. 55-003 consists of an aboveground storage tank and the surrounding containment structure (see Section 3.7.2.1). Currently the tank is used to store pure nitric acid, which is a product not a waste. The surrounding secondary containment structure is capable of holding the contents of the entire tank and is designed to prevent a release of hazardous materials to the environment. This AOC is recommended for NFA because the tank is not used to store hazardous waste and site design precludes a release to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.1.109 PRS 59-002—Container Storage Area (OU 1114)

SWMU 59-002 is recorded as a waste accumulation area outside TA-59-1. An active container accumulation area is located on the south-side loading dock at the main floor level, and a loading access door is on the east end at the basement level. At one time the south-side dock was used for drum storage. Presently, there are only gas cylinders and other items stored in cages.

A field survey found debris and drums stored at several outside locations in TA-59. Some of the drums were marked as radioactive (LANL 1990, 0145). All of the drums have since been removed.

TA-59-1 houses both offices and laboratories in a two-story structure. According to TA-59-1 operating personnel, the only drums or containers marked as containing radioactive waste are located inside the count trailers on the south side of the building. These containers are used for the disposal of collected samples counted in trailers. When the waste containers are full, they are immediately moved to the locked dumpster on the east end of TA-59-1 for storage. The contents of the dumpster is disposed of at TA-54. Until approximately 1989, one of the count trailers was located near the southwest corner of TA-59-1. Periodically, drums of debris with unknown contents were left near the count trailer from unknown sources. When this happened, the drum contents were sampled, analyzed, and disposed of in accordance with applicable regulatory requirements. Drums of hazardous or radioactive waste have never been stored on the loading dock at TA-59-1. There have been no documented releases of hazardous or radioactive waste on, or in the vicinity of, the loading dock (LANL 1992, 17-761).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.110 PRS 59-003—Sump (OU 1114)

SWMU 59-003 consists of three sumps in the basement of TA-59-1. The 100-gal. capacity sump and lift station in Room B-7 is constructed of cast iron and has been tied to the sanitary sewer line since the building was constructed in 1951. Engineering Drawings ENG-C 43430, and ENG-R 5300 show that the two sump pumps in Rooms B-8F and B-8J are constructed of acid-resistant plastic with a capacity of 5 gal. The two sump pumps sit on the concrete floor and are tied to the acid waste line.

The three sumps (SWMU 59-003) in the basement of TA-59-1 were included in the SWMU Report (LANL 1990, 0145) because of their potential to handle radioactive and hazardous wastes. However, the sump and lift station located in Room B-7 handle only sanitary waste water and has been connected to the sanitary sewer since the building was constructed (LANL 1992, 17-725). The sump pumps in Rooms B-8F and B-8J were installed approximately five years ago to handle waste water from laboratory operations that were relocated to the basement of TA-59-1.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.111 PRS 60-001(b)—Storage Area (OU 1114)

SWMU 60-001(b) is an active storage structure, TA-60-7, a corrugated-metal shed with a concrete floor, located in the northeast corner of the TA-60-2 materials storage yard. Materials stored in TA-60-7 include 1- and 5-gal. containers of paints, paint remover, lacquer thinner, methyl ethyl ketone, paint thinner, and concrete primer. After December 1992, TA-60-7 was no longer be used for the storage of these constituents. Additionally, one 85-gal. overpack drum containing one absorbent pillow and two bags of absorbent material is located in the center of the shed. What appear to be oil or grease stains were observed on the concrete floor between the large center door and small door near the northwest corner of the structure. These stains were created by a small forklift that periodically leaked oil. The forklift was parked in the area of the shed but has not been used in several years.

When the SWMU Report was written, TA-60-7 was designated as an active satellite waste and hazardous materials accumulation area (LANL 1990, 0145). Johnson Controls personnel have since confirmed that no waste was ever handled or stored at TA-60-7, and there has been no record of spills or releases of paints, thinners, or solvents since its construction in 1978 (LANL 1992, 17-665).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

0049). There have been no known releases of hazardous substances from this tank, which is believed to contain only sanitary waste.

Sanitary Septic Tank TA-69-9, PRS 69-002(a), is proposed for NFA under Criterion 1. No hazardous materials were used in the guard house and none could have entered the septic system.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.1.120 PRS 69-002(b)—Septic System (OU 1157)

The SWMU Report and Engineering records state that PRS 69-002(b) includes a 1000-gal. septic tank, TA-69-10, and a seepage pit, TA-69-11 (LANL 1990, 0145; Weston 1989, 12-0049). They were constructed in 1986 and presently serve Trailer TA-69-2, which was put in by M Division in May of 1987 for use as an office trailer. Trailer TA-69-2 contains one restroom. Another trailer, TA-69-5, was moved into the area in March of 1989 by ENG-5 for use as an office trailer. This trailer has no restroom.

No known hazardous releases have been reported for this septic system. The buildings it supports are for office use only which only produces sanitary waste), and it has been operating during a period when Utilities Operating Instructions for Waste Water Operations have been in place.

This PRS is proposed for NFA based on Criterion 1. Sanitary waste was the only waste present here.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2 NFA Criterion 2. No release has occurred from the PRS to the environment.

2.2.2.1 PRS 0-035(a)—Surface Disposal (OU 1071)

On July 12, 1991, during the upgrading of the bridge spanning Los Alamos Canyon, a 55-gal. drum was discovered in the canyon beneath the bridge (Environmental Protection Group 1991, 05-0164). The drum was exposed during grading to level the ground for a large crane. The drum was punctured but did not leak. Analysis of the material in the drum showed it to be a tar made up of several polynuclear aromatic hydrocarbons (Bell 1991, 05-0165).

An electromagnetic survey was conducted over the area, which revealed a section of pipe and roll of cable (Aldrich 1992, 05-0176); however, no additional drums were found (Tiedman 1991, 05-0166).

Because tar did not leak from the drum and because no other drums were found in the electromagnetic survey, it is recommended that no further action be taken at this site.

EPA Concurrence: OU 1071 RFI review letter dated 1/6/93.

2.2.2.2 PRS 3-010(c)—Operational Release (OU 1114)

SWMU 3-010(c) is the site of a hydraulic pump housed in a metal shed north of TA-3-216. The pump was mounted on a concrete pad elevated about 6 in. above the ground and enclosed in a small sheet metal housing. It was removed between December 1990 and August 1991. The ground around the pad is landscaped with gravel-covered plastic sheeting. Investigation by Laboratory staff determined that the unit was a belt-driven vacuum pump installed in the late 1980s and used in conjunction with a cryogenic liquid nitrogen Dewar flask. The pump used an oil comparable to the one described for SWMU 3-010(b) above. Operating practices included the placement of drip pans under the pump to catch any leakage (LANL 1992, 17-733).

The vacuum pump identified in this PRS has been removed, and a recent inspection by Laboratory personnel revealed no visual evidence of any seal oil spills, either on the concrete base or on the ground around the base. Because there are no stains, and because drip pans had been placed beneath the pump to contain any leaks, it can be concluded that there was no history of release to the environment from this PRS.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.2.3 PRS 3-039(b, c, d, and e)—Silver Recovery Units (OU 1114)

SWMUs 3-039(a-e) are photographic processing sites using silver recovery units which capture silver in resin-containing canisters. Rinse water circulating through the processor discharges to the sanitary sewer system through a floor drain. Laboratory analyses indicate that typical effluent flow contains about 0.29 mg/L of silver (LANL 1992, 17-727). The SAL for silver is 240 mg/L. Currently, the recovery canisters are collected by the Waste Management Group (EM-7) and either stored or processed at TA-54. Operators at the Laboratory have recovered silver from all these PRSs since 1979. Several types of silver recovery units have been used at the Laboratory. A newer type, used at the Laboratory since 1989, deposits silver onto a metal drum by means of an electrolytic reaction. Older units collected silver onto a "steel wool" material which was sent to Albuquerque for recovery.

SWMUs 3-039(a-e) are located at five separate indoor sites within the OU. Two units are active; two are former photographic processing sites that used silver recovery units. Discharges from the fifth unit, SWMU 3-039(e), are collected and removed.

Prior to 1979, waste solutions from these PRSs were discharged to the sanitary sewer system serving the TA-3 waste water treatment facility, SWMUs 3-014(a-z), discussed in Subsection 5.5.

Drain lines that transported silver wastes will be addressed during decontamination and decommissioning (D&D) of each building. The TAL element, silver, is now collected and removed from active sites. These recovery units are recommended for NFA because the only hazardous material, silver, had no credible pathway to the environment except via the waste water treatment plant. Subsections 5.5.1.1.2 and 5.5.1.1.4 discuss monitoring of the effluent from lines in TA-3 into the sewer system, and states that no RCRA-required analytes over detection limits were found. Consequently, it is believed that these PRSs pose no threat.

SWMU 3-039(e), located in TA-3-409, is an x-ray processing unit used by the Laboratory medical facility. All developer and replenisher chemicals were discharged into a floor drain that was connected to the TA-3 sanitary sewer and waste water treatment facility. This practice was discontinued in March, 1992. The chemicals are now collected in double-walled containers and removed from the site.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.2.4 PRS 6-003(b)—Firing Site (OU 1111)

The recovery effort during the Manhattan Project (Section 2.2) was directed toward finding a means of recovering the fissionable material from the Trinity test in case the conventional explosives detonated but the fissionable material did not (Hoddeson et al., in preparation, 0851; Goldberg 1991, 0852). As part of the effort, scale-model steel explosion containers were tested during 1944 and 1945. The objective was to test the strength of different container designs. Explosives were used in these tests (Schaffer 1945, 19-0027), but no fissionable materials were used. Spherical containers tested were called Model I Jumbinos (sometimes Jumbos); cylindrical containers were called Model II Jumbinos. The total number of containers produced and tested at Technical Area 6 is not known.

A Model I Jumbino, about two feet in diameter, was located south of the concrete bowl [6-003(a)], and parts of three Model II Jumbinos were located in a disposal area [6-007(f)] north of Buildings TA-6-1 and -3. Because these objects have historical value, the Bradbury Science Museum at the Laboratory wishes to acquire them for their collection. Personnel from the museum have had the three Model II Jumbinos tested for explosives residues and found them to be free of explosives contamination (Turner 1992, 19-0105). Museum personnel also plan to test and acquire the Model I Jumbino container.

The known uses of these explosion containers indicate that the only hazardous contaminants to be expected are explosives and their residues. The parts of containers that have been located and tested for explosives have been found free of explosives contamination. Other containers that may be found will be tested for contamination and may be collected by the museum. Because many of these containers were tested to destruction, they may have been disposed of in landfills and other disposal areas, or they may have been recycled as scrap steel. All known containers have been or will be tested for explosives contamination, and landfill and disposal areas will be investigated as part of the RCRA facility investigation process.

EPA Concurrence: OU 1111 NOD dated 5/20/94.

2.2.2.5 PRS 8-008(a)—Storage Area (OU 1157)

Structure TA-8-38 was installed 80 ft southwest of Building TA-8-22 between 1949 and 1950 and consisted of three electrical transformers mounted on a pole-supported platform. At some point during 1986 or 1987, the transformers and the supporting platform were removed and were replaced with a set of three modern transformers mounted on a single pole (LANL 1944 to present, 12-0003). According to G. Brooks, who was working at the site daily during the time that these and other transformers at TA-8 were replaced, the old transformers sat on the ground for several days before being removed from the site. He further stated that all of the transformers were in good working order and showed no sign of leakage (Jones 1992, 12-0157). A visual inspection of the area around the pole revealed no signs of leakage from the transformers.

This transformer storage area, PRS 8-008(a), is recommended for NFA under Criterion 2. There is no evidence the transformers ever leaked and, therefore, would not be a PRS.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.6 PRS 8-008(b)—Storage Area (OU 1157)

Structure TA-8-77, a single transformer mounted on a pole, was installed 250 ft west of building TA-8-21 between 1949 and 1950. At some point in 1987, the transformer was removed from the site. According to G. Brooks, who was working at the site daily during the time that this and other transformers at TA-8 were removed and/or replaced, the old transformers sat on the ground for several days before being removed from the site (Jones 1992, 12-0157). He further stated that all of the transformers were in good working order and showed no sign of leakage. A visual inspection of the area around the pole revealed no signs of leakage from the transformers.

This transformer storage area, PRS 8-008(b) is recommended for NFA under Criterion 2. There is no evidence the transformers ever leaked and, therefore, would not be a PRS.

EPA Concurrence: OU 1157 NOD dated 4/5/94. Typographical error in the NOD spelled this PRS 8-000(b).

2.2.2.7 PRS 8-008(c)—Storage Area (OU 1157)

Structure TA-8-79, two transformers mounted on a single pole, was installed 125 ft northeast of Building TA-8-24. At some point during 1986 or 1987, the transformers and the original pole were removed and were replaced with a set of three modern transformers mounted on a single pole. According to G. Brooks, who was working at the site daily during the time that this and other transformers at TA-8 were replaced, the old transformers sat on the ground for several days before being removed from the site (Jones 1992, 12-0157). He further stated that all of the transformers were in good working order and showed no sign of leakage. A visual inspection of the area around the pole revealed no signs of leakage from the transformers.

This transformer storage area, PRS 8-008(c) is recommended for NFA under Criterion 2. There is no evidence the transformers ever leaked and, therefore, would not be a PRS.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.8 PRS 8-008(d)—Storage Area (OU 1157)

Structure TA-8-38, three transformers mounted on a pole-supported platform, was installed in 1944 directly north of TA-8-1. At some point during 1968, the transformers and the platform were removed from the site. As with the removal/replacement of other transformers at TA-8, these transformers may have been placed on the ground for a short period prior to removal from the site, although no specific information on this transformer was found. A visual inspection of the area around the pole revealed no signs of leakage from these transformers.

This transformer storage area, PRS 8-008(d) is recommended for NFA under Criterion 2. There is no evidence the transformers ever leaked and, therefore, would not be a PRS.

EPA Concurrence: OU 1157 NOD dated 4/5/94. Typographical error in the NOD spelled this PRS 8-000(d).

2.2.2.9 PRS C-8-017—Storage Area (OU 1157)

This AOC was once a storage vault for fissionable materials associated with the radiography facility (Weston 1989, 12-0049). Currently, it is being used by Group WX-3. Radioactive material used for radiography is sealed and is not released to the environment unless the container is broken

(Harry 1993, 12-0120). No documentation pertaining to spills or releases of source material related to this building has been found.

Building TA-8-27, AOC C-8-017, is proposed for NFA based on Criterion 2. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.10 PRS C-8-018—Building (OU 1157)

This AOC was once a storage/radiation laboratory used primarily to store contained radioactive sources for radiography (Weston 1989, 12-0049). Currently, WX-3 is using this building for storage. Radioactivity has never been released in this building, and radiation has not been detected inside or outside the building. As of October 1991, one projector was empty and the other source was almost totally depleted (LANL 1991, 12-0121). Radioactive material used for radiography is sealed and is not released to the environment unless the container is broken (Harry 1993, 12-0120). No documentation pertaining to spills or releases of source material related to this building has been found.

Building TA-8-65, AOC C-8-018, is proposed for NFA based on Criterion 2. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.11 PRS C-8-019—Building (OU 1157)

This AOC was once a storage/radiation laboratory and was built to perform ^{60}Co radiography (Weston 1989, 12-0049). Currently the building is being used by MEE-9 as a macrostatistical hydrodynamics laboratory and has no radioactive materials associated with it. Radioactive material used for radiography is sealed and is not released to the environment unless the container is broken. No documentation pertaining to spills or releases of source material related to this building has been found (Harry 1993, 12-0120).

Building TA-8-30, AOC C-8-019, is proposed for NFA based on Criterion 2. There is no evidence of any contamination associated with this building.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.12 PRS C-9-009—Non-intentional Release (OU 1157)

The SWMU Report states that this AOC results from oil stains found on the northeast loading dock of TA-9-28 and refers to an ER Program site visit in November 1988 when several 3-ft diameter oil stains were found (Weston 1989, 12-0049). This building contains a mechanical machine shop. Oil has run off of equipment onto the concrete floor. Also, corrosion was discovered on the concrete floor beneath several storage containers. The oil and corrosion have only contacted the concrete and have not affected the soil around the building (Harry 1993, 12-0081). A memo has been written to the operating group (Group M-1) to ensure that appropriate measures will be taken to guarantee that there will be no releases to the environment in the future (Glatzmaier 1993, 12-0077).

Because no releases have been made to the environment in the past, this AOC is proposed for NFA under Criterion 2.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.2.13 PRS 11-003(a)—Mortar Impact Area (OU 1082)

SWMU 11-003(a), a mortar impact area, is a swath one hundred feet wide by several hundred feet long that was cleared through the forest north of TA-11. The swath runs generally southeast to northwest from the drop tower complex. Currently, older growth pine trees define the outer margins of the swath, with younger pines of varying heights in the swath itself. The general area is well vegetated with grasses, oaks, and weeds. A tributary of Water Canyon transects the impact area from west to east.

This mortar impact area was used in the late 1950s and early 1960s for test operations involving a 155 mm recoilless launcher. According to project engineer William A. Spencer, the launcher was used to conduct acceleration tests on the Davy Crockett warhead. The test devices sometimes contained small amounts of HE and depleted uranium within the inert outer envelope. A parachute was attached to the test device to prevent it from falling outside of the impact area. Plastic foam pads were attached to the nose of the device to cushion its impact. Spencer is certain that no devices detonated, broke open, or otherwise contaminated the soil. All devices were recovered for diagnostic analysis (Griffin 1992, 15-11-052).

Based on the interview with William A. Spencer, none of the outer envelopes of any of the test devices launched at this location were breached, nor were any hazardous or radioactive materials released. Therefore, this SWMU received no hazardous or radioactive constituents as a result of mortar impacts.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.2.14 PRS 15-005(d)—Storage Area (OU 1086)

In the area known as "The Hollow," a small building, TA-15-30, is presently used for chemical storage. During the 1988 environmental restoration (ER) site reconnaissance visit (LANL 1989a, 0861; LANL 1989b, 0862; LANL 1989c, 0863), lead bricks were noted stacked by this building [SWMU 15-005(d)]. This was a temporary storage location, the number of lead bricks was small. The bricks have been removed and the area has been covered with asphalt. This information indicates that it is highly unlikely that release occurred from these lead bricks in quantities sufficient to be hazardous to occupational workers or future receptors. This SWMU is therefore recommended for NFA.

EPA Concurrence: OU 1086 NOD dated 7/26/94.

2.2.2.15 PRS 18-005 (b and c)—Storage Areas (OU 1093)

[See PRS C-51-002 (OU 1148). PRSs 18-005 (b and c) were transferred to TA-51 and are now identified as PRS C-51-002].

2.2.2.16 PRS 18-009(c)—Transformer (OU 1093)

Transformers [AOCs 18-009(b) and (c)] at Stations TA-18-46 and -148 (Figure 1-2) were both removed in 1988 (LANL 1990, 0145). One of the three transformers at Station TA-18-46 contained oil with PCB concentrations above 50 ppm (Assaigai Analytical Laboratories, Inc. 1984, 16-0048 ; LANL 1992, 16-0047). No data were discovered regarding the transformer(s) at Station TA-18-148. According to the SWMU Report (LANL 1990, 0145), these transformers were inspected before removal. There is no evidence from engineering records that leaks occurred. These sites were designated as AOCs because PCBs are not regulated by RCRA or HSWA.

A July 1992 onsite inspection of these two locations revealed that the transformers have been replaced with transformers containing less than 50 ppm PCBs. Because there is no evidence of past or present leaks, NFA is proposed for these two AOCs.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.2.17 PRS 18-009(d)—Transformer (OU 1093)

According to the SWMU Report, a transformer at Station TA-18-142 (Figure 1-2) leaked PCB-contaminated oil in 1988. According to documentation (Bailey 1992, 16-0049), oil was observed around the fill valve and bushing horns of this transformer. The fill valve is on the upper part of the transformer and the bushing horns are located at the transformer switch-gear connection. The release points on the transformer had an oily sheen under the fill valve and under the bushing horns. The PCB concentration was 101 ppm, and the volume leaked was estimated to be 1 teaspoon. There was no oil on the concrete pad below these areas. This site is designated as an AOC because PCBs are not regulated by RCRA or HSWA.

According to cleanup documentation (Bailey 1992, 16-0049), the fill valve, surface below the fill valve, underside of the bushing horns, junction boxes, and underside of all bushing horn junction boxes were cleaned. A double wash/double rinse was done on the surfaces using Viking Electric R-30 solvent. The solvent was applied with rags and a wire brush. After the cleanup, a close inspection of the areas where the leaks had occurred indicated the oil had sweated out. A 1992 visual inspection showed no signs of leakage. Because the leakage was cleaned up, there was no release to the environment, and there are no indications of present leakage, NFA is proposed for this AOC.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.2.18 PRS 18-009(e)—Transformer (OU 1093)

A 1983 capacitor fire in the pumphouse for Pajarito Mesa Well No. 2 (TA-18-252) (Figure 1-2) resulted in PCB contamination of walls, ceiling, floor, and installed equipment. According to the SWMU Report, firefighters used extinguishers and water to douse the blaze, resulting in the contamination of the floor and soil surrounding the door. Soil in the affected areas was excavated to depths at which PCBs were no longer detected, but available documentation does not stipulate what detection levels were used. The excavated soil reportedly was disposed of at Material Disposal Area G. The building and equipment were cleaned with Fantastic brand cleaner and repainted. According to a 1984 memo (Ortiz 1984, 16-0001), sandblasting and painting the interior walls, ceiling, and floor were both recommended and performed. A 1992 interview (Hesch 1992, 16-0046) indicated that the equipment, as well as the pumphouse interior, was washed down. This site is designated as an AOC because PCBs are not regulated by RCRA or HSWA.

This AOC was apparently included in the SWMU Report because of a presumed potential for continuing release from the equipment in the pumphouse, rather than because of the contaminated soil (which was cleaned up). The 1984 memo referenced above indicated that only air concentrations of PCBs inside the building were of concern. The sandblasting and painting referred to above were designed to mitigate those releases. Some PCB contamination of interior surfaces of the pump motor may still exist, and routine monitoring of air inside the building accompanies any maintenance work in the building. While some atmospheric release of PCBs or decomposition products (either aerosols or vapors) may still be continuing, these releases do not represent a concern subject to or requiring environmental remediation. It is entirely an occupational health issue. Therefore, NFA is proposed.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.2.19 PRS C-18-002—Building (OU 1093)

This assembly building (TA-18-10) was located north of Pajarito Road on the mesa above the present location of TA-18. It was used for the assembly of explosive devices tested at either TAs-18 or -27. Material handled inside the building would probably have included high explosives, uranium, and thorium. There is no documented evidence to suggest that any systematic or even occasional releases occurred from this building. The building was moved to TA-5 between 1947 and 1948 (DOE 1987, 0264). The former location of this building is presently within TA-54, which is outside the boundary of OU 1093 (Figure 1-3).

The building and contained operations were not related to waste management; it served only to house assembly operations. Because the site area has been cleared and regraded, the exact location of the former building is not evident. The source of potential contamination no longer exists and there is no evidence that radioactive or hazardous releases occurred from this building. For these reasons the site was designated as an AOC in Appendix C of the SWMU Report (LANL 1990, 0145) rather than as a SWMU. NFA is proposed for this AOC.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.2.20 PRS 21-025(a, and b)—Operational Facility (OU 1106)

This section addresses two off-gas systems that have been identified as SWMU 21-025(a) and -025(b) at TA-21. These SWMUs are active systems that are monitored under routine operations at the Tritium Systems Test Assembly (TSTA) facility.

The first off-gas system is located in Building TA-21-155 (SWMU 21-025a), the TSTA facility, and the second is located in Building TA-21-209 (SWMU 21-025b), the high-temperature chemistry research facility. Building TA-21-155 was completed in 1982, and the first tritium operations began in 1984. Building TA-21-209 was built in 1965. The off-gas systems in both buildings are connected to exhaust stacks that are used to vent gas containing small amounts of tritiated water after treatment. The exhaust stack releases are identified as SWMU 21-019 and are discussed in Chapter 13.

The following is a description of the basic operating principle of the two off-gas systems (LANL 1990). They are designed to remove tritium from gaseous effluents prior to release to the environment. A tritium treatment train is in operation in both the TSTA facility (TA-21-155) and the high-temperature chemistry research facility (TA-21-209). On each train, gases that may contain tritium are stored in a tank until a given pressure is exceeded. When the pressure is exceeded, the gases are released from the tank and are passed through a catalyst bed operated at high temperatures in order to oxidize the tritium to tritiated water. The tritiated water is then collected in a series of molecular sieves. When a sieve is near breakthrough it is removed and hot nitrogen gas is used to strip the tritiated water from the sieve. The now- concentrated, tritiated water vapor is collected on a second series of molecular sieves. Just before breakthrough occurs in the second series of sieves, the sieves are removed and placed in asphalt-lined, 55-gal. drums for collection and disposal. After the off-gas streams are sufficiently detritiated, as determined by radiation monitoring, they are released to the exhaust stacks (see Chapter 13, SWMU 21-019). The entire off-gas treatment trains, including the tanks, are located entirely within the confines of Buildings TA-21-155 and TA-21-209.

No known releases or contamination to the inside of the buildings that could have reached the environment as a result of the off-gas treatment trains have been documented.

It has been concluded that the two off-gas systems pose no threat to the environment and should not be investigated under field activities. It appears that the two off-gas systems have been incorrectly identified and should no longer be considered SWMUs. It has been recommended that no further action be taken in the investigation of the off-gas systems based on the following:

2.2.1.112 PRS 60-001(d)—Storage Area (OU 1114)

SWMU 60-001(d) is the pesticide storage shed, TA-60-29, located approximately 650 ft east of the NTS Test Fabrication Facility. TA-60-29 is a corrugated metal structure constructed in 1988 and currently operated by Johnson Controls. A bermed concrete pad is attached to the north side of the structure to contain any spills that may occur during the mixing and/or filling of pesticide-spraying equipment. No wastes are stored in the shed (LANL 1992, 17-691), although the unit is listed as a RCRA satellite accumulation area.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.113 PRS 60-003—Oil-Water Separator (OU 1114)

SWMU 60-003 is an active oil-water separator located approximately 30 ft east of the northeast corner of TA-60-1. Installed in 1986, the separator measures approximately 8 to 10 ft deep and approximately 4 ft in diameter. It is constructed from a pre-formed, reinforced concrete manhole set upright in a poured bed of reinforced concrete.

From 1978 to 1986, process waste from steam cleaning operations at TA-60-1 discharged directly into a large storm water drainage ditch leading to Sandia Canyon. During the first quarter of 1986, an oil-water separator was installed to collect all liquid waste produced by the steam cleaning process. The separator operates on gravity and the natural propensity of oil and water to separate; oil rests on top and the underlying water discharges into the sanitary sewer system. The oil is periodically skimmed from the bottom of the separator tank. When this occurs, the tank is effectively cleaned and the water is replaced.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.114 PRS 60-004(a)—Storage Area (OU 1114)

SWMU 60-004(a) is a storage area that appeared to contain old equipment and general debris (LANL 1990, 0145). It is located three-tenths of a mile east of the locked entrance gate on Sigma Mesa. The PRS site is actually a 2.5 acre, active storage yard for equipment and supplies used by Johnson Controls. Stored items include 20 x 10 ft concrete forms, electrical equipment, a unit substation transformer, wooden cable reels, light poles, and 4 x 6 in. lumber posts. There are several 100 ft-long electric poles, electrical insulators, and 4-in. conduit of various lengths (Griggs 1992, 17-671). Blue stickers on the electrical equipment state that they contained no PCBs. HSE-7 verified that the transformers have been tested and contain no PCBs (Holm-Hansen no date, 17-554).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.115 PRS 60-005(b)—Mud Pit/Drilling (OU 1114)

SWMU 60-005(b) [formerly SWMU 3-030(a)] is a 60 x 120 ft rectangular pit located at the eastern end of Sigma Mesa. Half the pit is 20 ft deep with a level floor; the remainder is inclined and leads up to the level of the mesa. The north (shallow) end of the pit is now used as a storage area for topsoil, sand, gravel, asphalt chunks, rebar, and some rubble.

The pit was in use between July and September 1979, when an experimental geothermal well was drilled at this site. East of the pit were staging and drilling areas for the project. These areas are described in Subsection 5.7. Bentonite clay and additives were mixed on site in 1 000-gal. tanks prior to use (Martell 1992, 17-600). The contractor's, Moran Bros, Inc., daily drilling report records indicate that the additives were water, soda ash, and commercial gel products (Quickgel, Benex, A-gel, and M-gel) (Moran 1979, 17-815). The pit was used as a settling area to recycle water from the spent mud. The SWMU Report states that the pit was once lined, but the lining lasted only a short time (LANL 1990, 0145). Some drilling mud remains in the pit.

According to 40 CFR 261.4, which addresses exclusions to the identification and listing of hazardous waste, "Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy" are included in Part B as "Solid wastes which are not hazardous wastes." They are exempt from RCRA Subtitle C regulations. Moran used proprietary products as additives. In addition, the hole frequently lost circulation and most of the drilling fluids were not brought to the surface and recovered.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.116 PRS 60-006(b)—Septic System (OU 1114)

SWMU 60-006(b) is an inactive septic system installed in 1979 to serve temporary trailers for personnel at the geothermal drilling site. The tank is located approximately 10 ft east of the utility pole that served the trailers. The associated seepage pit appears to be located beneath a small mound of dirt. A white, 4-in. PVC pipe protrudes from the center of the mound. The drilling operation was discontinued in approximately 1981 and the area has been periodically used for equipment storage since that time. The septic system was abandoned in place when the drilling operations ceased (LANL 1992, 17-695).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.117 PRS 60-006(c)—Septic Tank (OU 1114)

SWMU 60-006(c) is listed as an inactive septic system located at the Nevada Test Site (NTS) Test Rack Fabrication facility (LANL 1990, 0145). This PRS is a duplicate of SWMU 60-006(a) (see Subsection 5.6).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.118 PRS 61-003—Burn Sites (OU 1114)

SWMU 61-003 is an alleged burn pit. The SWMU Report states that aerial photographs taken in the 1940s show a burn pit on East Jemez Road near the present location of the Royal Crest Trailer Court. Aerial photographs from 1946 (photograph LAHM-P 1990-40-1-3030) and 1947 (photograph 7473-1 aerial view tube #70,C3,TD19) of the same area show what might be mistaken for a burn pit but is not. Burn pits are large, bermed features easily identified in aerial photos.

Scrutiny through a high-power magnifier shows the PRS to be trees. Several walking trips through the possible site of the burn pit were made by the 1114 Operable Unit Project Leader and team members in the spring of 1992. No evidence was found that a burn pit ever existed.

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.1.119 PRS 69-002(a)—Septic System (OU 1157)

The 1990 SWMU Report (LANL 1990, 0145) states that this system includes Septic Tank TA-69-9 (formerly TA-0-69), supporting Guard House TA-69-1 (formerly TA-0-68) for sanitary waste. Both the SWMU Report and Engineering records (LANL 1990, 0145; Weston 1989, 12-0049) state that the tank measures 5-ft 4-in. wide by 5-ft 4-in. long by 3-ft deep, and is built of reinforced concrete. Engineering records indicate that the tank was built as part of the guard house project for Station 502 located on Anchor Ranch Road near the TD Site turnoff in 1954.

The tank overflows to a 90-ft long drain line that discharges to an outfall. The system is registered as an unpermitted individual Liquid Waste System with EID Registration Number LA-08. The Active Septic Tank System data base indicates that the drain line was plugged in 1988 and that the waste is now collected in a holding tank and pumped (LANL 1990, 0145; Weston 1989, 12-

1. The two off-gas systems are considered to be separate from the building exhaust stacks. Any environmental contamination resulting from stack releases is not considered to be associated with the off-gas systems, but is associated with the stacks, and thus will be investigated under the TA-21 site-wide sampling plan (Chapter 12) and in relation to stack emissions, SWMU 21-019 (Chapter 13).

2. The two off-gas treatment trains, including the storage tanks, are located entirely within the confines of Buildings TA-21-155 and TA-21-209.

3. The two off-gas systems are currently in operation and are covered under routine Laboratory operations.

4. No environmental releases from inside of buildings to the environment have been documented from either TA-21-155 or TA-21-209.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.21 PRS 21-028(b)—Container Storage (OU 1106)

TA-21 contains five active container storage areas listed under SWMU 21-028(a)-(e) shown in Fig. 20.2-1. SWMU 21-028(a) is covered in Sec. 16.3 because it is located within MDA T. SWMU 21-028(c) is covered in Sec. 18.4 because it is an active container storage area located in a part of TA-21 that is scheduled for D&D. SWMU 21-028(d) and a portion of SWMU 21-028(e) are addressed in Chapter 14, Surface Units, because they are associated with buildings not currently planned for D&D. This section discusses SWMU 21-028(b), and the next section discusses the interior portions of SWMU 21-028(e). These are recommended for no further action.

SWMU 21-028(b) consists of three satellite container storage areas located inside of Building TA-21-150 (Fig. 20.2-2). Generators at satellite storage sites may accumulate a total of 55 gal. of hazardous or mixed waste or up to one quart of acutely hazardous waste.

The three satellite container storage areas are located under hoods within Rooms 603, 605, and 607. It is assumed that chemical waste storage at Building TA-21-150 began in 1963 when the building went into operation (Nyhan 1990).

No information regarding sampling and analysis in or around SWMU 21-028(b) is available.

The types of materials that are stored under the hood in the chemistry research lab, Room 603, include

- halogenated organic chemicals--chloroform, methylene chloride, carbon tetrachloride, and alkyl halides; and
- nonhalogenated organic chemicals--acetone, toluene, tetrahydrofuran, benzene, ethanol, methanol, butanol, diethyl ether, and isopropanol.

These chemicals may be contaminated with thorium, depleted uranium, technetium, and other metals (LANL no date) .

The types of materials being stored in Room 605, the general chemistry lab, are

- liquids--acetone, dichloromethane, ether, tetrahydrofuran, hexane ethyl acetate, xylene, phenol, acetonitrile, n-butyl alcohol, benzyl alcohol, formalin, chloroform, methanol, ethanol, benzene, isopropanol, toluene, acetic anhydride, acetaldehyde, o-toluidine, pyridine, dioxane, propyl ether, t-butyl alcohol, dimethylformamide, and dimethylsulfoxide; and

- solid wastes--pipets, kimwipes, and gloves contaminated with the above-listed chemicals.

The ethers (propyl ether, ethyl ether, and tetrahydrofuran) are stored separately in a chemical safety cabinet.

Mercury is also being temporarily stored under a hood in the room (LANL no date).

The types of materials being stored in Room 607, glassware cleaning room, are

- liquids -- acetone, ethyl acetate, methanol, benzene, hexane, and n-butyl alcohol; and
- solid wastes -- kimwipes, gloves, and pipets are contaminated with the above-listed chemicals.

Acetone and methanol are the primary reagents used (LANL no date).

It is recommended that no further action be taken in the investigation of the three satellite container storage areas located inside Building TA-21-150, based on the following:

1. These storage areas exhibit no evidence of routine releases.

2. No environmental releases from inside Building TA-21-150 to the environment have been documented.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.22 PRS 21-028(e)—Container Storage (OU 1106)

This section addresses those parts of SWMU 21-028(e) inside Building 210. A portion of SWMU 21-028(e) is outside of the building, the north loading dock, and is covered in Sec. 14.4.

SWMU 21-028(e) consists of three satellite container storage areas located at TA-21-210. The areas are inside Room 128, inside the south lab in Room 120, and outside on the north loading dock. Only the areas inside Rooms 120 and 128 are considered here (see Fig. 20.2-1).

TA-21-210, Room 128, has been used periodically to store alcohol and solvents. Room 120 in Building 210 has been used to store waste oil from machines and wipes that have been used to absorb freon (LANL no date).

No information regarding sampling and analysis in or around SWMU 21-028(e), Rooms 120 and 128, is available.

It is recommended that no further action be taken in the investigation of the satellite storage areas located inside Building TA-21-210, Rooms 120 and 128, based on the following:

1. These storage areas exhibit no evidence of routine releases.

2. No environmental releases from inside Building TA-21-210 to the environment have been documented.

EPA Concurrence: OU 1106 RFI review letter dated 1/9/92.

2.2.2.23 PRS C-32-001—Buildings (OU 1079)

AOC C-32-001 consists of the soil beneath the former structure locations at TA-32, and is considered an AOC based on the potential for surface spills during past operation of TA-32 (Figure 4.3-1). The structures at TA-32 included three laboratories, four warehouses, an office

building, a valve house, an incinerator (SWMU 32-001), and two septic tanks [SWMUs 32-002(a-b)].

Possible contamination in the soil beneath the former structures would have been removed or disturbed beyond the point at which characterization could take place when the site was decommissioned. No further action is proposed for the AOC because there are no records of any spills of hazardous material occurring at the site.

EPA Concurrence: OU 1079 NOD dated 10/5/92.

2.2.2.24 PRS 35-001—Material Disposal Area (OU 1129)

SWMU No. 35-001 consists of two 4-in.-diameter, 125-ft-long stainless steel tubes suspended vertically inside 8-in.-diameter carbon-steel-cased wells (see Section 3.3.2.1). Each tube, which is backfilled under pressure with nitrogen and is sealed, contains 150 L of liquid sodium reactor coolant contaminated with ^{239}Pu and associated fission products. Gross-gamma activity emitted from the site is monitored. Sodium and radionuclides cannot be released from the tubes unless the steel tubes are cracked. If the tubes were breached, the sodium would be expected to react explosively with moisture in the soil or tuff. However, because the tubes have not shown signs of cracking, no releases of sodium are believed to have occurred. Furthermore, potential contamination of the surrounding tuff cannot be assessed without drilling deep wells adjacent to the tubes. Such drilling activity would greatly increase the likelihood of breaching the containment tubes and could cause a potentially dangerous release.

