Request for Permit Modification

Units Proposed for NFA

Volume I

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A Department of Energy Environmental Cleanup Program

Los Alamos Environmental Restoration Records Processing Facility

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Los Alamos
NATIONAL LABORATORY

LA-UR-96-3357

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ACRONYMS AND ABBREVIATIONS

AC	Accelerated cleanup, area coordinator
AOC	Area of concern
BDL	Below detection limits
BTEX	Benzene, toluene, ethylbenzene, xylene
CAS	Chemical Abstract Service (number)
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLS	Chemical and Laser Sciences (Division)
COC	Contaminant of concern
COPC	Contaminant /constituent of potential concern
cpm	Counts per minute
D&D	Decontamination and decommissioning
DL	Detection limit
DOE	US Department of Energy
DPM	Disintegrations per minute
EM	Environmental Management (Division)
EM-7	Waste Management Group (now CST-7)
EM-8	Environmental Protection Group (now ESH-19)
EMI	Electromagnetic induction
ENG	Facilities Engineering (Division)(now Facility, Securities, and Safeguard)
EPA	US Environmental Protection Agency
ER	Environmental restoration
ES&H	Environment, safety, and health
FIMAD	Facility for Information Management, Analysis, and Display

APPENDIX A Attachments Common to Several HSWA Units
APPENDIX B Requested Modifications to Tables A, B, and C of the LANL HSWA Module B-1
APPENDIX C Proposed Tables A, B, and C of the LANL HSWA Module C-1

RCRA	Resource Conservation and Recovery Act
QL	Quantitation limit
R&D	Research and development
RFI	RCRA facility investigation
RDX	"Royal Dutch explosive" (Cyclotrimethylenetrinitramine)
REM	Roentgen equivalent man
RME	Reasonable maximum exposure
RPF	Records-Processing Facility
SAL	Screening action level
SAP	Sampling and analysis plan
SMO	Sample Management Office (formerly Sample Management Facility)
SOP	Standard operating procedure
SVOC	Semivolatile organic compound
SWMU	Solid waste management unit
TA	Technical area
TBD	To be determined
TPH	Total petroleum hydrocarbons
UST	Underground storage tank
UTL	Upper tolerance level
VOC	Volatile organic compound
WM	Waste management
WWTP	Wastewater treatment plant
XRF	X-ray fluorescence

GIS	Geographical Information System
GPR	Ground-penetrating radar
H&S	Health and safety
HE	High explosive
HEPA	High-efficiency particulate air (filter)
HMX	"Her Majesty's explosive" (cyclotetramethylenetrinitramine)
HSE	Health, Safety, and Environment (Division) (now ESH Division)
HSWA	Hazardous and Solid Waste Amendments (of 1984)
IWP	Installation work plan
JCI	Johnson Controls World Services Inc.
LAAO	Los Alamos Area Office (a branch of the Department of Energy)
LANL	Los Alamos National Laboratory
LASL	Los Alamos Scientific Laboratory
MCL	Maximum concentration level
MDA	Material disposal area
MDL	Minimum detection limit
MWDF	Mixed-Waste Disposal Facility (formerly Mixed-Waste Storage and Disposal Facility)
NDA	Nondetectable activity
NFA	No further action
NMED	New Mexico Environment Department
NOD	Notice of deficiency
NPDES	National pollutant discharge elimination system
OU	Operable unit
PAH	Polyaromatic hydrocarbon
PCB	Polychlorinated biphenyl
PRS	Potential release site
PVC	Polyvinyl chloride

INTRODUCTION

The Los Alamos National Laboratory (the Laboratory) Environmental Restoration (ER) Project has successfully investigated and recommended an additional 42 sites for no further action (NFA) within Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) work plans and RFI reports.

After reviewing RFI work plans and RFI reports submitted by the ER Project, the Environmental Protection Agency (EPA) has indicated that the Laboratory may request a Class 3 permit modification for removal of solid waste management units (SWMUs) from the Hazardous and Solid Waste Amendments (HSWA) Module of the Laboratory's RCRA Hazardous Waste Facility Permit. The removal of these 40 units is a result of both field and archival investigations as well as site cleanups performed by the Laboratory's ER Project.

This document contains the necessary information to support the request to the New Mexico Environment Department (NMED) for a Class 3 permit modification for removing from the HSWA Module the 40 SWMUs that received EPA concurrence for proposed removal. It also contains information to support the request to the NMED for a Class 1 permit modification to remove 2 SWMUs resulting from typographical errors.

Each SWMU proposed for NFA is separated by an indexed tab. The format is the same for each discussion and follows the NFA format agreed upon by the Laboratory, Sandia National Laboratories/New Mexico, the DOE, the NMED, and the EPA in the Document of Understanding. Section 1 is a brief Introduction followed by a description of the SWMU and the basis for NFA. The text for each SWMU was based on an RFI work plan or RFI report as applicable to that SWMU. In some instances the text was revised for clarity or when additional information was obtained since the work plan or report was written. Section 2 includes a summary of historical information. The evaluation of the relevant evidence for each SWMU is contained in Section 3. The amount of information in this section varies depending on the level of characterization and/or remediation performed. Section 4 summarizes the rationale for the NFA decision by stating the specific NFA criterion. The references for each SWMU are listed in Section 5, and those cited within the text are attached following each SWMU discussion. In order to avoid unnecessary duplication, attachments that are common to more than one SWMU are included in Appendix A. Appendix A attachments are clearly distinguished from those that are included within each SWMU discussion. For some attachments, the information applicable to support NFA has been highlighted to point the reader to the exact location that was referenced in the SWMU discussion. When only a small portion of a cumbersome document was applicable, only those pages have been included. Complete attachments are readily available upon request. Appendix B includes the Laboratory's requested modifications to Tables A, B, and C of the HSWA Module. The date of the permit modification request is indicated next to the number of the unit proposed for modification. Appendix C includes the Proposed Tables A, B, and C of the HSWA Module. These tables represent the Laboratory's HSWA Module upon final approval of all NFA requests to date. Records pertaining to this modification request are kept on file at the ER Project's Records-Processing Facility.

All SWMUs discussed in this permit modification have been characterized or remediated based on human health concerns. Although many of the SWMUs have no ecological concerns, for example duplicate SWMUs, each SWMU will be addressed for ecological risk concerns in a future report to be submitted to the administrative authority for review and approval.

The criteria for proposing no further action for potential release sites (PRSs) within the Laboratory's ER Project are listed below. The term PRS is used to collectively identify SWMUs listed in the Laboratory's HSWA Module and areas of concern (AOCs), which are not listed in the

NFA Criterion 4. There was a release, but the site was characterized and/or remediated under another authority which adequately addresses corrective action, and documentation, such as a closure letter, is available.

Examples/Explanations: For example, an underground storage tank for which certification of closure has been received from NMED may be requested for NFA. Another example would be a one-time spill that has been cleaned up in accordance with applicable standards, such as the Spill Prevention Control and Countermeasures (SPCC).

RCRA hazardous waste management units should not be considered under RCRA corrective action, because requirements under interim status or the Laboratory's RCRA operating permit adequately address releases from these units. Additionally, RCRA generator requirements adequately address proper management of less-than-90-day storage areas and satellite accumulation areas.

Temporary storage areas in use since 1980 (less-than-90-days and satellite storage areas) must operate according to 40 CFR 262, which requires that the units be routinely inspected. To avoid further consideration by the ER Project, engineering and management controls must be present. If the site was active prior to 1985 (internal Laboratory inspection checklist), and there is evidence that indicates a release has occurred prior to that date, the site may undergo corrective action under 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 that was active prior to the Clean Water Act may now be permitted under the NPDES program, but 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.

NFA Criterion 5. The PRS has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

Examples/Explanations: A site where an expedited cleanup or voluntary corrective action was performed in accordance with an approved plan would be a candidate for NFA. Following EPA's proposed Subpart S and RAGS guidance, determination that a contaminant is not present will be made by comparison with background data. Determinations of acceptable level of risk will be based on subsequent comparisons with SALs. Constituents exceeding SALs can be further evaluated in risk assessments based on projected future land use scenarios. If the contaminants present can be demonstrated to present an acceptable risk, the site is a candidate for NFA.

HSWA Module and are under the jurisdiction of the Department of Energy (DOE). The Laboratory uses the same NFA criteria for SWMUs and AOCs. Only those SWMUs listed in the Laboratory's HSWA Module are addressed in this document. The criteria stated in this document are those that were agreed upon in the Document of Understanding between the Laboratory, Sandia National Laboratories/New Mexico, the DOE, the NMED, and the EPA. The examples and explanations following each criteria are in the ER Project's No Further Action Criteria Policy (Project Consistency Team, 1210) and are used as guidance by the Laboratory's ER Project personnel in making NFA decisions.

NFA Criterion 1. The site cannot be located or has been found not to exist, is a duplicate PRS, or is located within and, therefore, investigated as part of another PRS.

Examples/Explanations: For purposes of the HSWA Module of the RCRA Hazardous Waste Facility Permit, units falling under Criterion 1 may have been mistakenly identified as SWMUs in an earlier study. For example, a SWMU was identified based on personnel interviews; however, field and archival investigations cannot substantiate its existence. In addition, a site mistakenly may have been assigned more than one PRS number. In this case, retain one number for investigation and propose the duplicate number(s) for NFA. Also, if one PRS is within the boundary of another and has similar contaminants, the contained site can be proposed for NFA, while the bounding site is being investigated.

NFA Criterion 2. The site has never been used for the management (that is, generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes and/or constituents, or other Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances.

Examples/Explanations: Any inadvertently identified unit (e.g., a product tank with no known releases) that did not manage waste would a be candidate for NFA.

NFA Criterion 3. No release to the environment has occurred, nor is likely to occur in the future.

Examples/Explanations: "Release" is defined as any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment.

Units falling under Criterion 3 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. For example, if a unit is completely contained within a building with no migration route to the environment, a visual inspection of the unit and examination of engineering drawings, if available, may be satisfactory for documentation of no release.

SWMU 3-002(a) — Container Storage Area

1.0 Introduction

SWMU 3-002(a) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-002(a) [Map 3-002(a)] is a less-than-ninety-day storage area located in the Sigma Building (TA-3-66) outside of room P-100. This storage area was established in conformance with 40 CFR 262, Standards Applicable to Generators of Hazardous Waste, which requires that this unit be routinely inspected. Generator storage sites are subject to inspection and closure requirement 40 CFR 265. SWMU 3-002(a) is managed under the RCRA generator requirements. Additionally, management of drums at less-than-ninety-day storage sites must comply with the Laboratory's Spill Prevention Control and Countermeasure Plan, which follows 40 CFR 112.

1.2 No Further Action Basis

SWMU 3-002(a) is recommended for NFA because it is managed under another authority which adequately addresses corrective action and documentation is available. The EPA and the Laboratory have agreed that less-than-ninety-day storage areas are SWMUs that need not be investigated provided that they have no history of release and have no credible pathways to the environment (Twombly 1992, 17-681) (Attachment A). SWMU 3-002(a) meets these criteria and is identified on the Laboratory list of satellite and less-than-ninety-day storage areas (McInroy 1992, 17-748) (Attachment B).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-002(a) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Storage unit used as a less-than-ninety-day storage area.

2.2 Previous Audits, Inspections, and Findings

Attachment A: DOE Letter LESH:6JM-013, Twombly 1992, 17-681.