This SWMU is recommended for NFA because no evidence of a release exists; the engineered controls presently in place preclude any migration of contaminants to the environment; assessment and remediation options pose a greater threat to human health and the environment than not investigating the site; and this site is designated as an MDA-W, which will be maintained under perpetual institutional control.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.25 PRS 35-004(c)—Storage Areas (OU 1129)

SWMU No. 35-004(c) is an outdoor container storage area located on the south side of TA-35-125 (see Section 3.3.2.1). It is used to store drums of dielectric oil. The area is associated with the waste-oil treatment system (AOC No. 35-007) and is located in a covered, bermed area that is equipped with sumps and pumps for spill containment. Oil stains were observed within this bermed area, but the berm is designed to prevent spills from reaching the environment. This SWMU is recommended for NFA because site design precludes COCs from migrating to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.26 PRSs 35-004(d) and 35-004(f, k, l, and n)—Container Storage Areas (OU 1129)

SWMU Nos. 35-004(d and e) and AOC Nos. 35-004 (f, k, l, and n) are container storage areas located inside buildings throughout TA-35 (see Section 3.3.2.1). In August 1991 a site inspection revealed no evidence of spills. These SWMUs and AOCs are recommended for NFA because even if spills have occurred at these storage areas, site design precludes COCs from migrating to the environment. In addition, AOC No. 35-004(n) is a RCRA-permitted waste storage area.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.27 PRS 35-007—Waste Oil Treatment (OU 1129)

AOC No. 35-007 is a closed-loop system used for reprocessing non-PCB dielectric oil, which is not a RCRA hazardous waste (see Section 3.3.2.1). The system is located within a curbed spill-retention area designed to contain oil spills. A container storage area (SWMU No. 35-004[c]) and a storage tank (AOC No. 35-011[c]) are also located inside this bermed area. This AOC is recommended for NFA because the materials managed are not hazardous wastes and site design precludes spilled oil from migrating to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.28 PRS 35-011(c)—Underground Storage Tank (OU 1129)

AOC No. 35-011(c) consists of an active UST (TA-35-197) and an aboveground tank. These tanks are associated with the oil-reprocessing facility (AOC No. 35-007) (see Section 3.3.2.1). Currently this system handles only non-PCB dielectric oil, but in the past the tanks may have received oils contaminated with water. The aboveground tank is located within a bermed area that precludes COCs from migrating to the environment. The UST was leak-tested in 1991 and found to be tight; therefore, it is assumed that the tank has not leaked in the past. This AOC is recommended for NFA because leakage from the UST is not suspected and site design precludes potential releases from the aboveground tank to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.29 PRS C-35-008—Leaking Transformer (OU 1129)

AOC No. C-35-008 is the site of a leaking PCB transformer (PCB ID No. 5618) located in the basement of TA-35-2 (see Section 3.3.2.1). The oil/water mixture that leaked from the transformer was cleaned up under the Toxic Substance Control Act (TSCA). This AOC is recommended for NFA because site design and conditions preclude a potential release to the environment and the transformer has been removed.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.30 PRS 36-004(f)—Firing Site (OU 1130)

Moe Magazine is located on a mesa top overlooking Fence Canyon. It comprises three permanent magazines: Big Moe, Little Moe, and Pro Moe (Schlapper 1991, 13-0077). Moe Magazine has never been a firing site and, since its construction in the 1950s, has never been used for any purpose other than storage. There have been no environmental releases of hazardous or radioactive materials from this magazine.

It is thought that, in the 1940s, before the construction of Moe Magazine, two explosives shots may have been detonated in the area where the magazine now stands (Kelkar 1992, 13-0051; Kelkar 1992, 13-0052). These two shots contained only explosives and detonators; no metals or materials other than explosives were involved.

No further action is proposed for this PRS on the basis of Criterion 4 (Section 4.4.1) of the IWP, because there is no reason to believe that hazardous or radioactive constituents have been released from the magazine, and it is unlikely to release any in the future. Further, any organic materials that may have been released by the alleged explosive experience will have volatilized or been degraded in the 50 years since the alleged experiments occurred. Thus potential receptors are unlikely to be exposed to any residual materials.

EPA Concurrence: OU 1130 RFI review letter dated 9/23/94.

2.2.2.31 PRSs 36-007(a, b, c, d, e, and f)—Storage Areas (OU 1130)

PRSs 36-007(a, b, c, d, e, and f) are active satellite waste storage containers that are used for short-term storage of small quantities of explosive-contaminated solid waste items. Each container is a small (less than 5 gal.) corrugated cardboard box with a plastic liner. When full, each box is sealed and transported to TA-16 for permitted burning. The boxes are located within Buildings TA-36-4, -5, -7, -8, -11, and a storage area at Minie. All of these buildings are concrete structures with concrete floors and a steel door. There have been no reports of contaminant releases from these waste containers or from the buildings.

These explosive waste containers are all recommended for NFA on the basis of Step Two, Section 3.1.1, Appendix J of the evaluation process described in the IWP (LANL 1992, 0768). That is, these PRSs are all permitted satellite and less-than-ninety-day waste storage areas from which there have been no environmental releases.

EPA Concurrence: OU 1130 RFI review letter dated 9/23/94.

2.2.2.32 PRS 39-002(g)—Storage Area (OU 1132)

This is a storage area inside of Building TA-39-98, which is an active shop. It is on a maintained concrete floor. There are no known or documented releases from this site.

EPA Concurrence: OU 1132 RFI review letter dated 9/22/94.

2.2.2.33 PRS 39-007(c)—Storage Area (OU 1132)

This is a room in Building TA-39-103 that was used for storage of blueprint-machine fluid. The material safety data sheet lists the components of this fluid as ethylene glycol, ethanolamine, and 2-(2-aminoethoxy) ethanol. Both the machine and the stored fluids have been removed from this area. No evidence or documentation exists of any releases.

EPA Concurrence: OU 1132 RFI review letter dated 9/22/94.

2.2.2.34 PRS 41-004—Container Storage (OU 1098)

There is an active satellite container storage area in room 319 of TA-41-30 (Figure 8.5-1). The SWMU report indicates that the area stores waste from a photo-processing laboratory and office machines. An interview with C. Randall Mynard (Mynard 1992, 14-0007) of MEE-4, the group that currently occupies building TA-41-30, revealed that this area does not have any photo-processing activity but does currently store various chemicals in small amounts (less than 1 pint). These chemicals include ethanol, acetone, RTV sealant (silicone rubber), Epon (an epoxy), Versamid #140 (an epoxy hardener), and some wire solder. A blueprint machine is also located in this room. This machine uses ammonium hydroxide, but the chemical is stored only in the machine in this room.

The SWMU report also indicates the SWMU location as being room 310 and not the current storage area (room 319). According to Mr. Mynard, room 310 was used as the chemical storage room until 1991, when the chemicals were either disposed of via shipment to TA-54 or moved to room 319. The major chemicals stored in room 310 (as of June 3, 1991) were Loctite (maleic acid, four 1.69-oz bottles), Locquick Primer T (1,1,1-TCA, five 6-oz cans), spray lacquer (one 13- oz can), acetone (about 1 pint), WD-40 (one 12-oz can), Stycast 2850 epoxy (one small can), Catalyst 9 (2 oz), wire solder, and 85% ethanol (1 qt). All of these chemicals were kept in a storage cabinet. An inventory in May 1990 of room 310 showed the same chemical inventory with the addition of ammonium hydroxide (small quantity) used for a blueprint machine. The blueprint machine is located in room 319. Before 1989, this blueprint machine used gaseous ammonia hydroxide, which was stored in room 310 and on the loading dock to building TA-41-30. Mr. Mynard does not

have a record of any spills of the liquid ammonium hydroxide or of any incidents with the other chemicals stored in the area.

The SWMU description also mentions a photo-processing laboratory with its associated wastes of sodium thiosulfate, ammonium hydroxide, silver salts, and kerosene-based chemicals. According to Mr. Mynard, the photo-processing laboratory was in room 242 of this same building. This room was a dark room with a portable photo-processing unit. Black-and-white and color photos were developed here from 1983 to 1990. The lab was not used heavily. Mr. Mynard, who worked in this lab, estimated that the maximum activity from the area was in 1986, when the workers used approximately 6 gal. of color developer.

The Mechanical and Electronic Engineering (MEE) Division, group MEE-4, has occupied this building since 1982. Before that, from 1978 to 1982, Design Engineering Division (WX), group WX-8 occupied the building, and from 1958 to 1978 WX-1 occupied the building. William A. Bradley worked with WX-8 and resided in the building when this group occupied the building. In an interview, he stated that the building was used as an office building and that no work requiring chemical storage took place. He did state that there were a couple of electronics laboratories in the building, but he does not recall any chemical storage areas present at that time (Bradley 1992, 14-0004). An interview with Bennie J. Gillespie (Gillespie 1992, 14-0005) who worked with WX-1, stated that the building was also used as office space during his time there and he does not recall any chemical storage areas in the building. Site inspections have revealed no visual evidence of releases from this site (Penneman 1992, 14-0009).

Environmental monitoring is performed in the immediate vicinity of the TA-41 container storage area. There is no evidence that hazardous or radioactive materials were spilled or discharged at this locality. Consequently, it is very unlikely that the container storage area is a release site.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.2.35 PRS 43-005—Radioactive Liquid Storage (OU 1136)

PRS 43-005 is described in the SWMU Report as the containers that were placed in the TA-43-1 laboratories starting in 1975 for the storage of radioactive-contaminated liquid waste. It was later designated as an area of concern. The waste is periodically collected for treatment at TA-50. Before 1975, radioactive waste was disposed of down the drains of the sanitary waste collection system. The sanitary waste system is covered under PRS 43-001(a2) in Subsection 5.1.1.1 and PRS 43-001(a1) in Subsections 6.1.1 and 6.2.1 of this work plan. According to Bud Whaley, the current group leader of LS-2, the disposal sequence was for the containers to be collected in TA-43-1. The containers were then periodically removed to TA-50 for treatment. More recently, the carboy containers were stored in B-140 of TA-43-1, and periodically the Health Physics Team would move them to locked vaults on the TA-43-1 dock before shipment to TA-50 (Martell 1993, 23-0056). The current SOP calls for laboratory personnel to take the radioactive liquid waste directly from the laboratory to the vault while accompanied by the Health Physics Team (Strniste 1992, 23-0041). The vaults are designed to fully contain accidental releases. There are no known releases from this storage system (Figure 6-1).

PRS 43-005 is recommended for NFA and removal from the SWMU Report because no hazardous waste or constituents were managed at the unit and there is no evidence of a release.

The laboratory locations associated with PRS 43-005 are within TA-43-1, and no documentation has been found that would indicate that any releases have ever occurred or that any risk is associated with this PRS.

EPA Concurrence: OU 1136 NOD dated 8/8/94.

2.2.2.36 PRS 48-002(d)—Container Storage (OU 1129)

AOC No. 48-002(d) is an active container storage area located on the northwest side of TA-48-1 that is currently used only for temporary storage of boxes of solid radioactive waste (see Section 3.5.2.1). A site inspection in 1991 revealed no visible evidence of past releases. This AOC is recommended for NFA because site conditions preclude COCs from migrating to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.37 PRS 48-008—Transformer Leak (OU 1129)

AOC No. 48-008 consists of two PCB transformers that are located inside the basement of TA-48-1 (see Section 3.5.2.1). Oil that leaked from these transformers was cleaned up in accordance with TSCA guidelines, and no visible signs of oil stains were observed during a site inspection in July 1991. This AOC is recommended for NFA because site design and conditions preclude a potential release to the environment and the leakage represents a nonsystematic release that was immediately cleaned up.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.38 PRS 50-003(b)—Storage Area (OU 1147)

This SWMU is a storage cabinet in Room 130 of Building TA 50-1. Room 130 is on the first floor and is in the southeast corner of the building. Mixed waste generated within TA 50-1 is brought to Room 130 and stored in small (quart-to-gallon-size) bottles. These bottles are periodically picked up for storage at TA-54.

There are no documented releases from this SWMU. Bottled waste has secondary containment, and the cabinet is checked daily.

There is no known source of contaminant release at this SWMU.

There is no evidence that this cabinet has ever leaked contaminants to the room or to the environment.

EPA Concurrence: OU 1147 NOD dated 9/9/92.

2.2.2.39 PRS 50-005—Waste Treatment Facility (OU 1147)

This plant, for treating nonradioactive liquid waste, occupies about 150 ft^2 of floor space in Building 1, Room 24B, at TA-50. This SWMU is a batch-type operation that was designed to keep the nonradioactive liquid wastes separate from the radioactive liquid wastes and to treat the nonradioactive wastes to make them less hazardous. The stainless-steel treatment tank is Kynar-lined, and the associated piping system is double (Kynar pipe within stainless-steel pipe). The plant sits on a concrete floor in an area enclosed by a concrete berm. Both floor and berm are painted with a corrosion-resistant, strippable, white epoxy paint trade-named "Plasite," making leaks highly visible. (Leaks have never been observed from this plant.)

The plant was constructed in 1984-1985. It was part of a larger construction project and had funding problems from the start. Some items in the original design had to be deleted, including a dedicated exhaust system. The plant was put into operation in 1988, but only operated until 1989, when the operator was reassigned because of lack of funding.

A mercury reclamation operation, also a part of SWMU 50-005, is located in Room 34 of Building 1. Although it has been operated infrequently since its inception in 1983, again because of manpower shortages, it is scheduled to be re-started to reclaim mercury stored on site. (Mercury

that can be certified clean will be packaged in DOT-approved containers and sold on the open market; the balance will be consigned for DOE use.)

Wastes that have been treated in the batch plant include cyanide, chromate plating solutions, solutions of acids and bases, and heavy metals. The Kynar-lined tank and associated Kynar-and-stainless-steel pipeline are used to treat electroplating waste containing copper and lead. A Kynar-lined blowdown tank in Room 24 has not yet been used.

The mercury reclamation operation is intermittent. Mercury is washed in acid and/or solvents and double-distilled. The capacity has been estimated at 35 lb/day.

No releases of contaminants that could have reached the environment have been documented from the nonradioactive liquid waste treatment plant. If any contaminants were released through the building's ventilation system, they will be identified during the RFI surface soil characterization activities (see Chapter 5, sampling plan for Aggregate 5).

The double-containment system of Kynar within stainless steel for the tanks and piping, plus the concrete berm underlying the treatment plant, provide triple-containment redundancy, rendering the probability very low that a leak could develop and transport contaminants out of the SWMU.

EPA Concurrence: OU 1147 NOD dated 9/9/92.

2.2.2.40 PRS C-51-002—Buildings (OU 1148)

The 1990 SWMU report listed the former locations of two explosives magazines as AOC C-51-002. The exact locations and dimensions of the magazines are unknown. The date that the structures were removed is also not known. Figure 6.6-1 presents the approximate locations for the structures as shown in the 1990 SWMU Report.

One of the structures was reportedly located north of a Laboratory water supply storage tank (TA-54-1006); the other was reportedly located north of the former Animal Holding Facility (TA-54-15). A site visit on April 16, 1992, to the area where the explosives magazines were located (Weston 1992, 08-0046) determined that there is no physical evidence of the former location of either magazine. The reported areas where the magazines were located are presently within the area of construction of the new Sanitary Wastewater Consolidation System line that will service facilities in TA-51 and the western part of TA-54. The ground surface in this area has been regraded due to trenching to install the new buried sanitary line.

There is no evidence that the past storage of explosives at the magazines has resulted in release of contaminants. Sampling of the area to determine the absence or presence of contaminants is not warranted; therefore, AOC C-51-002 is recommended for NFA.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.2.41 PRS 54-015(g)—Storage Area (OU 1148)

At the time the SWMU Report was written, uranium-contaminated lead casks [SWMU 54-015(g)] were stored on the surface near Disposal Shaft 4 on the east side of MDA L. They were first packaged in MDA G to prevent the exposure of lead to the environment. Then they were moved to MDA L for a period of time. They have since been moved to MDA G for storage as mixed waste (IT Corporation 1992, 08-0021). No releases have been identified.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.2.42 PRS 54-015(i)—Storage Area (OU 1148)

At the time the SWMU Report was written, a containerized, radioactively-contaminated forklift battery [SWMU 54-015(i)] was stored just north of the lead stringer shafts in MDA L. The forklift

battery is no longer at MDA L; it was overpacked and then moved to Area G for storage as mixed waste (IT Corporation 1992, 08-0021). No releases have been identified.

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.2.43 PRS 54-016(a)—Sump (OU 1148)

A sump located in the NDT Facility inside building TA-54-38 receives snowmelt and rainwater which drip off of trucks entering the building. The sump has a drain which connects to a canyon outfall on the north side of the building. The drain is kept closed until water in the sump is tested. If the water is free of contaminants, it is then discharged to the canyon outfall. If contaminants are detected, the water may be pumped from the sump for proper treatment and disposal. The NDT Facility handles containerized TRU wastes. The TRU waste verification testing and final shipment preparations are conducted on the containerized wastes, and it is unlikely that releases could occur and reach the sump. The NDT Facility was completed in 1990 and operated for a brief period of time. To date, only one truck has entered the NDT Facility, and no releases of radioactive or hazardous wastes have occurred (IT Corporation 1992, 08-0021).

EPA Concurrence: OU 1148 NOD dated 4/23/93.

2.2.2.44 PRSs 55-001, 55-004, and 55-005—Cement Plant (OU 1129)

AOC No. 55-001, AOC No. 55-004, and AOC No. 55-005 consist of a cementing process, an evaporator, and a filtration unit, which are situated together inside a series of negative-pressure glove boxes in TA-55-4 (see Section 3.7.2.1). The AOCs are part of the TA-55 waste minimization process that operates under RCRA Mixed-Waste Interim Status. These AOCs are recommended for NFA because site design precludes a release of hazardous materials to the environment and the AOCs are part of a process permitted under RCRA Mixed-Waste Interim Status at the Laboratory.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.45 PRS 55-002(a and b)—Rad Waste Storage Area (OU 1129)

AOC Nos. 55-002(a and b) are container storage areas for radioactive solid waste (see Section 3.7.2.1). AOC No. 55-002(a) consists of several separate storage areas located inside TA-55-4; AOC No. 55-002(b) includes dumpsters outside TA-55-4 that are used only for temporary storage of radioactively contaminated solid waste. These AOCs are recommended for NFA because site design and conditions preclude a release of COCs to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.46 PRS 55-006—Glass Breaker (OU 1129)

AOC No. 55-006 is a glass breaker designed to break radionuclide-contaminated glassware (see Section 3.7.2.1). The unit is located within a glove box in TA-55-4. This AOC is recommended for NFA because site design precludes a release to the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.47 PRS 55-007—Thermal Combustion Unit (OU 1129)

AOC No. 55-007 consists of two currently inactive thermal combustion units that are located inside glove boxes in TA-55-4 (see Section 3.7.2.1). The units are now awaiting a RCRA mixed-waste operating permit. The units are designed so that emissions are passed through scrubbing solutions and high-efficiency particulate air filters. This AOC is recommended for NFA

because site design precludes releases of hazardous materials to the environment and the units will not be operational until the appropriate RCRA permits are obtained.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.2.48 PRS 55-013(a and b)—Storage Areas (OU 1129)

AOC Nos. 55-013(a and b) consist of two active hazardous waste container storage areas (see Section 3.7.2.1). For health and safety reasons, containers of hazardous chemicals (that is, products not waste materials) are located under fume hoods. The storage areas are located in TA-55-3 and TA-55-4. These AOCs are recommended for NFA because site design and conditions preclude a release that would pose a threat to human health or the environment.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.3 NFA Criterion 3. The PRS is regulated or closed under a different authority which addresses corrective action.

2.2.3.1 PRS 0-015—Firing Range (OU 1071)

SWMU 0-015 is an active firing range located on General Services Administration (GSA) land.

The Sportsmen's Club Firing Range (SWMU 0-015) is located on GSA land in Rendija Canyon (Figure 3-5). It consists of several small-arms ranges and has been in operation since 1966 (LANL 1990, 0145). Lead is present in earthen berms and on the surface of the ranges. Shattered clay projectiles are present on the skeet and trap ranges. The extent of contamination in the soil and surface water is unknown. There are no documented occurrences of releases from the site.

Contamination at the site is directly related to use of the firing range, and there are no plans to change the use of this land in the future. Because the site is going to continue to be used as a firing range and additional contamination will occur as a result, the site should not be cleaned up until the range is decommissioned. This SWMU is similar to thousands of other firing ranges in the United States and has no higher risk associated with it. It is recommended that no further action be taken at this site until it ceases to be used as a range and the land is dedicated to some other use.

EPA Concurrence: OU 1071 NOD dated 10/16/92.

2.2.3.2 PRS 2-013—Storage Area (OU 1098)

There are three RCRA satellite container storage areas in various locations inside building TA-2-1 (LANL 1990, 0145). Two of the storage areas are for solvents from parts cleaning. The other area is used to store solvents and metals from experiments. Figure 8.4-1 shows the location of SWMU no. 2-013

Environmental monitoring has been performed in the immediate vicinity of these TA-2 active hazardous waste storage areas (Figure 8.4-1). There is no evidence that hazardous or radioactive materials have been spilled or discharged at this locality. Satellite areas that have not leaked are not SWMUs, and the technical team for OU 1098 has proposed to delete SWMU no. 2-013 in the revised HSWA-permit for the Laboratory.

EPA Concurrence: OU 1098 RFI review letter dated 11/16/93.

2.2.3.3 PRS 8-010(a)—Storage Area (OU 1157)

This PRS is a 55-gal. drum containing solid waste on a dock at the southeast end of TA-8-70. Building TA-8-70 houses a small machine shop for machining nonhazardous materials such as steel, plastics, metals, etc., and a tomographic system. As a result of cleaning the parts of the machining equipment and the x-ray unit of the tomography system, paper and rags contaminated with organic solvents are produced. These are packaged in plastic bags and stored in the drum until the container is emptied by the Waste Management Group (EM-7). Chemicals such as acetone, butyl acetate, freon, trichloroethylene, and ethyl alcohol have been used. There have been no reported spills associated with this container (Harris 1993; 12-0097). A visual inspection of the area where the drum is located showed no signs of spills or leaks.

This PRS, 8-010(a), is a satellite storage area (SSA) operated under RCRA generator requirements. A recommendation of NFA is based on Criterion 3.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.3.4 PRS 8-010(b)—Storage Area (OU 1157)

This PRS is a 5 gal. container for liquid waste, mostly ammonium hydroxide, from a diazo printer located in the south hallway of Building TA-8-21 (Harris 1993, 12-0101). The waste is generated as a result of the photo-processing and development activities in that building. The waste is collected periodically by EM-7 for proper disposal. There are no reported spills or leaks from this container. A visual inspection was conducted, and no signs of spills or leaks were observed.

This PRS, 8-010(b), is a SSA operated under RCRA generator requirements. A recommendation of NFA is based on Criterion 3.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.3.5 PRS 8-010(c)—Storage Area (OU 1157)

From December 1950 until recently, Building TA-8-30 was used as a radiation nondestructive test laboratory. The primary work involved the x-ray analysis of weapons components. In July 1991, Building TA-8-30 was converted into a Macro Statistical Hydrodynamics Research (MASH) laboratory (Harris 1993, 12-0102). Presently, studies are performed on the fluid dynamics of suspensions using cameras as tracking devices for the particles in the liquids. Used liquids from these studies are the source of the waste generated. Polyalkynated glycol (poly-antifreeze), surfactants, and tetrabromoethylene are presently used in this building.

The spent liquid at this waste container storage area is collected in a 55 gal. drum and stored on a solvent rack, equipped with a secondary container for spill control, in a shed near Building TA-8-30. The drums are collected periodically and the contents disposed of by Group EM-7. The solid waste, made up of paper and plastic, is collected in another 55 gal. drum and stored until it is also collected and disposed of by Group EM-7 (Harris 1993, 12-0102). This SSA was previously located (from July to September 1991) on an asphalt pad on the south side of the building. A visual inspection of this area showed signs of rust from the 55 gal. drums but no signs of leakage or spills of hazardous constituents. There have been no reported leaks or spills associated with the current arrangement of the waste container storage area.

This PRS, 8-010(c), is a SSA operated under RCRA generator requirements. A recommendation of NFA is based on Criterion 3.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.3.6 PRS 9-011(a)—Storage Area (OU 1157)

This was a waste container storage area at the end of the north corridor of Building TA-9-21. The two cans that comprised this storage area were removed and the area thoroughly cleaned in 1991. Each laboratory in Building TA-9-21 has now been declared a satellite storage area. Prior to the removal of the original SSA, waste (HE, chemicals, radioactive and nonhazardous) was collected in heavy plastic bags and stored in separate metal containers until it could be picked up and disposed of by the appropriate team—Group WX-3 (HE-contaminated), Group EM-7 (radioactive and chemical), Q-Site personnel (uncharacterized HE), or the janitorial service if the waste was known to be nonhazardous. The packaging requirement prevented the area from becoming contaminated. Note that only small laboratory quantities of materials are used in Building TA-9-21.

Waste Container Storage Area PRS 9-011(a) is recommended for NFA under Criteria 3 and 4. The original SSA was maintained and removed under current RCRA regulation.

EPA Concurrence: OU 1157 NOD dated 4/5/94.

2.2.3.7 PRS 16-012(a2)—Container Storage (OU 1082)

Satellite, less-than-ninety-day, and interim storage areas listed in Table 6-4 are active units that are currently regulated under 40 CFR 262, Standards Applicable to Generators of Hazardous Waste. The Laboratory conducts training classes for the operation of these areas. It also inspects and has institutional controls governing the closure of these units. The New Mexico Environment Department (NMED) also performs annual inspections.

SWMUs 16-012(d, i, j, l, m, n, t, u, x), 16-012(p), and 16-012(a2) are recommended for NFA and delisting from the SWMU Report and the HSWA Module [SWMU 16-012(a2) is not on the HSWA Module] because they are either satellite storage areas, less-than-ninety-day storage areas, or interim storage areas [SWMU 16-012(a2)] (LANL 1992, 0768).

If a release occurred at one of these areas, it would be cleaned up immediately in accordance with the Laboratory's Contingency Plan, Spill Prevention Countermeasures and Control Plan, and/or administrative requirements. Because any releases will be cleaned up immediately, these units do not have the potential to become historical release sites. Therefore, these areas will continue to be regulated under 3004(a) of the RCRA and not 3004(u) of the Hazardous and Solid Waste Amendments.

EPA Concurrence: OU 1082 NOD dated 7/13/94.

2.2.3.8 PRS C-18-003—Storage Area (OU 1093)

Appendix C of the SWMU Report (LANL 1990, 0145) indicates the possibility of a radioactive waste storage area behind Building TA-18-1 (Figure 1-2). A June 1992 site inspection did not reveal such storage and discussions with site personnel (Section 5.4.1) indicated that no radioactive materials have been stored in that location for a number of years.

No radioactive materials (waste or otherwise) are presently stored in outside areas at TA-18 and the exact location of the possible radioactive waste storage area was not provided in the SWMU Report. Thus, sampling cannot be performed. There is no evidence to suggest that releases occurred at this site, and it was, thus, designated as an AOC in the SWMU Report (LANL 1990, 0145). Sampling of storm sewer outfalls (Section 5.4.1) is designed to determine if any residual contamination is present at and below outfalls from possible previous radioactive waste storage at TA-18. That sampling will, therefore, evaluate whether any contaminants may have entered the environment as a result of possible waste storage at this AOC. The detection of contamination above screening action levels could lead to an in-depth evaluation for potential source areas throughout TA-18 as part of a Phase II investigation. Such an investigation would inevitably include any areas where waste materials could have been stored, including this AOC. Thus, NFA is proposed for this AOC.

EPA Concurrence: OU 1093 RFI review letter dated 9/23/94.

2.2.3.9 PRS 33-012(b, c, and d)—Satellite Storage (OU 1122)

These three SWMUs, located at Main Site, were visited by Operable Unit 1122 project team members June 7, 1991, and July 3, 1991. SWMU 33-012(b) is described in the SWMU Report as a storage area for photoprocessing chemicals at Main Site in TA-33-114, Room 116. During the site visit it was noted that photoprocessing chemicals were being collected and stored in plastic containers in the darkroom, Room 126, rather than Room 116 (LANL 1990, 0145). SWMU 33-012(c) is described in the SWMU Report as a satellite waste storage area for organics in TA-33-114, Room 117. This satellite storage area is a laboratory collection point for organic wastes. It is located in Room 116 rather than in Room 117 (LANL 1990, 0145). SWMU 33-012(d) consists of a 55-gal. steel drum located on the loading dock of TA-33-19. This satellite storage area is a collection point for waste organic liquids. These storage areas and their locations agree with the November 1991 LANL container storage data base.

During site visits, these SWMUs were found to be operating as waste satellite storage areas in accordance with current Laboratory waste management practices. There was no evidence of any releases from these units. Informational searches have not produced any documented releases to the environment from either inside or outside the buildings.

EPA Concurrence: OU 1122 RFI review letter dated 7/15/93.

2.2.3.10 PRS 35-011(b)—Underground Storage Tank (OU 1129)

AOC No. 35-011(b) consists of an inactive UST (TA-35-159) that formerly stored contaminated waste dielectric oil, which may have contained PCBs and other COCs (see Section 3.3.2.1). The UST has been emptied and abandoned in place, and the ground above the tank has been covered with concrete; therefore, little potential for off-site migration of COCs currently exists. This AOC is scheduled to be investigated and remediated in accordance with NMED UST regulations. No further investigation is recommended as part of the Operable Unit (OU) 1129 RCRA Facility Investigation because the Laboratory must close the site to comply with state UST regulations.

EPA Concurrence: OU 1129 RFI review letter dated 11/3/93.

2.2.3.11 PRS 46-001—Aboveground Tank (OU 1140)

SWMU 46-001 is the site of a decommissioned acid-waste tank, currently listed on the Laboratory EM-8 data base as an inactive, less-than-ninety-day WAA. The SWMU Report states: "...one of the two unbermed tanks released hazardous waste (at least 5 gallons of 6 to 7 Molar nitric acid) in 1987. The tanks were subsequently bermed, emptied and cleaned, and no longer contain hazardous waste" (LANL 1990, 0145). The activities in Building TA-46-88 at that time involved production of non-radioactive isotopes of carbon, oxygen, and nitrogen (ICON). When the program ended in 1989, much care was devoted to cleanup and neutralization. Researchers indicate that the ICON process involved the reaction of sulfur dioxide and nitric acid to produce only sulfuric acid and oxides of nitrogen. Nitric and sulfuric acids were the only wastes produced; no regulated hazardous wastes were generated by these activities (Michelotti 1993, 11-220). While concentrated acids are corrosive, they pose no hazards after dilution and neutralization in the environment (Martell 1992, 11-202). See Fig. 5-3-16 for location of SWMU 46-001 within SWMU 46-008(a).

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.3.12 PRS 46-010(a)—Storage Area (OU 1140)

SWMU 46-010(a) is located on the concrete loading dock outside the south bay of TA-46-1. A shed-like room was built on the original dock in 1955 (Engineering drawing ENG-C 3369), leaving only a 5 x 15 ft strip to serve as a receiving area. There is no direct access into the south bay. In addition to the SAA cabinet, two solvent storage cabinets and a pressurized-gas cylinder storage area are located on the dock. The area is covered but open on three sides. The concrete floor, scoured by wind and rain, shows only rust stains. The area east of the dock is unpaved and slopes steeply to SWMU 46-007, described in Chapter 5, Subsection 5.3.1.1. Sampling plan for the latter SWMU is discussed in Subsection 5.3.4.2.2; sampling points are shown in Fig. 5-3-15.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.3.13 PRS 46-010(b)—Storage Area (OU 1140)

SWMU 46-010(b) is a 90 x 160 ft area located against the south wall of TA-46-24. It is included in the 100 x 200 ft area of SWMU 46-008(d) discussed in Chapter 5, Subsection 5.3.1.1. The

sampling plan is discussed in Subsection 5.4.1.1.2, Outfall NN. The sampling points are shown in Fig. 5-3-18.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.3.14 PRS 46-010(c)—Storage Area (OU 1140)

SWMU 46-010(c) is an approximately 6 x 10 ft area located against the south wall of TA-46-31. It is included in the 50 x 100 ft area of SWMU 46-008(f) discussed in Chapter 5, Subsection 5.3.1.1. The sampling plan is discussed in Subsection 5.3.4.2.2 and the sampling point is shown in Fig. 5-3-20.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.3.15 PRS 46-010(e)—Storage Area (OU 1140)

SWMU 46-010(e) is not associated with any surface-release PRS. However, TA-46-154 was constructed in 1978 as a laser-induced-chemistry building. The SWMU has no prior history as an outside storage area (Michelotti 1993, 11-219). There are no historic releases documented from SWMU 46-010(e), nor are there visible stains.

EPA Concurrence: OU 1140 NOD 7/15/94.

2.2.3.16 PRS 46-010(f)—Storage Area (OU 1140)

SWMU 46-010(f) is located on a hillock above TA-46-158. It is covered by a shed-like roof and stores product and waste. Any past runoff commingled with PCOCs from 46-006(c) into the same storm drain. These adjacent PRSs are described in Chapter 5, Subsection 5.3.1.1. Sampling plans are discussed in Subsection 5.3.4.2.2. Sampling points are shown in Fig. 5-3-11.

Although the 46-010 series SAAs at OU 1140 were used for storage and accumulation prior to establishment of EPA regulations, any past releases from these areas have commingled with, and are indistinguishable from, contaminants from adjacent or enclosing PRSs addressed by individual sampling plans in Chapter 5. Should contamination above hazardous levels be encountered in an adjacent PRS, the associated SAA will be included in Phase II sampling.

EPA Concurrence: OU 1140 NOD dated 7/15/94.

2.2.3.17 PRS 50-003(c)—Storage Area (OU 1147)

50-003(c) is a temporary (less-than-90-day) storage area located on the asphalt paving immediately south of the tank farm. The waste is chemical and is hauled by truck to TA-50 in 200- to 300-gal. polyethylene tanks from other technical areas. These polyethylene tanks, enclosed in heavy-gauge steel and expanded metal cages, are trade-named "Tuff Tanks." The waste from these tanks is emptied into the tank farm.

This storage site is inspected weekly for leaks.

There are no documented releases from this storage site.

This site has had no releases.

Another storage area listed as part of SWMU 50-003(c) is located between the north wall of the Vehicle Decontamination Facility and the south wall of the east wing of Building 1. This is a temporary storage area, completely paved with asphaltic concrete, for mixed wastes generated from the treatment of industrial waste from many technical areas. No TRU waste is stored at this site. The waste is processed in Building 1: it is mixed with calcium hydroxide and ferric sulfate and then dewatered by a vacuum and filtering process until it is in the form of filter cake. The filter cake

is about 30% solids and 70% water and has the consistency of a damp clay. The filter cake is packed into 55-gal. drums, stored temporarily on site, and then hauled to TA-54 for landfill disposal.

The area is monitored periodically for contamination on the storage pad, and the drums are checked for any signs of leakage before they are moved onto the pad.

There have been no documented releases from this SWMU.

There have been no releases from this site.

EPA Concurrence: OU 1147 NOD dated 9/9/92.

2.2.3.18 PRS 50-003(d)—Storage Area (OU 1147)

SWMU 50-003(d) is used for greater-than-90-day storage of chemical waste, primarily acidic waste generated at the ICON facility. It comprises two structures: one is a canvas building about 12 ft wide and 14 ft deep, whose floor has an inflatable berm. The building is located on asphalt pavement and is against the south wall of the east wing of Building 1, adjacent to the filter-cake drum storage area.

The second structure is a modular 9-ft-x-24-ft steel shed set on a concrete pad. Designated TA-50-114, WM-114, this shed is located about 25 ft east of the northeast corner of the tank farm.

Both these storage areas are inspected frequently for possible leaks.

No contaminant releases have ever been documented from either of these sites.

There have been no releases from this site.

EPA Concurrence: OU 1147 NOD dated 9/9/92. Typogrphical error in NOD states PRS as 50-003(c).

2.2.3.19 PRS 60-001(a)—Storage Area (OU 1114)

PRS 60-001(a) is an active container accumulation area located on the east side of TA-60-1, as noted on Table 6-4.

Satellite accumulation areas and less-than-ninety-day accumulation areas were established at OU 1114 in conformance with 40 CFR 262, Standards Applicable to Generators of Hazardous Waste and managed under the Laboratory spill prevention control and countermeasure (SPCC) plan (Delta H. Engineering, Ltd. 1990, 17-820). The EPA and the Laboratory have agreed that accumulation areas are not PRSs provided that they have no history of release and have no credible pathway to the environment (Twombly 1992, 17-681). PRSs listed in Table 6-4 meet these criteria. They are either indoors with no potential for leaks beyond the building or they were extensively cleaned for the Department of Energy (DOE) Tiger Team inspection in 1991. None has a history of prior release. These PRSs are currently listed on the Laboratory registry of satellite and less-than-ninety-day accumulation areas (McInroy 1992, 17-748).

EPA Concurrence: OU 1114 RFI review letter dated 1/7/94.

2.2.3.20 PRS 64-001—Storage Area (OU 1114)

SWMU 64-001 is several satellite accumulation areas located inside the Central Guard facility, TA-64-1, built in October 1986. Satellite accumulation areas and less-than-ninety-day accumulation areas were established at OU 1114 in conformance with 40 CFR 262, Standards Applicable to Generators of Hazardous Waste, and are currently regulated under 3004(a) of RCRA. The EPA and the Laboratory have agreed that registered accumulation areas are not PRSs to be regulated

under the HSWA Module (Twombly 1992, 17-741) provided that they have no history of release and have no credible pathway to the environment. This PRS meets these criteria and is currently on the Laboratory list of satellite and less-than-ninety-day accumulation areas (McInroy 1992, 17-748).

EPA Concurrence: OU 1114 NOD dated 10/29/93.

2.2.4 NFA Criterion 4. The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants of concern are either not present or are present in concentrations that would pose an acceptable level of risk under the projected future land use. The determination of acceptable risk and future land use has considered stakeholder involvement.

2.2.4.1 PRS 0-024—Cistern (OU 1071)

SWMU 0-024 is a cistern located on private property on Barranca Mesa.

A cistern on Barranca Mesa (SWMU 0-024) was an unlined hole with a wood cover in the Bandelier tuff (Aldrich 1991, 05-0153) and was used as a disposal site for military ordnance (DOE 1987, 0264). The cistern is located on the plot at the east end of Barranca Road just west of the Deer Trap trailhead (Figure 3-5). The cistern was located in May 1965, and its entire contents of expended munitions and gun components were removed (Aldrich 1991, 05-0153).

Based on available site information, the abandoned cistern does not pose a threat to human health or the environment because all expended munitions and gun components have been removed from the cistern. Additionally, the exact location of the cistern is no longer known; locating it would be difficult and require significant disruption of private property. It is therefore recommended that no further action be taken.

EPA Concurrence: OU 1071 RFI review letter dated 1/6/93.

2.2.4.2 PRS 0-040—Underground Tank (OU 1071)

We are notifying EPA of the new SWMUs as required by the Hazardous and Solid Waste Amendments module of the Resource Conservation and Recovery Act (RCRA) permit currently held by the LANL facility. The two new SWMUs and their tentatively assigned SWMU numbers are the following:

- SWMU 0-039: site of two former tetrachloroethene Underground Storage Tanks (UST).
- SWMU 0-040: site of a former diesel UST.

These SWMUs are located in the area of the Los Alamos Community Center. The private owner of the land undertook activities to remove the tanks mentioned above, and other additional tanks in the area, during May and June of 1993. Five tanks at four locations were removed.

The tanks at two of the locations did not leak. At one location, the tank was a small 500 gallon gasoline tank, and at the other, a used oil tank. A diesel tank, which had leaked, was removed at a third location. Excavation removed most of the contamination. All three of these sites were determined to require no further action by the New Mexico Environment Department (NMED) UST Bureau in July 1993.

Although the diesel tank site was closed, we are tentatively designating the location as SWMU 0-040 because it meets the definition of such a unit under current RCRA regulations. However, since the NMED UST Bureau has already determined that no further action is required at the site, we are also recommending that the unit not be placed on the permit. With your approval, this would also mean that the unit would not undergo any further investigation or remediation.

EPA Review: OU 1071 RFI review letter dated 1/6/93.

2.2.4.3 PRS 1-004a—Incinerator (OU 1078)

Incinerator 146 was one of two incinerators located within TA-1 and used for combustion of nonradioactive trash generated at TA-1. It was built in 1947 and located between G and H

Buildings. Incinerator 146 was used for 10 years and then removed (LANL 1990, 0145). This small incinerator (3.5 x 3.0 x 2.5 ft.) was gas fired and was housed in a 6-foot-high sheet metal structure.

There is no indication that radioactive waste material was burned in Incinerator 146. Because Incinerator 146 was gas fired, any organic material would most likely have been subject to complete combustion. During the 34 years since Incinerator 146 was used, any organic material emitted during incomplete combustion would have been destroyed by biological processes or disseminated by anthropogenic and physical processes. Most heavy-metal residues would have been reduced to ash, which was undoubtedly disposed of outside the TA-1 area (no waste disposal areas exist within the TA-1 OU). Only massive amounts of heavy-metal emissions could have manifested themselves as hot spots around the incinerator. It is extremely unlikely that hot spots could have been produced by an incinerator as small as Incinerator 146. Residuals from Incinerator 146 are not a health risk; this SWMU is a candidate for NFA.

EPA Review: OU 1078 NOD dated 8/13/92.

2.2.4.4 PRS 1-004b—Incinerator (OU 1078)

Incinerator 147 is the second of two identical incinerators located within TA-1 and used for combustion of nonradioactive material generated at TA-1. Incinerator 147 was located on the north side of TA-1's U Building. This incinerator was removed at the same time as Incinerator 146. This location is currently beneath the paved area near the front of the Los Alamos Inn. Incinerator 147 has exactly the same function and history as previously described for Incinerator 146.

Incinerator 146 and Incinerator 147 were inspected in 1957 (Buckland 1957, 09-0004) and both were found to be "free of any radioactive contamination that is dangerous to health." It is 34 years since the incinerators ceased operation and unlikely that any residual contamination remains in either area. There is no pathway for dissemination of any possible hazardous constituents to potential human receptors. Incinerator 147 is not a health risk and is a candidate for NFA.

EPA Review: OU 1078 NOD dated 8/13/92.

2.2.4.5 PRS 1-005—Incinerator (OU 1078)

A bench-scale incinerator was located in the TU-1 Building at the western end of TA-1. The TU-1 Building was built in 1948 to store enriched uranium and to house a small incinerator used for recovery of uranium (presumably ^{235}U) from combustible materials, such as rags and papers (LANL 1990, 0145). Ash produced by combustion was treated by a uranium recovery process and the barren ash residues were disposed. In 1964 the TU-1 Building was dismantled and removed to a contaminated disposal area (Area G) and burned (Ahlquist et al. 1977, 0016). No mention of the disposition of the incinerator was made. However, it is likely that this small incinerator was buried in an MDA, such as Area C at TA-50 (OU 1147) or moved to another laboratory location. The fact that this incinerator was used for uranium recovery is not reason enough to consider it a SWMU. The purpose of the incinerator was not to create waste but rather to recover precious amounts of enriched uranium. Only small quantities of uranium would have been involved. In Ahlquist's (1977, 0016) 1974–1976 cleanup effort, 3682 yd^3 of soil were removed from the location of the former TU-1 Building and transported to Area G at TA-54 (OU 1148). The area surrounding the TU and TU-1 Buildings has been designated SWMU No. 1-007h, which is included in the J-2/TU Area SWMU Aggregate and will be investigated as such. This incinerator should not be regarded as a separate SWMU and is a candidate for NFA.

EPA Review: OU 1078 NOD dated 8/13/92.

2.2.4.6 PRS 1-007(f)—Soil Contamination Area (OU 1078)

SWMU 1-007(f) is an area of suspected subsurface soil contamination which was located at the west end of the former Delta Building. The building served primarily as a meeting place, and

briefly as a research laboratory in which fission-product tracers were used. The building was served by Septic Tank 139, and there were no storm drains or outfalls located in the vicinity of this SWMU.

A small spot of uranium contamination was found in a surface sample near the west end of the Delta Building during the remediation effort in the mid-1970s. Ahlquist et al. conducted further surface sampling, and collected samples from an exploratory trench near the west end of the Delta Building to determine the nature and extent of the contamination. Only one sample yielded results greater than 20 pCi/g. Analytical results from the elevated sample revealed slightly elevated levels of uranium (to 8.6 micrograms per gram) and fallout levels of Pu^{239} (0.09 pCi/g). Ahlquist et al. determined that the concrete slab on the west end of the Delta Building had become contaminated when debris from the Sigma Building demolition was temporarily stored there. At a meeting on November 25, 1975, the Delta Building excavation was determined to be decontaminated because no detectable phoswich activity was ever noted; 14 out of 15 soil samples from the trench had levels of less than 20 pCi/g gross alpha activity, with the only positive sample having 26 pCi/g.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, was incorrectly designated a SWMU based solely on the former presence of radioactivity, and lacked contamination sources and releases, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.7 PRS 1-007(h)—Soil Contamination Area (OU 1078)

SWMU 1-007(h) is an area of suspected subsurface soil contamination which was located in the vicinity of the former TU and TU-1 Buildings in TA-1. TU Building was used for processing natural uranium, and was found to be moderately contaminated at the time of its demolition in July 1964. TU-1 Building was used for enriched uranium storage and recovery. TU Building was served by Septic Tank 143.

Drums of tuballoy (normal uranium) were stored outside TU Building. The drums would spontaneously ignite. Fire control procedures consisted of flooding the drums until they overflowed, causing contamination of surrounding soils. Approximately 3700 cubic yards of soil were removed, and follow-up samples were collected to confirm the cleanup. Two thin horizontal veins of uranium contamination (4 to 8 inches thick) remained north of the former TU-1 Building. These veins were observed at depths of approximately 4 and 10 feet below the restored ground surface. These veins were not completely removed during the excavation because of the depth of the pit being excavated, and because drilling around the veins confirmed that either the extent of the contaminated veins was quite limited or that dilution had occurred during the sampling process. It was decided that the uranium remaining was deep enough that any future excavation would dilute the contamination to acceptable levels. The entire area was subsequently backfilled and recontoured, leaving the veins of uranium at depths of between 4 and 10 feet below the present ground surface (see Figure 122 and page 36 of Attachment B).

At a meeting on November 25, 1975, the area was determined to be decontaminated because no phoswich-detectable activity remained (except for the two known veins of contamination); 30 of 31 samples exhibited gross alpha activity of less than 20 pCi/g, with the only positive sample being 40 pCi/g. The area in the vicinity of the TU Building remediation has been subject to significant construction activity, and is currently the location of the Timber Ridge townhomes and associated support structures.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, was incorrectly designated a SWMU based solely on the former presence of

radioactivity, and lacked hazardous waste contamination sources and releases, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.8 PRS 1-007(i)—Soil Contamination Area (OU 1078)

SWMU 1-007(i) consists of three areas of suspected subsurface soil contamination located in the vicinity of former Warehouses 5, 6, and GR. Warehouse 5 was used for materials storage, Warehouse 6 was used for equipment repair and storage, and Warehouse GR was used for equipment storage. There were no storm drains or outfalls located in the vicinity of this SWMU. During the radiological survey conducted by Ahlquist et al. during the mid-1970s, three areas of subsurface uranium contamination were discovered in the vicinity of former Warehouses 5, 6, and GR. Approximately 503 cubic yards of soil were removed from these areas, in addition to a 34-pound cylinder of natural uranium. The source of contamination in these areas was not determined. For other areas of surficial radioactive contamination, Ahlquist et al. had found that the decontamination and decommissioning activities were a probable source of such contamination. However, Ahlquist et al. makes no attempt to explain this SWMU.

At a meeting on June 8, 1976, the warehouse-area excavations were determined to be decontaminated because no detectable phoswich activity remained; only 3 of 69 soil samples from the excavation had levels of gross alpha activity greater than 20 pCi/g, with the maximum being 36 pCi/g. The entire area was subsequently restored using clean fill and soil from new construction sites, and the surface was recontoured (see page 36 of Attachment C). The area of the warehouse-area remediation is currently under the buildings and roadways of the Ridge Park Village complex.

Because these areas of suspected subsurface soil contamination were not the site of hazardous waste management, were incorrectly designated a SWMU based solely on the former presence of radioactivity, and lacked contamination sources and releases, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.9 PRS 1-007(m)—Soil Contamination Area (OU 1078)

SWMU 1-007(m) is an area of suspected subsurface soil contamination consisting of the former C Building footprint. C Building was a normal machine shop, with a uranium machine shop located in the southeast portion of the building. Before the building was removed, it was found to be free of radioactive contamination, except for that portion of the concrete foundation pad associated with the uranium machine shop. The building was removed in 1964. The concrete pad was demolished in 1965, with the contaminated portion of the pad disposed in a Laboratory MDA, and the remaining concrete placed in Bailey's Canyon.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, and was incorrectly designated as a SWMU based solely on the former presence of radioactivity, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.10 PRS 1-007(n)—Soil Contamination Area (OU 1078)

SWMU 1-007(n) is an area of suspected subsurface soil contamination located near the southwest corner of the former J-2 Building. Materials processing was carried out in the building, including the processing of fission products and plutonium. Before it was removed, radiological survey results of the J-2 Building showed that the eastern half of the building was relatively free of contamination, but that the western portion was highly contaminated within the hoods, hot cells, and duct work. The building was subsequently demolished in 1958. During the remediation

effort of the mid-1970s, six auger soil samples, a coresample, and a surface soil sample were collected from the area southwest of the former J-2 Building, and the area was surveyed for radioactivity. One of the auger samples showed a residual gross alpha concentration of 27 pCi/g, and the other sample results were all below 20 pCi/g. No further excavation to remove soil occurred. The area southwest of the former J-2 Building was, therefore, determined to be clean. The source of contamination in this area was not determined. For other areas of surficial radioactive contamination, Ahlquist et al. had found that the decontamination and decommissioning activities were a probable source of such contamination. However, Ahlquist et al. makes no attempt to explain this SWMU.

Hazardous wastes were not managed in the SWMU, and therefore could not have been released. This SWMU was not listed in the 1990 SWMU Report (see Attachment B), and its inclusion in the RFI Work Plan for OU 1078 was based solely on the elevated alpha levels found in one sample near the southwest corner of the building. Known contamination associated with the former J-2 Building was the leaking acid waste line northeast of the building.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, and was incorrectly designated a SWMU based solely on the former presence of radioactivity, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.11 PRS 1-007(o)—Soil Contamination Area (OU 1078)

SWMU 1-007(o) is an area of suspected subsurface soil contamination located in the vicinity of the former D-5 Sigma Vault. D-5 Sigma Vault consisted of reinforced concrete, 20 feet wide by 41 feet long by 13 feet high, and was used solely for the storage of U^{235} and P^{239}. Minor spills in the building resulted in lasting low-level contamination on the concrete floors and shelves. The building was demolished in December 1965. During the remediation effort of the mid-1970s, a three-foot-deep auger soil sample was collected from the location of the former D-5 Sigma Vault, and the area was surveyed for radioactivity. A residual gross alpha concentration of 29 pCi/g was measured from the auger sample, and no further excavation to remove soil occurred. The location of the former D-5 Sigma Vault was determined to be clean when there was no detectable phoswich activity observed during the survey, and when the augered soil sample from the Vault location revealed an alpha activity of 29 pCi/g.

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, and was incorrectly designated a SWMU based solely on the former presence of radioactivity, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.12 PRS 1-007(p)—Soil Contamination Area (OU 1078)

SWMU 1-007(p) is an area of suspected subsurface soil contamination located directly south of the former HT Building. HT Building was used for processing (heat treating and machining) normal uranium and enriched uranium. During the radiological survey and remediation effort conducted in TA-1 during the mid-1970s, an outcrop of tuff south of the former HT Building exhibited elevated levels of alpha activity. Exploration showed that the activity extended over a wide, shallow area. Approximately 35 cubic yards of soil and a slab of tuff were removed until no further activity could be detected by the phoswich. Nine soil samples were then taken on a 6.1-meter grid and results for all nine samples showed gross alpha activity of less than 20 pCi/g. At a meeting on November 4, 1975, the HT excavation was, therefore, determined to be decontaminated. The area was subsequently backfilled and recontoured (see page 36 of Attachment D).

Because this area of suspected subsurface soil contamination was not the site of hazardous waste management, and was incorrectly designated a SWMU based solely on the former presence of radioactivity, no further action is proposed for this SWMU.

EPA Review: OU 1078 NFA review letter dated 1/28/94.

2.2.4.13 PRS 2-002—Storage Area (OU 1098)

Oil-filled equipment was stored outside of building TA-2-1 for several years during the 1980s (LANL 1990, 0145) in an area of approximately 10 ft by 10 ft. Leaking oil from the equipment ran onto asphalt pavement and into an open storm ditch. In 1985, the oil was found to contain polychlorinated biphenyls (PCBs). The area was decontaminated by excavation of asphalt and soil to a depth of approximately 1 ft under the storage area. Several feet of the storm ditch were scraped and cleaned. Sampling and analysis showed the cleanup reduced PCBs to below a residual concentration of < 1 ppm (LANL 1990, 0145). The area is presently inactive and has not been used for storage of any potential contaminants since the cleanup. Radioactive releases are not known to have occurred. The area has been cleaned up and decontamination efforts have been verified (LANL 1990, 0145). Figure 8.3-1 depicts the location of the SWMU no. 2-002.

No Phase I activities are planned for this SWMU because of previous successful remediation efforts (LANL 1990, 0145).

EPA Review: OU 1098 RFI review letter dated 11/16/93.

2.2.4.14 PRS 3-020(b)—Surface Disposal Site (OU 1114)

SWMU 3-020(b) was a pit, now covered, adjacent to the southeast corner of TA-3-70 that was used to catch residue from steam-cleaning small engines. The pit was a 1-in.-deep metal box about 10 x 15 ft that was recessed into asphalt paving. It was filled with sand and covered with a metal grate. Small engines were placed on the grate to be steam cleaned. Oil and grease from the engines, as well as the condensed water and detergent from the steam cleaner, drained into the pit and were absorbed into the sand. As the sand became saturated, it was removed and discarded at the municipal landfill. The pit was refilled with dry sand. In November 1991, the pit was cleaned, refilled with dry sand, and covered with 4 in. of asphalt as part of a general repaving of the lot.

EPA Review: OU 1114 NOD dated 10/29/93.

2.2.4.15 PRS 8-011(a)—Underground Tank (OU 1157)

Structure TA-8-60 was a 2000 gal. stainless-steel UST for diesel oil that served Building TA-8-1 (LANL 1990, 0145). The tank was installed in 1943 and removed as part of the Laboratory's underground storage tank removal program in 1987 (LANL 1944 to present, 12-0003). There were no reported spills or leaks, and there was no contamination of the soil from the diesel oil (Harris 1993, 12-0117).

The UST TA-8-60, PRS 8-011(a), is recommended for NFA under Criterion 4. It has been properly removed and remediated under the Laboratory's UST removal program.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.16 PRS 8-011(b)—Underground Tank (OU 1157)

Structure TA-8-61 was a 2000 gal. stainless steel, underground storage tank for diesel oil, that served Building TA-8-1. The tank was installed in 1943 and removed as part of the Laboratory's underground storage tank removal program in 1987 (LANL 1990, 0145; LANL 1944 to present, 12-0003). There were no reported spills or leaks, and there is no contamination of the soil from the diesel oil (Harris 1993, 12-0117).

The UST TA-8-61, PRS 8-011(b), is recommended for NFA under Criterion 4. It has been properly removed and remediated under the Laboratory's UST removal program.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.17 PRS 9-016—Underground Tank (OU 1157)

Structure TA-9-182 was a 1000-gal. petroleum storage tank built in July 1945, abandoned in place in December 1959, and removed in 1965 (LANL 1944 to present, 12-0003). There is no reported evidence of a spill from this structure. Personal communication about the condition of the older tanks revealed that they were much more substantially built than some of the present tanks on Laboratory property. This tank was not corroded, and the only leaks were those found at joints in pipes. The soil beneath these leaks was removed and disposed of with the structures (Harris 1993, 12-0117).

The storage tank, PRS 9-016, is recommended for NFA under Criterion 4. The tank has been removed. Any contaminated soil that may have been a result of spills or leaks from the UST were removed with the tank.

EPA Review: OU 1157 RFI review letter dated 10/7/94.

2.2.4.18 PRS C-9-002—Buildings (OU 1157)

This AOC, C-9-002, is the former location of two trimming buildings, a personnel shelter, and any associated soil contaminated with HE. In 1959, these buildings were reported to be contaminated with HE. These buildings were burned in January 1960, and in 1965 unburned residues were removed. Debris was taken to TA-54 and also to the burning ground at TA-16. The remaining combustibles were burned. Examination of barren soils at TA-9 in 1987 did not reveal elevated concentrations of either barium nitrate or explosives (Weston 1989, 12-0049).

This AOC, C-9-002, is proposed for NFA. The site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.19 PRS C-9-003—Building (OU 1157)

This AOC is the former location of a pump house, TA-9-16, and any associated soil contaminated with HE. In 1959, this building was reported to be contaminated with HE. This building was burned in January 1960, and in 1965 unburned residues were removed. Debris was taken to TA-54 and also to the burning ground at TA-16. The remaining combustibles were burned. Examination of barren soils at TA-9 in 1987 did not reveal elevated concentrations of either barium nitrate or explosives (Weston 1989, 12-0049).

Building TA-9-16, AOC C-9-003, is proposed for NFA. The site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.20 PRS C-9-004—Buildings (OU 1157)

The SWMU Report states that this AOC is the former location of a building, TA-9-19, that contained an oven and was used by Group X-6, responsible for studies in detonation physics. It was removed in 1952. Other buildings in this area were burned in 1960. Examination of barren

soils at TA-9 in 1987 did not reveal elevated concentrations of either barium nitrate or explosives (Weston 1989, 12-0049).

Building TA-9-19, AOC C-9-004, is proposed for NFA. The site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.21 PRS C-9-005—Buildings (OU 1157)

This AOC is the former location of an x-unit chamber, Building TA-9-58, at Far Point Firing Site. The structure was removed in 1965. The x-unit chamber performed experiments involving ^{137}Cs (Weston 1989, 12-0049).

Building TA-9-58, AOC C-9-005, is proposed for NFA. The site will be included under the Group 6, PRSs 9-001(a) and (b), Phase I sampling of surface and subsurface soils in the Far Point area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.22 PRS C-9-006—Buildings (OU 1157)

This AOC is the former location of structures TA-9-6, -11, -12, and -16. In 1959, these buildings were reported to be contaminated with HE. These buildings were burned in January 1960, and in 1965 unburned residues were removed. Debris was taken to TA-54 and also to the burning ground at TA-16. The remaining combustibles were burned. Examination of barren soils at TA-9 in 1987 did not reveal elevated concentrations of either barium nitrate or explosives (Weston 1989, 12-0049).

This AOC, C-9-006, is proposed for NFA. The site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.23 PRS C-9-007—Buildings (OU 1157)

This AOC is the former location of storage buildings AE-7 and AE-8 (TA-9-7 and -8). In 1959, these buildings were reported to be contaminated with HE. The buildings were burned in 1960, and unburned building debris was removed in 1965. Debris was taken to TA-54 and also to the burning ground at TA-16. The remaining combustibles were burned. Examination of barren soils at TA-9 in 1987 did not reveal elevated concentrations of either barium nitrate or explosives (Weston 1989, 12-0049).

Buildings TA-9-7 and TA-9-8, AOC C-9-007, are proposed for NFA. The site will be included under the Group 5, TA-9 Decommissioned Area, Phase I sampling of surface and subsurface soils throughout the Old Anchor East decommissioned area.

EPA Review: OU 1157 NOD dated 4/5/94.

2.2.4.24 PRS C-11-003—One-Time Release Site (OU 1082)

AOC C-11-003 is the slope northeast of TA-11-4 where radioactive lanthanum was spread as a result of leakage from a broken source capsule. The slope is on the south side of a tributary to Water Canyon. It is moderately steep, with a grade of about 30%. Grasses and scrub oak, with a few stands of ponderosa pine, grow on the slope. The precise location of the lanthanum spill is not known.

In 1949, a series of tests involving lanthanum-140 were conducted at TA-11. One source containing 9 Ci of lanthanum-140 was dropped and dragged a short distance before being picked up and put in a storage hutment. When the source was found to be leaking, it was dragged to a remote area, strung between two trees, and then washed off with a fire hose. Considerable contamination spread to surrounding areas. Contaminated soil was shoveled into cardboard boxes and removed from the site. All buildings associated with the spill were monitored and hot spots cleaned (Blackwell 1949, 15-11-009). In 1956, the health protection technician who monitored the original spill re-monitored the area and found no contamination (Blackwell 1956, 15-11-013).

With a half-life of 40.2 hours, any remaining lanthanum-140 has decayed to insignificant levels. Product of decay is cerium-140, a non-hazardous, stable element. Of concern is strontium-90, with a half-life of 28.5 years, which may have been a contaminant in the barium-140 from which the lanthanum was obtained. Lanthanum was separated chemically from barium at the Bayo Canyon facility by precipitation and filtration, first as the hydroxide and then as the oxalate, which was stabilized as lanthanum trifluoride. Strontium-90 contamination in the product was 0.003% on a pCi basis (Mayfield et al. 1979, 15-16-342).

In 1949, the total strontium-90 in the 9 Ci lanthanum-140 source was 2.7E-4 Ci or 270 000 pCi. With a half-life of 28.5 years, total strontium-90, 1.5 half-lives later in 1992, is about 100 000 pCi. Local background level is 0.34 pCi/g (Purtymun et al. 1987, 0211). The screening action level for strontium-90 is 8.90 pCi/g. Therefore, one could add an additional 8.56 pCi/g to background and still be within acceptable levels.

If no cleanup had occurred, further calculation indicates that dispersion of the remaining 100 000 pCi strontium-90 in greater than 151.5 kg of the local soil would reduce contamination to acceptable levels. However, given the large area over which the spill occurred (as a result of washing it down with a fire hose), the subsequent cleanup, and follow-up monitoring, it is much more likely that a smaller amount of strontium-90 remains and that it is dispersed in far more than 151.5 kg of the local soil.

EPA Review: OU 1082 NOD dated 7/13/94.

2.2.4.25 PRS 16-008(b)—Surface Impoundment (OU 1082)

This SWMU was a Hypalon-lined pond at the TA-16 burning ground. The pond was 60 ft long x 35 ft wide x 4 ft deep and received liquid from two pressure filter tanks, TA-16-401 and TA-16-406, located north of the pond. To reduce the barium nitrate level in the pond, on one occasion liquid sodium sulfate was added to precipitate barium as barium sulfate. When barium nitrate levels had been reduced to less than 100 ppm, the liquid was discharged to an outfall (Baytos 1986, 15-16-365).

SWMU 16-008(b) is recommended for NFA and delisting from the SWMU Report and the HSWA Module because site closure was completed on June 12, 1990 (LANL 1992, 0768).

On February 2, 1990, Jack Ellvinger, Chief, Hazardous Waste Bureau of the New Mexico Health and Environment Department forwarded to James R. Anderson, US Department of Energy (DOE), Los Alamos Area Office, "...the final closure plan approved by the New Mexico Environmental Improvement Division (NMEID) for the Los Alamos National Laboratory (LANL) TA-16 surface impoundment. This plan consists of the plan submitted by LANL February 6, 1989, as modified by the NMEID, February 2, 1990. These modifications are contained in the closure plan and a copy of the reasons for these modifications is included. NMEID approves this closure plan in accordance with the New Mexico Hazardous Waste Management Regulations (HWMR-5, as amended 1989), Part VI, 40 CFR 265.112 (d)(4), with an effective date of February 12, 1990. This date will become the starting date for the final closure schedule in Subsection 5.1.9 of the closure plan" (Ellvinger 1990, 15-16-372). The surface impoundment referred to in that correspondence is the Hypalon pond at the TA-16 burning ground designated SWMU 16-008(b).

On September 19, 1990, Harry T. Season, Jr., Acting Area Manager, Department of Energy, Los Alamos Area Office, submitted the closure documentation for the TA-16 Surface Impoundment to Ms. Kathleen Sisneros, Director Hazardous Waste Bureau, NMEID. This transmittal read in part, "Los Alamos National Laboratory (LANL) received an approved Resource Conservation and Recovery Act (RCRA) closure plan for the TA-16 Surface Impoundment on February 12, 1990. Upon the receipt of this document, LANL proceeded with the closure of this unit. This closure was completed on June 12, 1990" (Ellvinger 1990, 15-16-372).

EPA Review: OU 1082 NOD dated 7/13/94.

2.2.4.26 PRS 18-009(a)—Transformer (OU 1093)

According to the SWMU Report, a transformer [AOC 18-009(a)] located at Structure TA-18-136 (Figure 1-2) leaked PCB-contaminated oil in 1982. This PRS has been designated as an AOC because PCBs are not contaminants regulated by RCRA or HSWA. No data were located on PCB concentrations in the transformer. According to a Laboratory employee (Emelity 1982, 16-0050), approximately 50 cubic yards of PCB-contaminated soil was removed the same year. The memo gave no indication regarding the levels of PCB concentrations in the removed soil.

A site visit to the former location of this AOC was made in July 1992. The only evidence of the past transformer was a capped-off conduit in which electrical cables ran underground to Kiva 3. The concrete pad on which the transformer sat and the contaminated soil have been removed. Because the area was cleaned up and the transformer was removed, NFA is proposed.

EPA Review: OU 1093 RFI review letter dated 9/23/94.

2.2.4.27 PRS C-18-001—Laboratory (OU 1093)

This AOC, identified in Appendix C of the SWMU Report (LANL 1990, 0145), was associated, as such, with former portions of Building TA-18-1. It was not a waste management unit; therefore, it is designated as an AOC in this work plan.

The portion of Building TA-18-1 that contained the photochemical laboratory has been dismantled. The liquid waste discharges from that portion of the building were routed through the drain lines and septic system associated with SWMUs 18-003(g) and (h) (Sections 5.1.1.2.7 and 5.1.1.2.8). The sampling plans for these SWMUs acknowledge the possible presence of silver from photochemical waste discharges. Therefore, this AOC is proposed for NFA.

EPA Review: OU 1093 RFI review letter dated 9/23/94.

2.2.4.28 PRSs C-21-002, -003, -004, -008, -010, -011, -015 through -026, and -028 through -030 (OU 1106)

Records show that either no documented releases have occurred or that releases have occurred, but cleanup has been conducted and documented for these PRSs (Table 19-II).

PRS C-21-002—Non-intentional Release Area (OU 1106)

Leak of radionuclides from a waste storage tank to surrounding soil; soil was removed.

EPA Review: OU 1106 RFI approval letter dated 1/9/92.

PRS C-21-003—Non-intentional Release Area (OU 1106)

Unknown releases to paved area between these two structures; area has been repaired.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-004—Non-intentional Release Area (OU 1106)

Possible radionuclide and hazardous waste release to asphalt driveways. Soil was removed and area was repaved.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-008—One-Time Spill (OU 1106)

Release of radioactive material from a process exhaust line; soil was excavated.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-010—Systematic Leak (OU 1106)

Leak of ^{241}Am and plutonium from drums; area was decontaminated.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-011—One-Time Spill (OU 1106)

In 1963, a plugged scrubber on the roof of Building 155 backed up and spilled material containing Uranium-235; area was cleaned.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-015—Building (OU 1106)

A safety training building; building and soil were removed down to tuff.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-016—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-017—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-018—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-019—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-020—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-021—Storage Area (OU 1106)

A storage hutment removed in 1954.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-022—Laboratory (OU 1106)

A laboratory that was demolished and disposed of in TA-54, Area G.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-023—Laboratory (OU 1106)

Former location of a laboratory building and associated soil. Structure was demolished and disposed of in TA-54, Area G.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-024—Warehouse (OU 1106)

Former location of a warehouse and associated soil. Structure was demolished and disposed of in TA-54, Area G, Pit No. 4.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-025—Building (OU 1106)

Former location of a corridor contaminated with radionuclides; structure demolished in 1965.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-026—Building (OU 1106)

Former location of an administrative building with shops; removed in 1968.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-028—Tank (OU 1106)

A 12,788 gal. aboveground fuel tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-029—Aboveground Tank (OU 1106)

An aboveground 3,000 gal. steel oil tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

PRS C-21-030—Aboveground Tank (OU 1106)

A 320 gal. propane tank that was removed.

EPA Review: OU 1106 RFI review letter dated 1/9/92.

2.2.4.29 PRS 27-004—Control Building (OU 1093)

Control Building TA-27-2 was a small subsurface concrete firing site bunker covered with earthen fill that was used at TA-18. It was transferred to and reconstructed at the northwest end of TA-27 about 1945 (Figure 1-4). Demolished when the site was decommissioned in mid-1960, it was the only building at TA-27 reported to have any radioactive contamination (DOE 1987, 0264). The site is designated as an AOC because only radioactive contaminants, which are not regulated by RCRA or HSWA, were present.

Beta and gamma contamination were identified on the concrete floor of Building TA-27-2 in 1958 (DOE 1987, 0264). Decontamination efforts in 1959 were unsuccessful. A 1960 survey (DOE 1987, 0264) conducted before the structure was removed showed thorium (a low-energy gamma emitter) contamination remaining inside the concrete structure. Radiation levels were reported as 1,500 counts per minute (presumably alpha) and 2 millirad/hour thorium (DOE 1987, 0264). A 1988 beta and gamma screening of the remaining building rubble did not reveal gamma exposure rates above background levels (LANL 1990, 0145).

The general area where Building TA-27-2 was located has undergone extensive alteration with the construction of the TA-18 sewage lagoons and the realignment of Pajarito Road (Figure 1-4). The actual former location, as provided by a site map (LASL 1955, 16-0063), cannot be verified. A small quantity of concrete rubble is evident near the presumed location of the building. The radiation monitoring of this rubble done in 1988 did not reveal beta or gamma exposure rates above background levels (LANL 1990, 0145). (The original contamination on the building floor was identified as beta-gamma radiation.) Because the exact location of the building cannot be determined and current evidence indicates no contamination is present, NFA is proposed.

EPA Review: OU 1093 NOD dated 3/7/94.

2.2.4.30 PRS 35-005(a and b)—Surface Impoundments (OU 1129)

AOC Nos. 35-005(a and b) are the sites of former gunite-lined waste-oil impoundments that were removed and closed in 1989 as Laboratory voluntary corrective actions (see Section 3.3.2.1). SWMU No. 35-006 is an unlined waste-oil impoundment that was replaced by AOC No. 35-005(a) in 1985. (Because SWMU No. 35-006 and AOC No. 35-005[a] occupied the same site, all remedial actions undertaken for AOC No. 35-005[a] also pertain to SWMU No. 35-006.) In 1989 the contents of both impoundments, the concrete liners, and contaminated soils were removed; and the excavated pits were backfilled following verbal approval of a closure plan by the New Mexico Environment Department (NMED). However, post-closure verification samples collected in 1990 revealed that above regulatory threshold concentrations of total petroleum hydrocarbons (TPH) were present in surface samples at AOC No. 35-005(a); and above regulatory threshold concentrations of volatile organic compounds (VOCs), TPH, and alpha activity were present in the subsurface at AOC No. 35-005(b). In January 1992 final closure reports for these sites were submitted to the Environmental Protection Agency (EPA) and the NMED. This SWMU and these AOCs are currently awaiting resolution of an NMED notice of deficiency regarding sampling sufficiency.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.31 PRS 35-011(d)—Underground Storage Tank (OU 1129)

AOC No. 35-011(d) is the site of two USTs (TA-35-TSL-188[1&2]) that were formerly used to store dielectric oils (see Section 3.3.2.1). The tanks were removed and inspected in 1991 and

found to have no leaks. However, the area around the tanks is contaminated with oil because of leakage from an aboveground oil-handling facility formerly located at the area. That spill area is designated as SWMU No. 35-014(f). This AOC is recommended for NFA because the USTs have been removed, and it has been determined that they were not the source of the spilled oil. The oil-contaminated area, which includes the former UST locations, will be investigated as SWMU No. 35-014(f).

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.32 PRS 35-012(a)—Underground Storage Tank (OU 1129)

AOC No. 35-012(a) is the site of one UST (TA-35-158) that received materials such as dielectric oils and solvents from spills that occurred inside TA-35-85 (see Section 3.3.2.1). The tank was leak-tested before it was removed, and no leaks were found. The tank was removed in 1990 as a RCRA interim status closure, and the pit was backfilled and covered with asphalt. This AOC is recommended for NFA because remediation is complete, and the results of confirmatory sampling were submitted to the EPA and the NMED in the final closure report (estimated date of submittal was December 1, 1991).

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.33 PRS 35-017—Soil Contamination from Reactor (OU 1129)

AOC No. 35-017 is the site of potential soil contamination from the operations of the Los Alamos Power Reactor Experiment No. 1 (LAPRE-I), LAPRE-II, and Los Alamos Molten Plutonium Reactor Experiment (LAMPRE) reactors. LAPRE-I and LAMPRE were operated in Cell J (Room 203) in the basement of TA-35-2. LAPRE-II was located in an underground steel-lined pit on the southeast exterior of TA-35-2. LAPRE-I was disassembled in 1956; LAMPRE was built in the same location in 1960. Portions of LAPRE-I were used in the construction of LAMPRE. Complete decommissioning of LAMPRE was accomplished in 1980. Documentation shows no evidence of releases or spills outside the reactor cell (Cell J). All areas associated with the operations of LAPRE-I and LAMPRE, except Cell J, have been released for unrestricted use; Cell J is considered to be under institutional control. LAPRE-II underwent D&D in 1991 and was released for unrestricted use in January 1992; the final D&D report was issued in February 1993. All contaminated soils at the LAPRE-II site were removed and disposed of at the radioactive waste disposal site (TA-54, Area G). After D&D was completed, Group EM-8 (now Group ESH-8) conducted confirmatory soil sampling. Results indicate that no COCs exist. This AOC is recommended for NFA.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.34 PRS 39-007(e)—Storage Area (OU 1132)

This storage area, an open-front metal shed measuring about 8 ft × 4 ft, was located north of Pit 3; it received hazardous waste inappropriate for disposal at the landfills. The entire structure was removed with its contents when the last landfill pit was covered up. Its former site will be investigated as part of Phase I investigations of the landfills (see Chapter 5, Section 5.1.4.1.3.1).

EPA Review: OU 1132 RFI review letter dated 9/22/94.

2.2.4.35 PRS C-41-002—Underground Tank (OU 1098)

According to Richard E. Larson (Larson and Brown 1992, 14-0046) a TA-41 site worker, the 560-gal. diesel tank is located to the south of the guard station TA-41-2 (Figure 8.6-1). The structure number on this tank is TA-41-W55, and it is an underground tank measuring 8 ft by 4 ft. The diesel is used to fuel a generator that is a back-up system for security lighting and an alarm system for TA-41. The tank was put into place in 1985 and is still active. Mr. Larson indicated that the tank has been leak tested in the past and at some time failed. The tank was dug up and the leak was found

in the fuel stem. The tank was repaired and approximately 0.26 cu ft of soil around the tank were excavated. The tank was put back into place (McInroy 1992, 14-0006). The documentation of this activity has not been located. Subsequent leak tests have shown that the tank is tight, with a leak rate of 0.00163 gal./h (International Technology Corporation 1991, 14-0023). This AOC is recommended for NFA because the site was remediated and there is no evidence of more recent releases.

EPA Review: OU 1098 RFI review letter dated 11/16/93.

2.2.4.36 PRS 42-004—Canyon Disposal (OU 1129)

SWMU No. 42-004, a canyon disposal site, was used for dumping building debris (see Section 3.4.2.1). (Note: SWMU No. 42-004 is the same as AOC No. C-42-001.) Soil samples collected and analyzed in 1991 as part of an ERIA contained gross-alpha, -beta, and -gamma at background levels. No VOCs, semivolatile organic compounds (SVOCs), or PCBs were detected. Toxicity characteristic leaching procedure (TCLP) metals (Ag, As, Ba, Cd, Cr, Hg, Pb, and Se) were below the regulatory levels in 40 CFR 261.24, Table 1.

In July 1992 OU 1129 personnel collected samples at TA-42. None of the samples collected contained concentrations of COCs above screening action levels (SALs). In fact, all COCs were at least one order of magnitude below the SALs. On the basis of the D&D effort, the reconnaissance survey, and OU 1129 sampling, this SWMU is recommended for NFA because COCs are not present in concentrations that would pose a threat to human health or the environment.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.37 PRS 50-006(b)—Operational Release (OU 1147)

This SWMU was described as "stained soil (probably mineral oil) beneath an active radiator on the west wall of Building TA-50-37" (the incinerator facility). This radiator cools the mineral oil that drives a fluid coupling between an electric motor and a blower. It should be noted that this radiator is not on the west wall, but on a concrete foundation about 15 ft west of that wall. In addition, the radiator leaked some mineral oil on the asphalt pad around the concrete foundation but did not "stain soil" as noted in the SWMU report (LANL 1990, 0145).

On September 18, 1990, a small-job ticket was issued to wash the area around the radiator with a detergent degreaser and steam and to pick up the fluid with a vacuum cleaner. The soapy fluid was disposed of in the acid waste drain in Building 37. The radiator, mineral-oil fluid coupling, concrete foundation, and asphalt pad are scheduled for removal in the near future. The area will then be patched with new asphaltic concrete paving material, and a new, direct-drive motor will be installed to power the blower.

The source of any possible contamination has been removed.

This SWMU no longer exists.

EPA Review: OU 1147 NOD dated 9/9/92.

2.2.4.38 PRS 50-006(e)—Aboveground Tank (OU 1147)

Soil stained presumably with diesel fuel was noted around the diesel fuel tank on the southwest side of TA-50-37, the incinerator building. The tank was located about 5 ft off the paved area south of Building 37 and about 30 ft south of the building's southwest corner. The tank provided fuel to the furnaces in the incinerator complex. Because the tank had never been observed to leak, it is assumed that the soil stain resulted from careless filling by the fuel supply vendor.

On May 15, 1990, Work Order 6-5737-17 was issued to Pan Am to remove both the diesel fuel tank and the supply and return lines (up to the concrete approach ramp to the door at the

southwest corner of the incinerator building). The fuel tank was removed, steam-cleaned, and sent to salvage. The tank's foundations were removed, and the supply and return lines were dug up and capped near their entrance to the building. The stained soil apparently was also removed; none was visible during an October 1991 site visit.

All structures that could have been sources of contamination have been removed.

This SWMU no longer exists.

EPA Review: OU 1147 NOD dated 9/9/92.

2.2.4.39 PRS 52-003(b)—Industrial Wasteline (OU 1129)

SWMU No. 52-003(b) is the site of two 3-in.-diameter cast-iron industrial wastelines (lines 65 and 66) that transported liquid wastes from the UHTREX reactor to a waste-treatment facility (SWMU No. 52-003[a]) and then to TA-50 (see Section 3.6.2.1). These wastelines were removed in 1988 during the UHTREX D&D project, and 173 soil samples were collected at 2-ft intervals along the route of the wastelines. Sample depths ranged from 5 ft to 7 ft. Beta activity was nondetectable, alpha and gamma activity were far below the site-specific RESRAD computer code model, all metals were within background levels, and organics were below detection limits. This SWMU is recommended for NFA because the site has undergone D&D and confirmatory sampling indicates that COCs are not present in concentrations that exceed natural background levels.

EPA Review: OU 1129 RFI review letter dated 11/3/93.

2.2.4.40 PRS 54-021—Aboveground Tanks (6) (OU 1148)

Six tanks (SWMU 54-021) stored at MDA G have been removed under a RCRA closure plan. The Laboratory closure report was submitted to the NMED, and is awaiting approval. The tanks were originally located at MDA L, where they were used to store waste oil (see Section 5.3).
EPA Review: OU 1129 RFI review letter dated 11/3/93.