Attachment B: LANL Memorandum EM-13:92-1087, McInroy 1992, 17-748.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

Reference

Project Consistency Team. "Project Consistency Team (PCT) Policy Memo Notebook," (Controlled), Environmental Restoration Project, Los Alamos National Laboratory, Los Alamos, New Mexico. (Project Consistency Team, 1210)

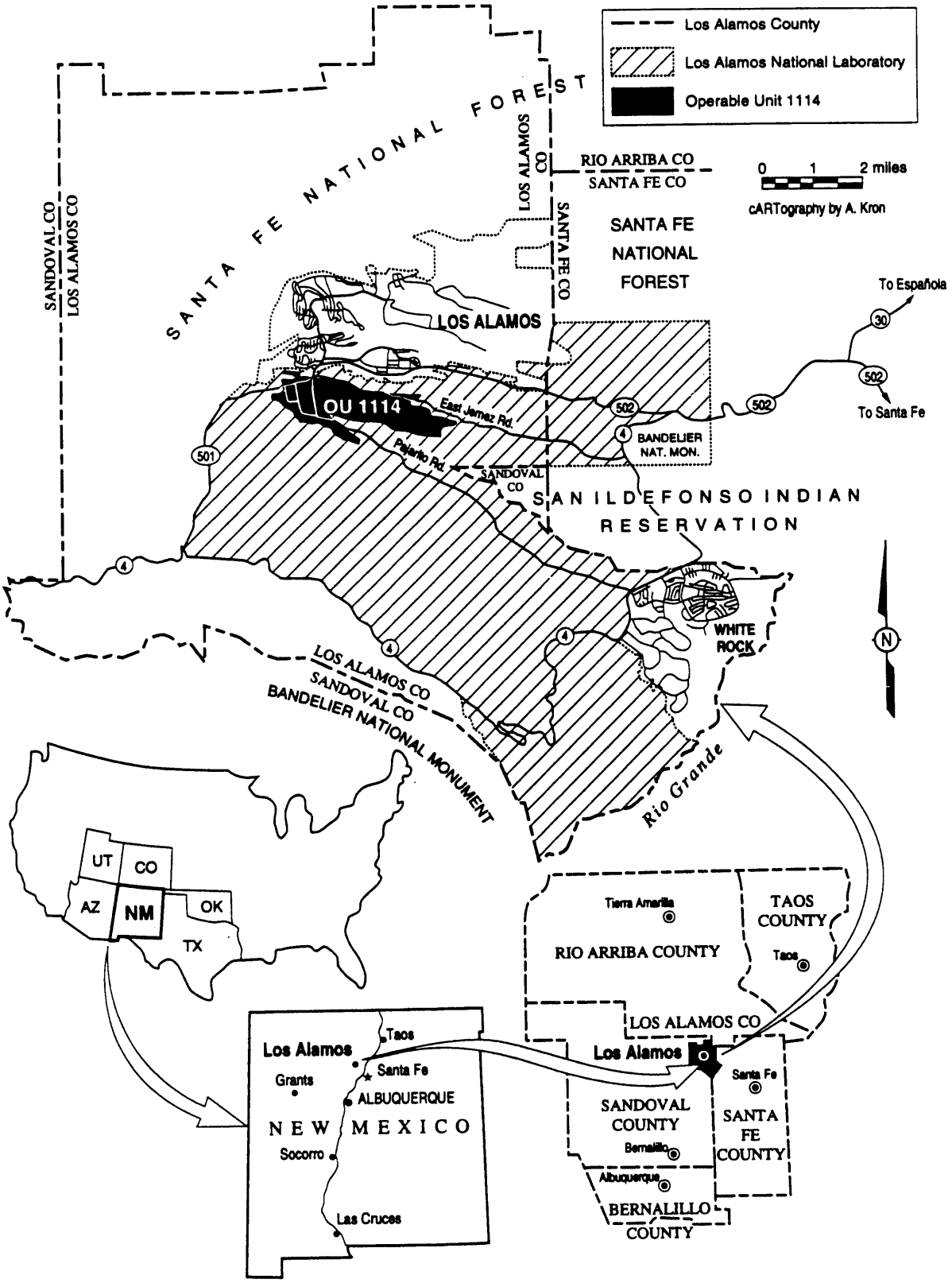


Fig. 1-1. Location of Operable Unit 1114.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Section 1.0, SWMU 3-002(a) is recommended for NFA under Criterion 4.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-73, 6-75. (LANL 1995, 1291)

McInroy, D., October 7, 1992. "Information Needed for Permit Modification," Los Alamos National Laboratory Memorandum EM-13:92-1087 to Distribution from Dave McInroy, Programmatic Project Leader (EM-13), Los Alamos, New Mexico. (McInroy 1992, 17-748)

Twombly, K. J., July 13, 1992. "Satellite and <90 day storage will be removed from SWMU list," Department of Energy letter LESH:6JM-013 to David Neliegh, Chief RCRA Permits Section from Karl Twombly, Chief ES&H, DOE, Los Alamos, New Mexico. (Twombly 1992, 17-681)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

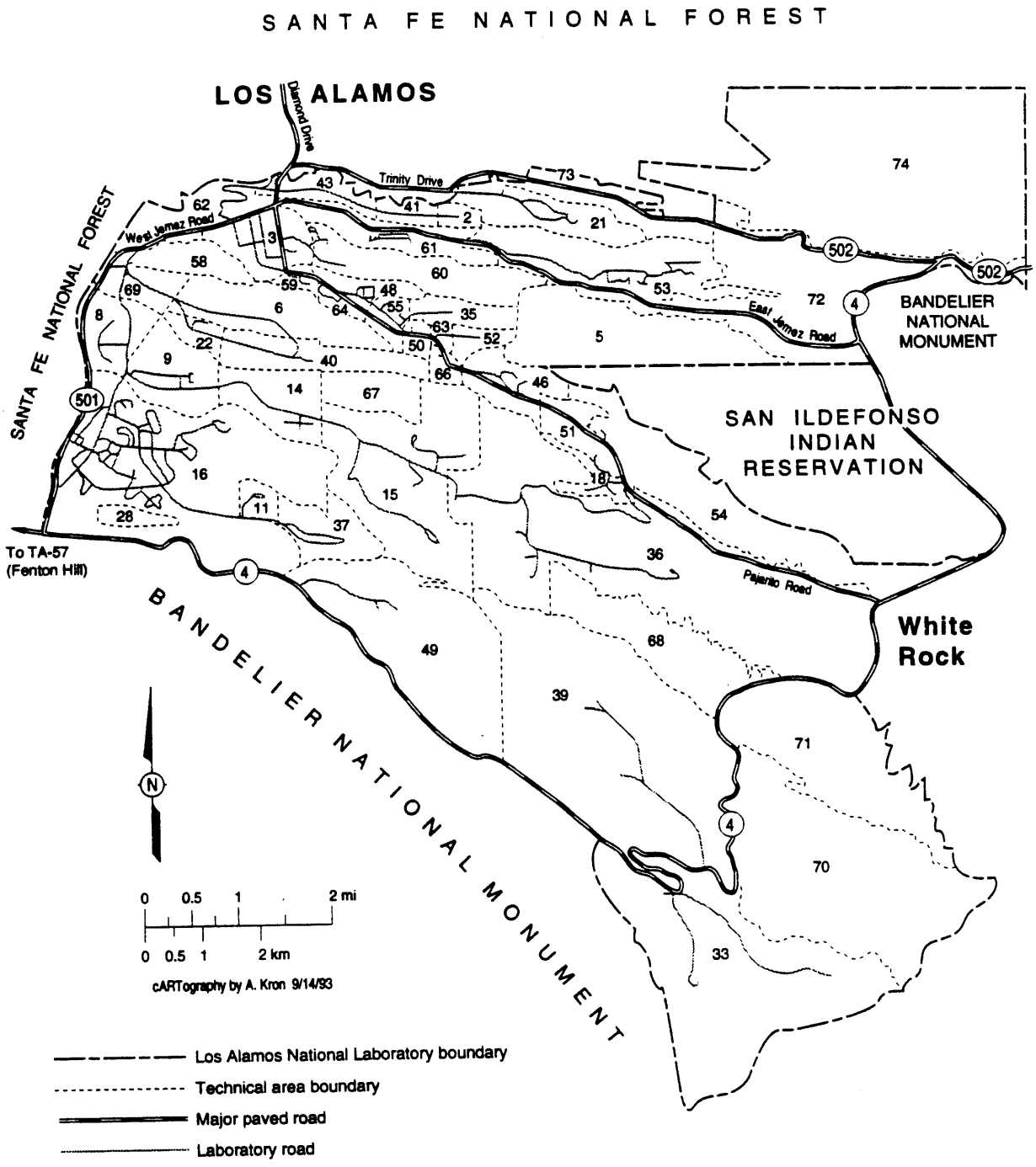
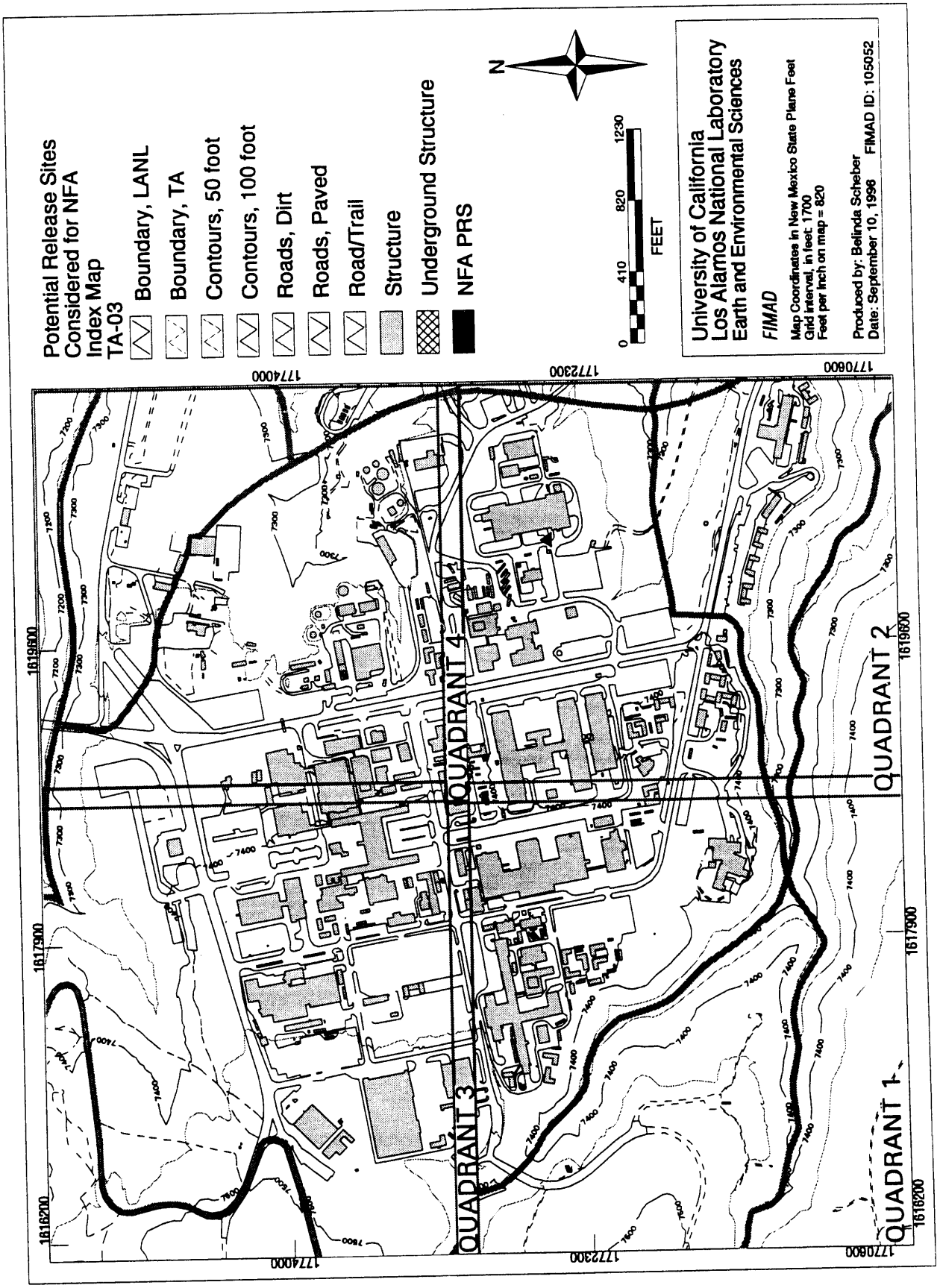
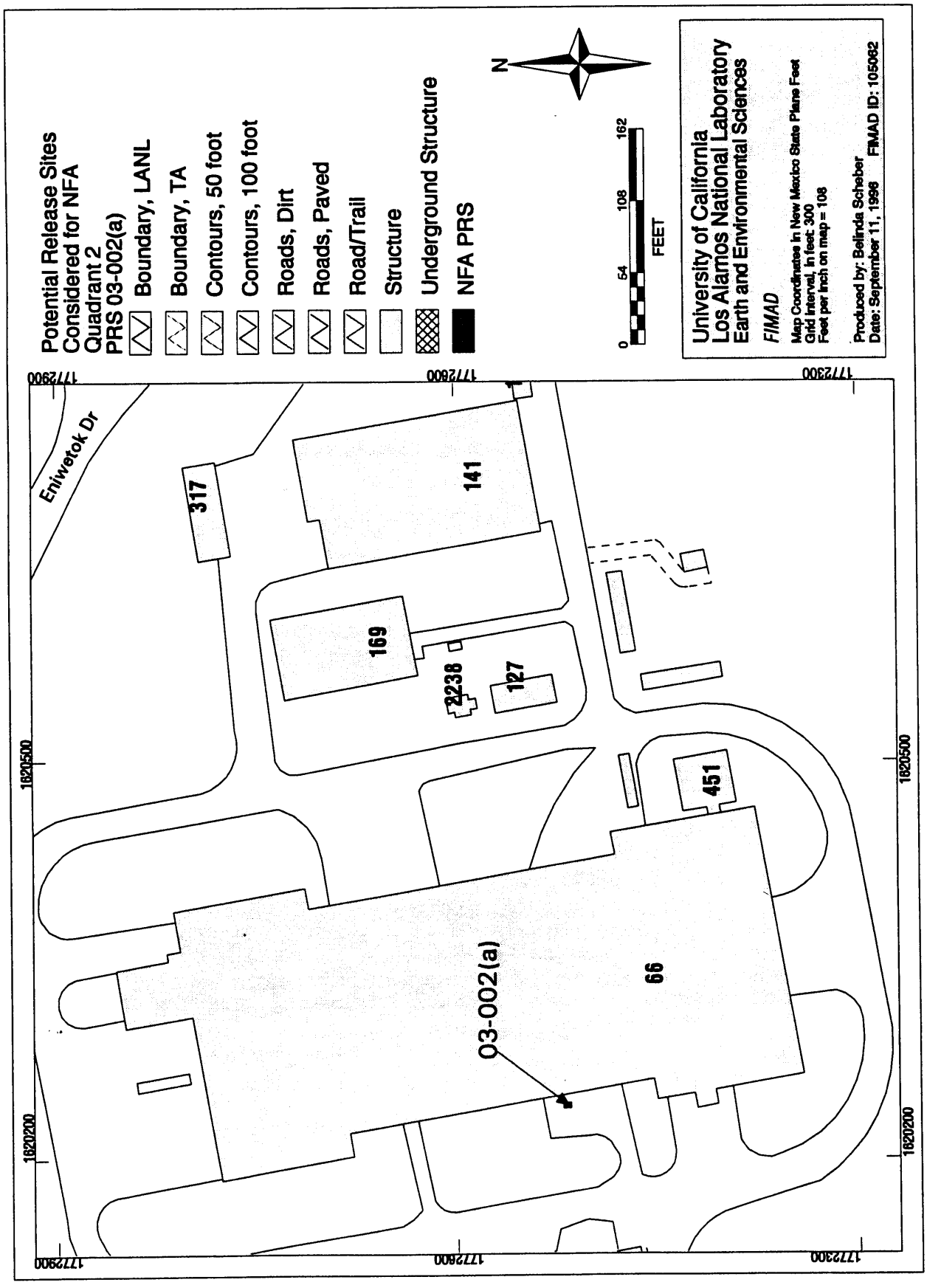