EPA Review: OU 1148 NOD dated 4/23/93.

2.2.4.41 PRS 54-022—Transformer Spill (PCB) (OU 1148)

A PCB transformer spill site (SWMU 54-022) is listed in the SWMU Report (LANL 1990, 0145) as the site where a transformer is known to have leaked. The transformer was removed on October 1, 1989, and cleanup was implemented. According to Johnson Controls World Service's Inc. standard procedures, any spills were to be cleaned up within 24 hours (IT Corporation 1992, 08-0003, 08-0006). Documentation of cleanup activities is pending.

EPA Review: OU 1148 NOD dated 4/23/93.

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LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1129," Los Alamos National Laboratory Report LA-UR-92-800, Los Alamos, New Mexico. (LANL 1992, 0785)

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LANL (Los Alamos National Laboratory), May 1994. "RFI Work Plan for Operable Unit 1136," Los Alamos National Laboratory Report LA-UR-94-1244, Los Alamos, New Mexico. (LANL 1994, 1158)

■ APPENDIX A

Maps

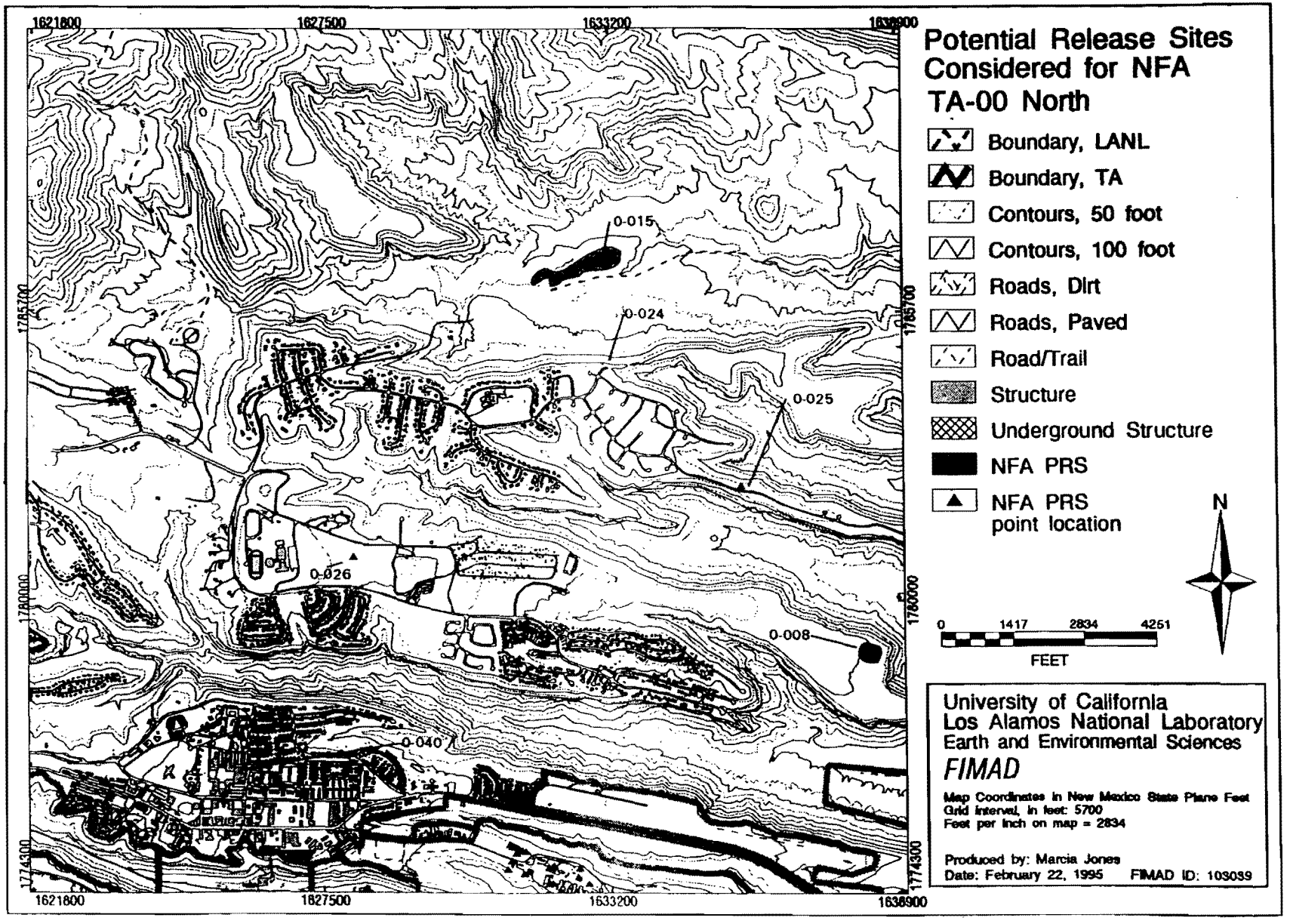

Figure A-1. Potential release sites considered for NFA, TA-00 North.

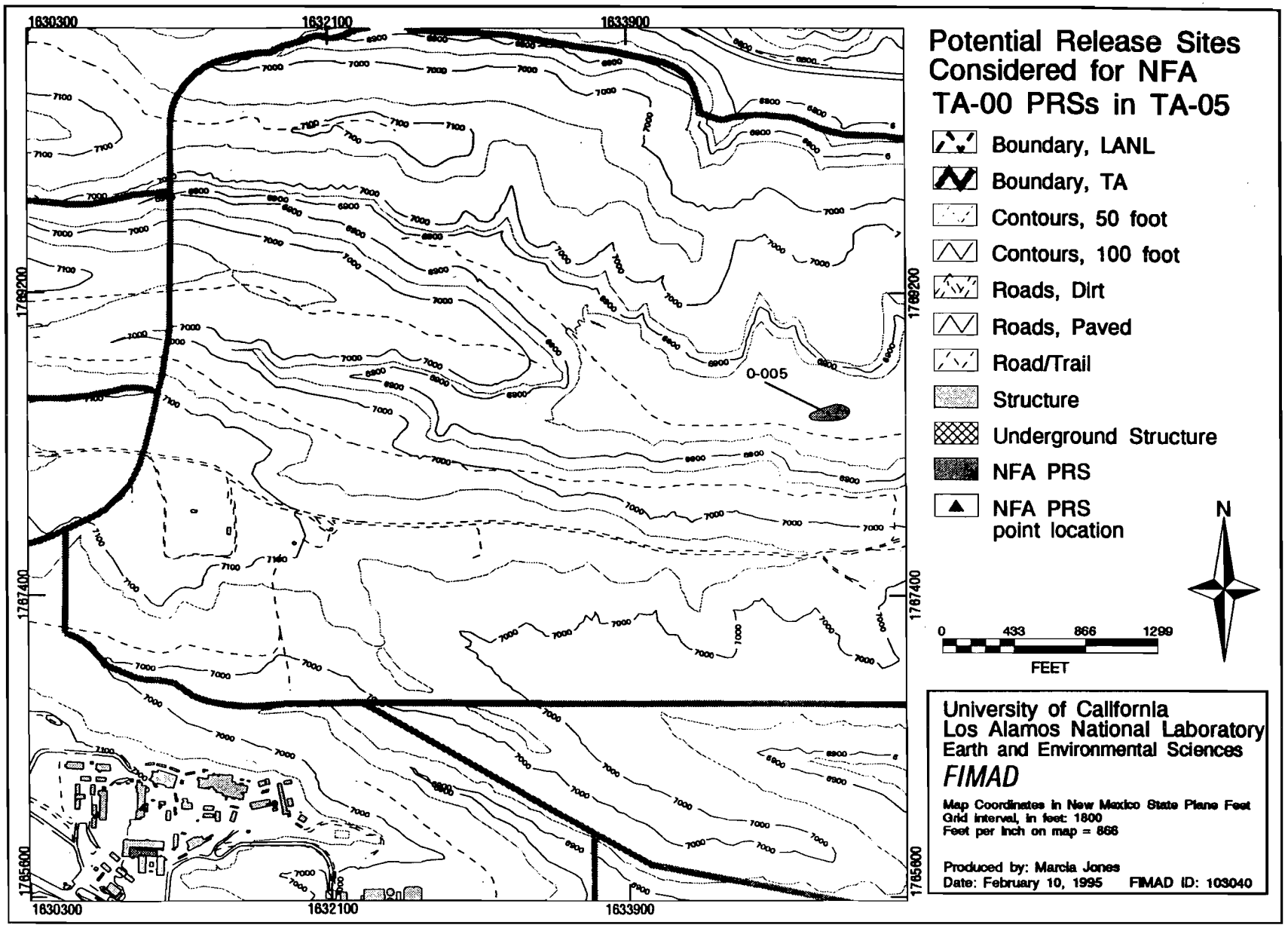

Figure A-2. Potential release sites considered for NFA, TA-00 PRSs in TA-05.

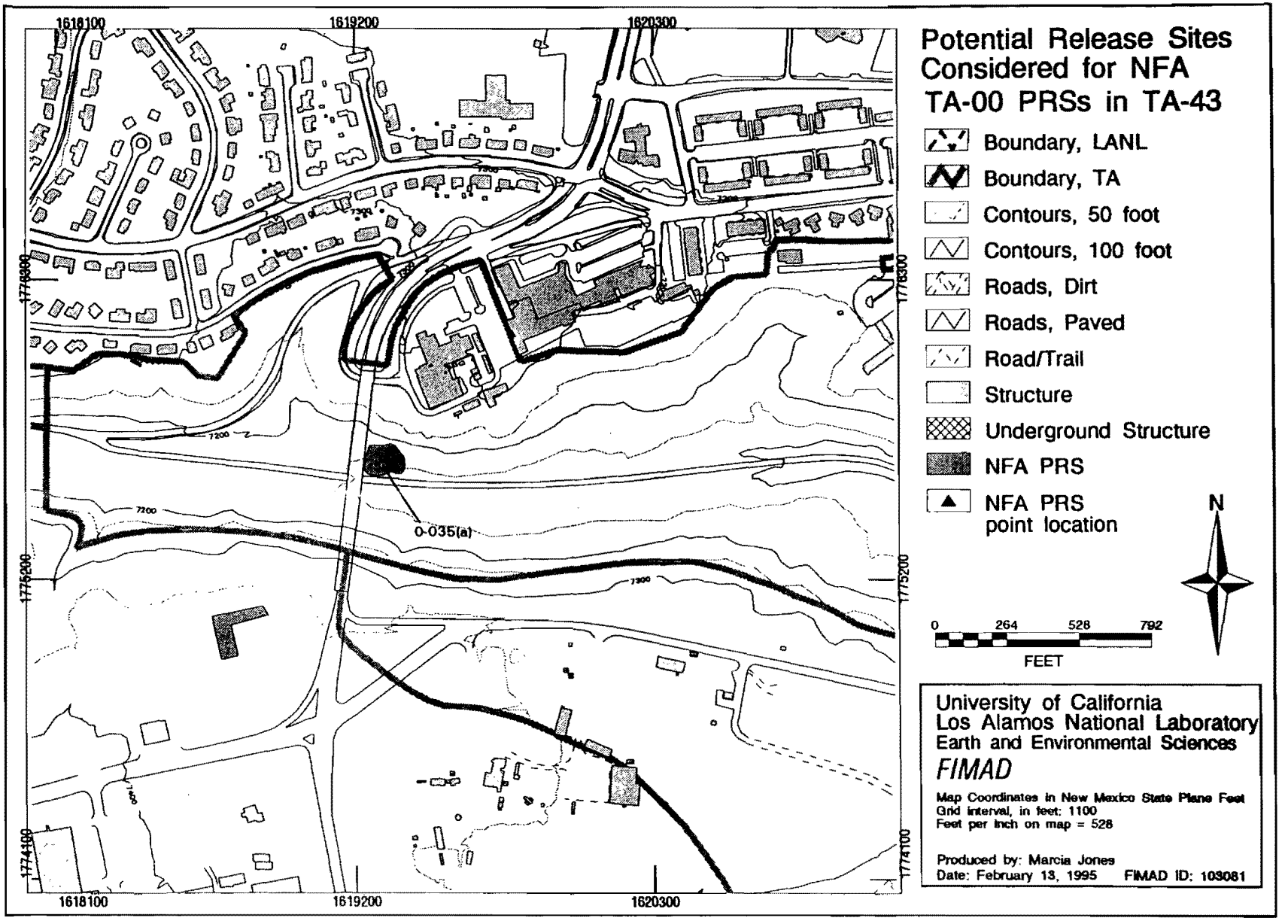

Figure A-3. Potential release sites considered for NFA, TA-00 PRSs in TA-43.

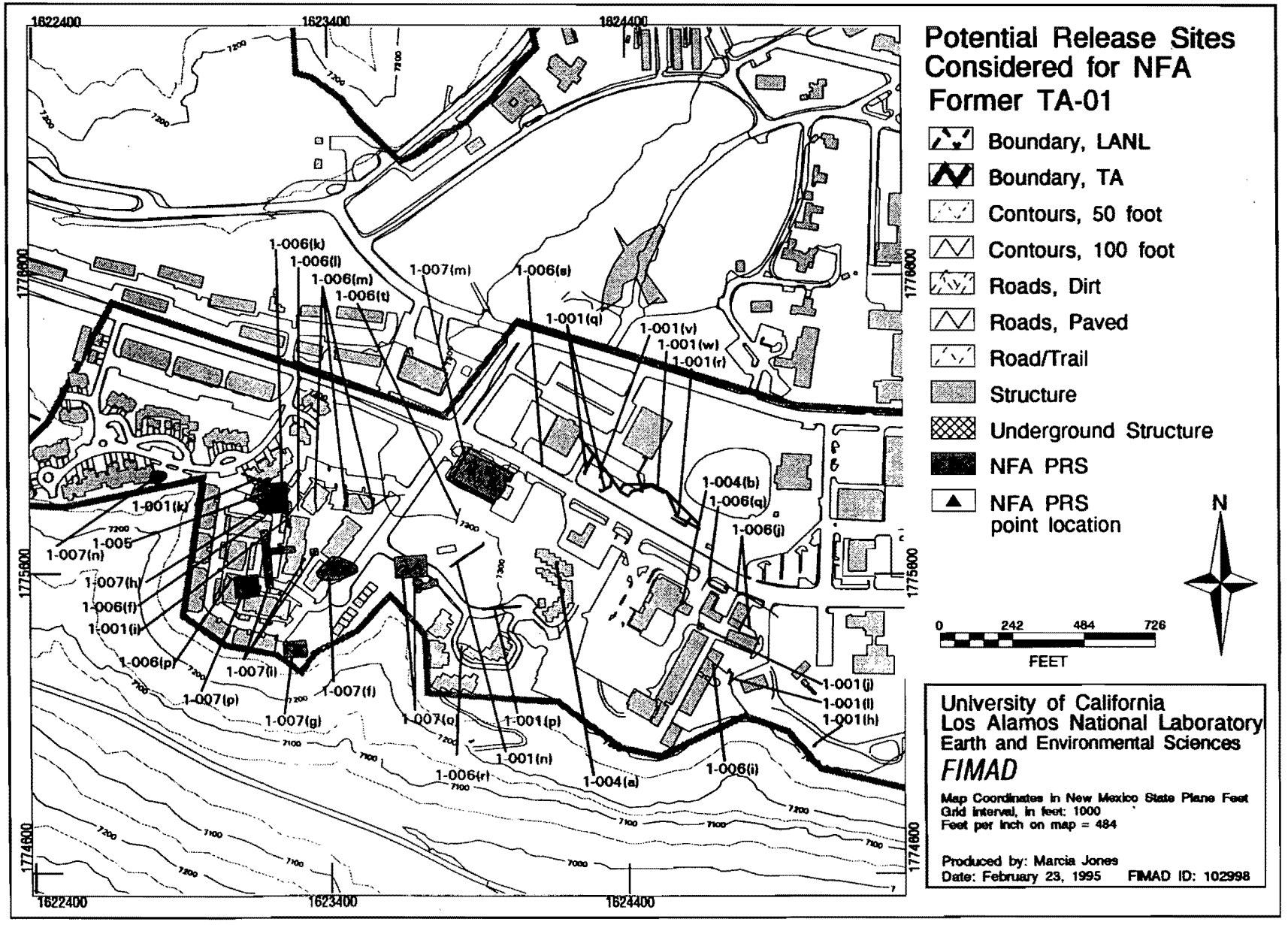

Figure A-4. Potential release sites considered for NFA, former TA-01.

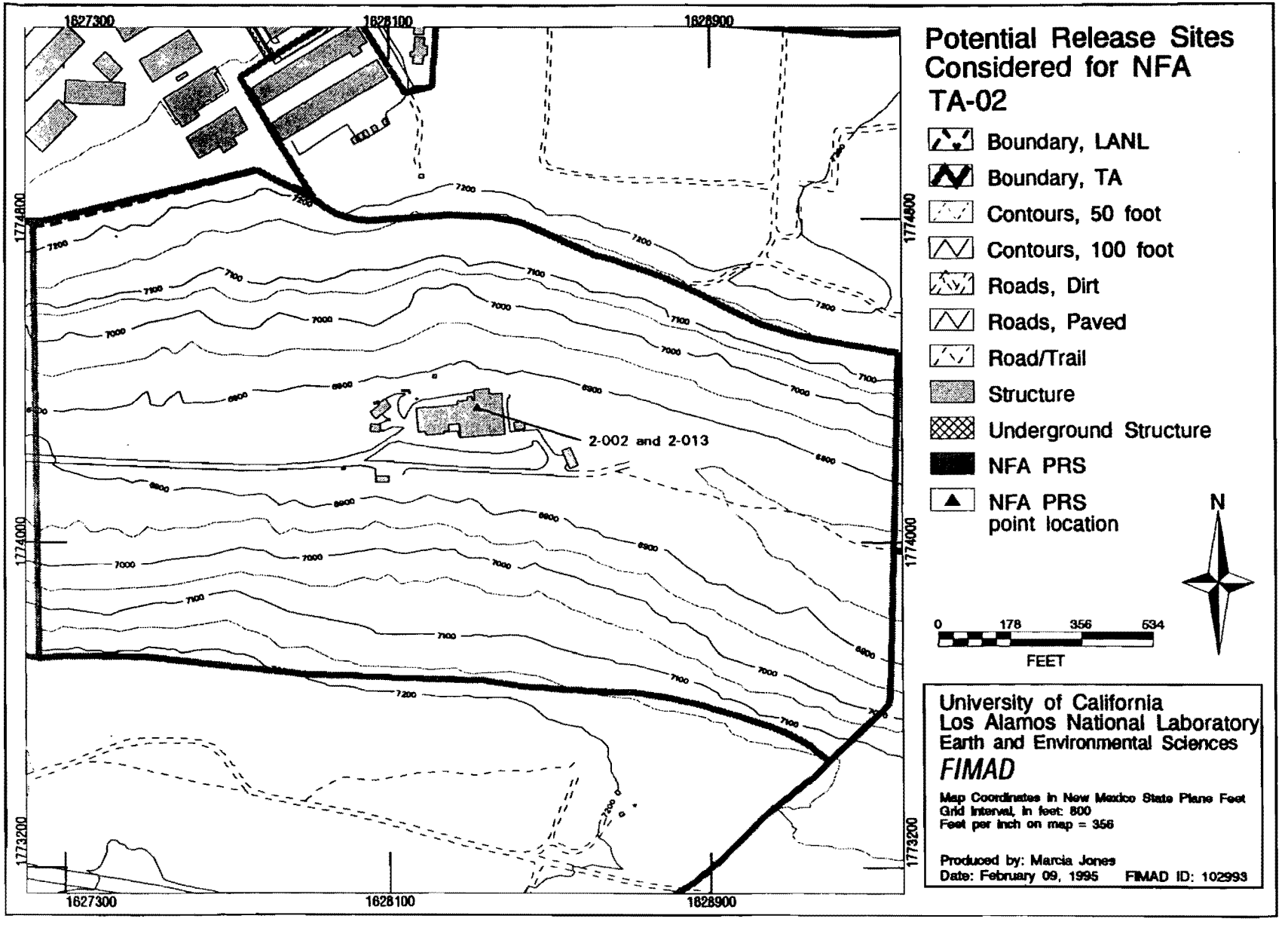

Figure A-5. Potential release sites considered for NFA, TA-02.

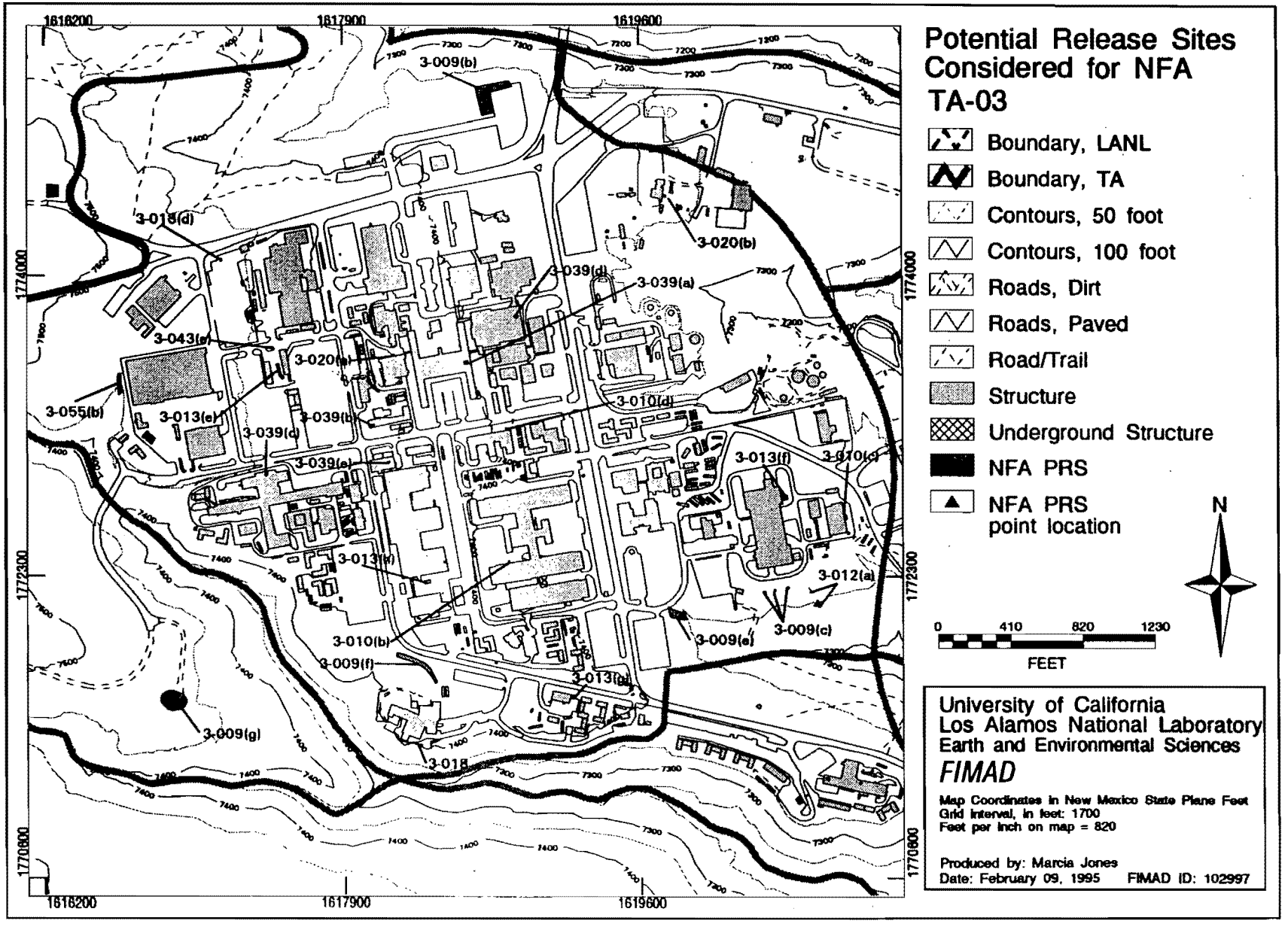

Figure A-6. Potential release sites considered for NFA, TA-03.

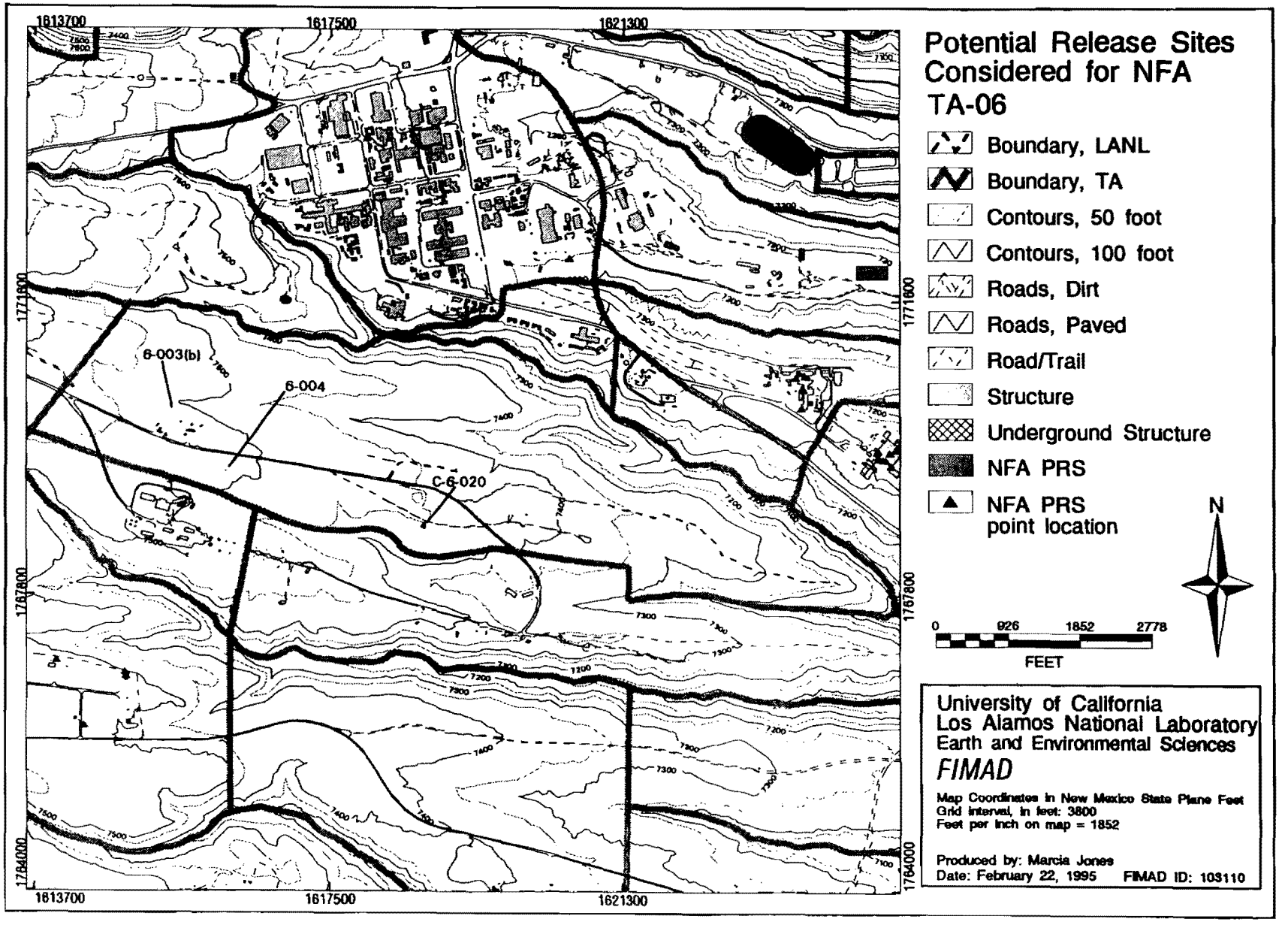

Figure A-7. Potential release sites considered for NFA, TA-06.

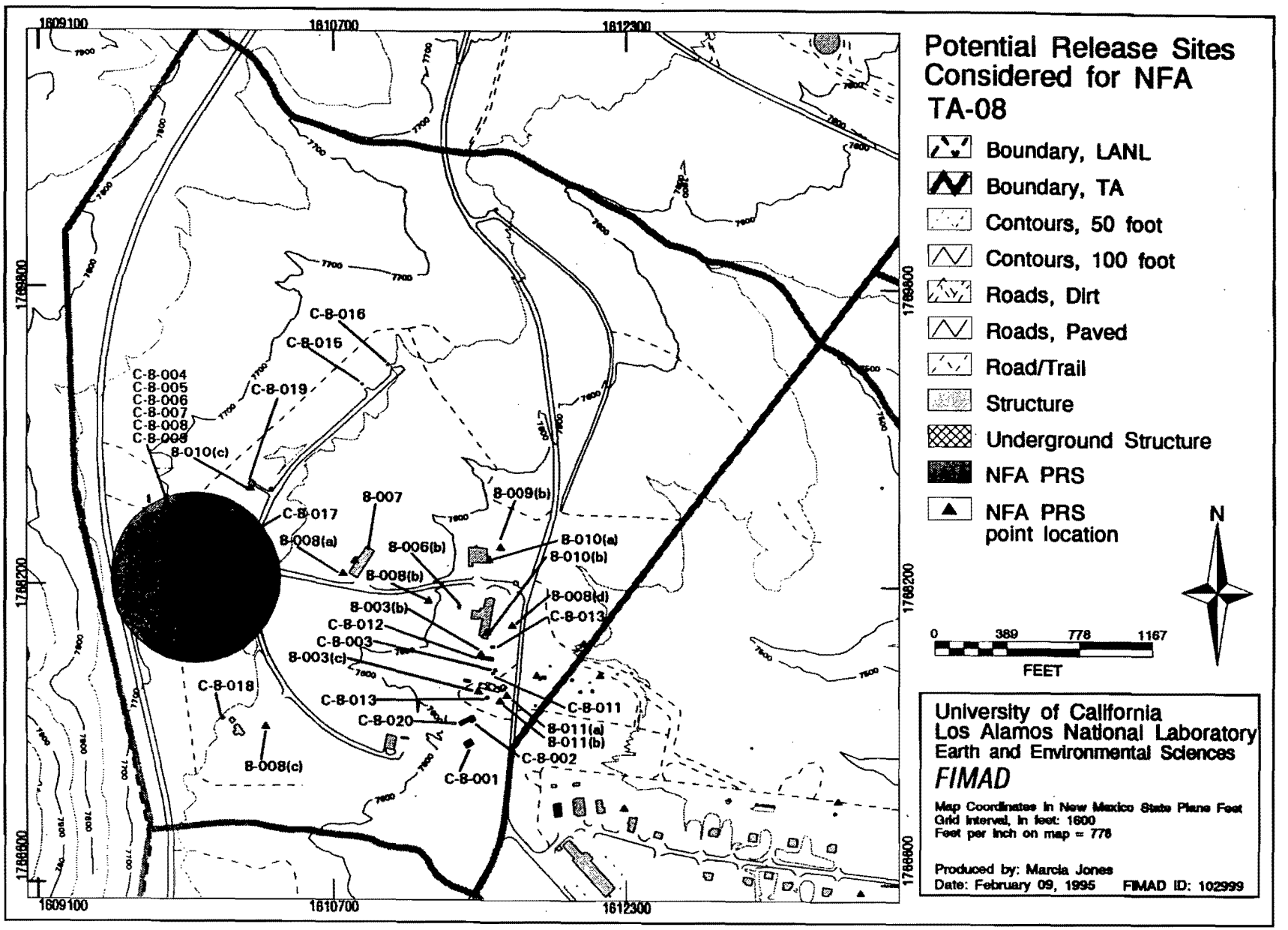

Figure A-8. Potential release sites considered for NFA, TA-08.

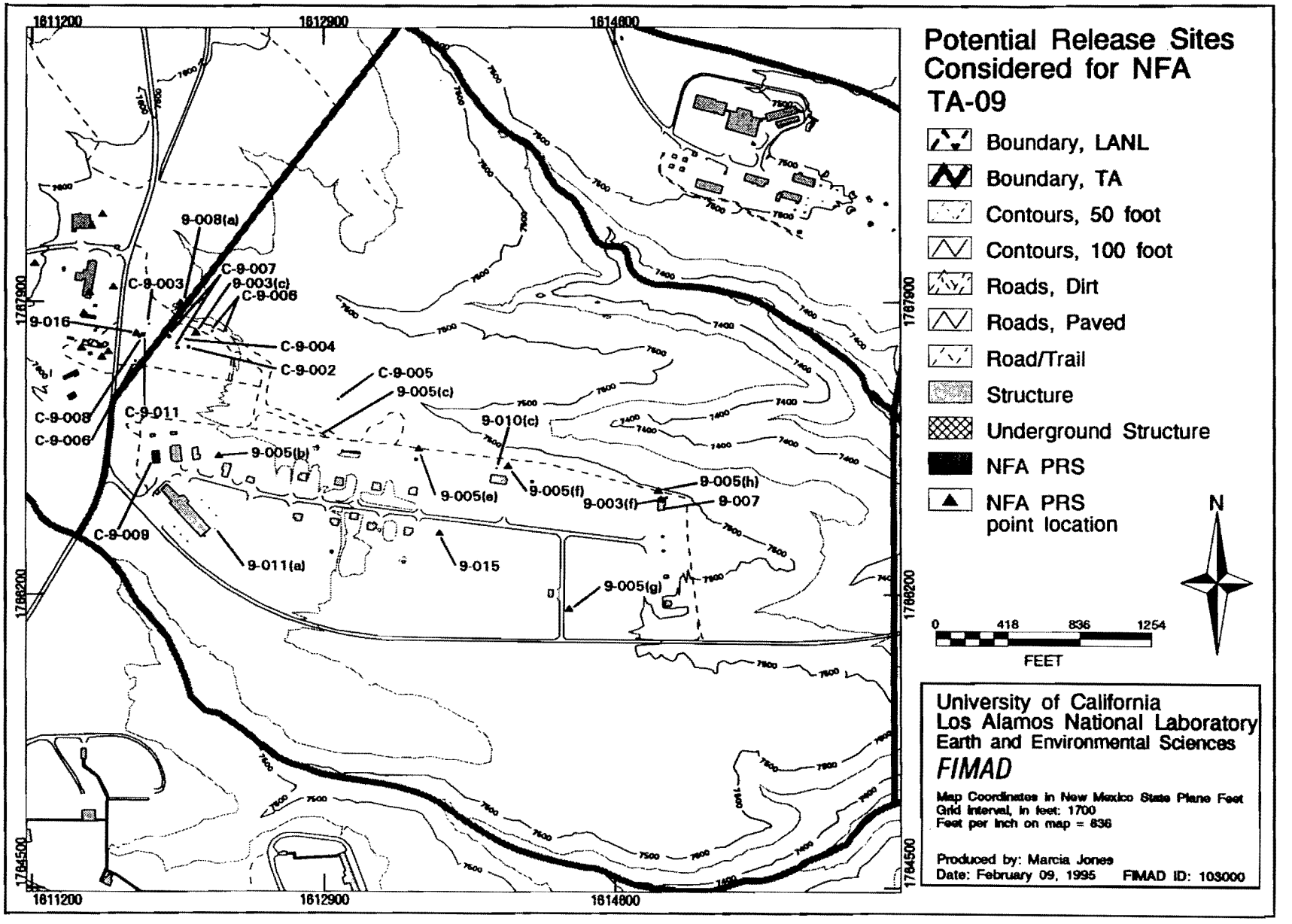

Figure A-9. Potential release sites considered for NFA, TA-09.

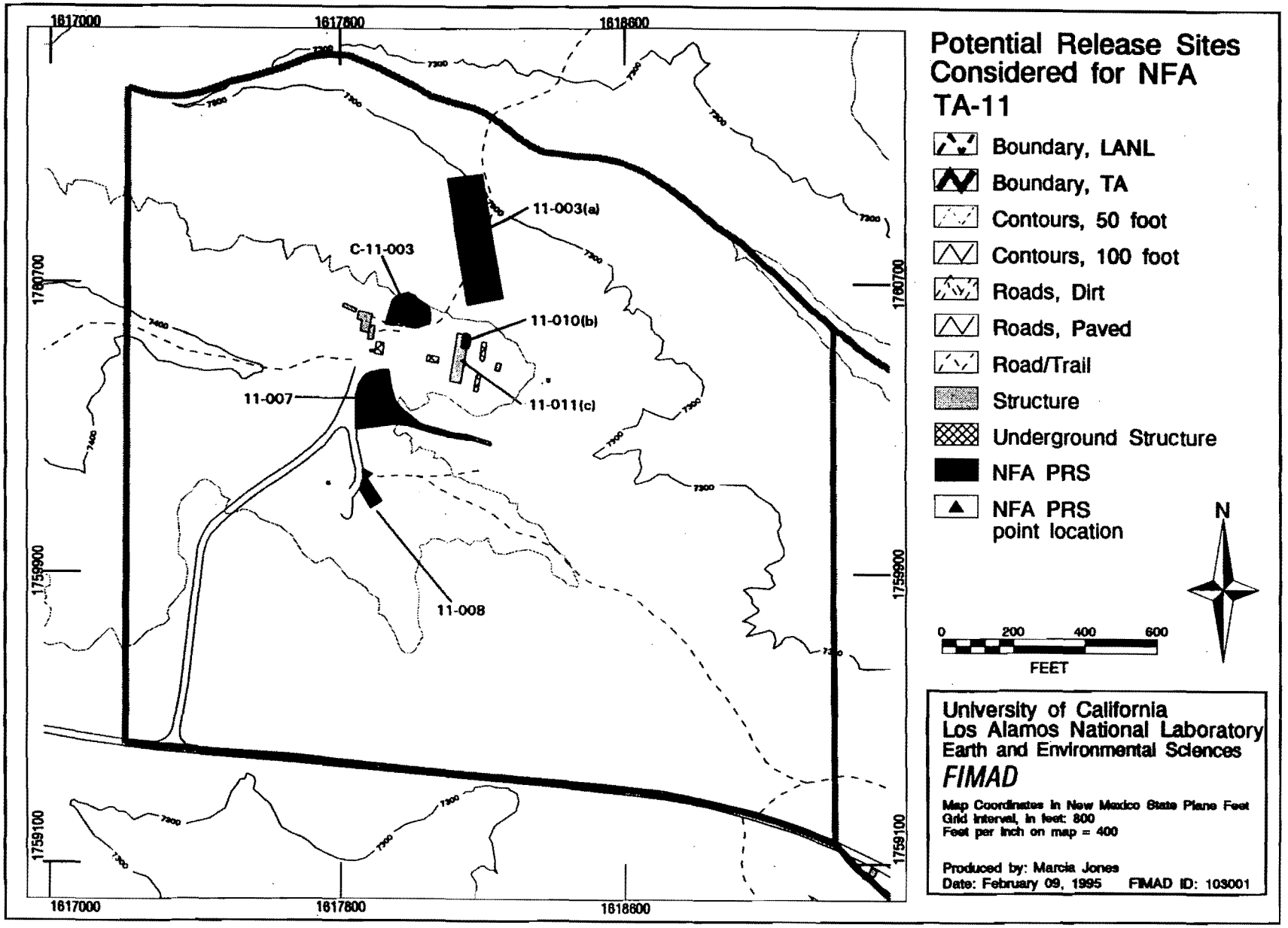

Figure A-10. Potential release sites considered for NFA, TA-11.