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-002(a)

6.3 Other Survey/Investigation Data

Section not applicable.

3-002(a)

ATTACHMENTS

Attachment A

46-000205

Department of Energy
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

JUL 13 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. David Neliegh, Chief
Resource Conservation and Recovery Act Permits Section
Hazardous Waste Management Division
Environmental Protection Agency, Region 6
First Interstate Bank Tower
1445 Ross Avenue
Dallas, TX 75202

Dear Mr. Neliegh:

The purpose of this letter is to confirm in writing an understanding that was made with your office and representatives of the Department of Energy, Los Alamos Area Office, and the Los Alamos National Laboratory (Laboratory). At a meeting with you, Mr. Steve Slaten, and Mr. David McInroy, in Dallas on February 27, 1992, the Environmental Protection Agency, and the Laboratory agreed that satellite and less-than-ninety-day hazardous waste accumulation areas need not be reported to your office as solid waste management units (SWMUs). This was further discussed by you and Mr. McInroy by telephone on April 8, 1992. The rationale for this agreement or interpretation of the Hazardous and Solid Waste Amendments (HSWA) portion of the Laboratory's Hazardous Waste Facility Permit was based on the following:

1) The Laboratory currently has over 700 of these types of units and it is not uncommon to have several new units a month set up and added to this list.

2) These are active units that are currently regulated under 40 CFR *Part 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 also performs annual inspections on these types of units.

3) 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 Resource Conservation and Recovery Act (RCRA) and not 3004(u) (HSWA).

Received by ER-IAPP
AUG 0 8 1994

This joint decision was made to avoid dual regulation of these units. For these reasons many of these units, which have already been included in the Laboratory's SWMU report will be listed for No Further Action (NFA) in the RCRA Facility Investigations.

If you are not in agreement with this interpretation of your conversations with Mr. Slaten and Mr. McInroy, or if you have any questions or need additional information, please contact Mr. Steve Slaten of my staff. He can be reached at (505) 665-9050.

Thank you for your cooperation in dealing with this matter.

Sincerely,

Karl J. Twombly, Chief
Environment, Safety & Health
Branch

LESH:6JM-013

cc:
Benito Garcia
New Mexico Environment Dept.
525 Camino de Los Marquez
Santa Fe, NM 87502
Allen Tiedman, ADO, LANL,
MS A120
Thomas Gunderson, EM-DO, LANL,
MS K491
Ken Hargis, (EM-8:92-1162-1),
EM-8, LANL, MS K490
David McInroy, EM-8, LANL,
MS K490
Robert Vocke, EM-13, LANL,
MS M992

Attachment B

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

(26)

memorandum

TO: Distribution — DATE: October 7, 1992

THRU: Robert Vocke, Group Leader — MAIL STOP/TELEPHONE: M992/7-0819

FROM: Dave McInroy, Programmatic Project Leader — SYMBOL: EM-13:92-1087

SUBJECT: **INFORMATION NEEDED FOR PERMIT MODIFICATION**

It has been decided that the information that was requested from the Operable Unit Project Leaders pertaining to the permit modification, needs to be submitted to the EM-13 Group Office no later than **October 16, 1992**. It is necessary to have such short turn around time in order to meet the October 31, 1992, submittal deadline to the Environmental Protection Agency. This information should be provided on a hard copy and preferably as an Excel file (if available); if Excel is used, please also provide a diskette copy (PC or Macintosh format is acceptable).

Enclosed please find flow charts that are intended to make your decision processes easier. Also, enclosed are lists of all RCRA Units. These lists are referenced in the flow charts and should help you conclude what units go into the RCRA column

Your cooperation in dealing with this request is greatly appreciated. Should you have any questions feel free to contact me at 7-0819.

DM:RV:amj

Enclosures: Flow Charts

Distribution:
J. Aldrich, EES-1, MSD462
R. Conrad, EM-8, MSK490
G. Eller, INC-9, MS J534
T. Glaztmaier, EES-5, MS M992
G. Gould, MEE-4, MS G787
C. Martell, CLS-1, MS E525
D. McInroy, EM-13, MS M992
E. Kelly, EM-13, MS M994
T. Norris, EM-13, MS M992
A. Pratt, EES-13, MS J521
E. Springer, EES-13, MS J521
M. Ray, EM-13, MS M707

G. Allen, CLS-6, MS E525
K. Bowler, CLS-1, MS E525
B. Gilkeson, WESTON, MS M992
E. Griggs, CLS-DO, MS E525
L. Maassen, EM-13, MS M992
B. Martin, CLS-DO, MS E525
R. Michelotti, CLS-6, MS E525
C. Newton, EES-3, MS C335
A. Ogard, INC-7, MS J514
C. Rofer, EES-1, MS D462
I. Triay, INC-11, MS J514
P. Longmire, INC-4, MS C346

Cy: L. Soholt, EM-13, MS M992
RPF, MS M707

P. Aamodt, EM-13, MS M992

Received by LANL
OCT 08 1992

Attachment B

09/07/92

SATELLITE and LESS THAN 90 DAY STORAGE

	BLDG	LOC	OPERATION TYPE	FACILITY TYPE	STATUS	INSPECTIONS	CONTACT
3	66	LOCATION ONE	CONTAINER	SATELLITE	ACTIVE	NONE	DAVID PHILLIPS/GERALD
3	66	OUTSIDE P100 AREA ←	CONTAINER	LESS 90 DAY	ACTIVE	DAILY/WEEKLY	JOANN MONTOYA
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	BOB AIKEN
3	66	WEST END OF ROOM	CONTAINER	SATELLITE	ACTIVE	NONE	W.S. GIBBS
3	66		CONTAINER	SATELLITE	INACTIVE	NONE	GARY CARTER
3	66		CONTAINER	SATELLITE	INACTIVE	NONE	CHARLES HOSFORD
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	DON MARTS, ROBERT REIS
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	HORACE CRANE
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	MELISSA LEWIS
3	66	N/A	CONTAINER	SATELLITE	ACTIVE	NONE	CHARLIE BACA
3	66	EAST WALL BY ROLL/SHOP 19	CONTAINER	SATELLITE	ACTIVE	NONE	JOE MITCHELL (RM M1
3	66	BASEMENT	CONTAINER	SATELLITE	REMOVED	NONE	RODGER BLAKE
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	DAVE PHILLIPS
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	J. PETROVIC
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	ERALIO TRUJILLO
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	JOHN KOSTACOPOULOS
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	RICHARD BRAMLETT
3	66		CONTAINER	SATELLITE	REMOVED	NONE	CHARLIE BACA
3	66	SOUTH WALL BY OFFICE	CONTAINER	SATELLITE	REMOVED	NONE	CHARLIE BACA
3	66	BASEMENT	CONTAINER	SATELLITE	INACTIVE	NONE	MARCIAL LUJAN
3	66		CONTAINER	SATELLITE	INACTIVE	NONE	MARCIAL LUJAN
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	MELISSA LEWIS
3	66		CONTAINER	SATELLITE	ACTIVE	NONE	PAUL DUNN
3	70	PAD SE OF BLDG. 70	CONTAINER	SATELLITE	ACTIVE	WEEKLY ONLY	LLOYD COLE
	70	SMALL MACHINES SHOP	CONTAINER	SATELLITE	REMOVED	NONE	LLOYD COLE
3	102	SOUTH END OF LH-39	CONTAINER	SATELLITE	ACTIVE	NONE	ELUTERIO GARCIA
3	102	CORNER OF LIH SHOP	CONTAINER	LESS 90 DAY	ACTIVE	WEEKLY ONLY	ROBERT HAYES
3	102	EAST WALL RM 125	CONTAINER	SATELLITE	REMOVED	NONE	MARTIN MARTINEZ
3	102	OUTSIDE UNDER ROOF	CONTAINER	SATELLITE	REMOVED	NONE	ROBERT W. HAYES
3	102	MAIN SHOP AREA/OUT OFFICE	CONTAINER	SATELLITE	ACTIVE	NONE	ROBERT HAYES
3	102	WEST END of shop 7	CONTAINER	SATELLITE	ACTIVE	NONE	DON GEERING
3	105	BASEMENT L LEVEL SW	CONTAINER	SATELLITE	ACTIVE	NONE	WILLIAM HINCKLEY
3	105		CONTAINER	LESS 90 DAY	REMOVED	DAILY/WEEKLY	NICK SALAZAR
3	132		CONTAINER	SATELLITE	INACTIVE	NONE	STEPHEN B. DUNAGAN
3	132		CONTAINER	LESS 90 DAY	ACTIVE	DAILY/WEEKLY	STEPHEN B. DUNAGAN
3	132		CONTAINER	SATELLITE	INACTIVE	NONE	STEPHEN B. DUNAGAN
3	141		CONTAINER	SATELLITE	ACTIVE	NONE	GERALD J. VOGT
3	141	NORTH DOCK	CONTAINER	SATELLITE	ACTIVE	NONE	VICTOR VARGAS
3	141		CONTAINER	SATELLITE	ACTIVE	NONE	HAROLD DAVIS
3	141		CONTAINER	SATELLITE	INACTIVE	NONE	HAROLD DAVIS
3	170		CONTAINER	SATELLITE	ACTIVE	NONE	JOHNNY LOVATO
3	215		CONTAINER	SATELLITE	ACTIVE	NONE	GREG COLE
3	216		CONTAINER	SATELLITE	ACTIVE	NONE	JERFFREY M. BRADLEY
3	216		CONTAINER	SATELLITE	ACTIVE	NONE	LARRY MITCHELL
3	223	LINE SHOP UPSTAIRS	CONTAINER	SATELLITE	ACTIVE	NONE	JERRY LYNCH
3	287	S.E. NEAR EXIT DOOR	CONTAINER	SATELLITE	REMOVED	NONE	PETE PAZUCHANICS
3	287	SOUTH SIDE	CONTAINER	LESS 90 DAY	REMOVED	DAILY/WEEKLY	MIKE HARVEY
3	316	S SH316 OUT/IN STORA	CONTAINER	SATELLITE	ACTIVE	NONE	BILL WAGEANARR
3	379	LEAD SHACK,NE 38	CONTAINER	LESS 90 DAY	ACTIVE	DAILY/WEEKLY	KELSIE DOSMIER

SWMU 3-002(d) — Container Storage Area

1.0 Introduction

SWMU 3-002(d) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-002(d) [Map 3-002(d)] is a drum storage area in the parking lot southeast of TA-3-40, the Physics Building. The entire parking lot, including the corner where the drums were reported to have been stored, is now completely covered with asphalt. Discussions with the former facility manager revealed that the drums contained waste dielectric mineral oil used inside electrical power supply units (Watanabe 1994, 17-1152) (Attachment A). The power supplies contained non-PCB mineral oil. The site worker does not recall any leakage or spills of mineral oil from the drums (Watanabe 1994, 17-1152) (Attachment A). Drums containing waste dielectric mineral oil were located in this storage area between 1982 and 1986. In 1986 when the experimental requirements of the associated laboratories changed, the drums were removed (Attachment B).

1.2 No Further Action Basis

SWMU 3-002(d) is recommended for NFA because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. An interview with the former facility manager clearly indicated that the drums stored in the area contained waste dielectric mineral oil, a non-PCB mineral oil not regulated under RCRA. (Attachment B). In addition, there is no history of releases from the drums and no obvious stains on the asphalt to suggest historical releases.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-002(d) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Storage unit used as a product storage area with no history of systematic releases to the environment.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Memorandum CST-ER SPW 94-06, Watanabe 1994.

Attachment B: LANL Weston Field Logbook, page 50 and photographs, September 1989.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

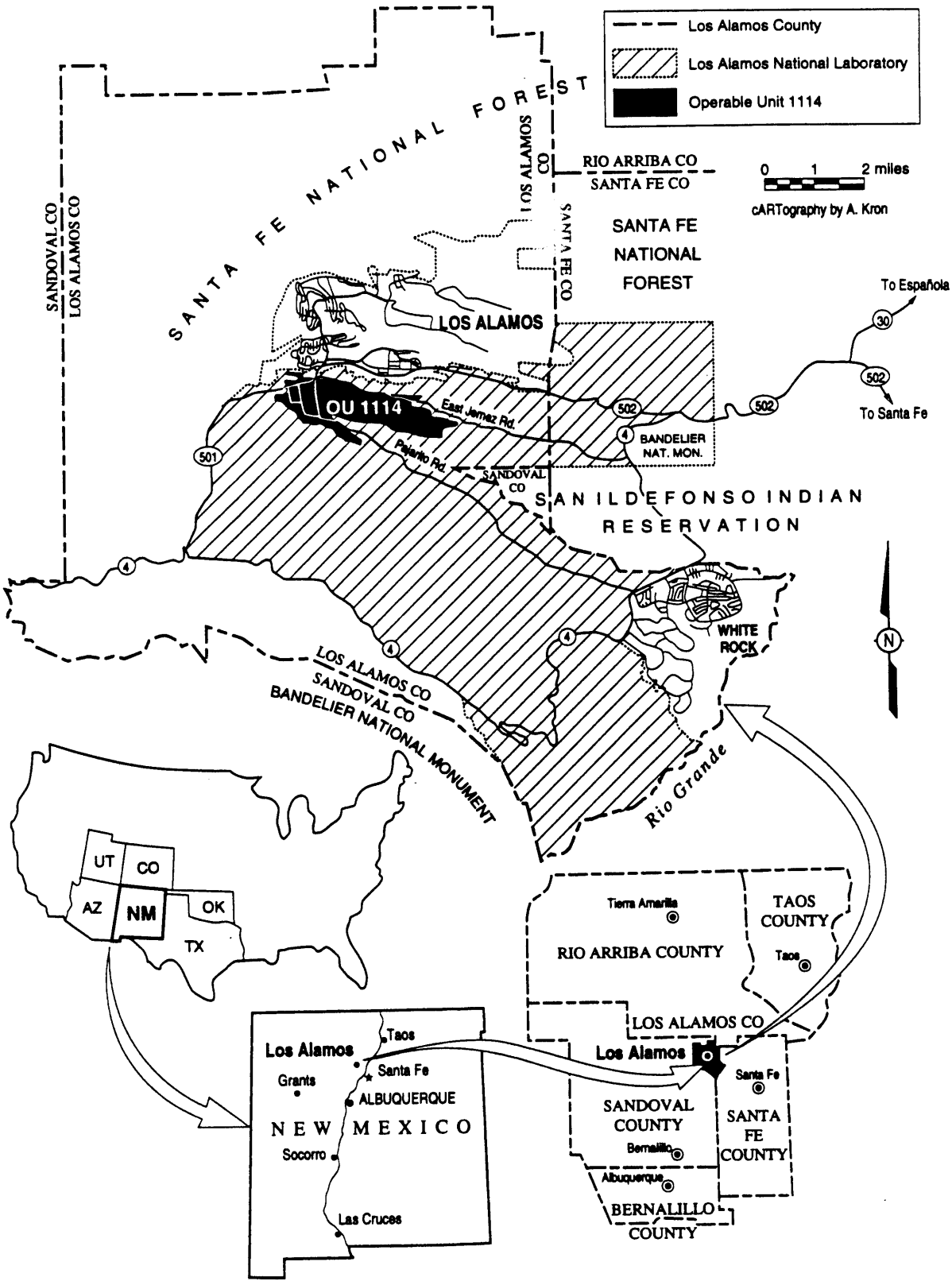


Fig. 1-1. Location of Operable Unit 1114.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, 3-002(d) is recommended for NFA under Criterion 2.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, September 1989. "Logbook and photos of TA-3 and TA-59 documented by Mike McVey of Weston, September 1989," Field Logbook, Los Alamos, New Mexico, page 50.

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-45 through 6-46. (LANL 1995, 1291)

Watanabe, S., September 6, 1994. "Interview with Roy Gallegos by Ed Griggs, SWMU 3-002(d)," Los Alamos National Laboratory Memorandum CST-ER SPW 94-06 to File from S. Watanabe (CST-6), Los Alamos, New Mexico.

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

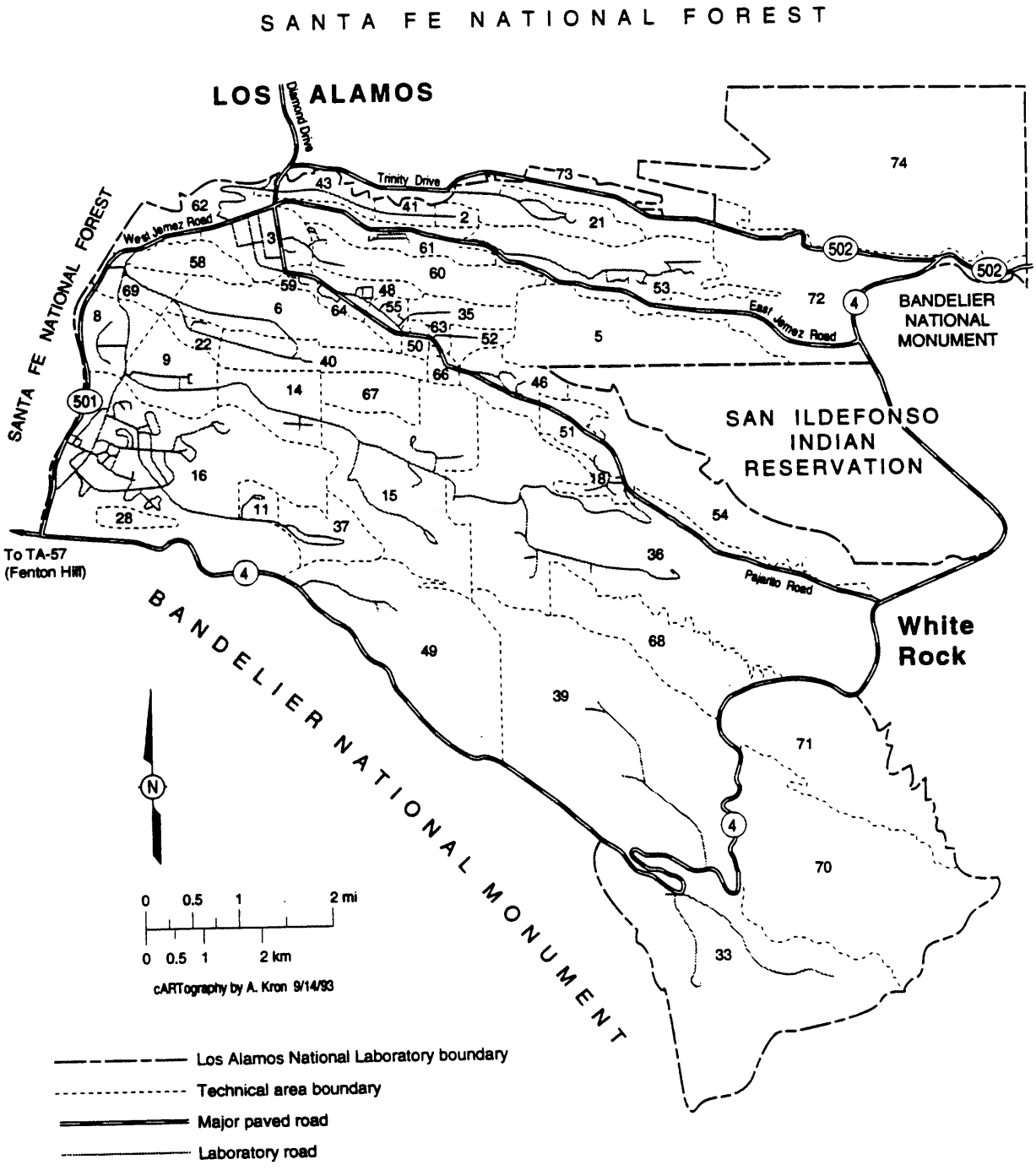
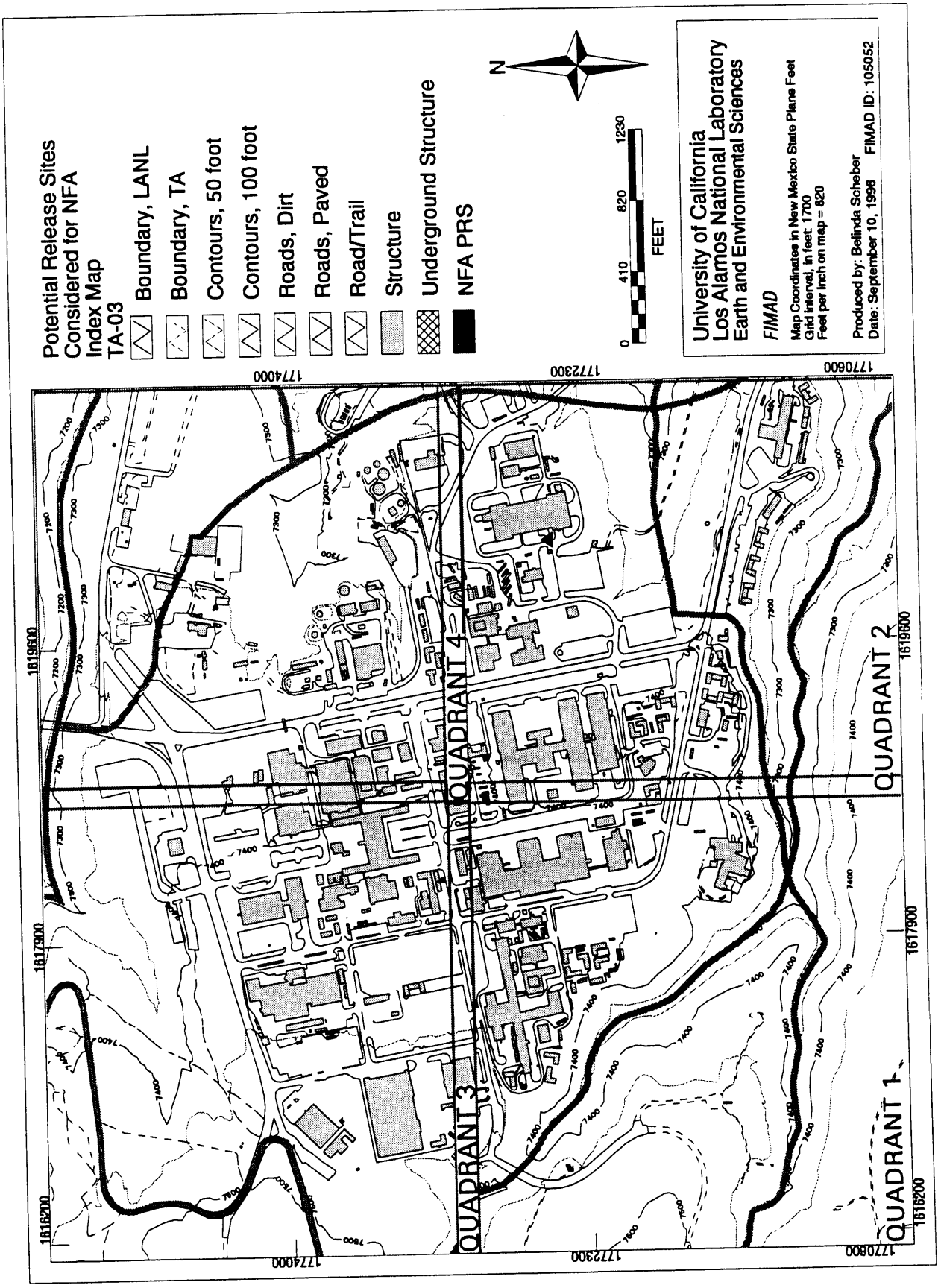
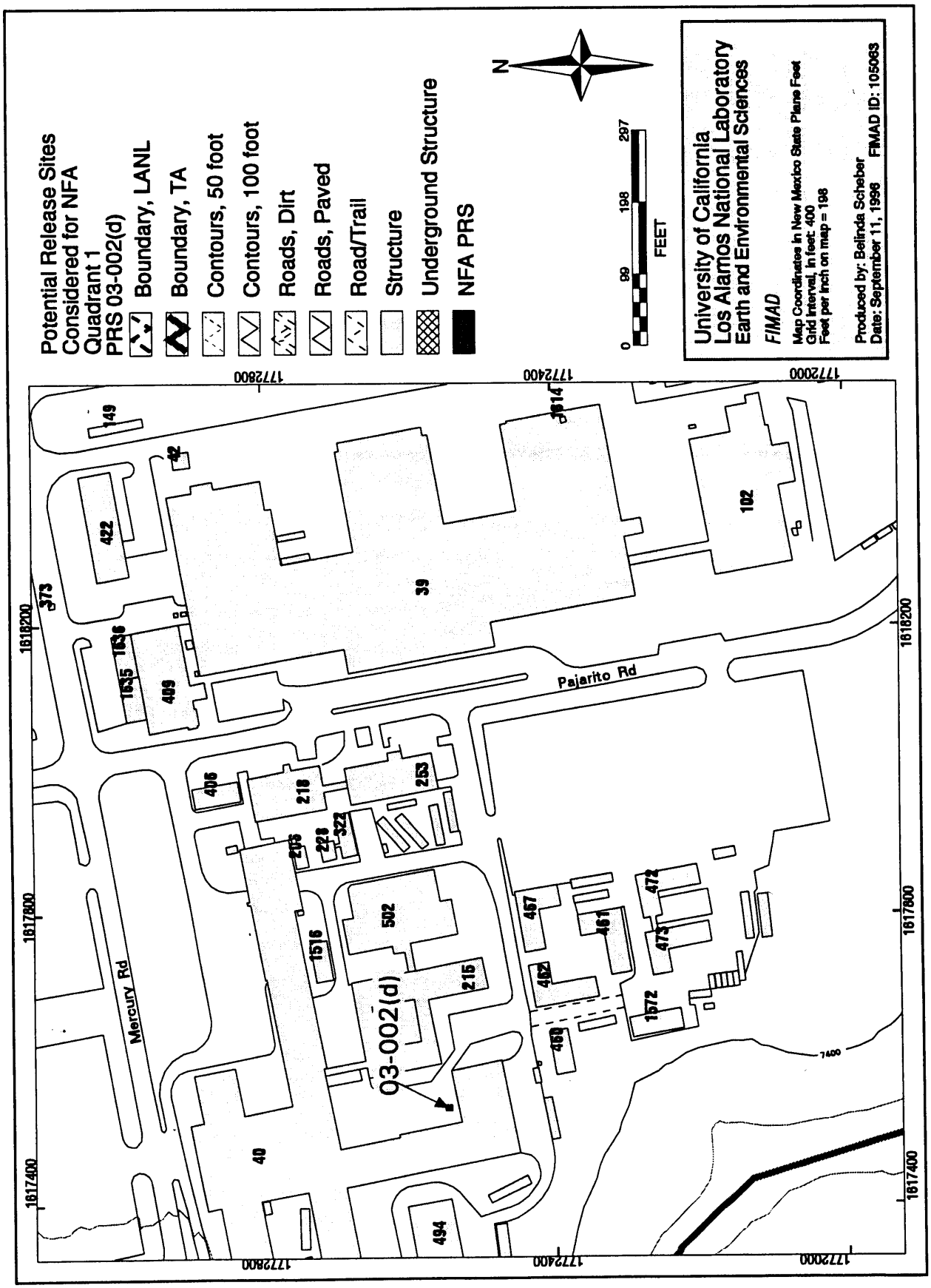