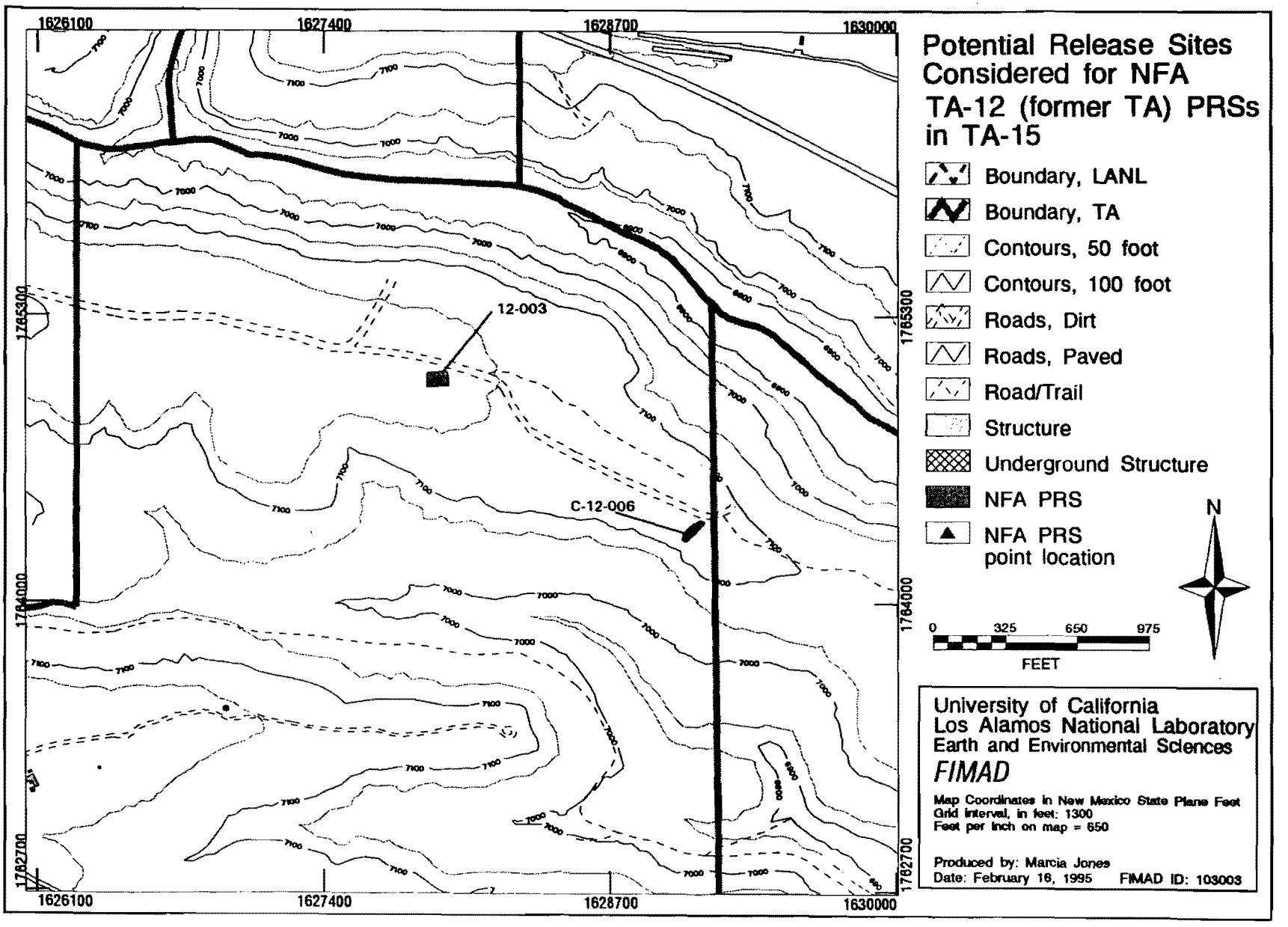

Figure A-11. Potential release sites considered for NFA, TA-12 (former TA) PRSs in TA-15.

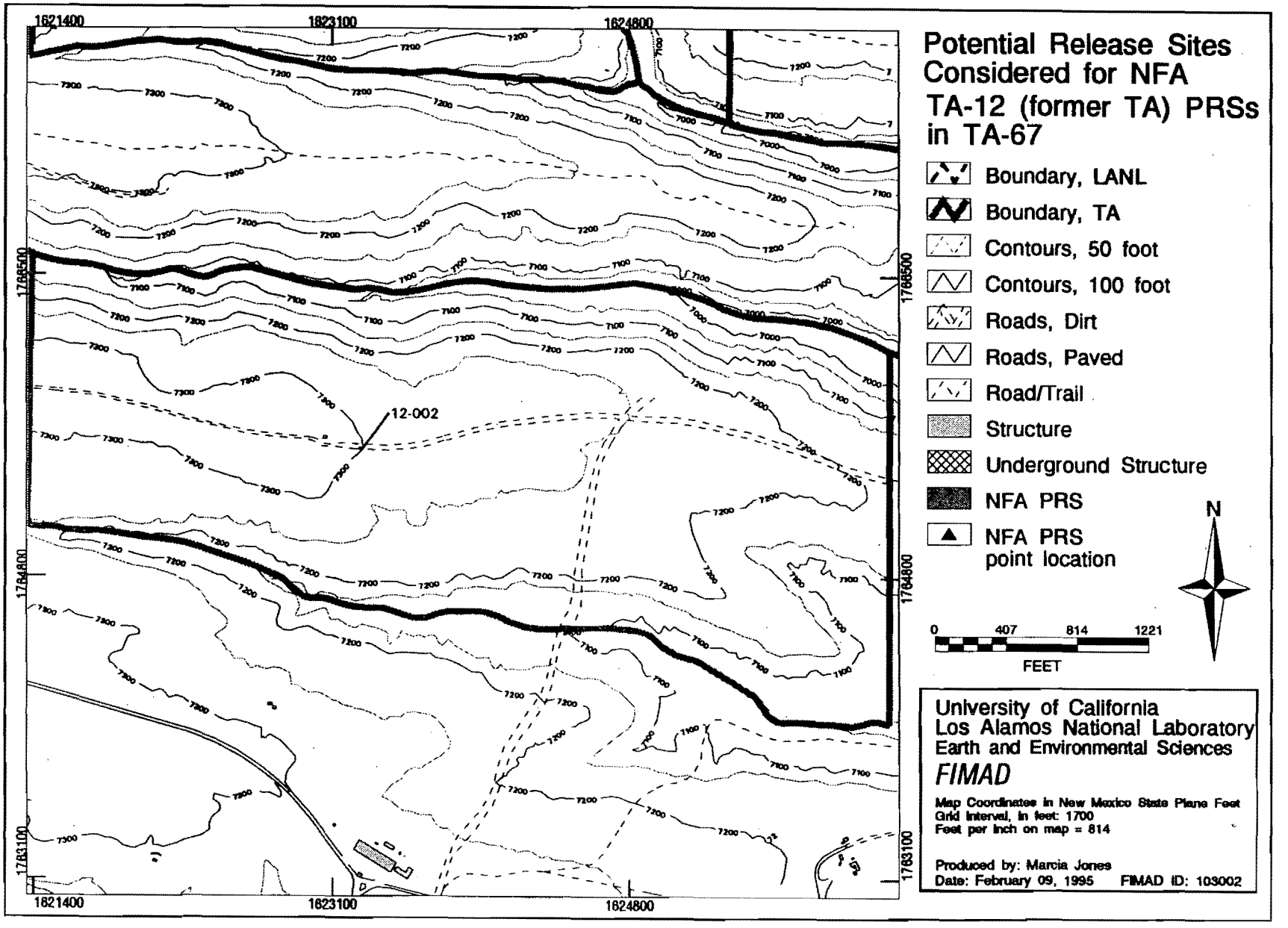

Figure A-12. Potential release sites considered for NFA, TA-12 (former TA) PRSs in TA-67.

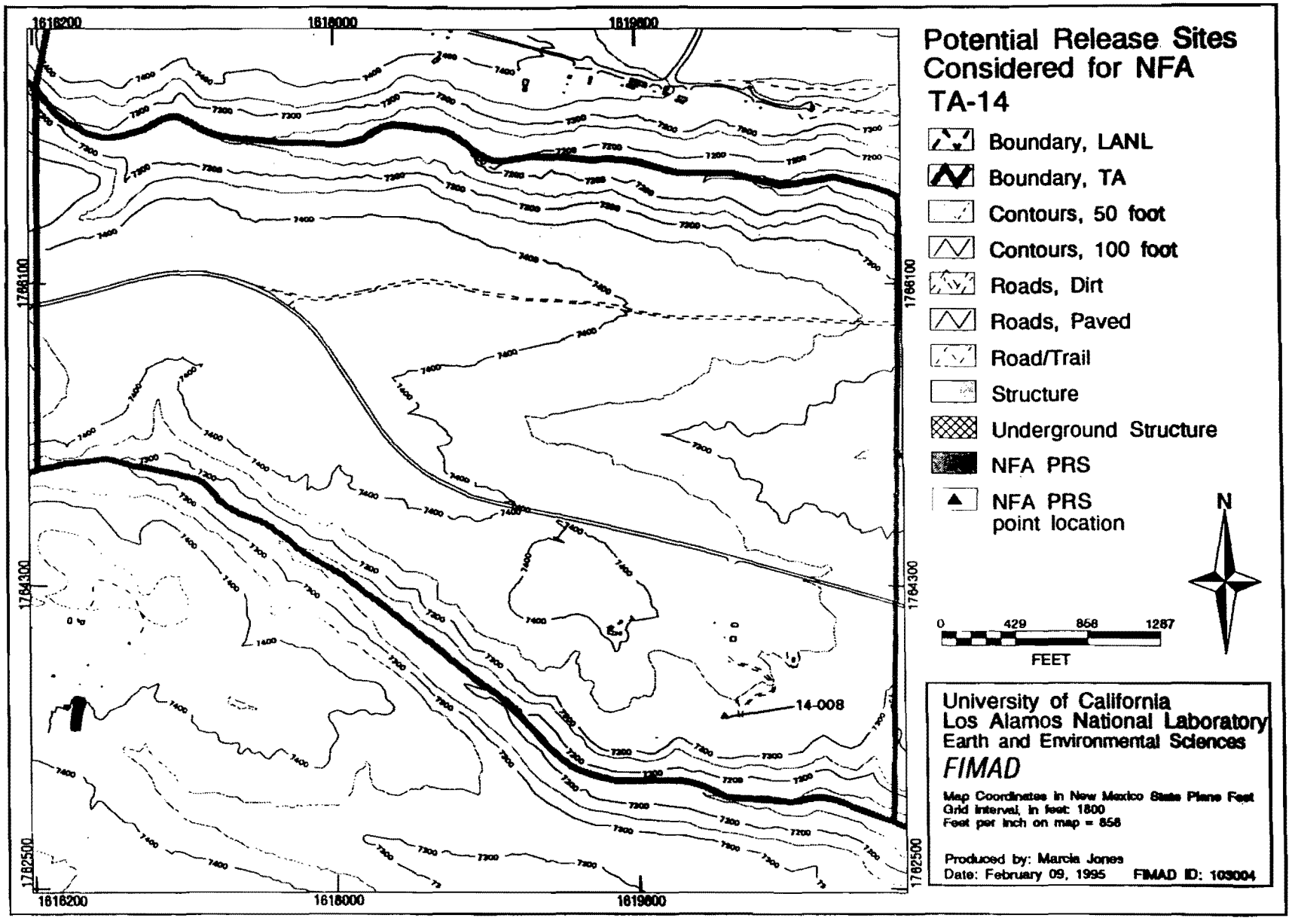

Figure A-13. Potential release sites considered for NFA, TA-14.

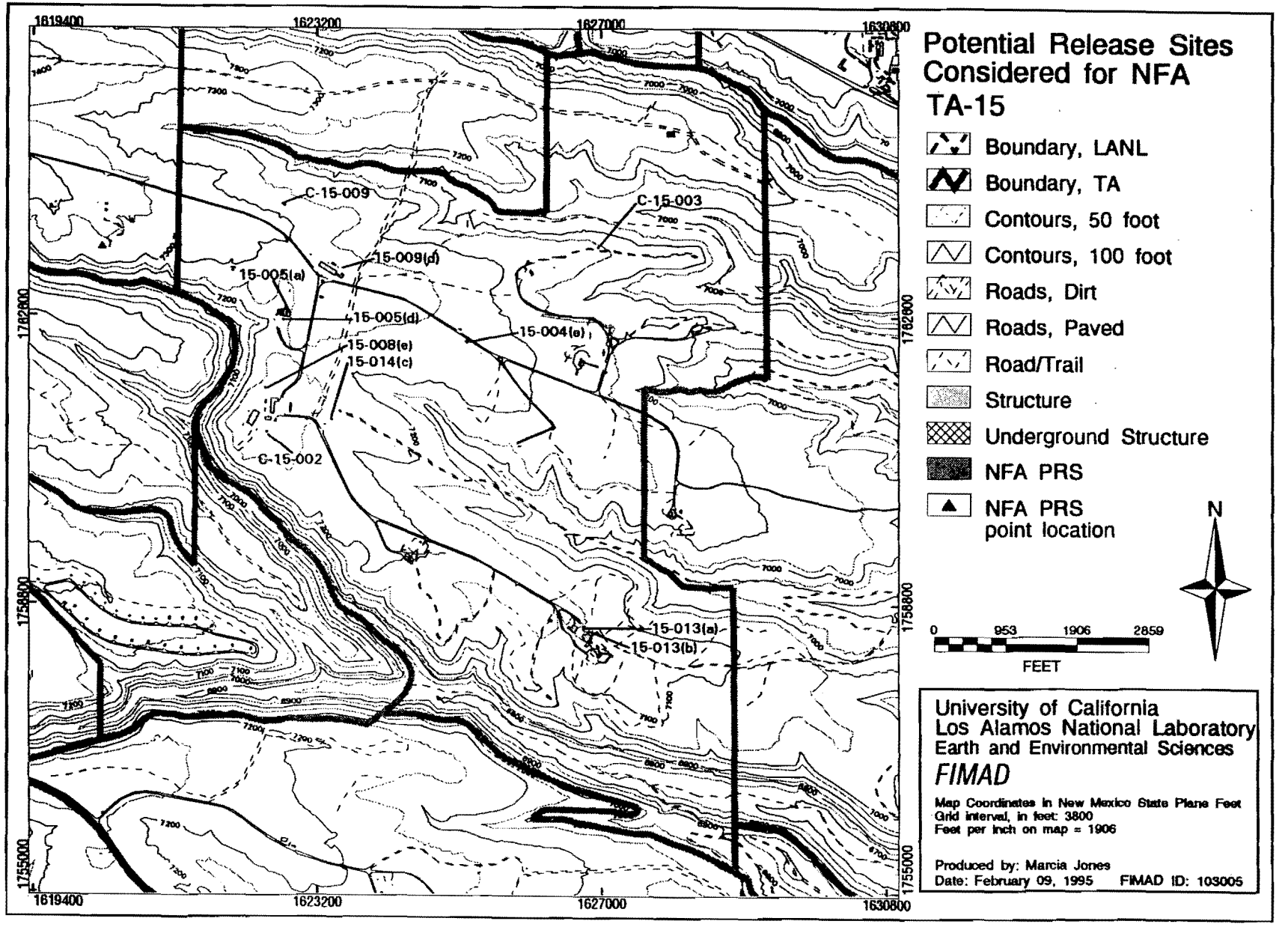

Figure A-14. Potential release sites considered for NFA, TA-15.

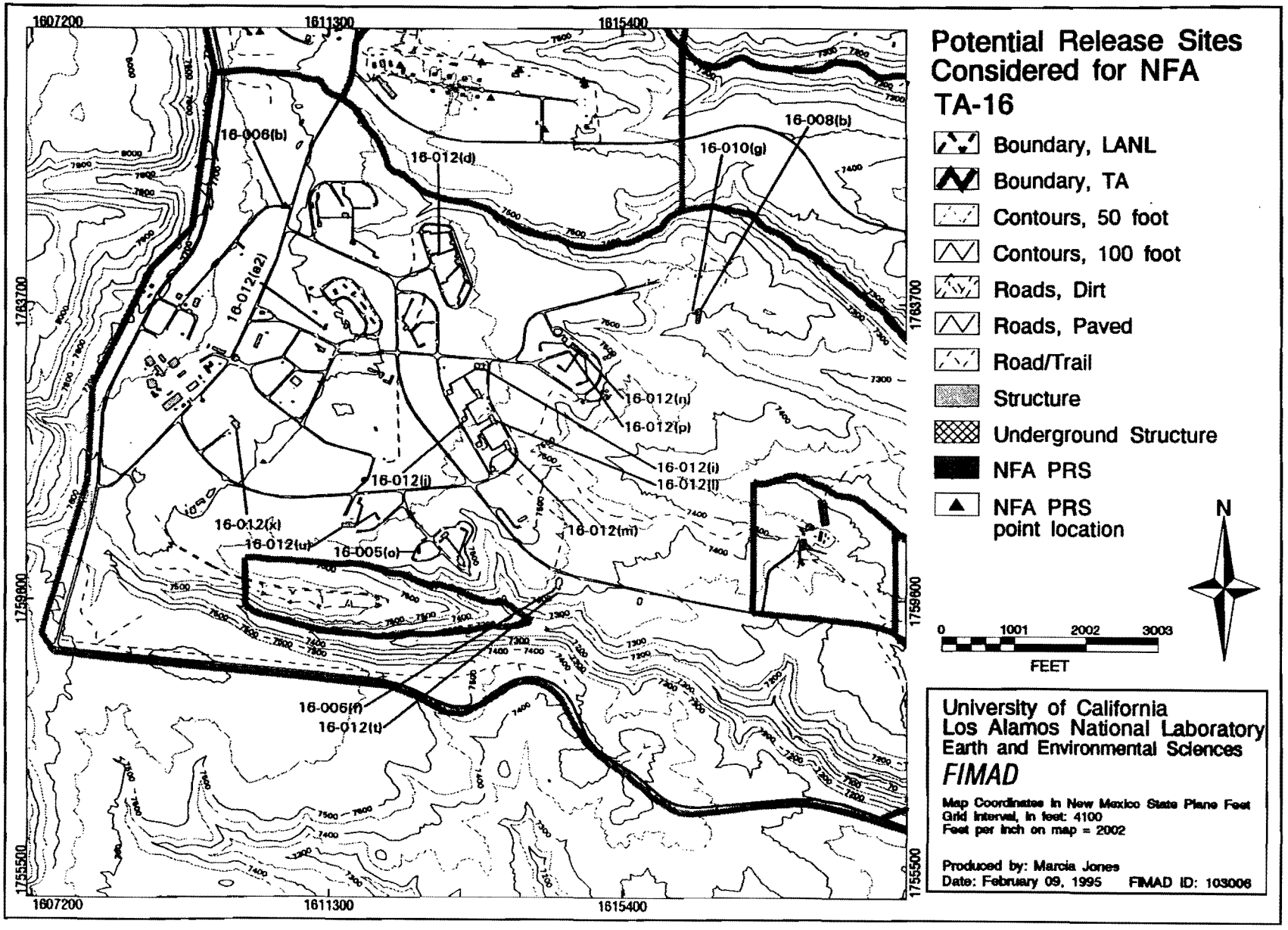

Figure A-15. Potential release sites considered for NFA, TA-16.

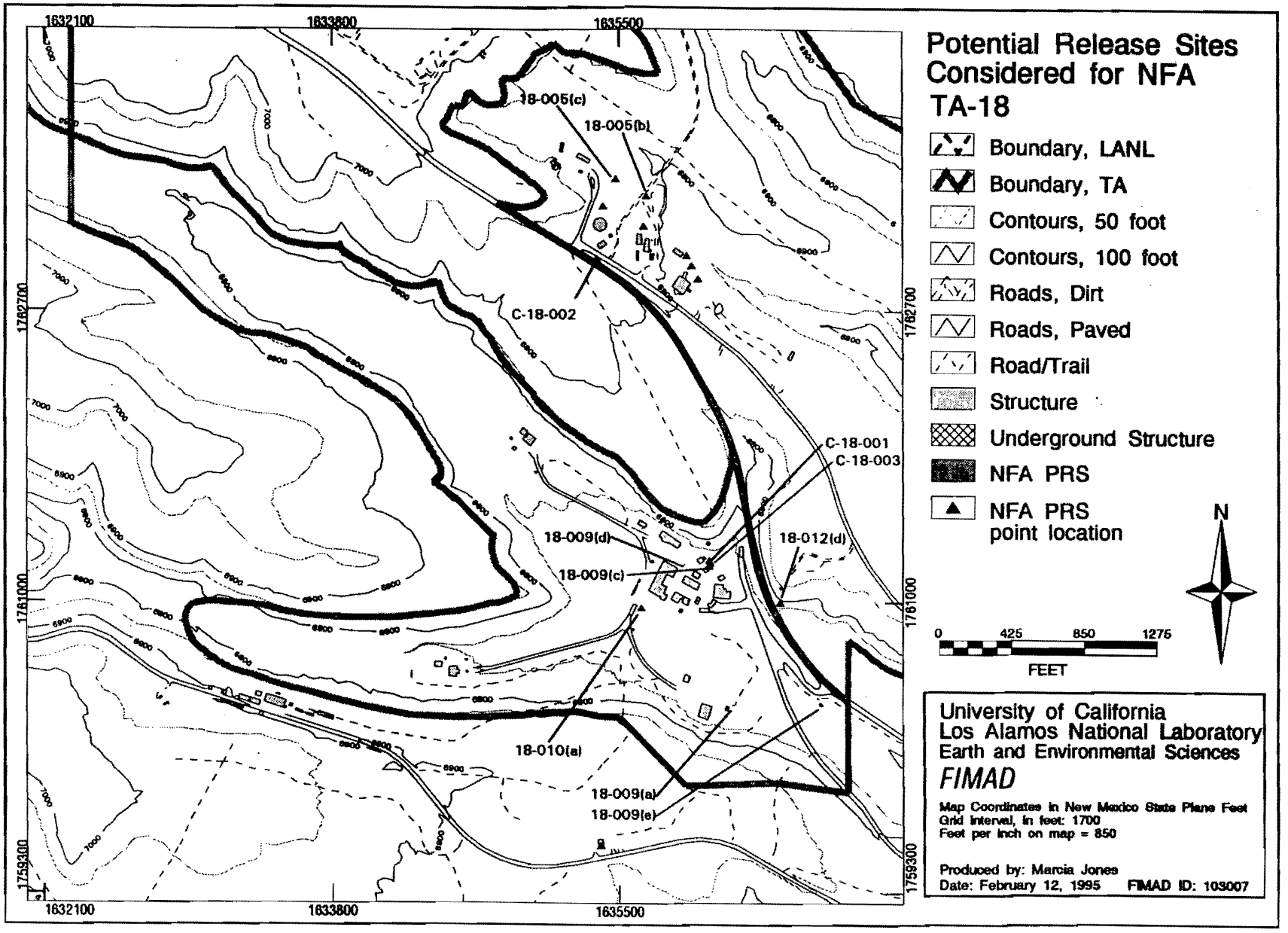

Figure A-16. Potential release sites considered for NFA, TA-18.

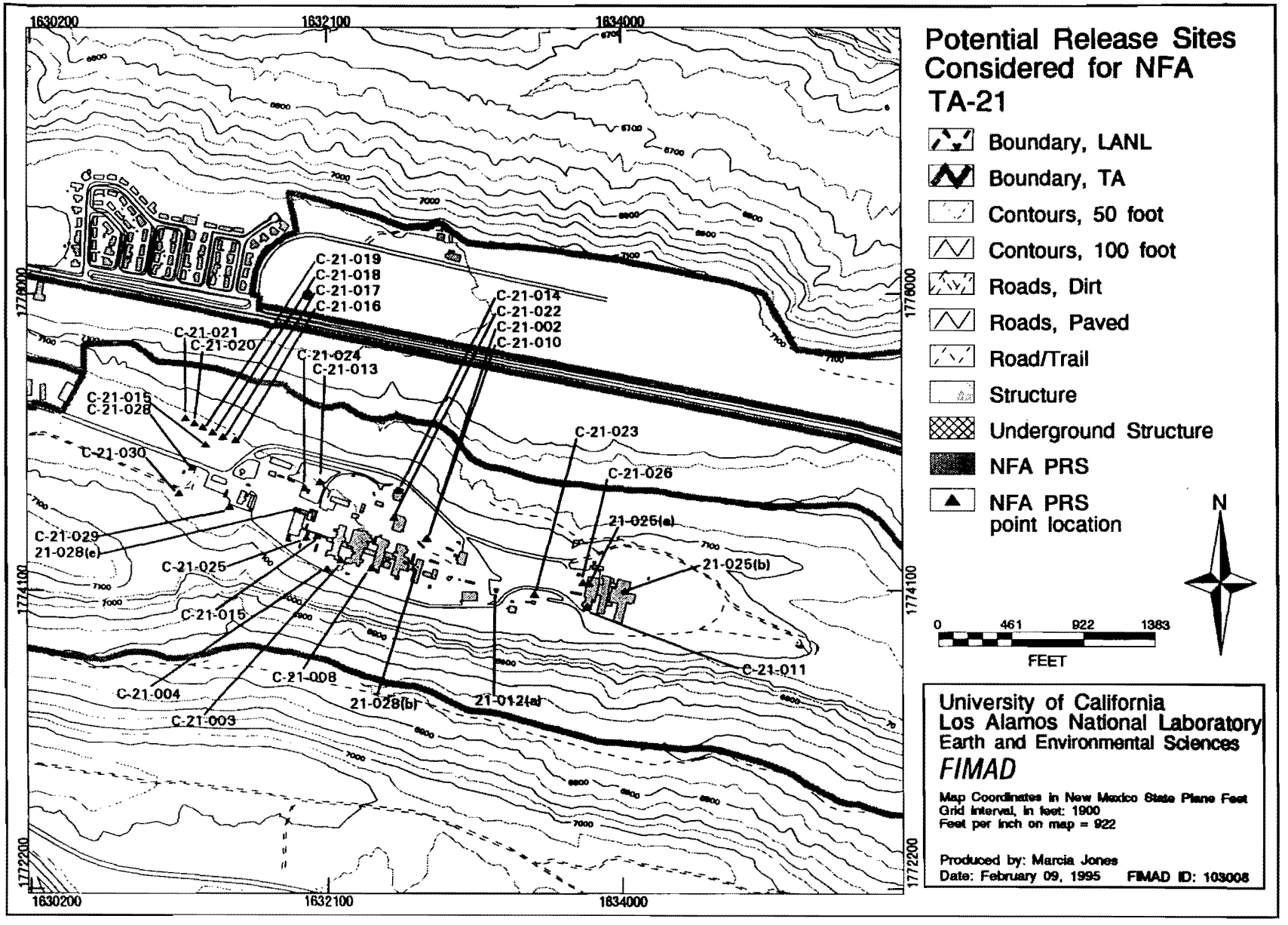

Figure A-17. Potential release sites considered for NFA, TA-21.

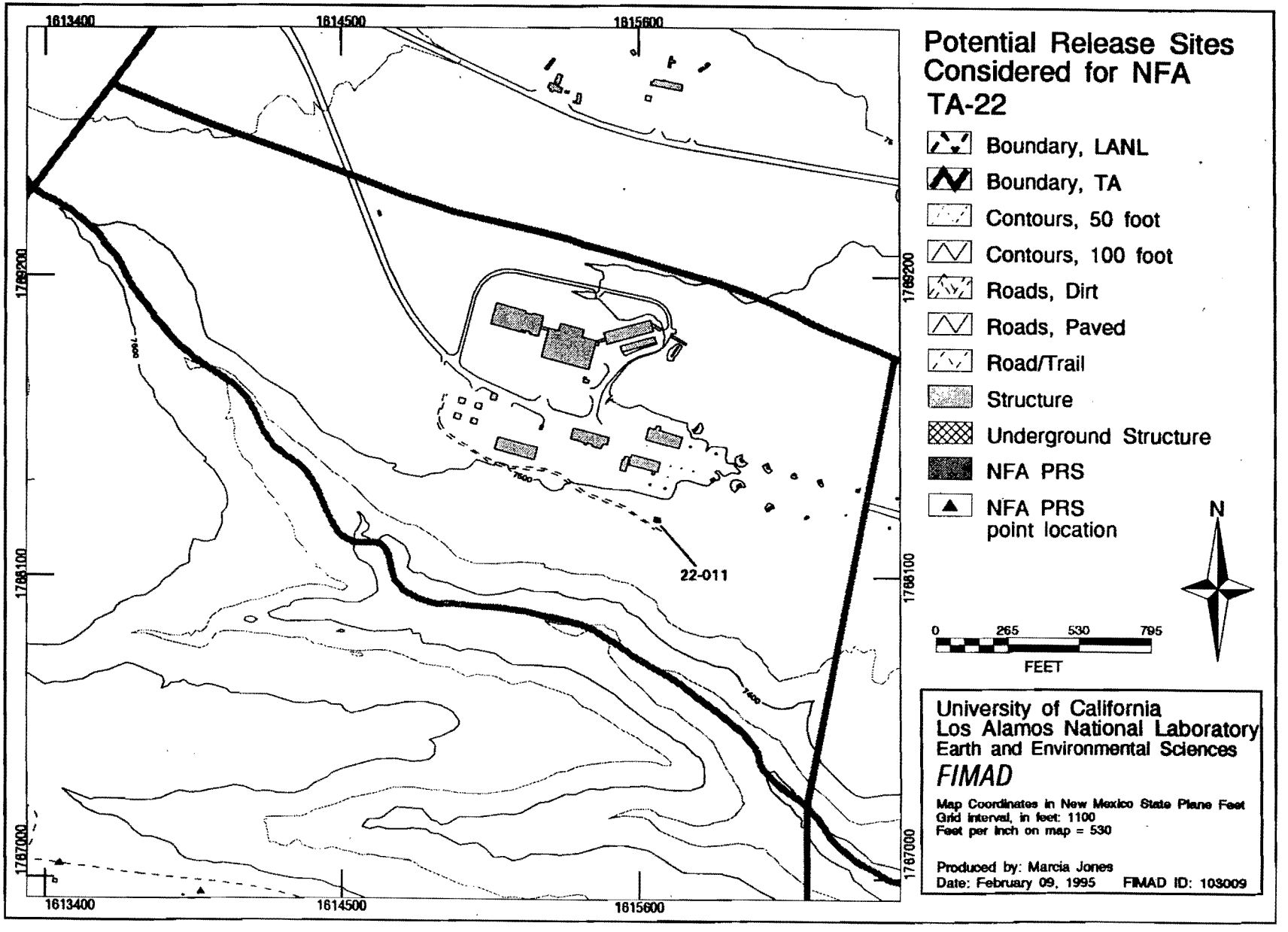

Figure A-18. Potential release sites considered for NFA, TA-22.

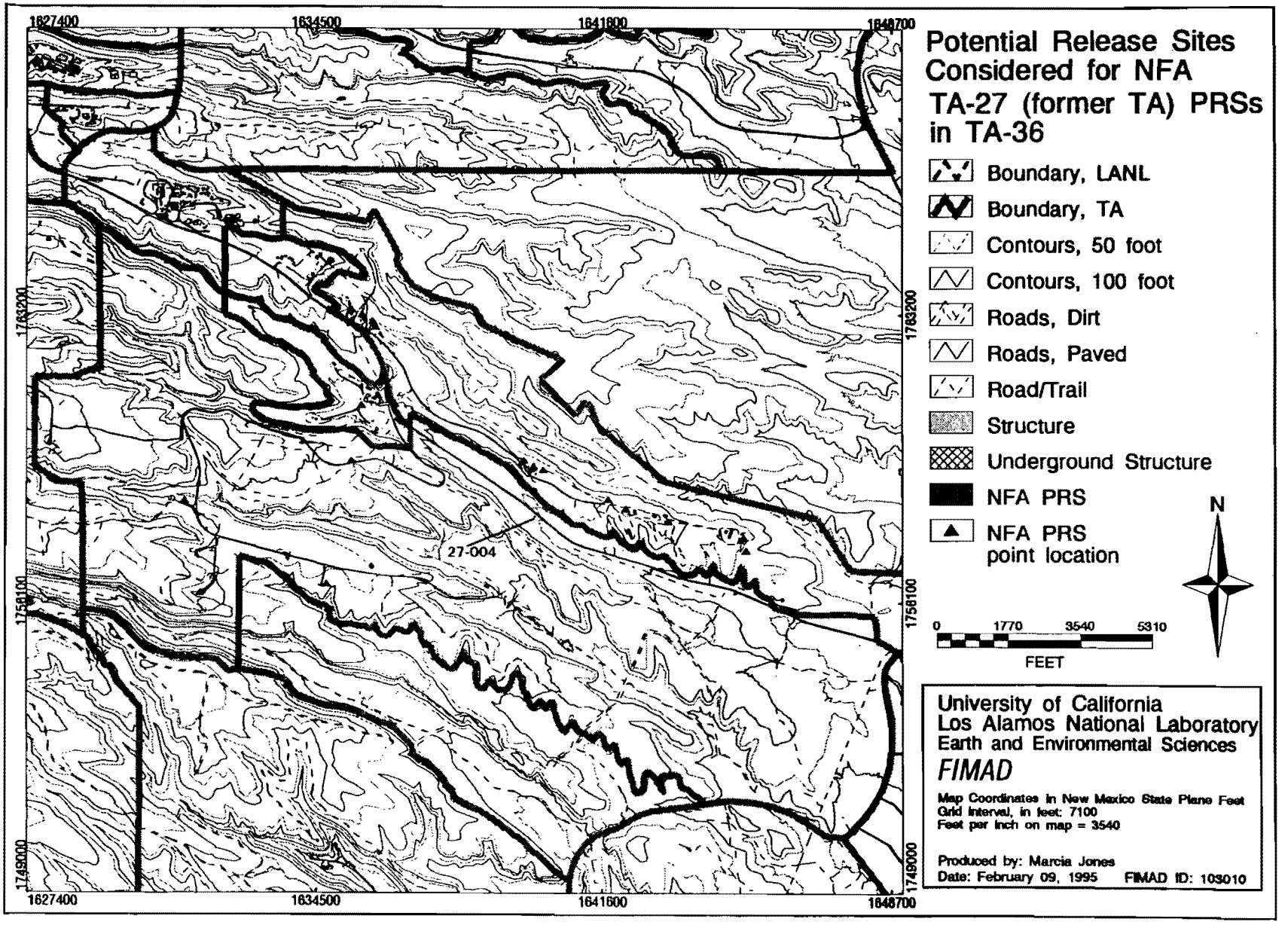

Figure A-19. Potential release sites considered for NFA, TA-27 (former TA) PRSs in TA-36.

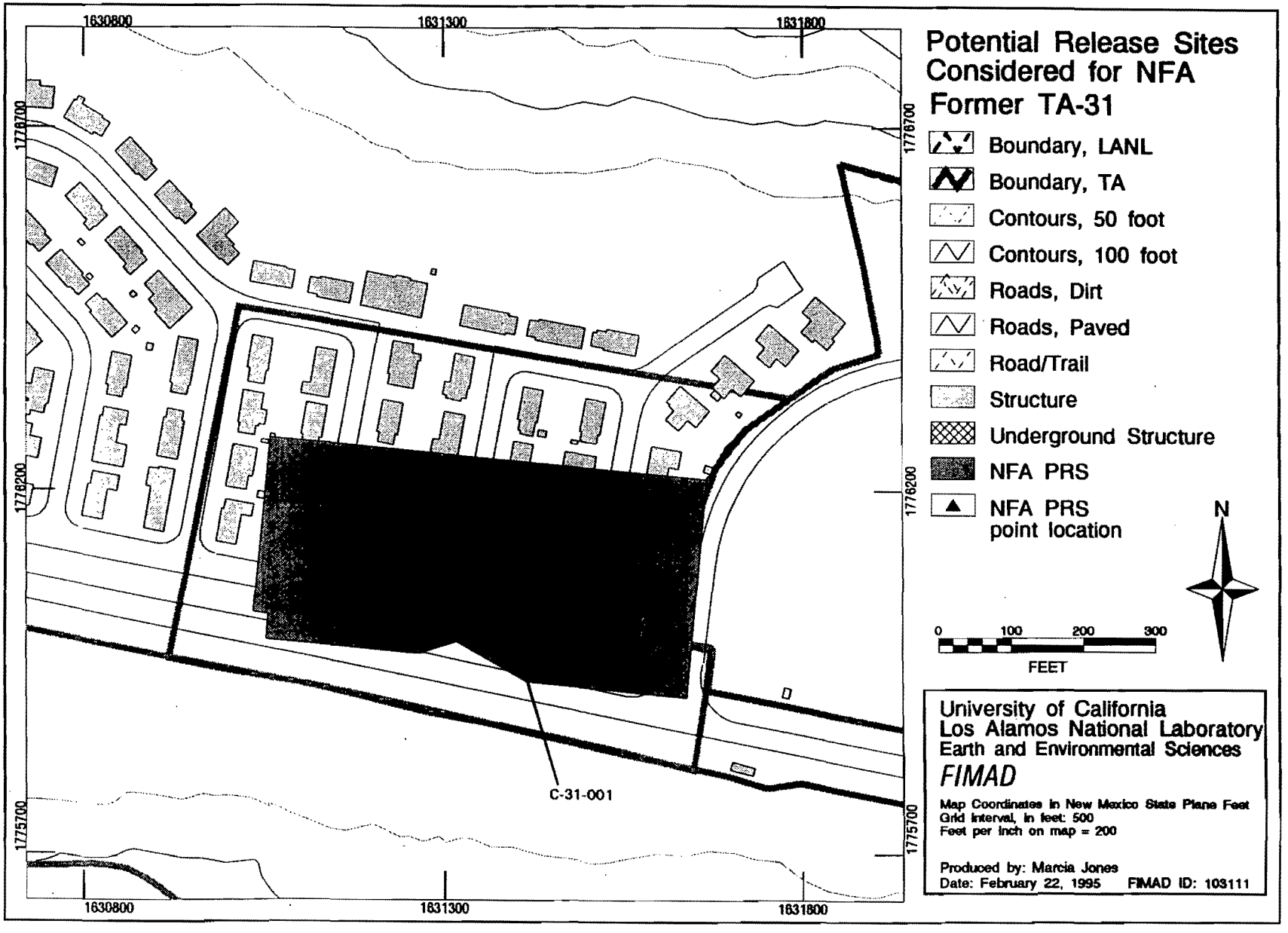

Figure A-20. Potential release sites considered for NFA, former TA-31.