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-002(d)

6.3 Other Survey/Investigation Data

Section not applicable.

3-002(d)

ATTACHMENTS

Attachment A

3-001152

Los Alamos
NATIONAL LABORATORY
memorandum

Chemical Science and Technology
Responsible Chemistry for America
Environmental Restoration Program/CST-6
Los Alamos, New Mexico 87545

To/MS: File
From/MS: Steven P Watanabe, E525 SW
Phone/FAX: 5-8843/5-4632
Symbol: CST-ER SPW 94-06
Date: 9/6/94

Interview with Roy Gallegos by Ed Griggs, SWMU 3-002(d)

Discussions with Roy Gallegos, who worked in the laboratories near the drum storage area, revealed that the drums contained dielectric mineral oil used inside electrical power supply units. The power supplies did not contain PCBs, only mineral oil. Gallegos does not remember any spillage or leaking mineral oil from drums. After the experimental requirements of the associated laboratories changed, the drums were removed.

Distribution:
OU 1114 Archives

Attachment B

Photo # 313

- location where old scrubber from PWB shop was stored after removal from PWB shop
- Sat out uncovered ~ 6-7 months
- chems. were washed off of the equipment from rain, etc. and washed onto asphalt

---

Photo # 314

- S. of SM-40
- old drum storage area, capacitors (PCB)
- stored here on and off for whole time Roy has been here (10 yrs) up until ~1987.
- oil drums
- spills were present

Photo # 315

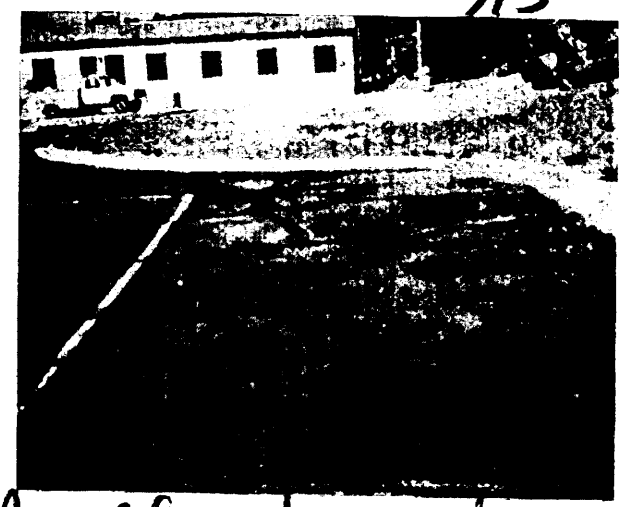
- old drum storage area
- S. wing, E side of SM-40
- drums of used oil
- stored here ~ 5-6 yrs
- removed ~ 1986

Attachment B

312

Tank connected to sump on North Wing of SM-40 V=NE

313



Area of former storage on N. wing of SM-40 V=W

314

Area of former drum storage, capacitors S of SM-40 V=W

315

Area of former drum storage area on E side of SM-40 V=W

SWMU 3-009(i) — Surface Disposal Site

1.0 Introduction

SWMU 3-009(i) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-009(I) [Map 3-009(i)] is a debris area located east of the Liquid and Compressed Gas Facility, TA-3-170. The SWMU Report states that the area contains concrete, asphalt, electrical cable, metal, vitrified clay pipe, and a large mound of soil (LANL 1990, 0145) (Attachment A). According to an official from Johnson Controls Environmental, the debris pile is residue from modifications and reconstruction of buildings in the immediate vicinity of building TA-3-170, and contains only non-contaminated materials such as tuff, concrete, rock, and other construction-related items (Griggs 1993, 17-841) (Attachment B). Use of this debris site discontinued in 1980 (Chacon 1995, 17-1258) (Attachment C).

1.2 No Further Action Basis

SWMU 3-009(i) is recommended for NFA because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. A memorandum from Johnson Controls Environmental clearly indicated that the unit managed only construction debris (Griggs 1993, 17-841) (Attachment B).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-009(i) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Building construction.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-009.

Attachment B: LANL Memorandum CLS-ER/EG-93:061, Griggs 1993.

Attachment C: LANL Personal communication, Chacon 1995, 17-1258.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-009(i) is recommended for NFA under Criterion 2.

5.0 References

Chacon, C., June 29, 1995. Personal communication (Electronic Mail transmittal) from Carlos Chacon, JCI, Inc., pertaining to storage area at compressed gas processing facility, SWMU 3-047(h) and debris area from Liquid and Compressed Gas Facility, SWMU 3-009(i), Los Alamos National Laboratory, Los Alamos, New Mexico. (Chacon 1995, 17-1258)

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Griggs, E., June 2, 1993. "Debris Piles East of TA-3-170 and Northwest of TA-3-142," Los Alamos National Laboratory Memorandum CLS-ER/EG-93:061 to M. Bailey (JCI/JENV) from E. Griggs (CLS-DO), Los Alamos, New Mexico. (Griggs 1993, 17-841)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-3 through 6-4. (LANL 1995, 1291)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-009. (LANL 1990, 0145)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

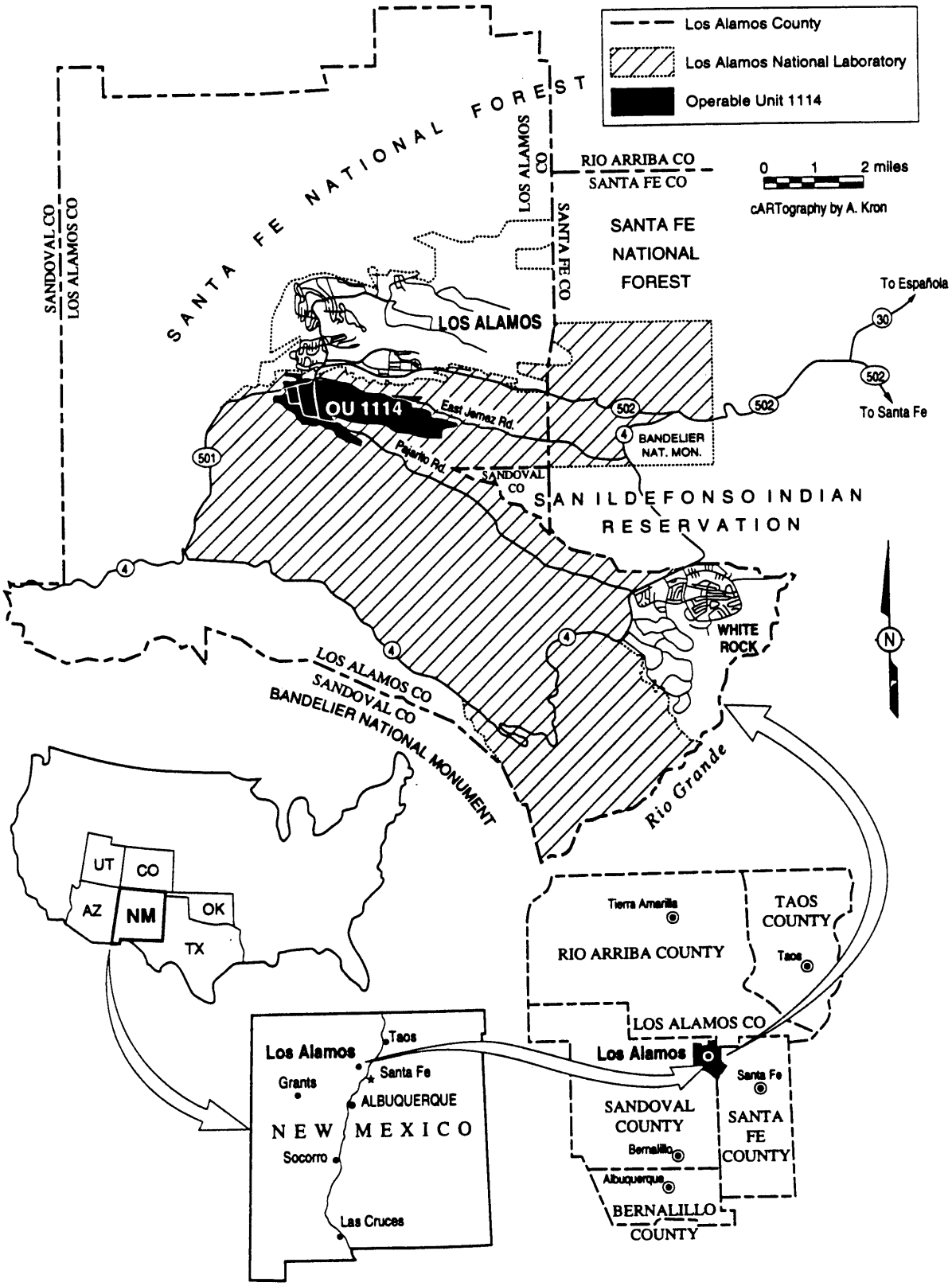


Fig. 1-1. Location of Operable Unit 1114.

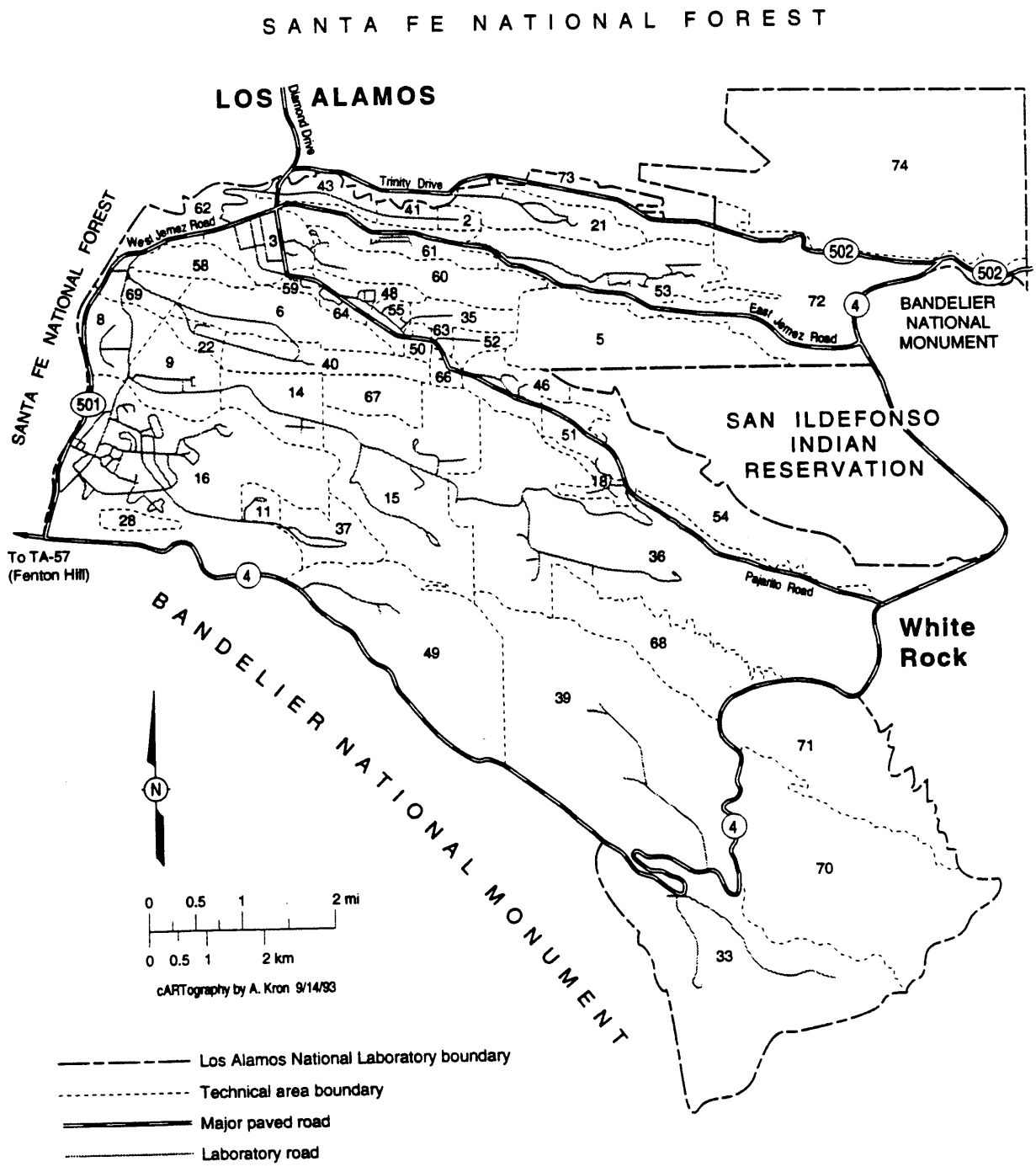
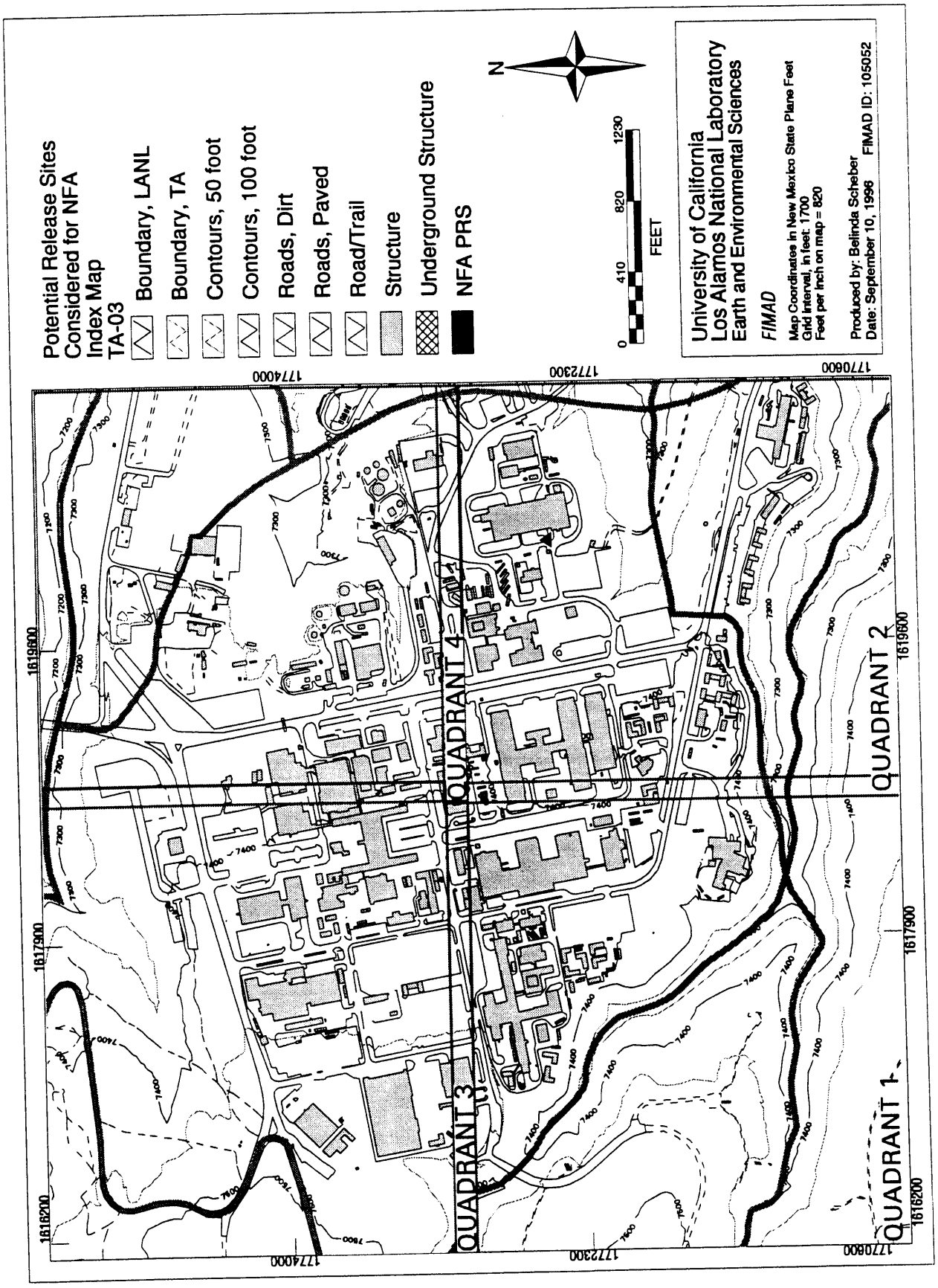
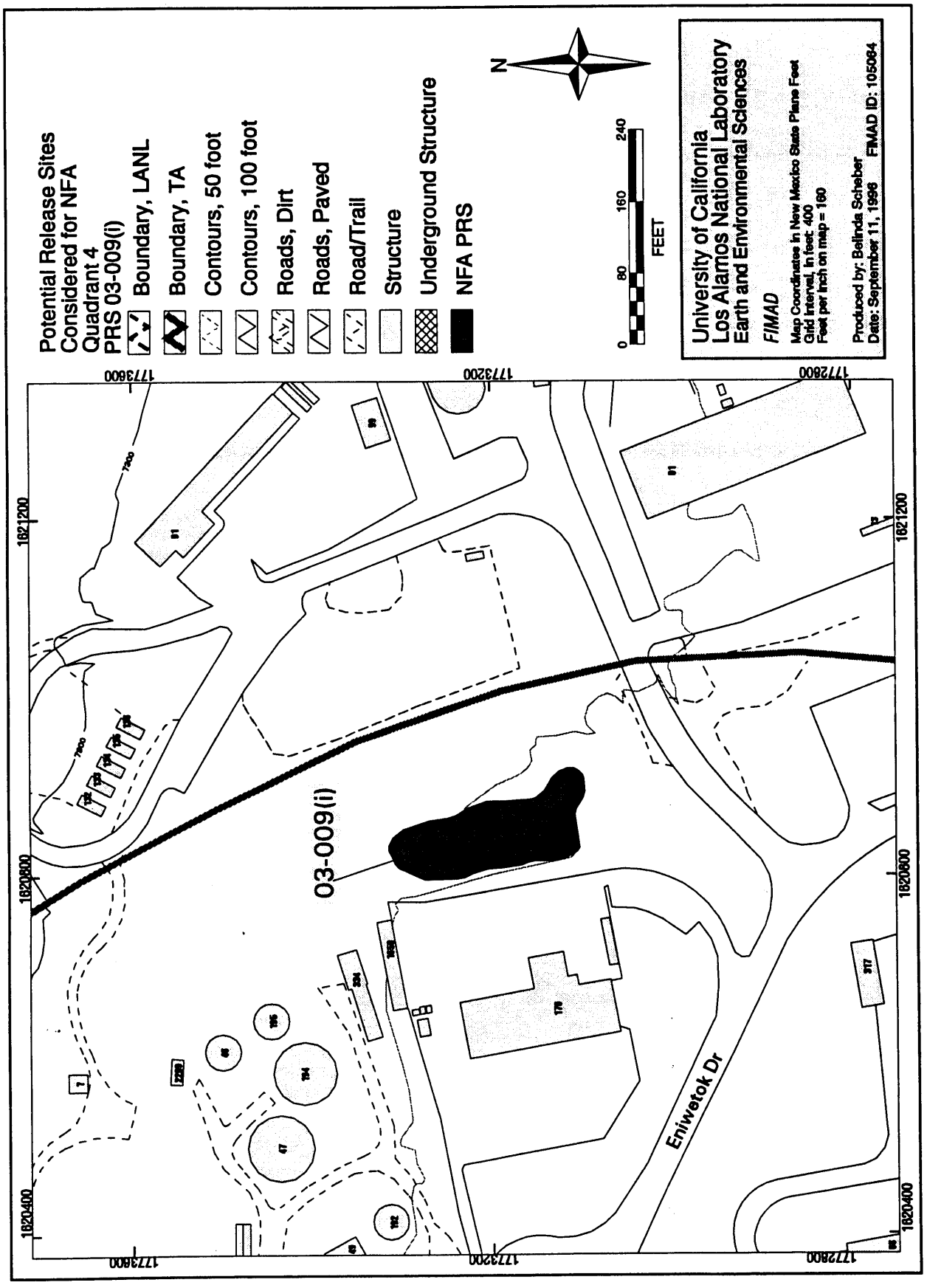


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-009(i)

6.3 Other Survey/Investigation Data

Section not applicable.