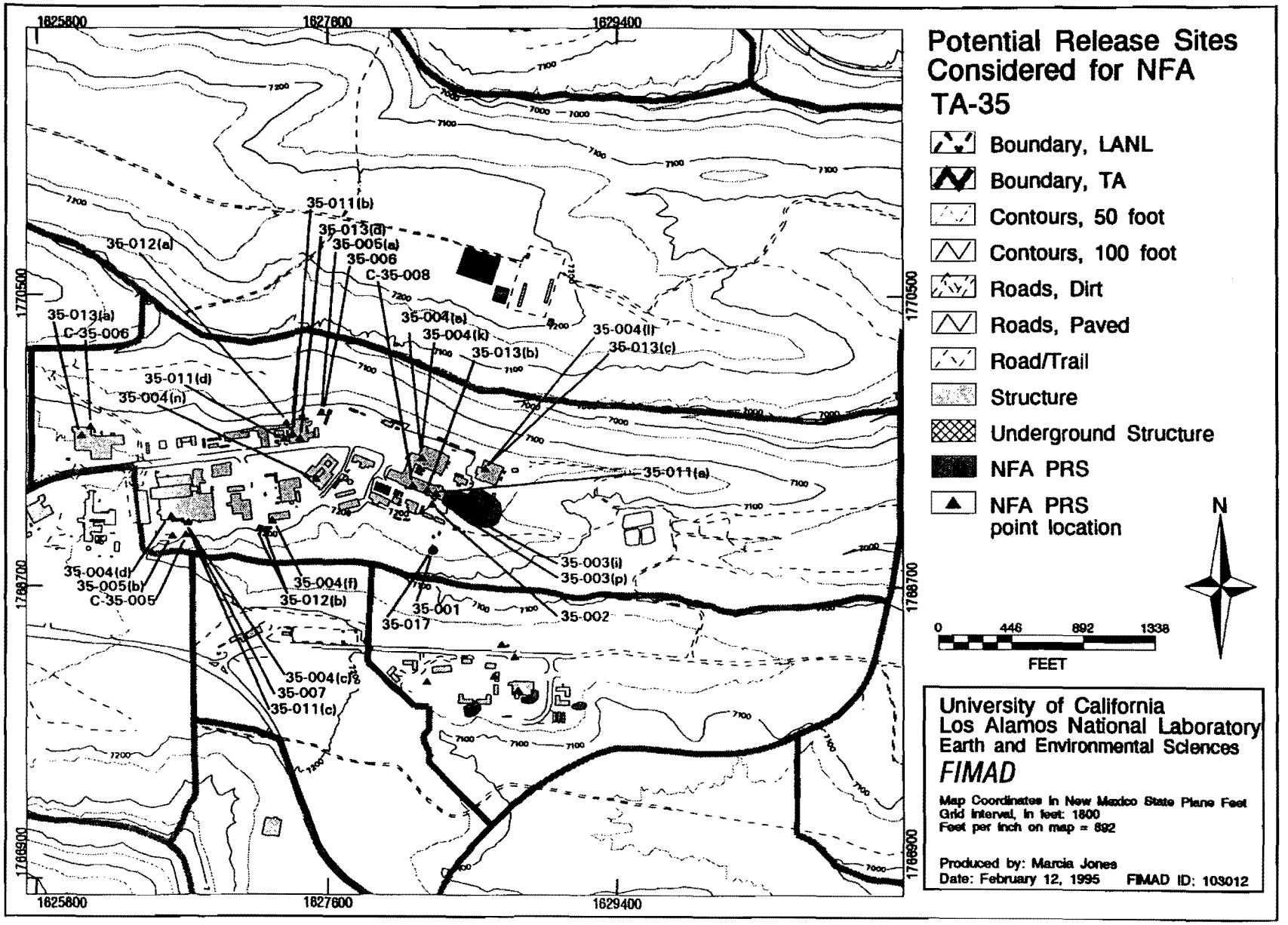

Figure A-23. Potential release sites considered for NFA, TA-35.

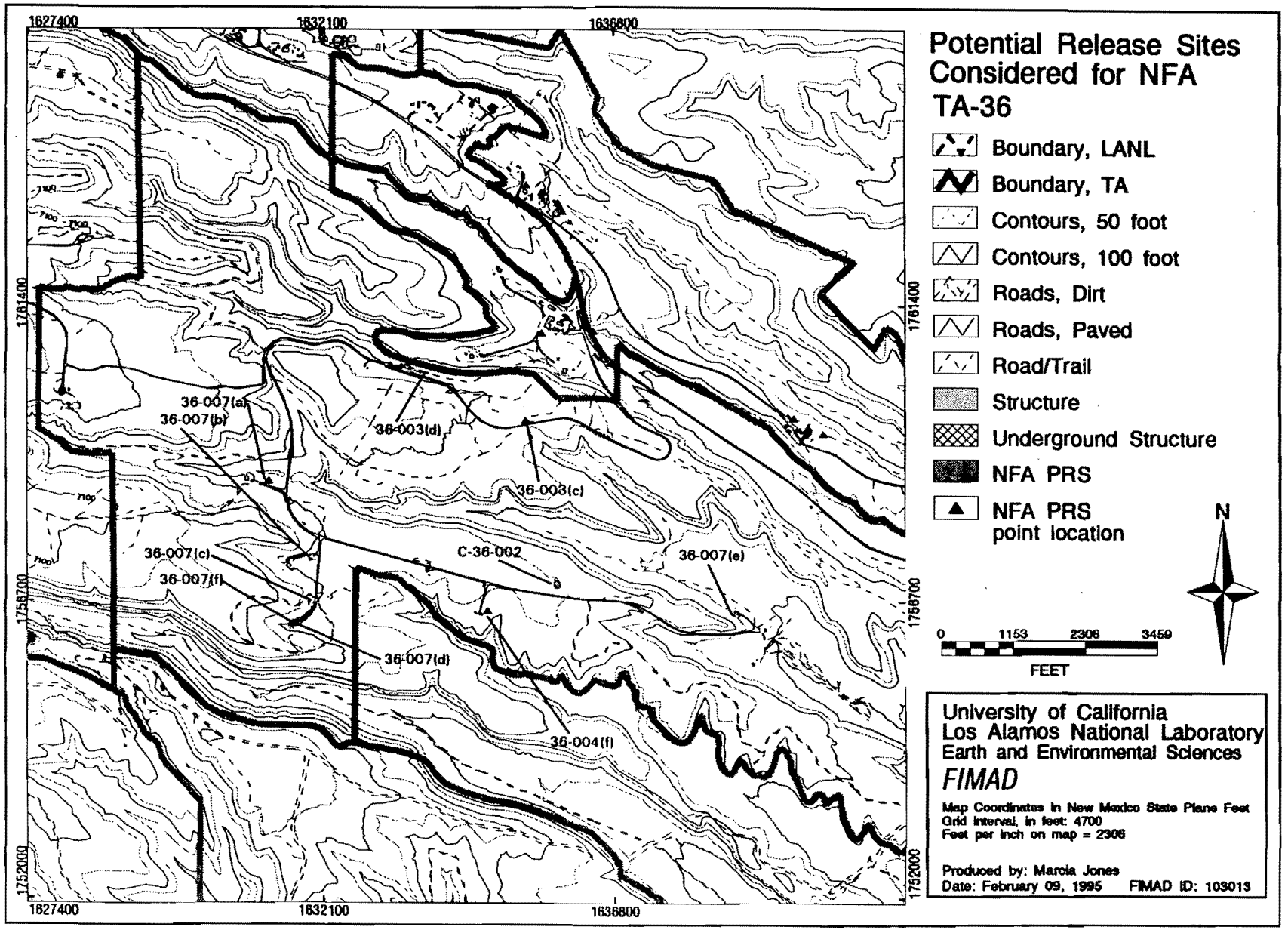

Figure A-24. Potential release sites considered for NFA, TA-36.

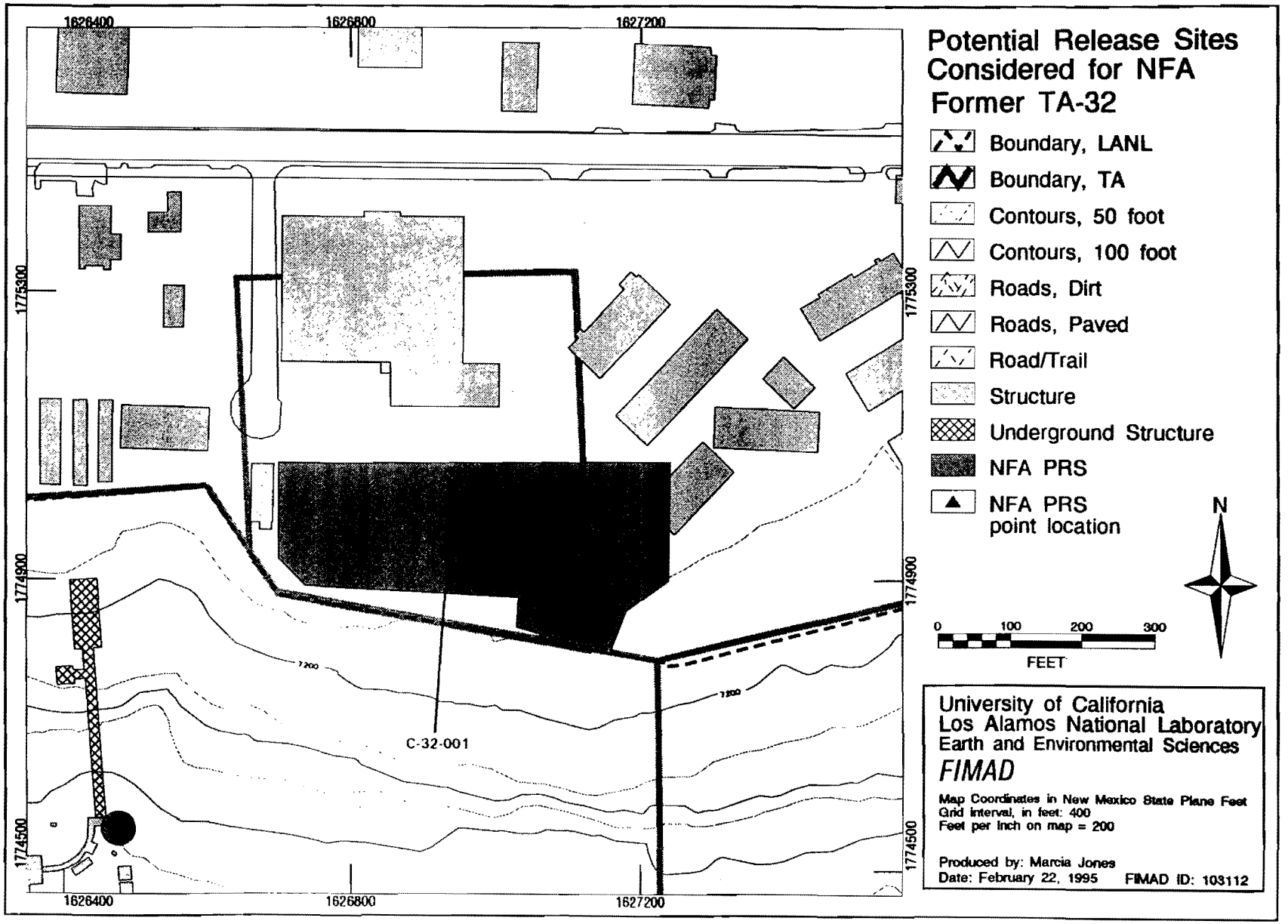

Figure A-21. Potential release sites considered for NFA, former TA-32.

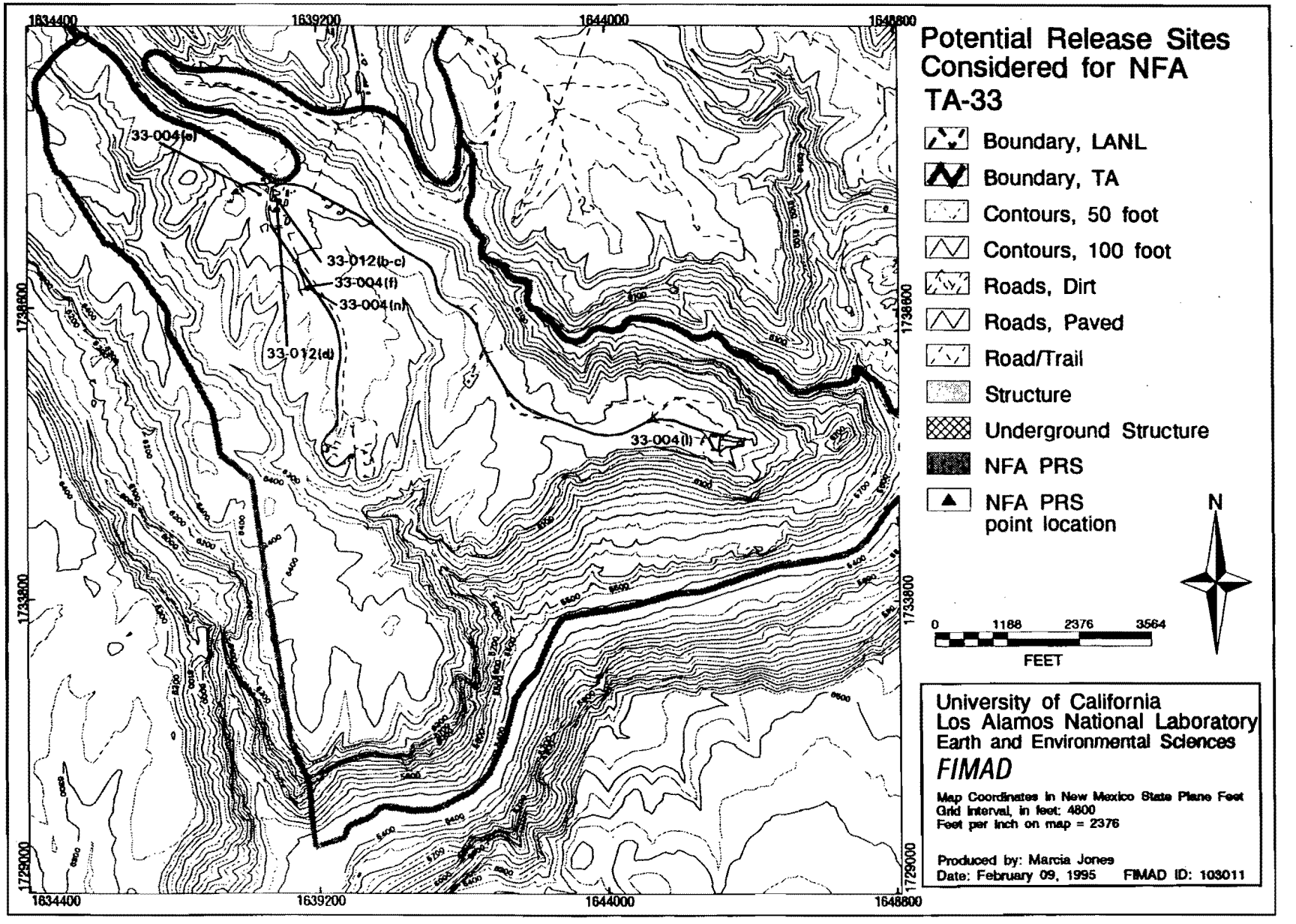

Figure A-22. Potential release sites considered for NFA, TA-33.

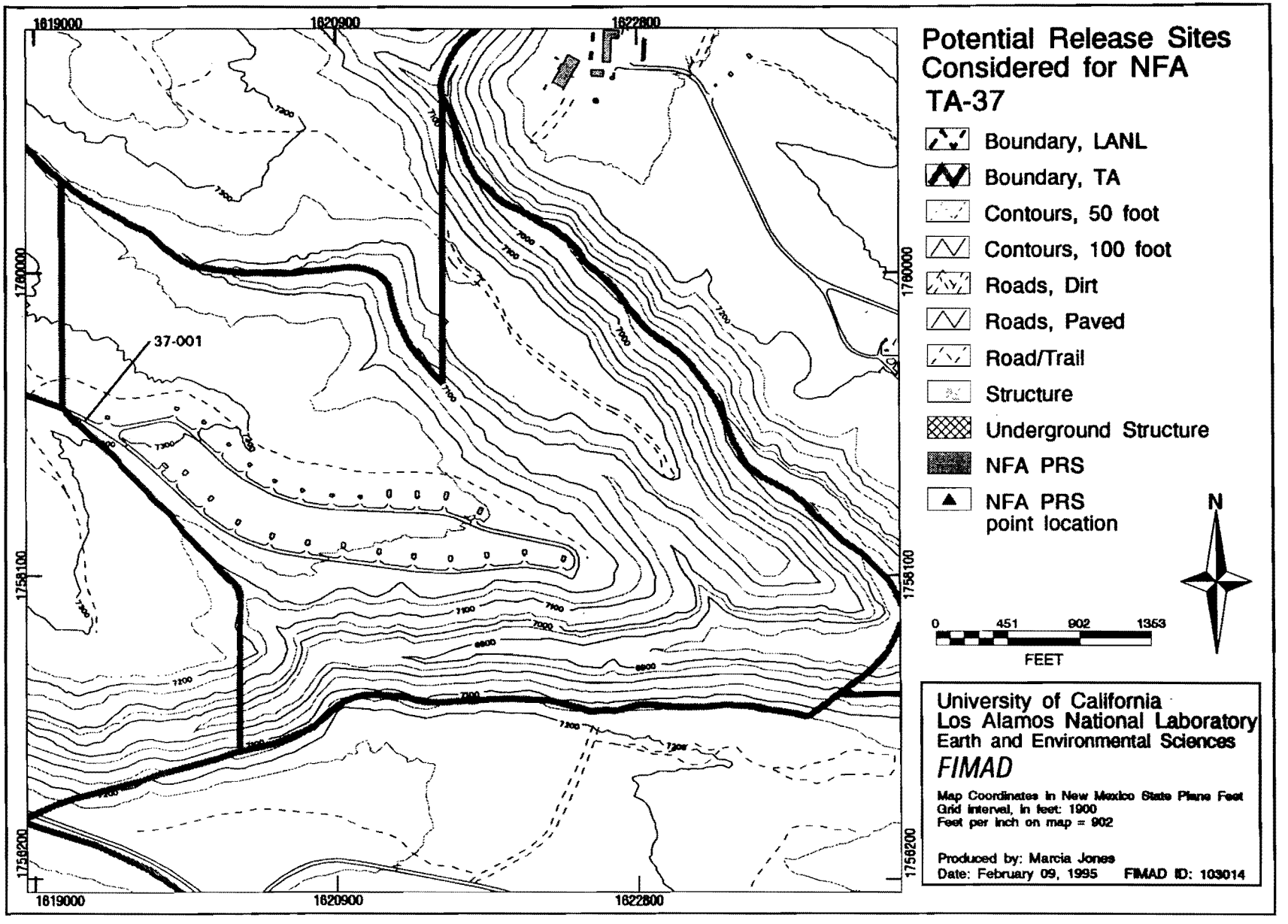

Figure A-25. Potential release sites considered for NFA, TA-37.

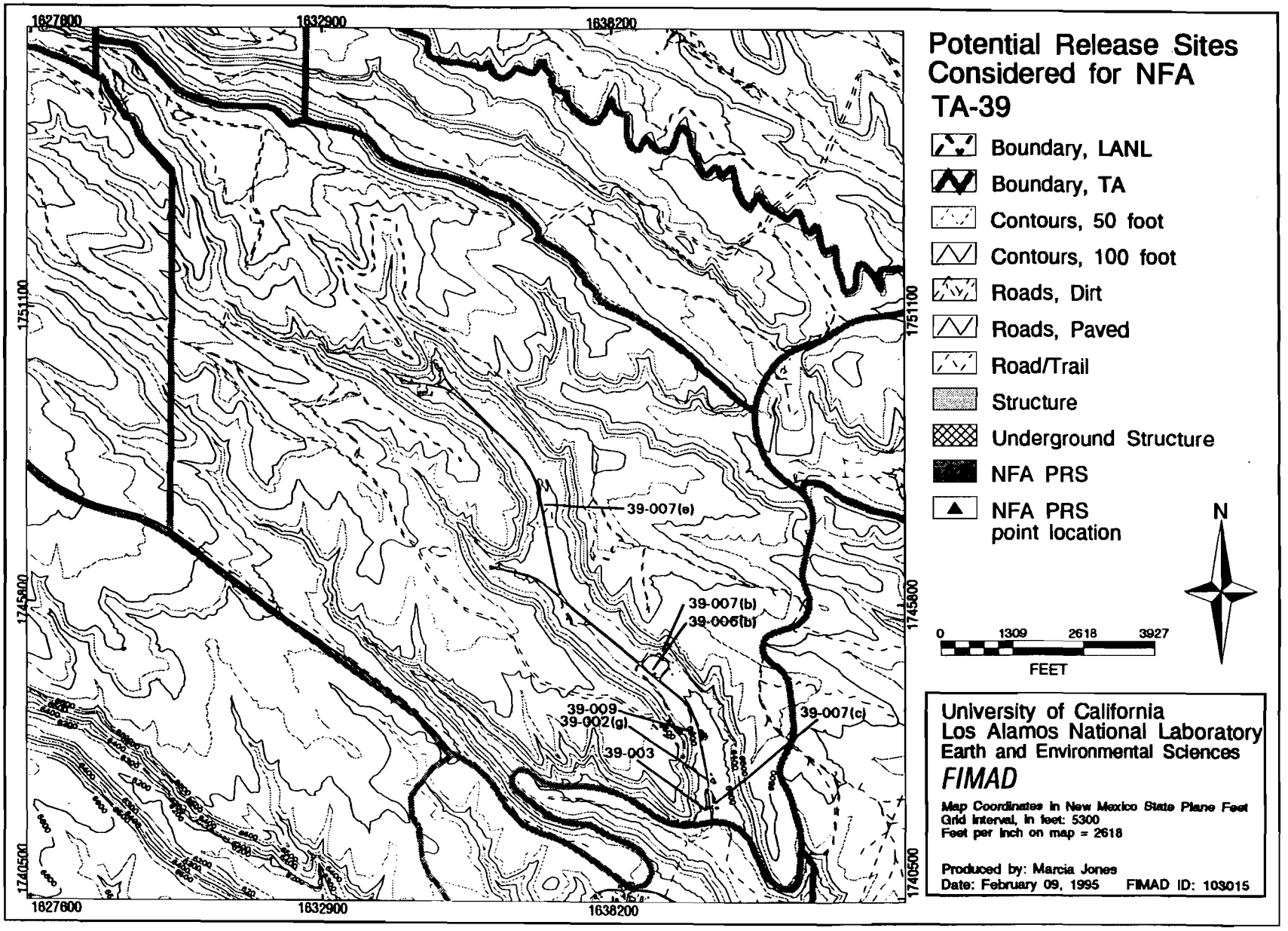

Figure A-26. Potential release sites considered for NFA, TA-39.

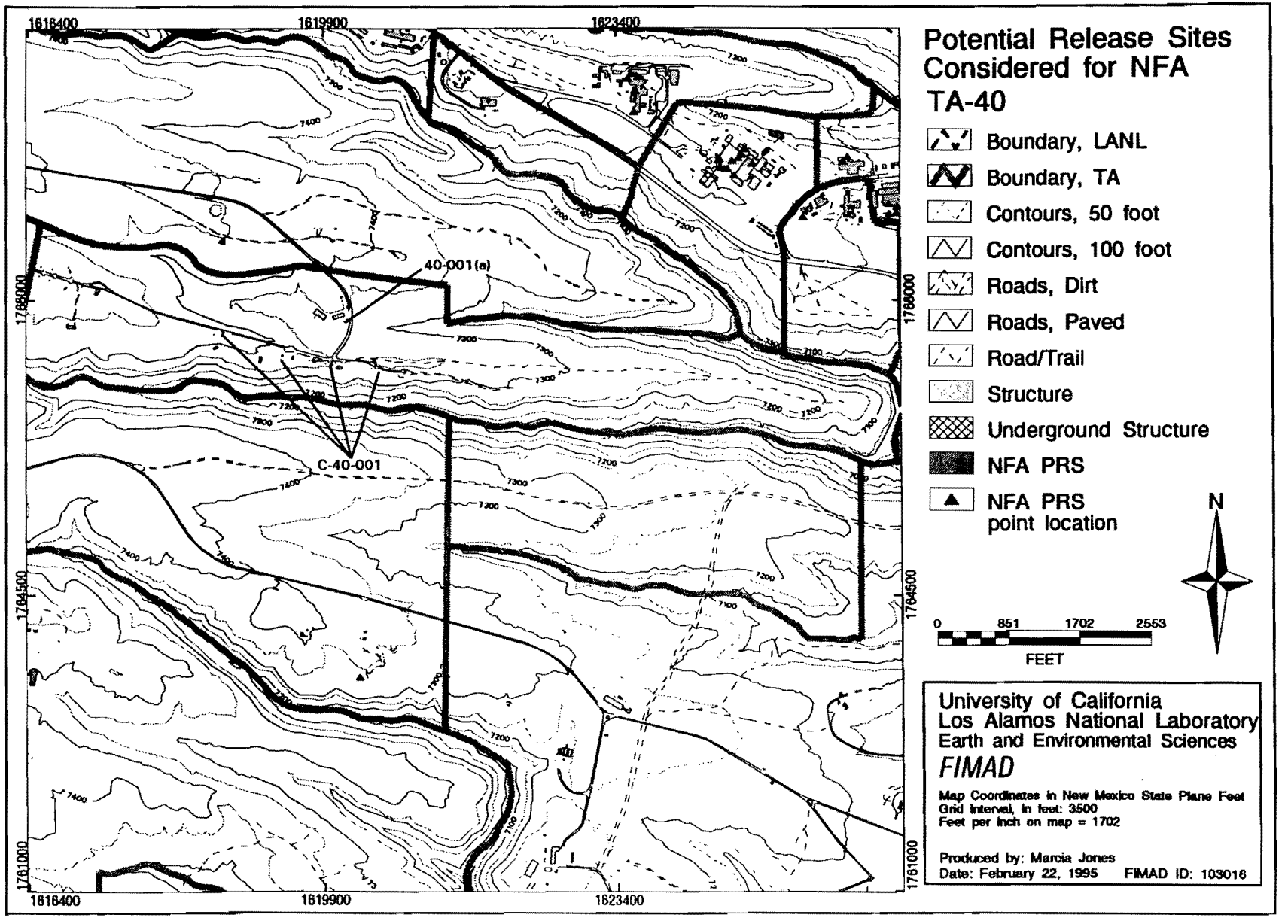

Figure A-27. Potential release sites considered for NFA, TA-40.

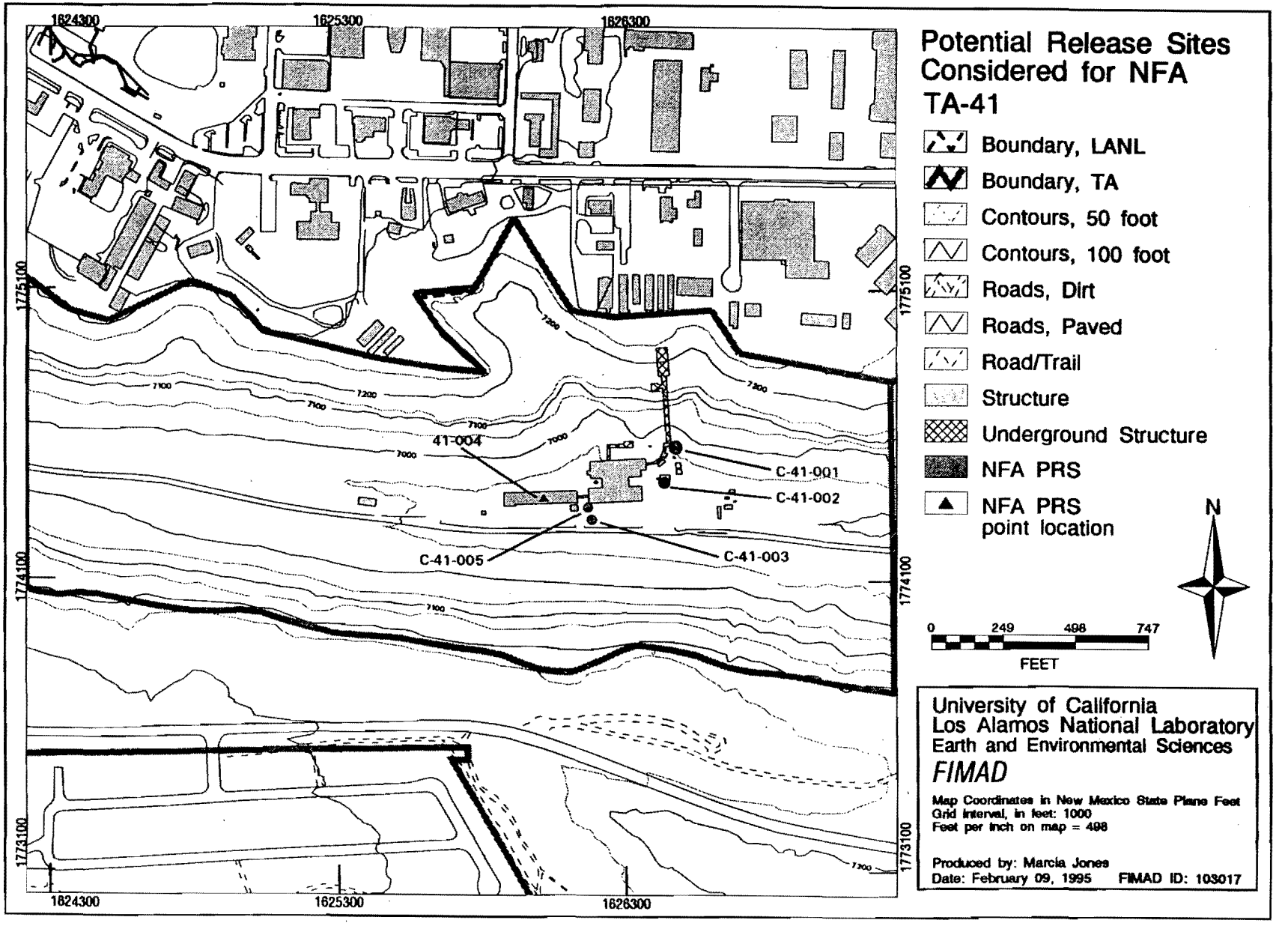

Figure A-28. Potential release sites considered for NFA, TA-41.

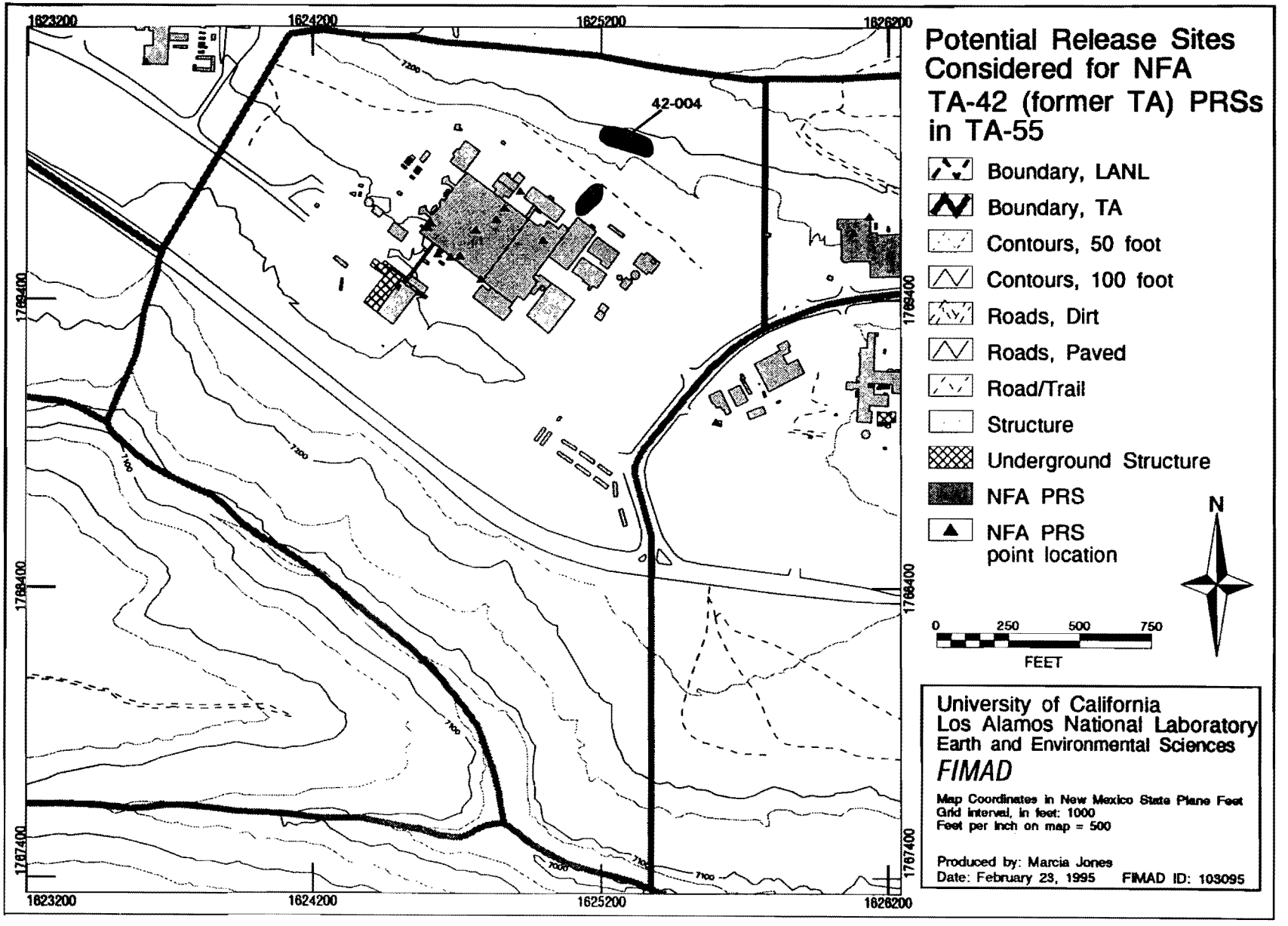

Figure A-29. Potential release sites considered for NFA, TA-42 (former TA) PRSs in TA-55.

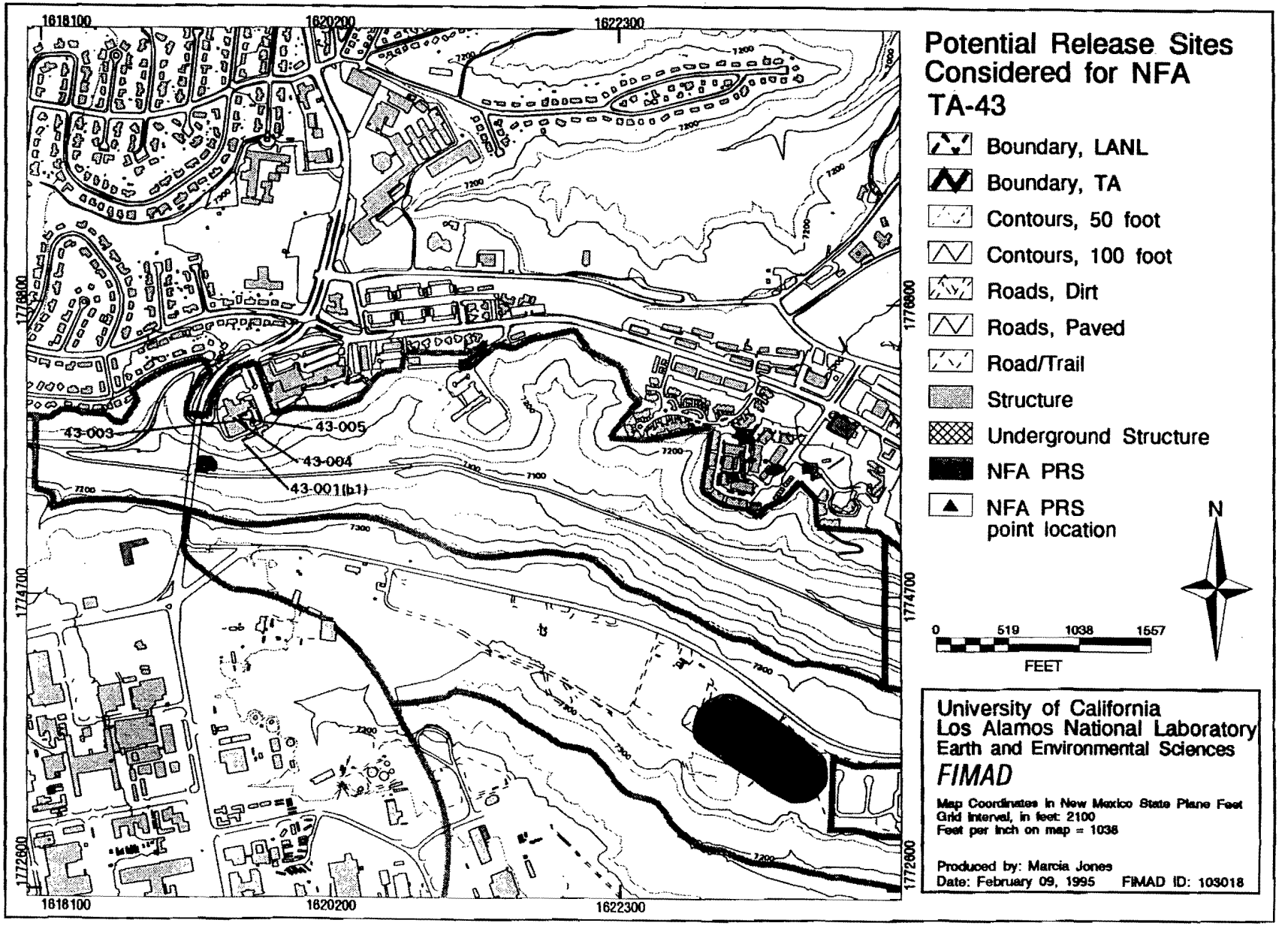

Figure A-30. Potential release sites considered for NFA, TA-43.

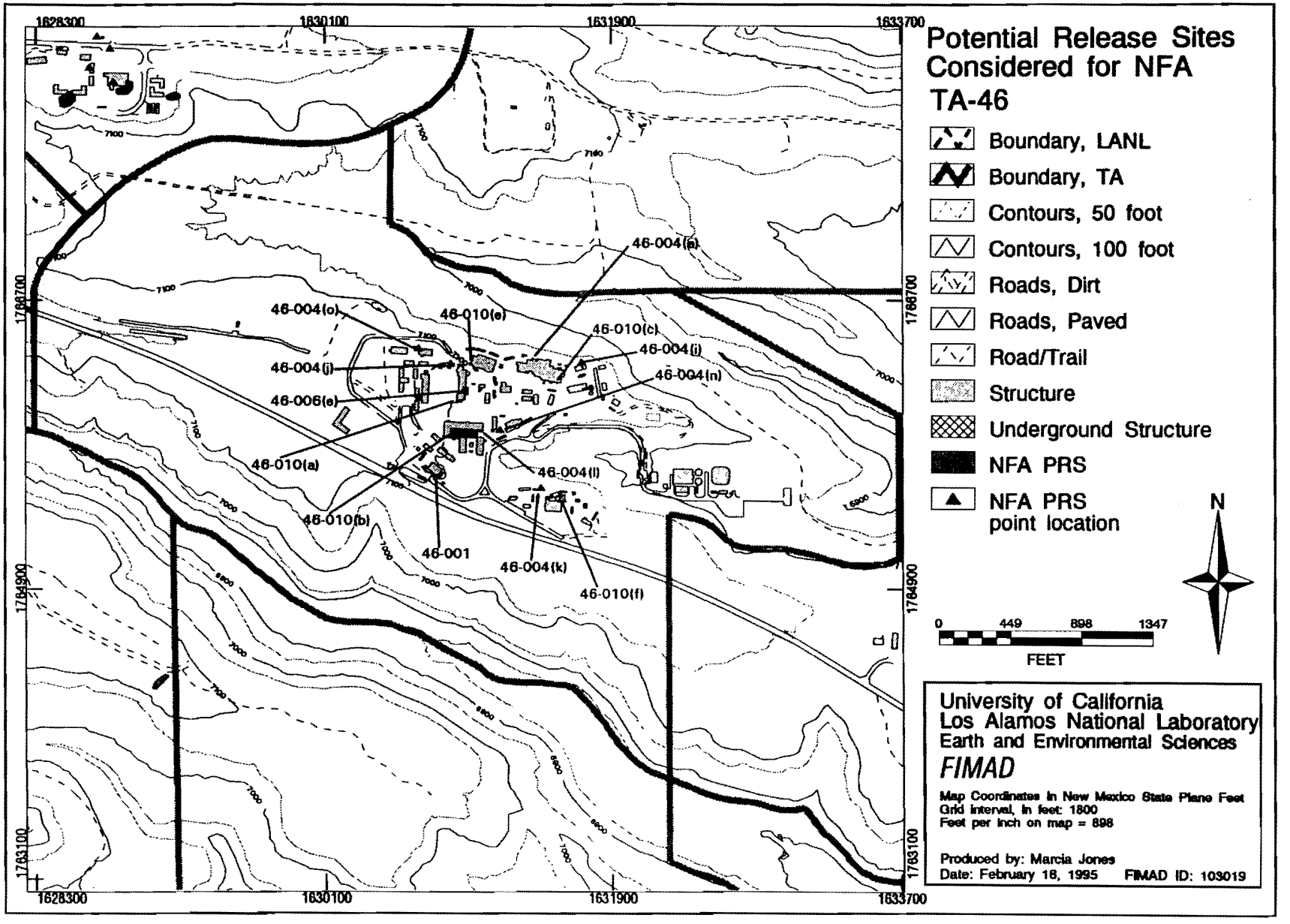

Figure A-31. Potential release sites considered for NFA, TA-46.

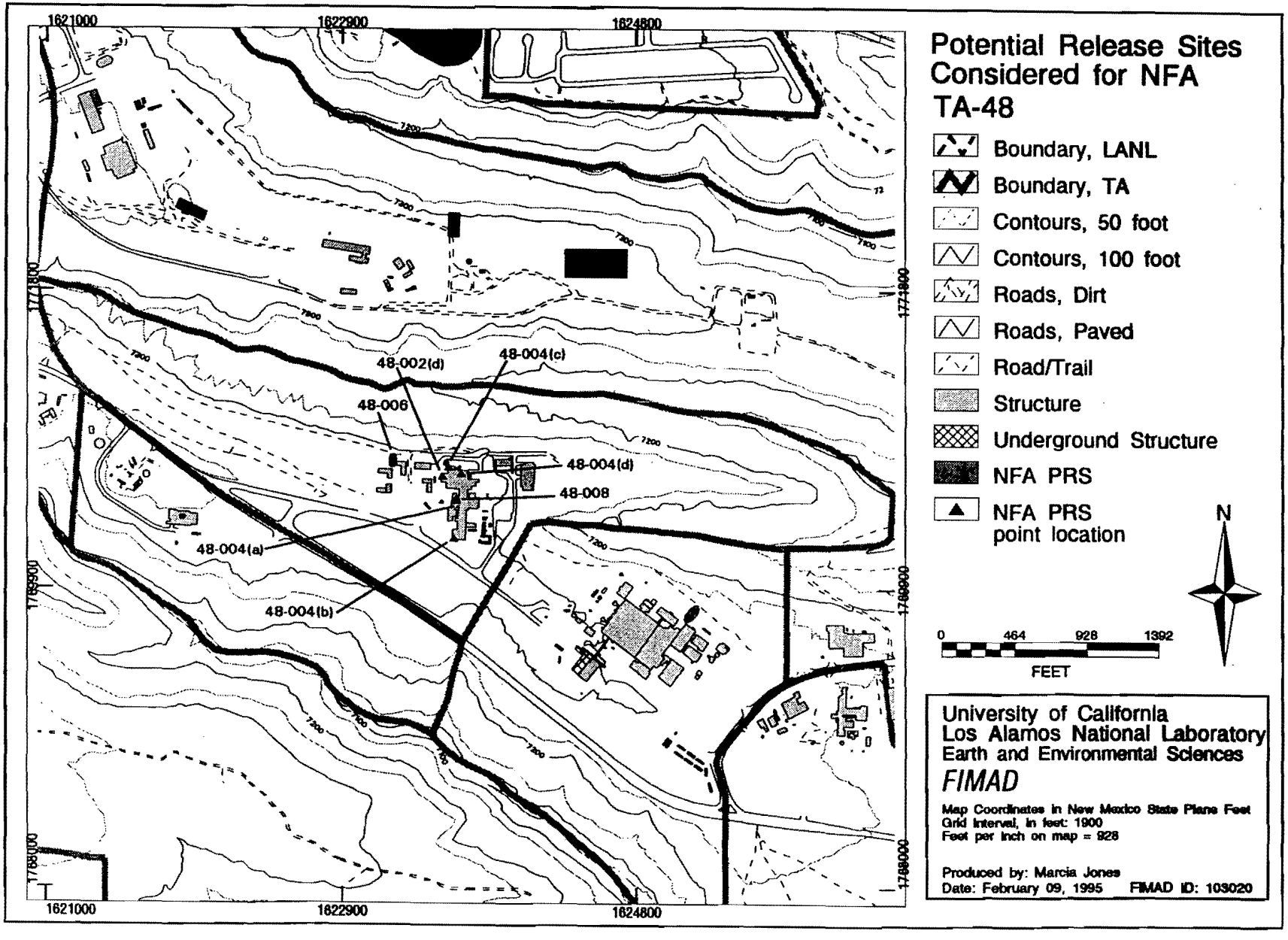

Figure A-32 Potential release sites considered for NFA, TA-48.

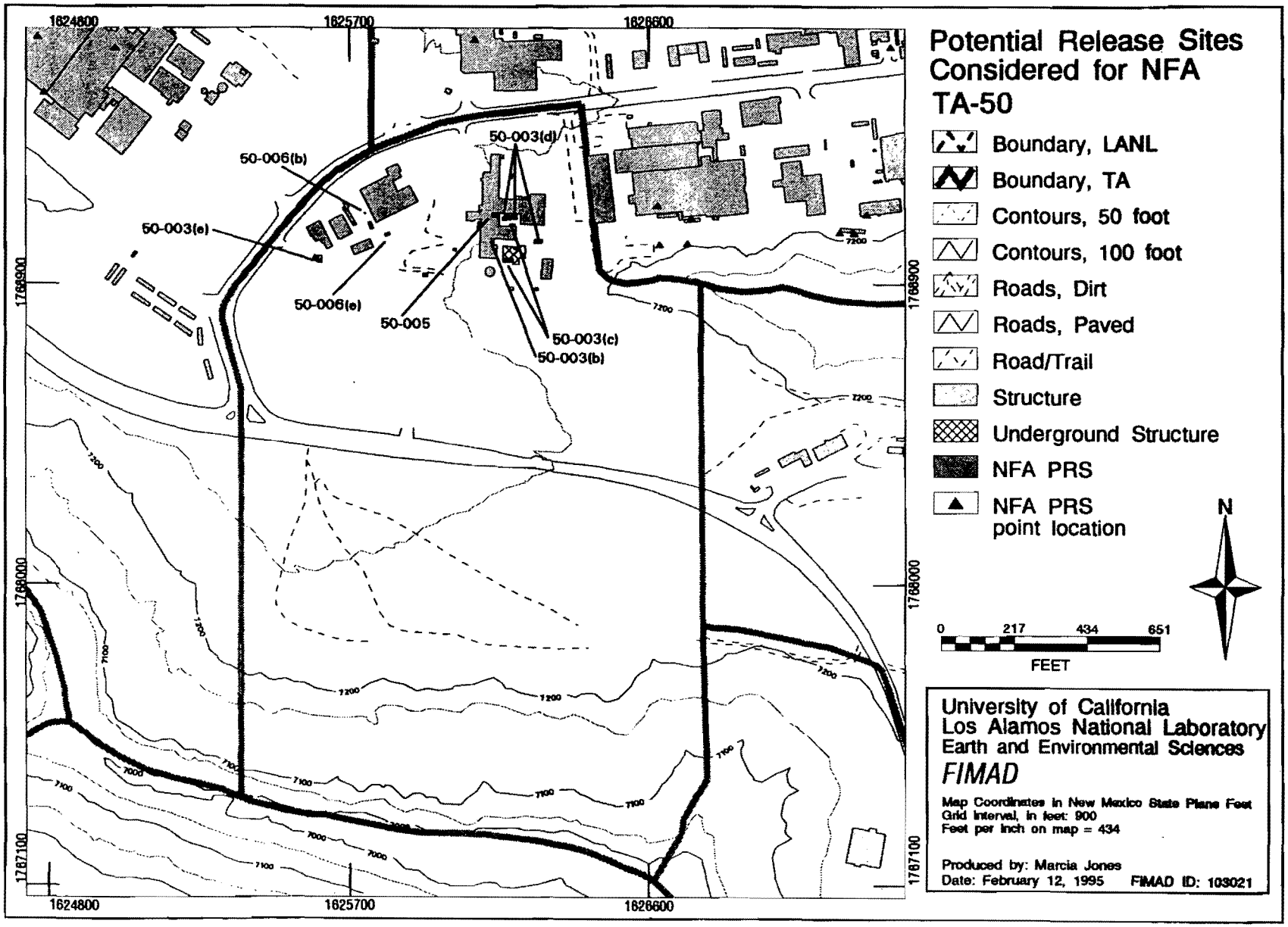

Figure A-33. Potential release sites considered for NFA, TA-50.

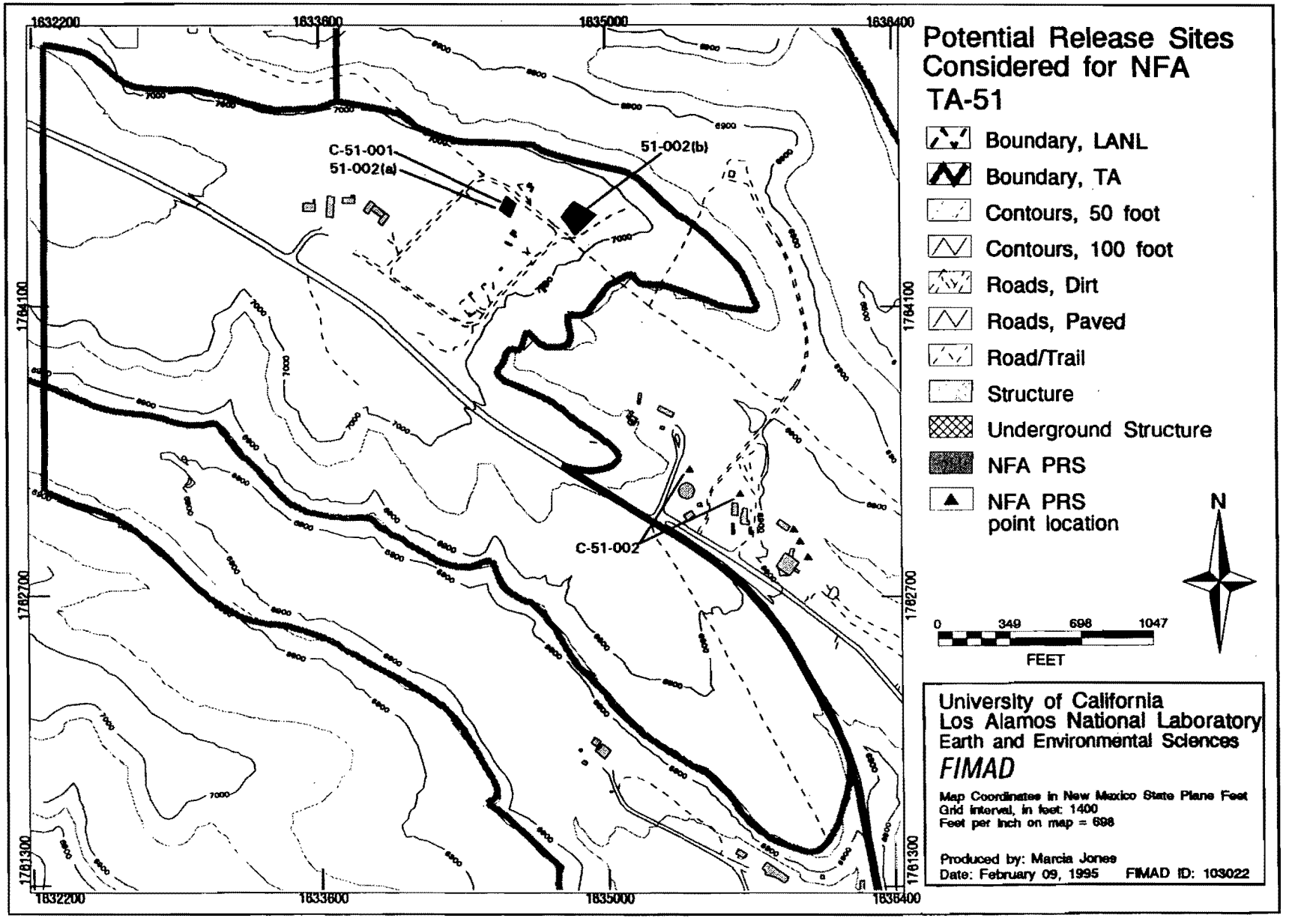

Figure A-34. Potential release sites considered for NFA, TA-51.

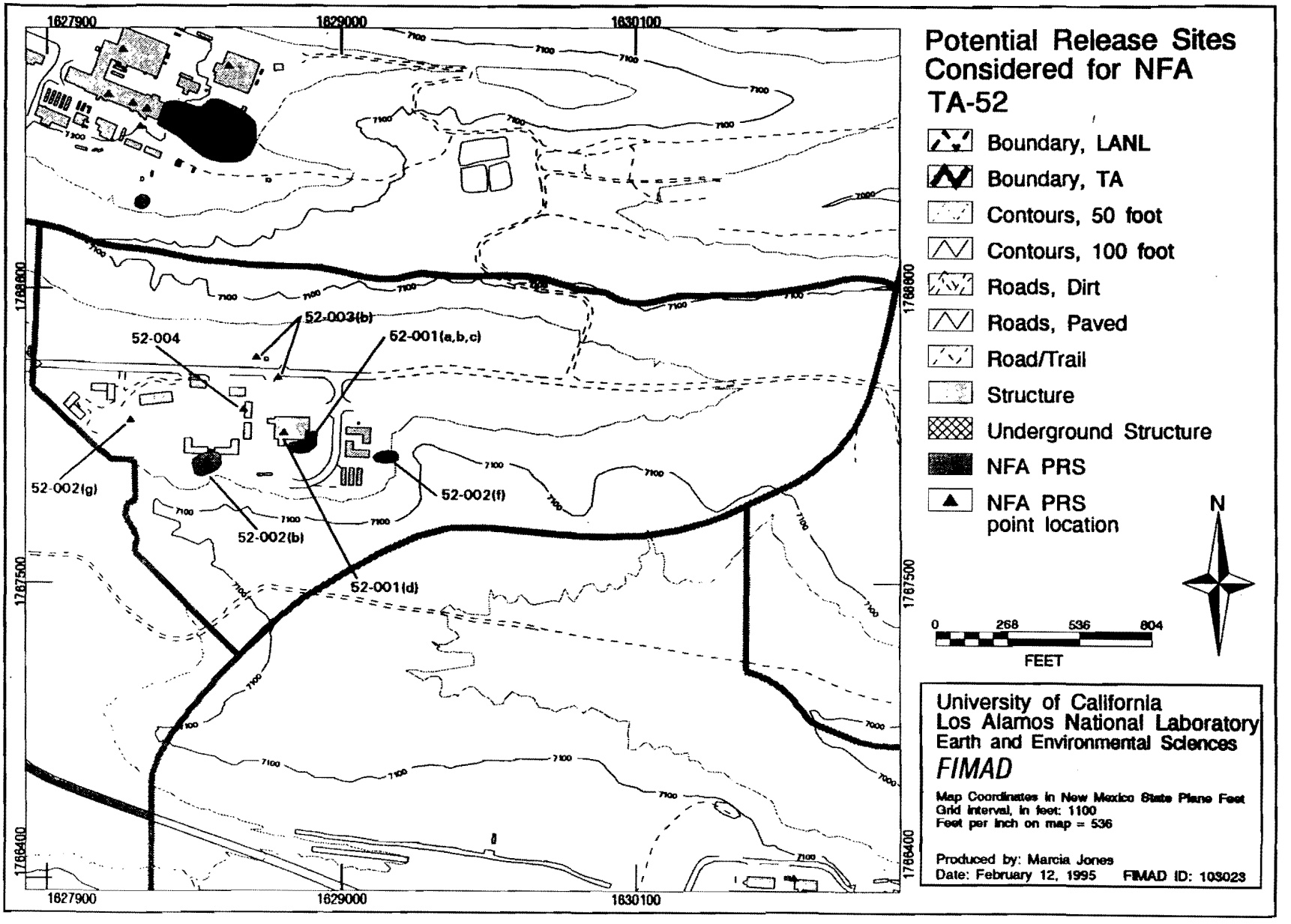

Figure A-35 Potential release sites considered for NFA, TA-52.

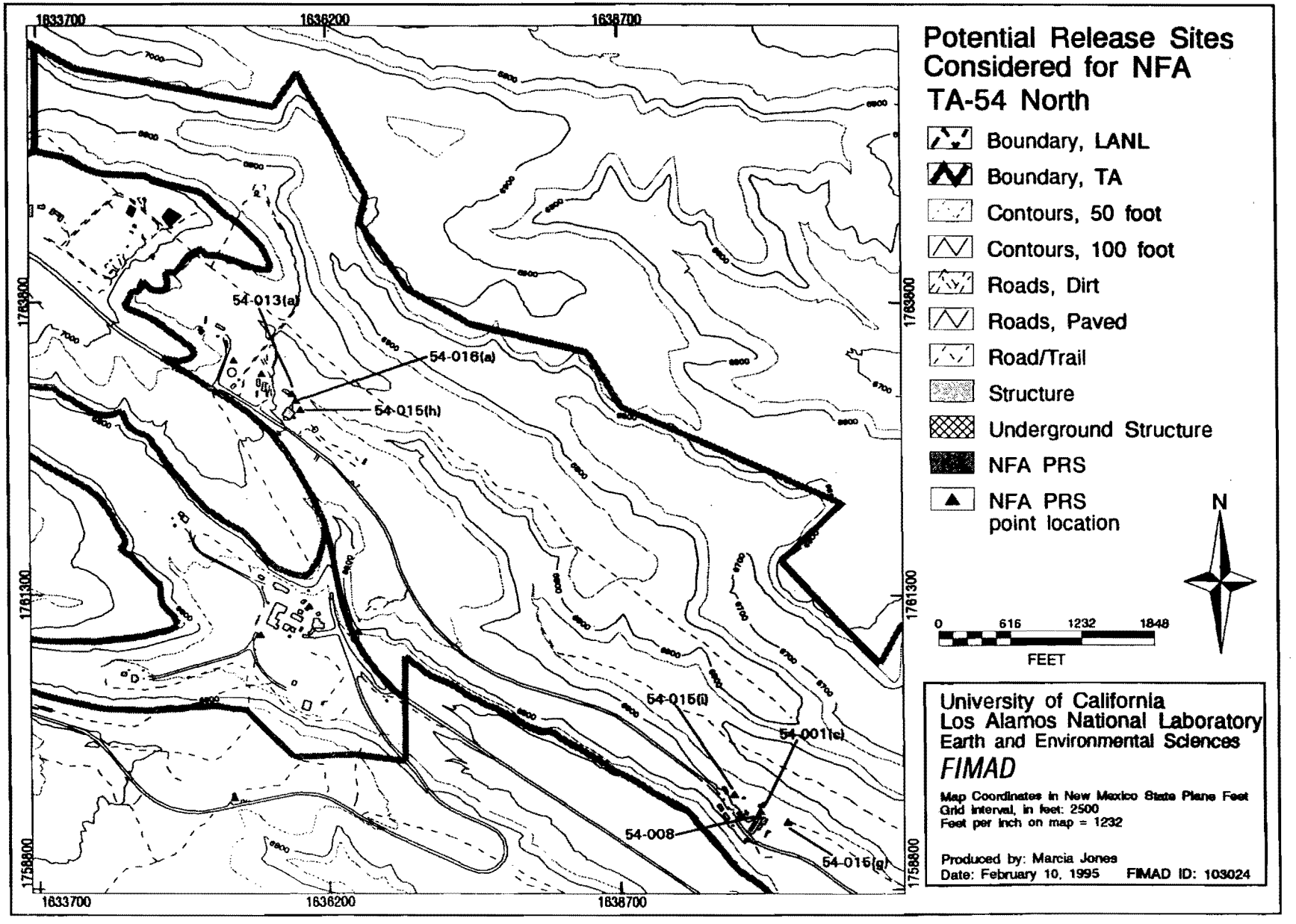

Figure A-36. Potential release sites considered for NFA, TA-54 North.

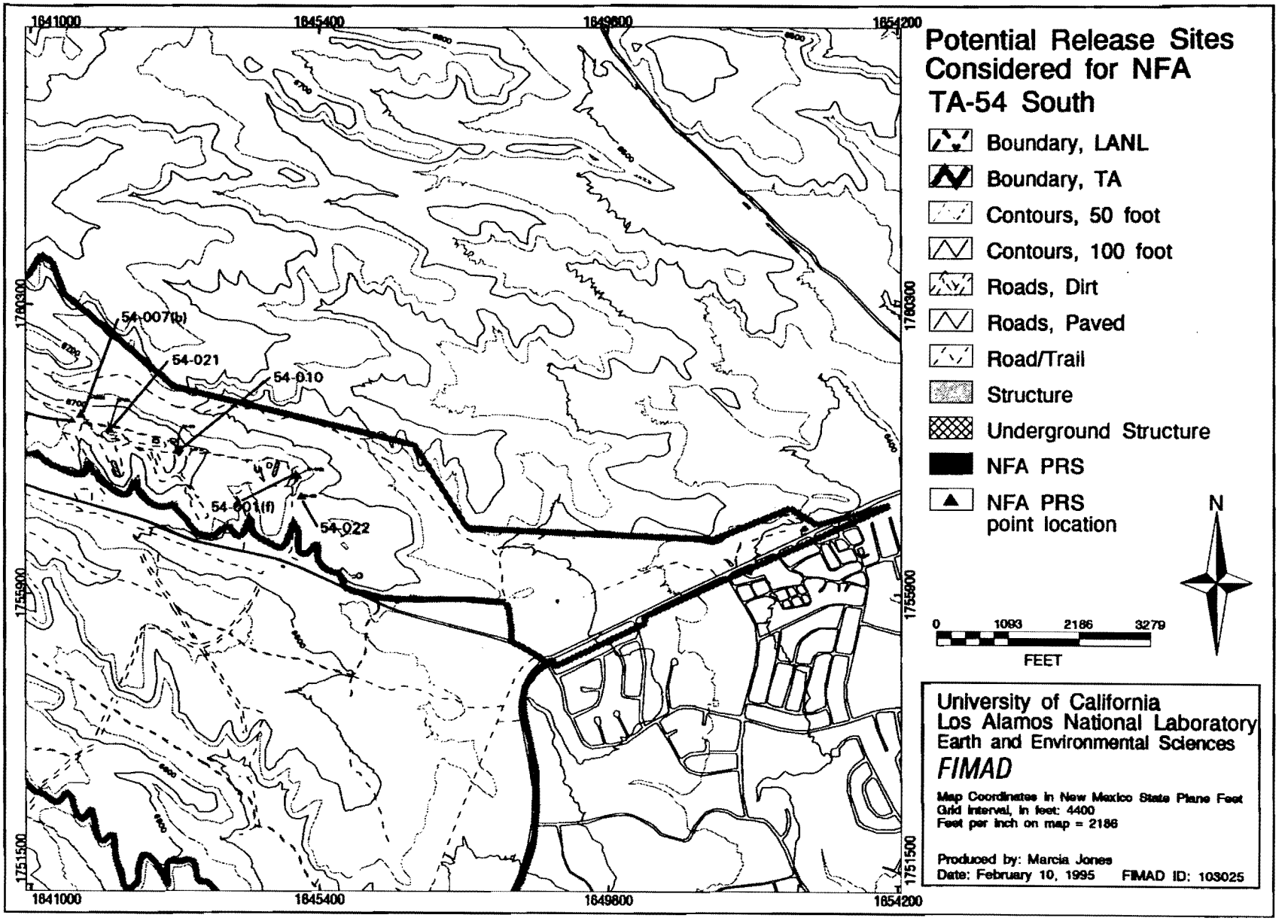

Figure A-37. Potential release sites considered for NFA, TA-54 South.

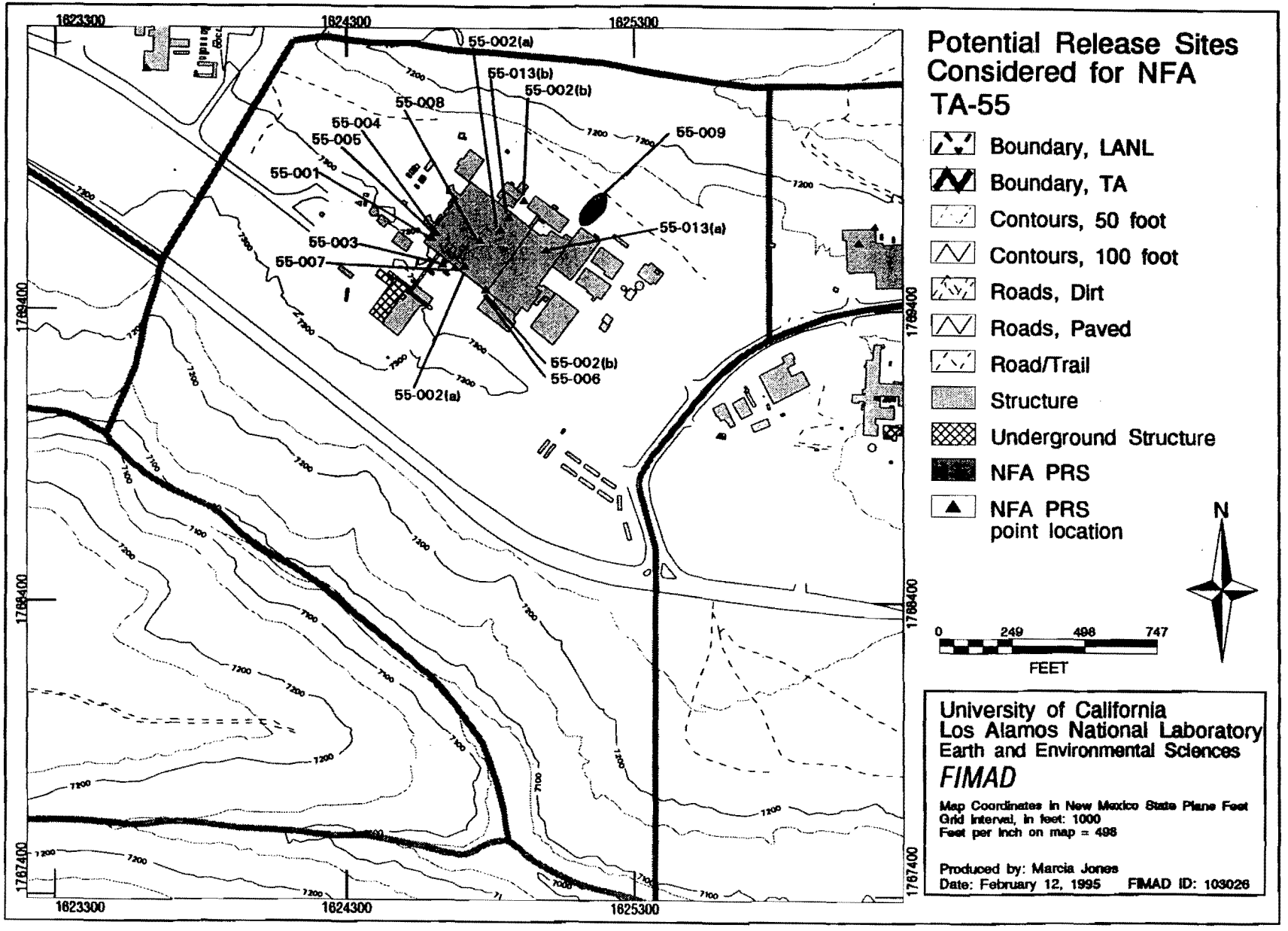

Figure A-38. Potential release sites considered for NFA, TA-55.

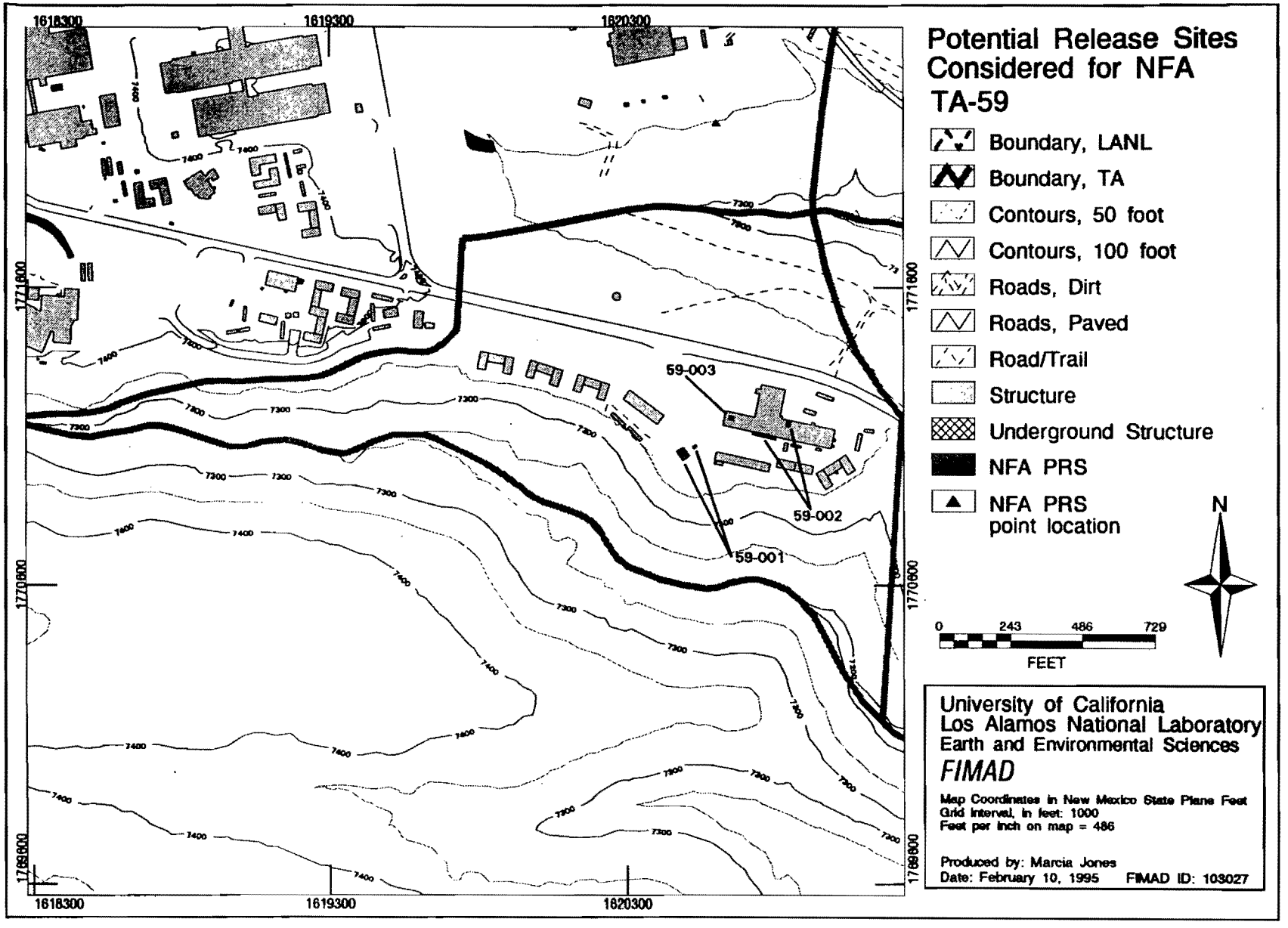

Figure A-39 Potential release sites considered for NFA, TA-59.

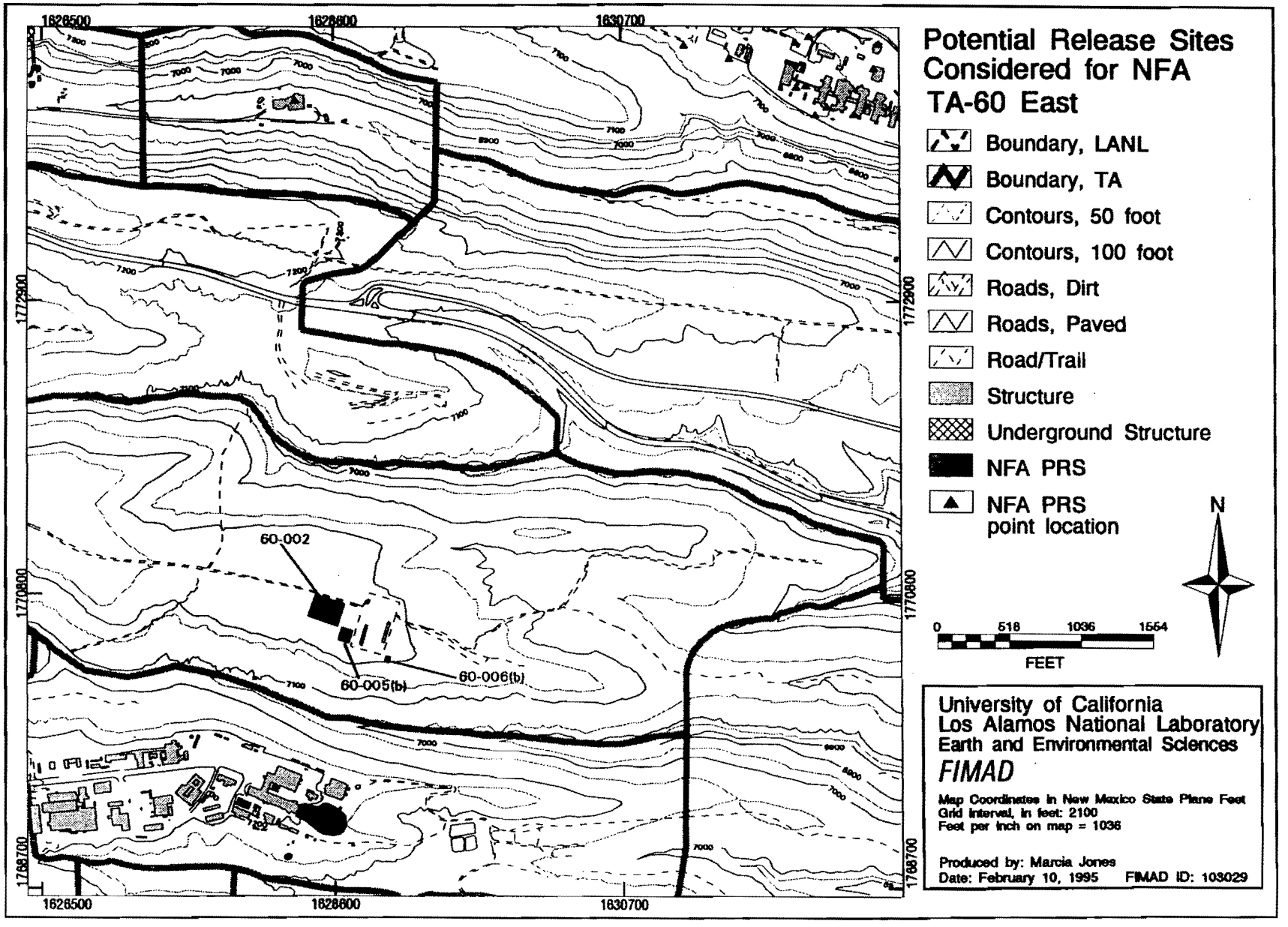

Figure A-40. Potential release sites considered for NFA, TA-60 East.

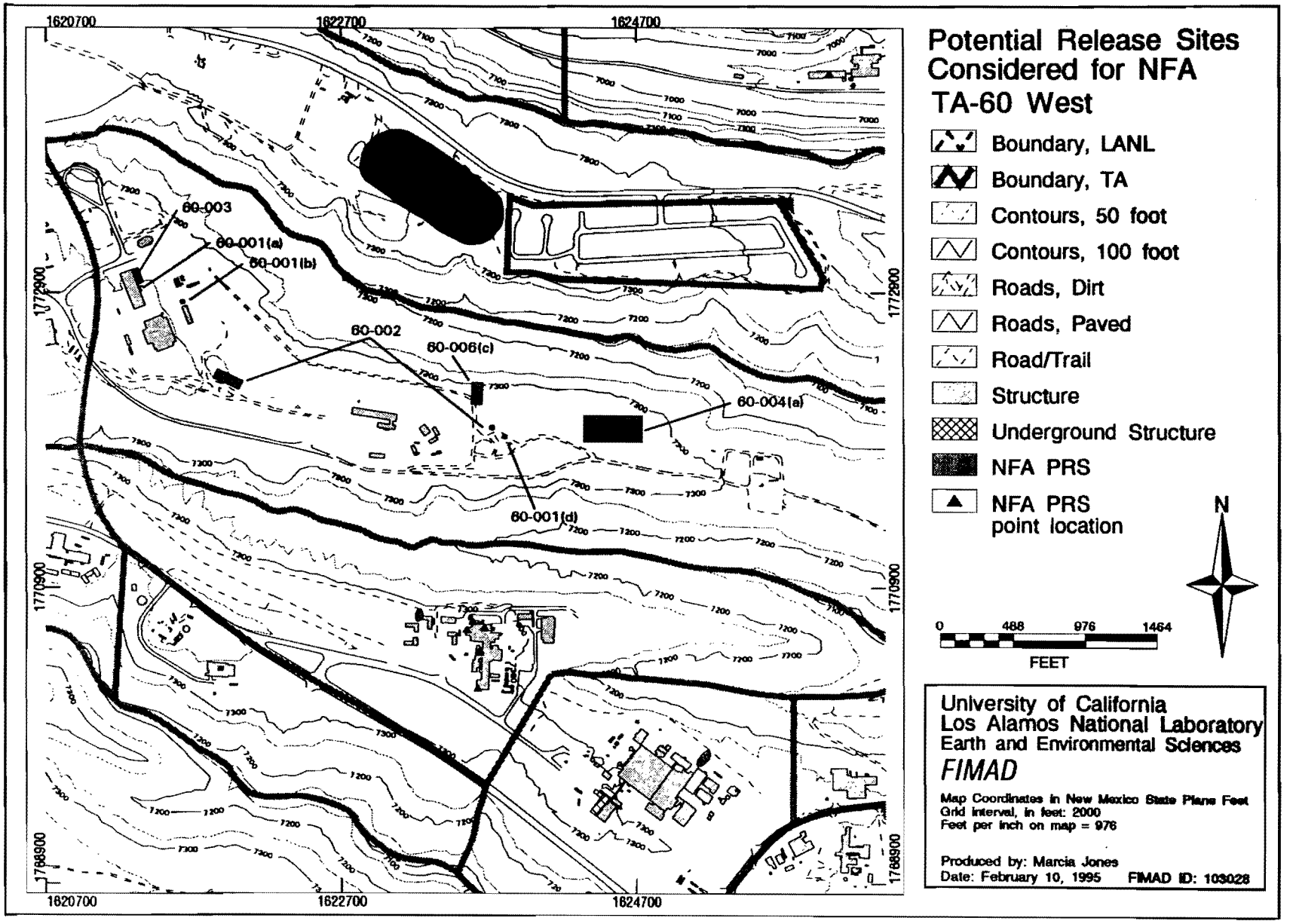

Figure A-41. Potential release sites considered for NFA, TA-60 West.