3-009(i)

ATTACHMENTS

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : SURFACE DISPOSAL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : INACTIVE
PERIOD OF USE : ?
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : SOLID WASTE
SUSPECTED HAZARDOUS WASTE

UNIT INFORMATION

3-009(a) Concrete, building material and approximately 20 feet of asbestos-coated pipe were disposed of in an estimated 30' x 300' area on the north rim of Sandia Canyon south of TA-3-70 and -271. A soil disturbance is also visible upcanyon, near the asphalt plant TA-3-73. It appeared to consist mainly of soil fill with minor amounts of concrete.

3-009(b) Concrete and building debris are located in an approximately 1/2 acre fill area adjacent to the South Mesa fire station (TA-3-41). The debris may be decommissioned buildings from the former TA-3.

3-009(c) A disturbed area has been noted south of TA-3-66, and concrete and building debris are visible.

3-009(d) A building fill area is located along the north rim of Two-Mile Canyon between TA-3-40 and TA-3-16.

3-009(e) A soil fill area is located in Upper Mortandad Canyon, southeast of TA-3-29.

3-009(f) There have been reports of a landfill north of TA-3-16.

3-009(g) A large soil fill area is located south of Two-Mile Canyon Bridge.

3-009(h) Asphalt piles are located near the salvage yard and on Sigma Mesa. Also on Sigma Mesa there is concrete debris near the test rack.

3-009(i) A debris area is located east of TA-3-170; concrete, asphalt, electrical cable, metal, VCP and large mound of soil were visible.

3-009(j) A soil fill area is reported to be located west of TA-3-142. An old water tank, pieces of wire, and assorted debris are reported to comprise the fill material.

WASTE INFORMATION

The fill areas appear to contain fill and building debris.

RELEASE INFORMATION

It is unknown whether a hazardous release has occurred.

NOTES

Asphalt piles near TA-3-381, part of 3-009(h), are now in TA-60. See 60-002.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-009(a)	TA3-10-OL/L-A/I-HW		Tsk 19 : 65 66	TA-3-70, -73, -271
3-009(b)	**		Tsk 21 : 1160 1173 1193	NEAR TA-3-41
3-009(c)	**		Tsk 20 : 56	SOUTH OF TA-3-66
3-009(d)	TA3-10-OL/L-A/I-HW		Tsk 21 : 1190	NEAR TA-3-40, -16
3-009(e)	**		Tsk 20 : 55	SOUTHEAST OF TA-3-29
3-009(f)	TA3-10-OL/L-A/I-HW		Tsk 21 : 1191	NORTH OF TA-3-16
3-009(g)	TA3-10-OL/L-A/I-HW		Tsk 21 : 1189	TWO-MILE CANYON
3-009(h)	**			NEAR SALVAGE YARD, SIGMA MESA
3-009(i)	**		Tsk 20 : 60	EAST OF TA-3-170
3-009(j)	**		Tsk 21 : 1192	WEST OF TA-3-142

** No corresponding E. R. Program unit.

Attachment B

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Michael Bailey, JCI/JENV, A199/M6B DATE: June 2, 1993

FROM: Ed Griggs, CLS-DO EG MAIL STOP/TELEPHONE: E525/7-5544

SYMBOL: CLS-ER/EG-93:061

SUBJECT: **DEBRIS PILES EAST OF TA-3-170 AND NORTHWEST OF TA-3-142**

Per our conversation concerning the debris pile, SWMU 3-009(i), east of TA-3-170, it is believed that the material in the large debris pile is from past construction projects in the TA-3 area and, to the best of your knowledge, that it contains only non-contaminated materials such as tuff, concrete, rock, and other construction related items.

Also discussed was the debris pile, SWMU 3-009(j), northwest of TA-3-142. This area has been paved over and is currently used as a parking lot for TA-3-142 and TA-3-1663. It is believed that this area also contains only non-contaminated materials such as tuff, concrete, rock, and other construction related items.

If you agree with this information, please initial this memorandum next to your name and return it to me for my archives to be used in the development of the RCRA Facility Investigation Work Plan for the solid waste management units (SWMUs) located in TA-3.

Thank you.

Cy: Griggs ER File

Carlos Chacon,11:18 AM 6/29/9...,Info on SM-170

X-UIDL: 804458001.002
MR-Received: by mta TRTUGA; Relayed; Thu, 29 Jun 1995 14:13:37 -0600
Alternate-recipient: prohibited
Date: Thu, 29 Jun 1995 11:18:57 -0600 (MDT)
From: Carlos Chacon <CHACON_CARLOS_E@canyon.Lanl.GOV>
Subject: Info on SM-170
To: Melissa Jackson <mrj@Lanl.GOV>
Cc: Johnny Lovato <LOVATO_JOHNNY_A_D@canyon.Lanl.GOV>
MIME-version: 1.0
Posting-date: Thu, 29 Jun 1995 14:13:00 -0600 (MDT)
Importance: normal
Priority: normal
UA-content-id: E23ZVVEKBW8E
Al-type: MAIL
Hop-count: 1

The Compressed Gas Processing Facility yard was paved as far back as 1981, that I know of. You mention photos that show product spills/leaks and wonder about the potential for soil contamination. Keep in mind, that all our products are in gas or liquid cryogen form. If spills are visible in your photos then they probably were oil spots etc. from the delivery vehicles that were parked in the compound, especailly if the photos are current.

At one time, a drum of pump oil and one of a cleaning fluid were stored at the north east corner of SM 170. The drums were grounded and stored over drip pans of some sort. This storage point was eliminated in "87" or "88".

Our older personnel recall that ZIA Co. was using the area east of our fence as a dump site, but none of them remeber when they may have started. They all agree that the dumping stopped around 1980. ← SWMU 3-009(c)

SWMU 3-009(j) — Surface Disposal Site

1.0 Introduction

SWMU 3-009(j) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-009(j) [Map 3-009(j)] is described in the SWMU Report as a soil fill area located west of TA-3-142, a warehouse (LANL 1990, 0145) (Attachment A). The fill area is located under the parking lot of the wellness center, TA-3-1663. The soil fill area is documented by aerial photographs and personnel interviews to contain only non-contaminated construction debris such as tuff, concrete, rock, and other construction-related items (Griggs 1993, 17-841; Air Force photograph 1958, AF58-25-5) (Attachments B, C).

1.2 No Further Action Basis

SWMU 3-009(j) is recommended for NFA because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. Interviews with site workers clearly indicated that the unit managed only construction debris (Griggs 1993, 17-841) (Attachment B).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-009(j) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Building construction.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-009.

Attachment B: LANL Memorandum CLS-ER/EG-93:061, Griggs 1993.

Attachment C: Air Force Photograph 1958, AF58-25-5.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this SWMU.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Section 1.0, SWMU 3-009(j) is recommended for NFA under Criterion 2.

5.0 References

Air Force photograph 1958, AF58-25-5.

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Griggs, E., June 2, 1993. "Debris Piles East of TA-3-170 and Northwest of TA-3-142," Los Alamos National Laboratory Memorandum CLS-ER/EG-93:061 to M. Bailey (JCI/JENV) from E. Griggs (CLS-DO), Los Alamos, New Mexico. (Griggs 1993, 17-841)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, page 6-4. (LANL 1995, 1291)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-009. (LANL 1990, 0145)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

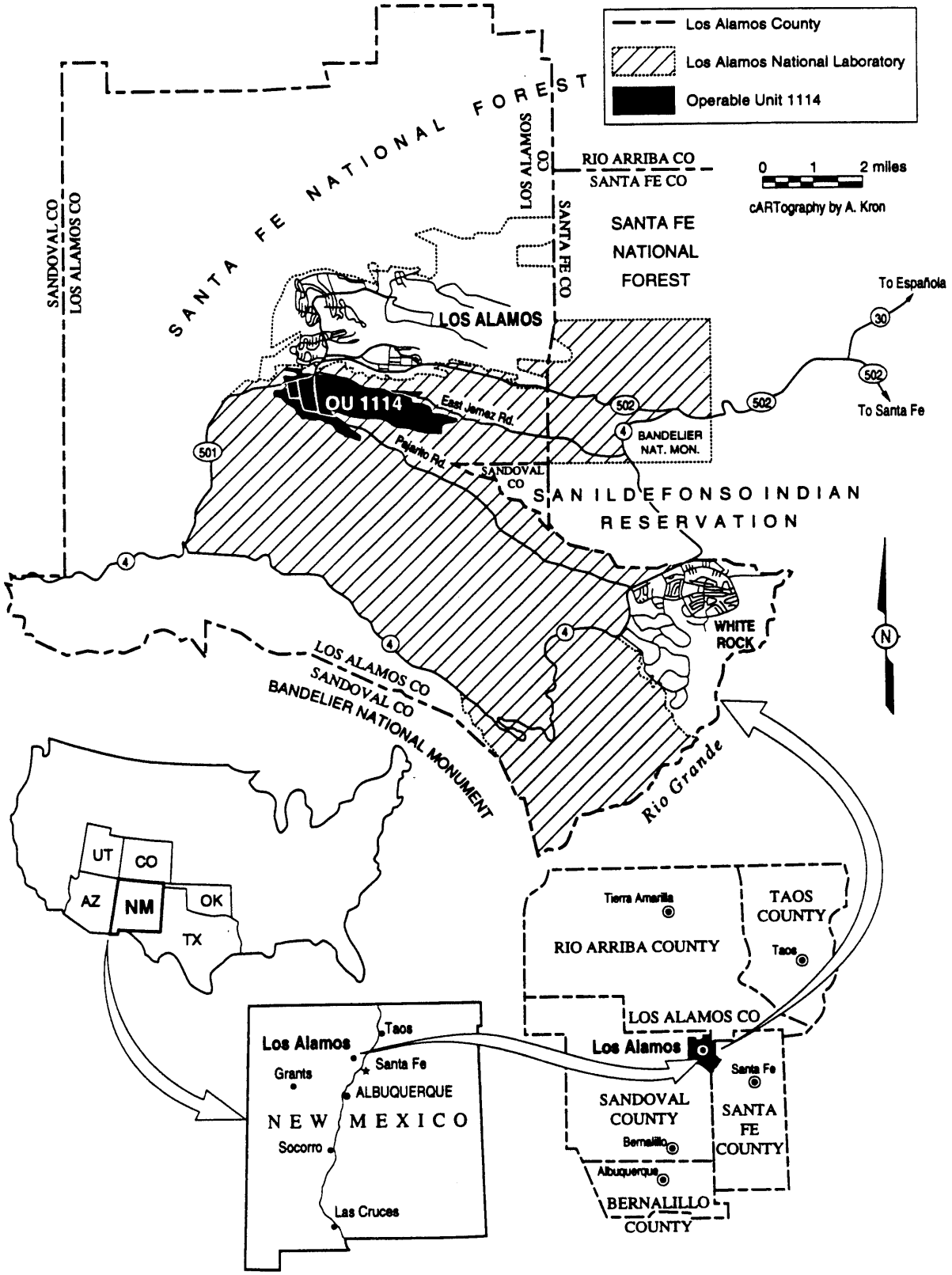


Fig. 1-1. Location of Operable Unit 1114.