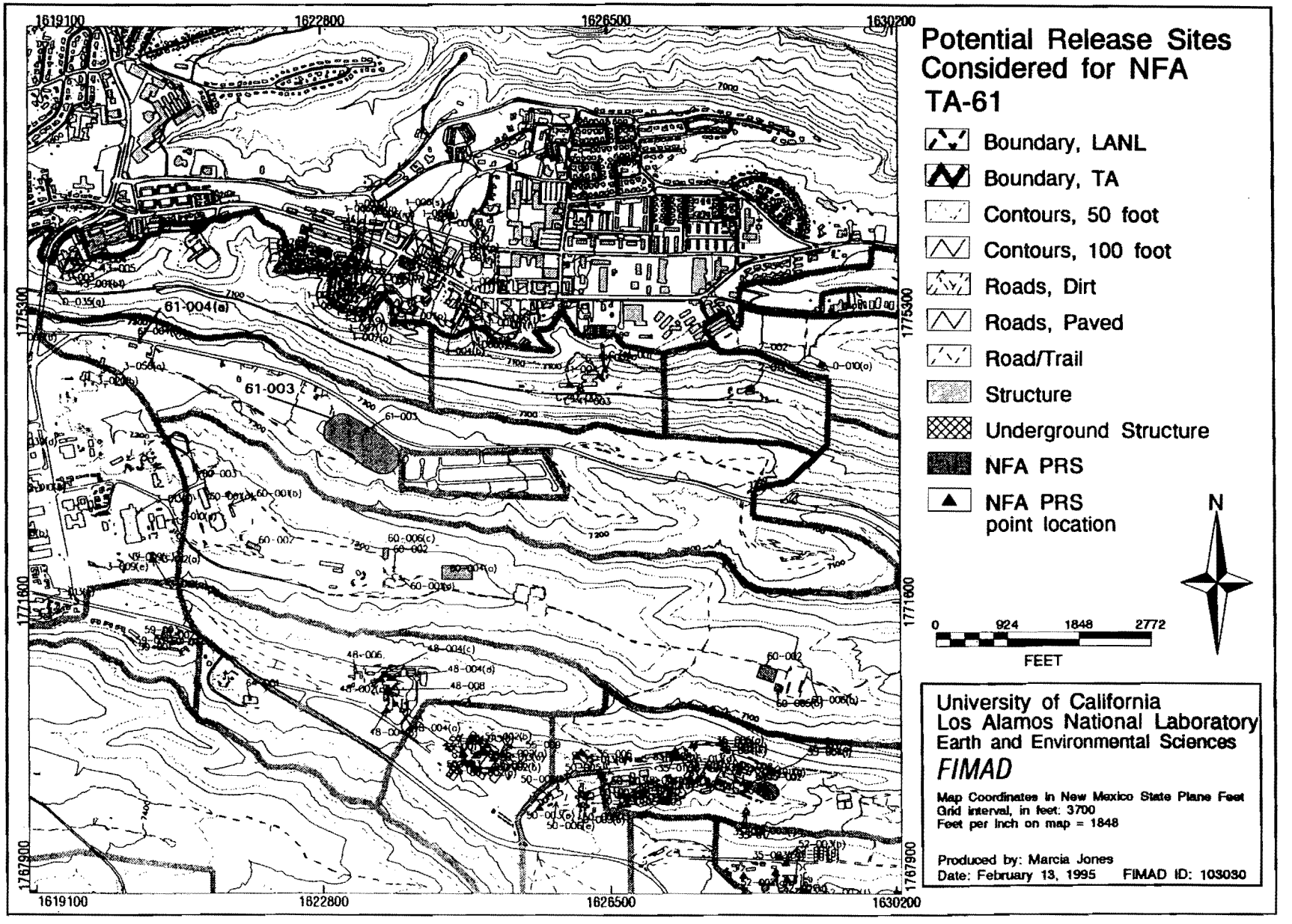

Figure A-42. Potential release sites considered for NFA, TA-61.

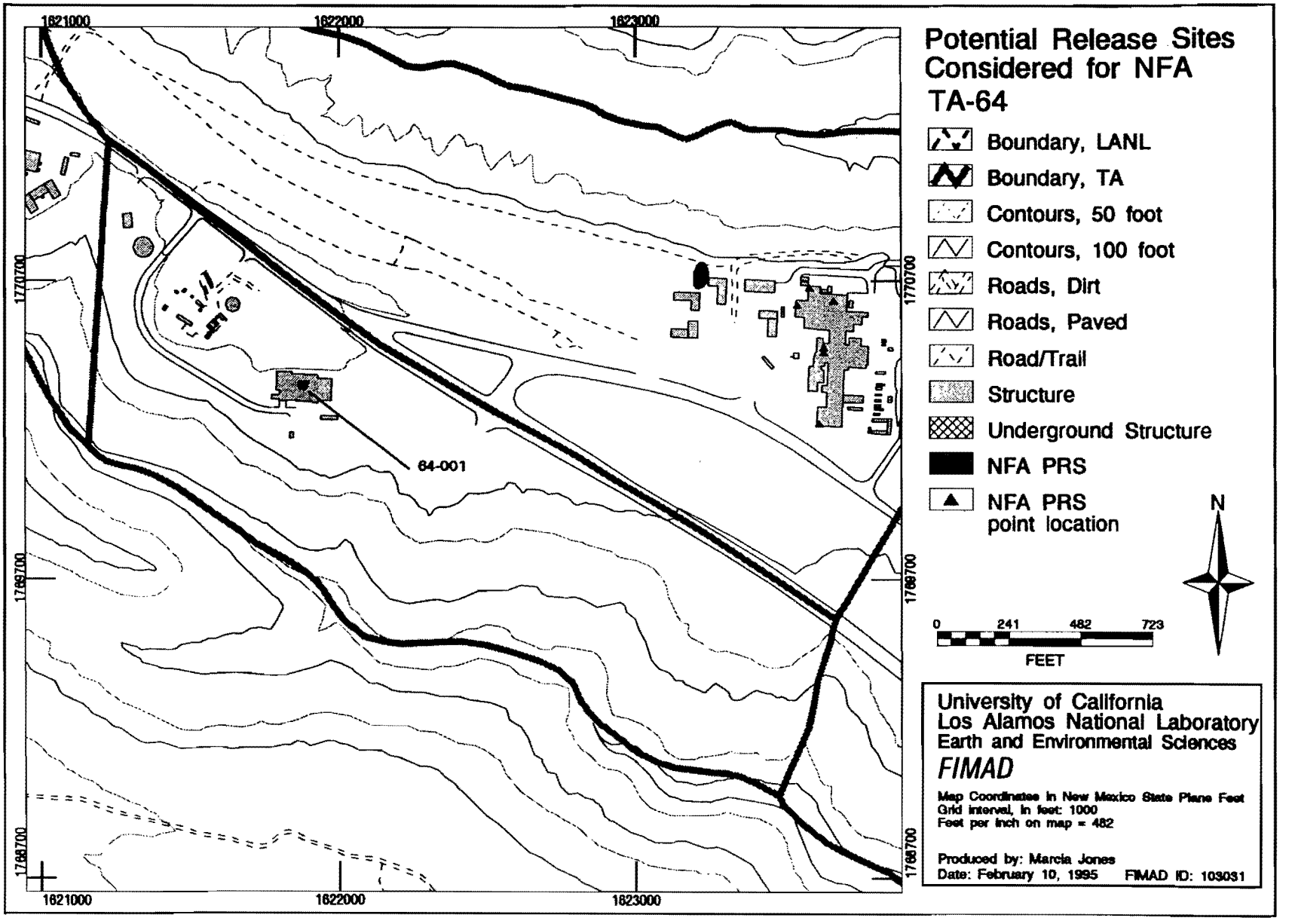

Figure A-43. Potential release sites considered for NFA, TA-64.

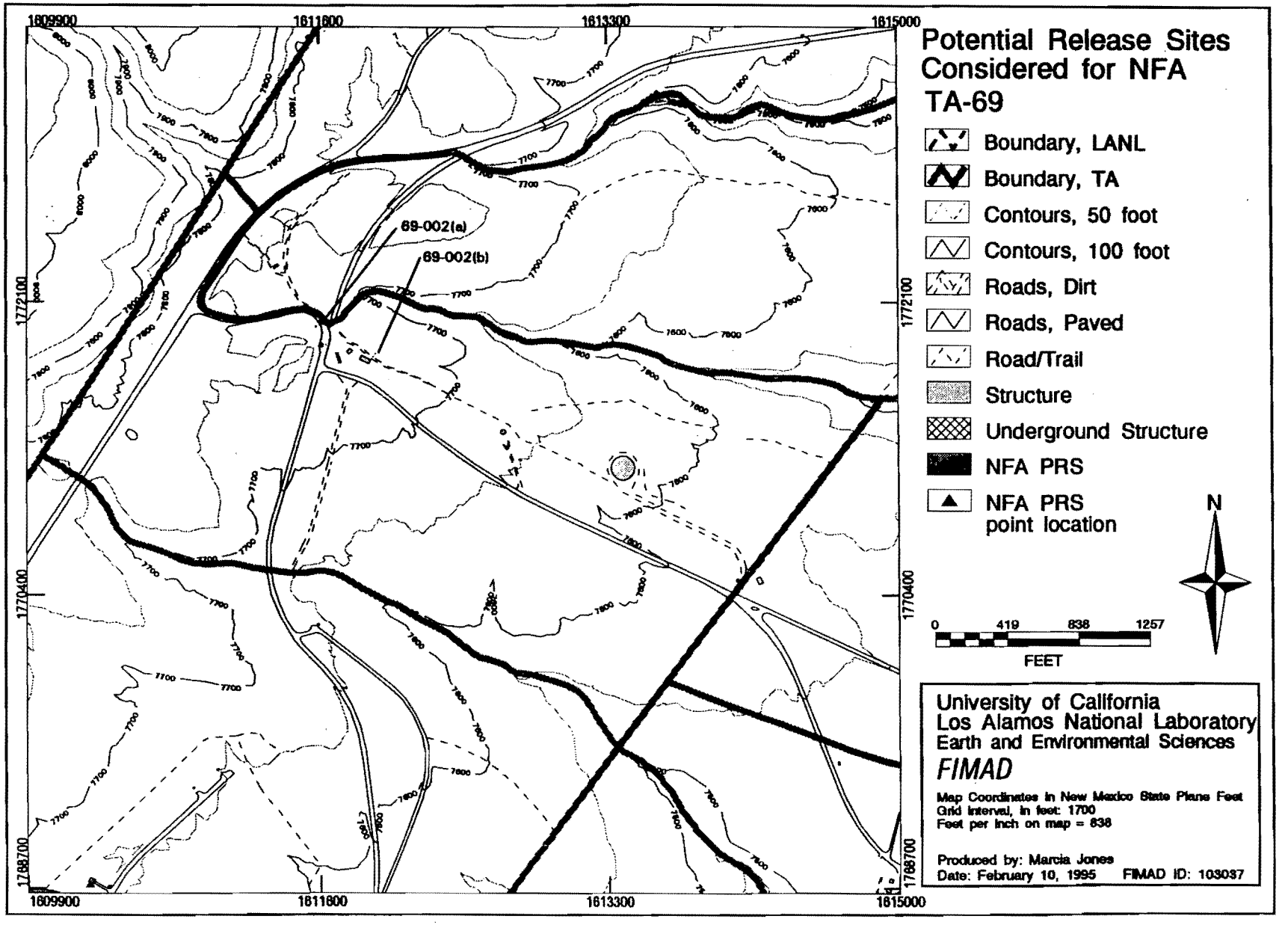

Figure A-44. Potential release sites considered for NFA, TA-69.

■ APPENDIX B

Requested Modifications to Tables A and B of LANL's HSWA Module

Note:
This appendix contains the requested modifications to Tables A and B of LANL's HSWA Module. The requested deletions to the tables are indicated by using strike-through text. The bolded and bracketed text indicates new text. The number to the side of each listing for a technical area denotes the number of PRSs for that area. The number at the lower right-hand corner of each page denotes the total number of PRSs on that page.

REQUESTED MODIFICATIONS TO TABLE A

SWMU Number	
Technical Area 0	
0-001	
0-003	
~~0-005~~	
0-011 (a)	
0-011 (c-e)	~~(21)~~
0-012	**[(20)]**
0-016	
0-017	
0-018 (a)	
0-019	
0-028 (a-b)	
0-030 (a-b)	
0-030 (g)	
0-030 (l-m)	
0-033	
0-039	
Technical Area 1	
~~1-001 (a-o)~~	
[1-001 (a-g)]	
[1-001 (m)]	
[1-001 (o)]	
1-001 (s-u)	
1-002	
1-003 (a)	~~(36)~~
1-003 (d-e)	**[(30)]**
1-006 (a-d)	
1-006 (h)	
1-006 (n-o)	
1-007 (a-e)	
1-007 (j)	
1-007 (l)	
Technical Area 2	
2-005	
2-006 (a-b)	**(9)**
2-007	
2-008 (a-b)	
2-009 (a-c)	
Technical Area 3	
3-001 (a-c)	
3-001 (k)	
3-002 (b-c)	
3-003 (a-c)	
~~3-009 (a-h)~~	
[3-009 (a)]	
[3-009 (d)]	
[3-009 (h)]	
3-010 (a)	
~~3-012 (a-b)~~	
[3-012 (b)]	
3-013 (a)	
3-014 (a-u)	
3-015	~~(61)~~
~~3-018~~	**[(51)]**
~~3-020 (a)~~	
3-026 (d)	
3-028	
3-033	
3-035 (a-b)	
3-036 (a)	
3-036 (c-d)	
3-037	
3-038 (a-b)	
~~3-039 (a)~~	
~~3-043 (e)~~	
3-044 (a)	
3-056 (a)	
3-056 (c)	
Technical Area 4	
4-001	
4-002	**(4)**
4-003 (a-b)	
Technical Area 5	
5-001 (a-b)	
5-002	
5-003	**(11)**
5-004	
5-005 (a-b)	
5-006 (b,c,e,h)	
	~~(142)~~
	[(125)]

Technical Area 6	
6-001 (a-b)	
6-002	
6-003 (a)	**(19)**
6-003 (c-h)	
6-005	
6-006	
6-007 (a-g)	
Technical Area 7	
7-001 (a-d)	**(6)**
7-003 (c-d)	
Technical Area 8	
8-002	
~~8-003 (a-c)~~	
[8-003 (a)]	
8-004 (a-d)	
8-005	~~**(16)**~~
~~8-006 (a-b)~~	**[(12)]**
[8-006 (a)]	
~~8-007~~	
8-009 (a)	
8-009 (d-e)	
C-8-010	
Technical Area 9	
9-001 (a-d)	
9-002	
~~9-003 (a-i)~~	
[9-003 (a)]	
[9-003 (b)]	
[9-003 (d)]	
[9-003 (e)]	
[9-003 (g-i)]	
9-004 (a-o)	
~~9-005 (a-h)~~	~~**(43)**~~
[9-005 (a)]	**[(34)]**
[9-005 (d)]	
9-006	
~~9-007~~	
9-008 (b)	
9-009	
9-013	
C-9-001	
Technical Area 10	
10-001 (a-d)	
10-002 (a-b)	
10-003 (a-o)	~~**(26)**~~
10-004 (a-b)	**[(25)]**
10-005	
~~10-006~~	
10-007	
Technical Area 11	
11-001 (a-c)	
11-002	
11-004 (a-e)	
11-005 (a-c)	~~**(22)**~~
11-006 (a-d)	**[(20)]**
~~11-007~~	
11-009	
~~11-011 (a-d)~~	
[11-011 (a)]	
[11-011 (b)]	
[11-011 (d)]	
Technical Area 12	
12-001 (a-b)	~~**(3)**~~
~~12-002~~	**[(2)]**
Technical Area 13	
13-001	
13-002	**(4)**
13-003 (a)	
13-004	
Technical Area 14	
14-002 (a-f)	
14-003	
14-004 (b)	
14-005	**(13)**
14-006	
14-007	
14-009	
14-010	
	~~**(152)**~~
	[(135)]

Technical Area 15

15-002
15-003
15-004 (a-c)
15-004 (f-g)
~~15-004 (i)~~
15-006 (a-d) ~~(45)~~
15-007 (a-d) **[(44)]**
15-008 (a-d)
15-009 (a-c)
15-009 (e-k)
15-010 (a-c)
15-011 (a-c)
15-012 (a-b)
15-014 (a-b)
15-014 (i-m)

Technical Area 16

16-001 (a-e)
16-003 (a-o)
16-004 (a-f)
16-005 (g)
16-005 (i)
~~16-005 (n-o)~~
[16-005 (n)]
~~16-006 (a-f)~~
[16-006 (a)]
[16-006 (c-e)]
16-007 (a) ~~(105)~~
16-008 (a) **[(91)]**
16-009 (a)
~~16-010 (a-n)~~
[16-010 (a-f)]
[16-010 (h-n)]
~~16-012 (a-z)~~
[16-012 (a-c)]
[16-012 (e-h)]
[16-012 (k)]
[16-012 (o)]
[16-012 (q)]
[16-012 (r)]
[16-012 (s)]
[16-012 (v)]
[16-012 (w)]
[16-012 (y)[
[16-012 (z)]
16-013
16-016 (a-c)
16-018
16-019
16-020
16-021 (a)
16-021 (c)
16-026 (b-e)
16-026 (h2)
16-026 (j2)
16-026 (v)
16-029 (a-g)
16-030 (h)
16-035
16-036

Technical Area 18

18-001 (a-c)
18-002 (a-b)
18-003 (a-h) **(19)**
18-004 (a-b)
18-005 (a)
18-007
18-012 (a-b)

Technical Area 19

19-001
19-002 **(3)**
19-003

Technical Area 20

20-001 (a-c)
20-002 (a-d) **(9)**
20-003 (a)
20-005

~~(181)~~
[(166)]

Technical Area 21

21-002 (a)	
21-003	
21-004 (b-c)	
21-005	
21-006 (a-e)	
21-007	
21-010 (a-h)	~~(83)~~
21-011 (a-g)	**[(82)]**
21-011 (i-k)	
~~21-012 (a-b)~~	
[21-012 (b)]	
21-013 (a-e)	
21-014	
21-015	
21-016 (a-c)	
21-017 (a-c)	
21-018 (a-b)	
21-021	
21-022 (a-j)	
21-023 (a-d)	
21-024 (a-o)	
21-026 (a-b)	
21-027 (a-d)	
21-029	

Technical Area 22

22-010 (a)	
22-010 (b)	
~~22-011~~	
22-012	
22-014 (a-b)	~~(12)~~
22-015 (a-e)	**[(11)]**
22-016	

Technical Area 26

26-001	
26-002 (a-b)	**(4)**
26-003	

Technical Area 27

27-001	
27-002	**(3)**
27-003	

Technical Area 31

31-001	**(1)**

Technical Area 32

32-001	
32-002 (a-b)	**(3)**

Technical Area 33

33-001 (a-e)	
33-002 (a-e)	
33-003 (a-b)	
~~33-004 (a-k)~~	
[33-004 (a-d)]	
[33-004 (g-k)]	
33-004 (m)	
33-005 (a-c)	
33-006 (a-b)	~~(52)~~
33-007 (a-c)	**[(50)]**
33-008 (a-b)	
33-009	
33-010 (a-d)	
33-010 (f-h)	
33-011 (a)	
33-011 (c-e)	
33-012 (a)	
33-013	
33-014	
33-015	
33-016	
33-017	

Technical Area 35

~~35-002~~	
~~35-003 (a-q)~~	
[35-003 (a-h)]	
[35-003 (j-o)]	
[35-003 (q)]	
35-004 (a-b)	
~~35-004 (e)~~	
35-004 (g-h)	
~~35-006~~	
35-008	
35-009 (a-e)	
35-010 (a-d)	
~~35-011 (a)~~	
~~35-013 (a-d)~~	~~(54)~~
35-014 (a-b)	**[(44)]**
35-014 (e)	
35-014 (g)	
35-015 (a-b)	
35-016 (a)	
35-016 (c-d)	
35-016 (i)	
35-016 (k)	
35-016 (m)	
35-016 (o-q)	
	~~(212)~~
	[(198)]

Technical Area 36

36-001	
36-002	
~~36-003 (a-c)~~	**~~(9)~~**
[36-003(a)]	**[(8)]**
[36-003(b)]	
36-004 (d)	
36-005	
36-006	
C-36-003	

Technical Area 39

39-001 (a-b)	
39-002 (a)	
~~39-003~~	**~~(14)~~**
39-004 (a-e)	**[(12)]**
39-005	
~~39-006 (a-b)~~	
[39-006(a)]	
39-007 (a)	
39-008	

Technical Area 40

~~40-001 (a-c)~~	
[40-001 (b)]	
[40-001 (c)]	
40-003 (a)	
40-004	**~~(11)~~**
40-005	**[(10)]**
40-006 (a-c)	
40-009	
40-010	

Technical Area 41

41-001	**(4)**
41-002 (a-c)	

Technical Area 42

42-001 (a-c)	
42-002 (b)	**(5)**
42-003	

Technical Area 43

43-001 (a)	**(2)**
43-002	

Technical Area 45

45-001	
45-002	**(4)**
45-003	
45-004	

Technical Area 46

46-002	
46-003 (a-h)	
~~46-004 (a-h)~~	
[46-004 (b-h)]	
46-004 (a2-d2)	
46-004 (m)	
46-004 (p-z)	
46-005	**~~(51)~~**
46-006 (a-d)	**[(49)]**
46-006 (f-g)	
46-007	
~~46-008 (a-g)~~	
[46-008 (a)]	
[46-008 (b)]	
[46-008 (d-g)]	
46-009 (a-b)	
46-010 (d)	

Technical Area 48

48-002 (a-b)	
48-003	
~~48-004 (a-c)~~	**~~(13)~~**
48-005	**[(10)]**
48-007 (a-d)	
48-007 (f)	
48-010	

Technical Area 49

49-001 (a-g)	
49-003	**(11)**
49-004	
49-005 (a)	
49-006	

~~(124)~~
[(115)]

Technical Area 50

50-001 (a)
50-002 (a-c)
50-004 (a-c) **(12)**
50-006 (a)
50-006 (c-d)
50-009
50-011 (a)

Technical Area 52

~~52-001 (a-d)~~
~~52-002 (a-f)~~ ~~**(10)**~~
[52-002 (a)] **[(2)]**
[52-002 (e)]

Technical Area 53

53-001 (a-b)
53-002 (a-b)
53-005 **(12)**
53-006 (b-f)
53-007 (a-b)

Technical Area 54

54-001 (a)
~~54-001 (c)~~
54-004 (excluding Shaft No. 9)
54-005
54-006
~~54-007 (a-c)~~ ~~**(20)**~~
[54-007 (a)] **[(16)]**
[54-007 (c)]
54-012 (b)
~~54-013 (a-b)~~
[54-013 (b)]
54-014 (b-d)
~~54-015 (h)~~
54-015 (k)
54-017
54-018
54-019
54-020

~~Technical Area 55~~

~~55-008~~ ~~**(2)**~~
~~55-009~~ **[(0)]**

~~Technical Area 59~~

~~59-001~~ ~~**(1)**~~
[(0)]

Technical Area 60

~~60-002~~
60-005 (a) ~~**(5)**~~
60-006 (a) **[(4)]**
60-007 (a-b)

Technical Area 61

61-002
~~61-004(a)~~ ~~**(5)**~~
61-005 **[(4)]**
61-006
61-007

Technical Area 63

63-001(a-b) **(2)**

Technical Area 69

69-001 **(1)**

Technical Area 73

73-001 (a-d)
73-002
73-004 (a-d) **(11)**
73-005
73-006

~~**(81)**~~
[(64)]

Total SWMUs in Table A = ~~892~~ [803]

REQUESTED MODIFICATIONS TO TABLE B - PRIORITY SWMUS*

SWMU No.

~~0-005~~
~~1-001 (a-n)~~
[1-001 (a-g)]
[1-001 (o)]
1-002
1-003 (a)
2-005
2-008 (a)
3-010 (a)
~~3-012 (a-b)~~
[3-012 (b)]
3-013 (a)
3-015
~~3-020 (a)~~
5-005 (a)
6-007 (a)
~~8-003 (a-c)~~
[8-003(a)]
~~8-007~~
9-008 (b)
9-009
9-013
10-003 (a-f)
~~10-006~~
11-004 (a-e)
11-005 (a-b)
11-006 (a)
13-004
15-002
15-006 (a-d)
15-007 (a-d)
15-008 (a-d)
15-009 (a-b)
15-012 (a-g)
16-001 (b-e)
~~16-005 (n-o)~~
[16-005 (n)]
16-006 (a)
~~16-006 (c-f)~~
[16-006 (c-e)]
16-007
16-008 (b)
16-016
16-018

SWMU No.

16-019
16-020
16-021 (a)
18-001 (a)
18-003 (a-h)
21-006 (a-e)
21-010 (a-h)
21-011 (a-i)
~~21-012 (a)~~
21-014
21-015
21-016 (a)
21-017(a-c)
21-018 (a-b)
22-015 (c)
33-002 (a-c)
33-017
~~35-003 (a-q)~~
[35-003 (a-h)]
[35-003 (j-o)]
[35-003 (q)]
~~35-006~~
35-010 (a-d)
~~36-003 (a-c)~~
36-003 (a)
36-003 (b)
39-001 (a-b)
41-001
46-002
46-006 (a-d)
46-007
49-001 (a)
50-006 (a)
50-006 (c-d)
50-009
54-004 (except Shaft No. 9)
54-005
~~54-015 (h)~~
60-005 (a)
73-001 (a)

~~**179 SWMUs**~~
[159]

* As RFI work progresses, EPA may identify more SWMUs to be added to the list to be addressed in the installation workplans.

■ APPENDIX C

Proposed Tables A, B, and C of LANL's HSWA Module

Note:
This appendix contains the proposed Tables A, B, and C for LANL's HSWA Module. The bolded text indicates the proposed new text. The number to the side of each listing for a technical area denotes the number of PRSs for that area. The number at the lower right-hand corner of each page denotes the total number of PRSs on that page.

PROPOSED TABLE A

SWMU Number	
Technical Area 0	
0-001	
0-003	
0-011 (a)	
0-011 (c-e)	
0-012	**(20)**
0-016	
0-017	
0-018 (a)	
0-019	
0-028 (a-b)	
0-030 (a-b)	
0-030 (g)	
0-030 (l-m)	
0-033	
0-039	
Technical Area 1	
1-001 (a-g)	
1-001 (m)	
1-001 (o)	
1-001 (s-u)	
1-002	
1-003 (a)	
1-003 (d-e)	**(30)**
1-006 (a-d)	
1-006 (h)	
1-006 (n-o)	
1-007 (a-e)	
1-007 (j)	
1-007 (l)	
Technical Area 2	
2-005	
2-006 (a-b)	**(9)**
2-007	
2-008 (a-b)	
2-009 (a-c)	
Technical Area 3	
3-001 (a-c)	
3-001 (k)	
3-002 (b-c)	
3-003 (a-c)	
3-009 (a)	
3-009 (d)	
3-009 (h)	
3-010 (a)	
3-012 (b)	
3-013 (a)	
3-014 (a-u)	
3-015	**(51)**
3-026 (d)	
3-028	
3-033	
3-035 (a-b)	
3-036 (a)	
3-036 (c-d)	
3-037	
3-038 (a-b)	
3-044 (a)	
3-056 (a)	
3-056 (c)	
Technical Area 4	
4-001	
4-002	**(4)**
4-003 (a-b)	
Technical Area 5	
5-001 (a-b)	
5-002	
5-003	**(11)**
5-004	
5-005 (a-b)	
5-006 (b,c,e,h)	
Technical Area 6	
6-001 (a-b)	
6-002	
6-003 (a)	**(19)**
6-003 (c-h)	
6-005	
6-006	
6-007 (a-g)	
	(144)

Technical Area 7

7-001 (a-d) **(6)**
7-003 (c-d)

Technical Area 8

8-002
8-003 (a)
8-004 (a-d)
8-005 **(12)**
8-006 (a)
8-009 (a)
8-009 (d-e)
C-8-010

Technical Area 9

9-001 (a-d)
9-002
9-003 (a) **(34)**
9-003 (b)
9-003 (d)
9-003 (e)
9-003 (g-i)
9-004 (a-o)
9-005 (a)
9-005 (d)
9-006
9-008 (b)
9-009
9-013
C-9-001

Technical Area 10

10-001 (a-d)
10-002 (a-b)
10-003 (a-o)
10-004 (a-b) **(25)**
10-005
10-007

Technical Area 11

11-001 (a-c)
11-002
11-004 (a-e)
11-005 (a-c)
11-006 (a-d) **(20)**
11-009
11-011 (a)
11-011 (b)
11-011 (d)

Technical Area 12

12-001(a-b) **(2)**

Technical Area 13

13-001
13-002 **(4)**
13-003 (a)
13-004

Technical Area 14

14-002 (a-f)
14-003
14-004 (b)
14-005 **(13)**
14-006
14-007
14-009
14-010

Technical Area 15

15-002
15-003
15-004 (a-c)
15-004 (f-g)
15-006 (a-d)
15-007 (a-d) **(44)**
15-008 (a-d)
15-009 (a-c)
15-009 (e-k)
15-010 (a-c)
15-011 (a-c)
15-012 (a-b)
15-014 (a-b)
15-014 (i-m)

(160)

Technical Area 16

16-001 (a-e)
16-003 (a-o)
16-004 (a-f)
16-005 (g)
16-005 (i)
16-005 (n)
16-006 (a)
16-006 (c-e)
16-007 (a)
16-008 (a) **(91)**
16-009 (a)
16-010 (a-f)
16-010 (h-n)
16-012 (a-c)
16-012 (e-h)
16-012 (k)
16-012 (o)
16-012 (q)
16-012 (r)
16-012 (s)
16-012 (v)
16-012 (w)
16-012 (y)
16-012 (z)
16-013
16-016 (a-c)
16-018
16-019
16-020
16-021 (a)
16-021 (c)
16-026 (b-e)
16-026 (h2)
16-026 (j2)
16-026 (v)
16-029 (a-g)
16-030 (h)
16-035
16-036

Technical Area 18

18-001 (a-c)
18-002 (a-b)
18-003 (a-h) **(19)**
18-004 (a-b)
18-005 (a)
18-007
18-012 (a-b)

Technical Area 19

19-001
19-002 **(3)**
19-003

Technical Area 20

20-001 (a-c)
20-002 (a-d) **(9)**
20-003 (a)
20-005

Technical Area 21

21-002 (a)
21-003
21-004 (b-c)
21-005
21-006 (a-e)
21-007
21-010 (a-h)
21-011 (a-g) **(82)**
21-011 (i-k)
21-012 (b)
21-013 (a-e)
21-014
21-015
21-016 (a-c)
21-017 (a-c)
21-018 (a-b)
21-021
21-022 (a-j)
21-023 (a-d)
21-024 (a-o)
21-026 (a-b)
21-027 (a-d)
21-029

Technical Area 22

22-010 (a)
22-010 (b)
22-012
22-014 (a-b) **(11)**
22-015 (a-e)
22-016

Technical Area 26

26-001
26-002 (a-b) **(4)**
26-003

(219)

Technical Area 27

27-001
27-002 **(3)**
27-003

Technical Area 31

31-001 **(1)**

Technical Area 32

32-001
32-002 (a-b) **(3)**

Technical Area 33

33-001 (a-e)
33-002 (a-e)
33-003 (a-b)
33-004 (a-d)
33-004 (g-k)
33-004 (m)
33-005 (a-c)
33-006 (a-b)
33-007 (a-c) **(50)**
33-008 (a-b)
33-009
33-010 (a-d)
33-010 (f-h)
33-011 (a)
33-011 (c-e)
33-012 (a)
33-013
33-014
33-015
33-016
33-017

Technical Area 35

35-003 (a-h)
35-003 (j-o)
35-003 (q)
35-004 (a-b)
35-004 (g-h)
35-008
35-009 (a-e)
35-010 (a-d)
35-014 (a-b) **(44)**
35-014 (e)
35-014 (g)
35-015 (a-b)
35-016 (a)
35-016 (c-d)
35-016 (i)
35-016 (k)
35-016 (m)
35-016 (o-q)

Technical Area 36

36-001
36-002
36-003 (a) **(8)**
36-003 (b)
36-004 (d)
36-005
36-006
C-36-003

Technical Area 39

39-001 (a-b)
39-002 (a)
39-004 (a-e) **(12)**
39-005
39-006(a)
39-007 (a)
39-008

Technical Area 40

40-001 (b)
40-001 (c)
40-003 (a)
40-004
40-005 **(10)**
40-006 (a-c)
40-009
40-010

Technical Area 41

41-001 **(4)**
41-002 (a-c)

Technical Area 42

42-001 (a-c)
42-002 (b) **(5)**
42-003

(140)

Technical Area 43

43-001 (a) **(2)**
43-002

Technical Area 45

45-001
45-002 **(4)**
45-003
45-004

Technical Area 46

46-002
46-003 (a-h)
46-004 (b-h)
46-004 (a2-d2)
46-004 (m)
46-004 (p-z)
46-005
46-006 (a-d) **(49)**
46-006 (f-g)
46-007
46-008 (a)
46-008 (b)
46-008 (d-g)
46-009 (a-b)
46-010 (d)

Technical Area 48

48-002 (a-b)
48-003
48-005 **(10)**
48-007 (a-d)
48-007 (f)
48-010

Technical Area 49

49-001 (a-g)
49-003 **(11)**
49-004
49-005 (a)
49-006

Technical Area 50

50-001 (a)
50-002 (a-c)
50-004 (a-c) **(12)**
50-006 (a)
50-006 (c-d)
50-009
50-011 (a)

Technical Area 52

[52-002 (a)] **(2)**
[52-002 (e)]

Technical Area 53

53-001 (a-b)
53-002 (a-b)
53-005 **(12)**
53-006 (b-f)
53-007 (a-b)

Technical Area 54

54-001 (a)
54-004 (excluding Shaft No. 9)
54-005
54-006
54-007 (a) **(16)**
[54-007 (c)
54-012 (b)
54-013 (b)
54-014 (b-d)
54-015 (k)
54-017
54-018
54-019
54-020

Technical Area 60

60-005 (a)
60-006 (a) **(4)**
60-007 (a-b)

Technical Area 61

61-002
61-005 **(4)**
61-006
61-007

(126)

Technical Area 63

63-001(a-b) **(2)**

Technical Area 69

69-001 **(1)**

Technical Area 73

73-001 (a-d)
73-002
73-004 (a-d) **(11)**
73-005
73-006

(14)

Total SWMUs in Table A = 803

PROPOSED TABLE B - PRIORITY SWMUs*

SWMU No.	SWMU No.
1-001 (a-g)	16-019
1-001 (o)	16-020
1-002	16-021 (a)
1-003 (a)	18-001 (a)
2-005	18-003 (a-h)
2-008 (a)	21-006 (a-e)
3-010 (a)	21-010 (a-h)
3-012 (b)	21-011 (a-i)
3-013 (a)	21-014
3-015	21-015
5-005 (a)	21-016 (a)
6-007 (a)	21-017(a-c)
8-003(a)	21-018 (a-b)
9-008 (b)	22-015 (c)
9-009	33-002 (a-c)
9-013	33-017
10-003 (a-f)	**35-003 (a-h)**
11-004 (a-e)	**35-003 (j-o)**
11-005 (a-b)	**35-003 (q)**
11-006 (a)	35-010 (a-d)
13-004	**36-003 (a)**
15-002	**36-003 (b)**
15-006 (a-d)	39-001 (a-b)
15-007 (a-d)	41-001
15-008 (a-d)	46-002
15-009 (a-b)	46-006 (a-d)
15-012 (a-g)	46-007
16-001 (b-e)	49-001 (a)
16-005 (n)	50-006 (a)
16-006 (a)	50-006 (c-d)
16-006 (c-e)	50-009
16-007	54-004 (except Shaft No. 9)
16-008 (b)	54-005
16-016	60-005 (a)
16-018	73-001 (a)
	159 SWMUs

* As RFI work progresses, EPA may identify more SWMUs to be added to the list to be addressed in the installation workplans.

PROPOSED TABLE C

RFI Work Plan due July 7, 1994:	**RFI Work Plan due July 7, 1995:**	**RFI Work Plan due May 21, 1995:**
Technical Area 16	Technical Area 16	Operable Unit 1114
16-005 (a-f)	16-016 (d-e)	3-002(a)
16-005 (h)	16-016 (g)	3-002(d)
16-005 (j-m)	16-025 (a2)	3-009(i)
16-006 (g-i)	16-025 (d2)	3-009(j)
16-015 (a,b)	16-025 (e2)	3-011
16-017	16-025 (f2)	3-019
16-024(e)	16-025 (h2)	3-021
16-025 (a)	16-026 (a-a2)	3-024
16-025 (b-b2)	16-026 (b2)	3-025(a-b)
16-025 (c-c2)	16-026 (c2)	3-026(b-c)
16-025 (d-f)	16-026 (d2)	3-029
16-025 (g-g2)	16-026 (e2)	3-031
16-025 (h-z)	16-026 (f-f2)	3-032
16-026 (i2)	16-026 (g-g2)	3-034(a-b)
16-026 (m-q)	16-026 (h-j)	3-043(c)
16-026 (s)	16-026 (k-k2)	3-045(a-i)
16-026 (w)	16-026 (l)	3-046
16-028 (a)	16-026 (r)	3-049(a-e)
16-029 (a2-h2)	16-026 (t-u)	3-050(a)
16-029 (k-z)	16-026 (x-z)	3-050(d-g)
16-031 (c-d)	16-028 (b-e)	3-052(a)
16-031 (g)	16-029 (h-j)	3-052(c)
16-032 (a)	16-030 (a-c)	3-052(e-f)
16-032 (c-e)	16-030 (e-f)	3-054(a-e)
16-034 (a-g)	16-031 (a-b)	3-055(a)
16-034 (l-p)	16-031 (e-f)	3-055(c-d)
C-16-025	16-031 (h)	3-056(d)
C-16-026	16-034 (h-k)	3-056(l-n)
		3-059
***Total SWMUs = 101**	**Total SWMUs = 51**	**Total SWMUs = 55**

* Twenty additional SWMUs were added after workplan review.