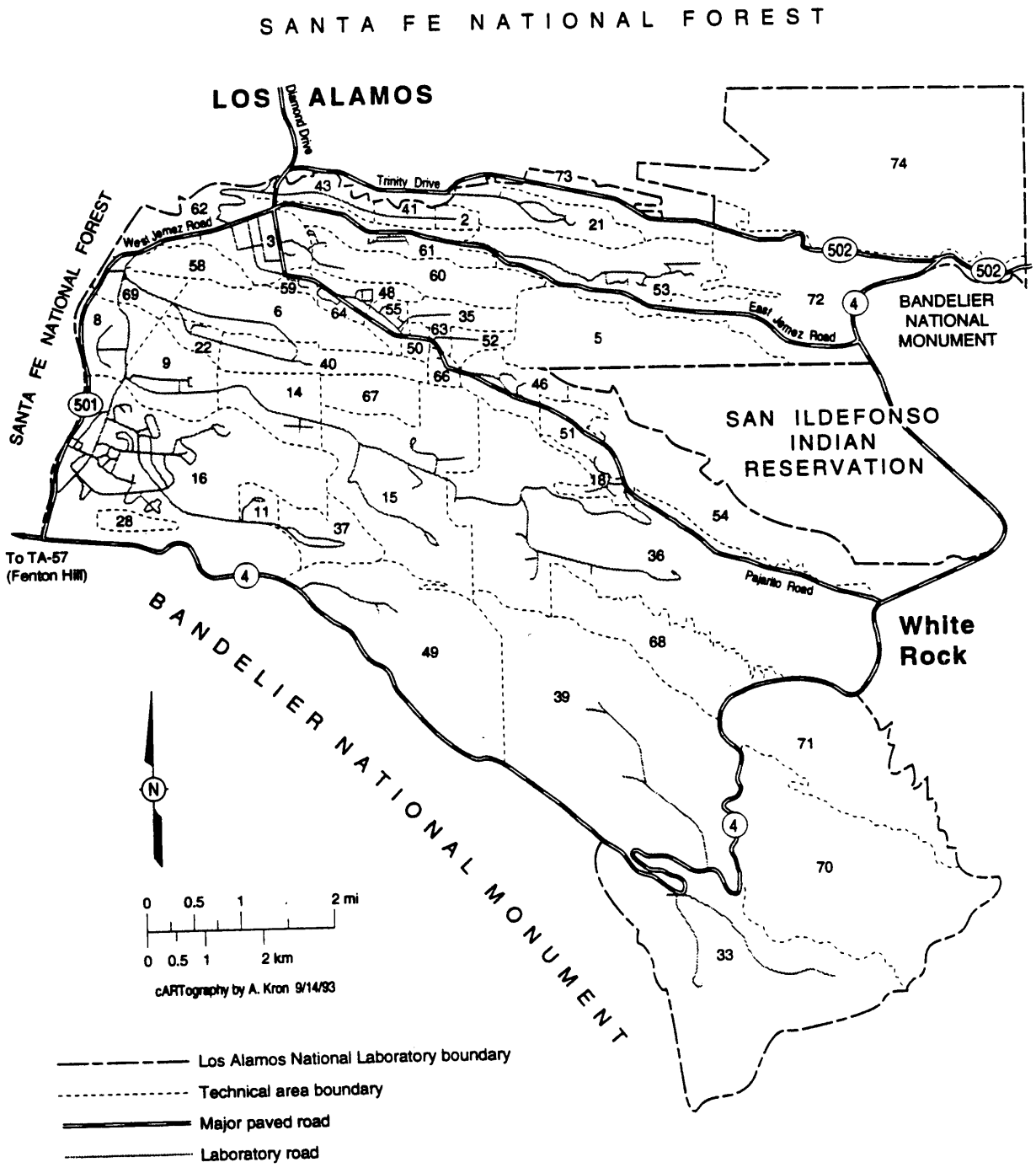
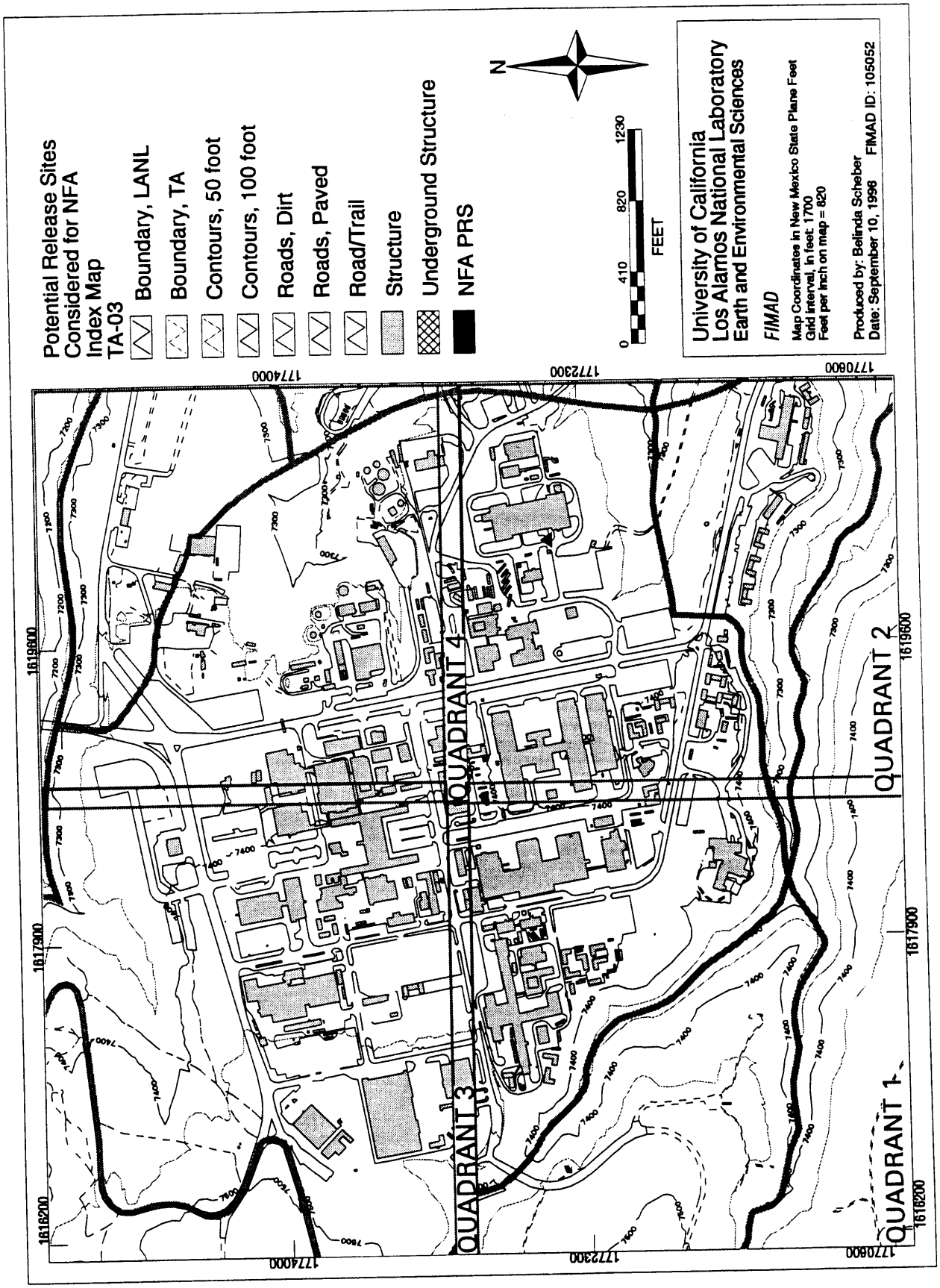
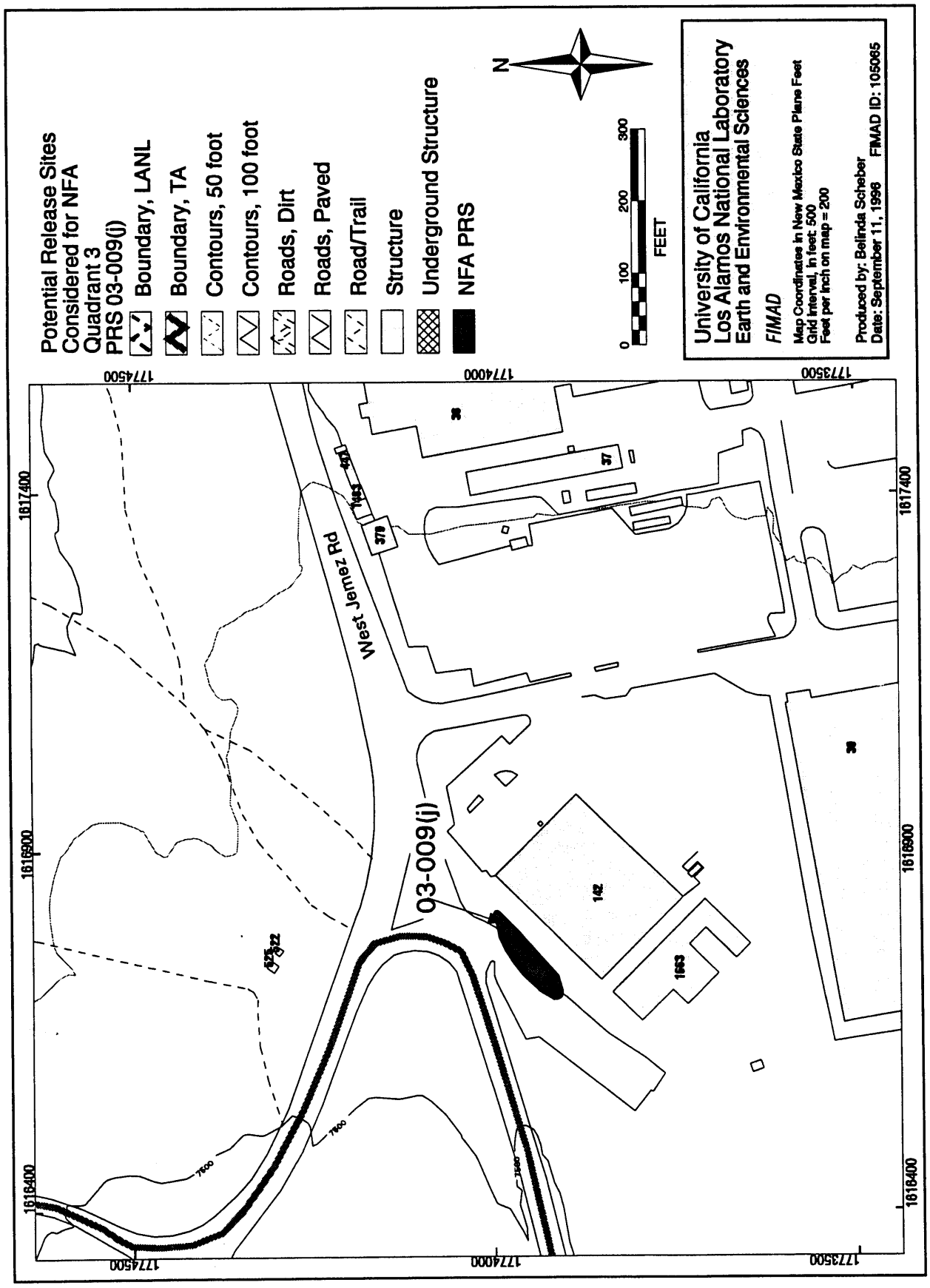


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-009(j)

6.3 Other Survey/Investigation Data

Section not applicable.

3-009(j)

ATTACHMENTS

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : SURFACE DISPOSAL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : INACTIVE
PERIOD OF USE : ?
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : SOLID WASTE
SUSPECTED HAZARDOUS WASTE

UNIT INFORMATION

3-009(a) Concrete, building material and approximately 20 feet of asbestos-coated pipe were disposed of in an estimated 30' x 300' area on the north rim of Sandia Canyon south of TA-3-70 and -271. A soil disturbance is also visible upcanyon, near the asphalt plant TA-3-73. It appeared to consist mainly of soil fill with minor amounts of concrete.

3-009(b) Concrete and building debris are located in an approximately 1/2 acre fill area adjacent to the South Mesa fire station (TA-3-41). The debris may be decommissioned buildings from the former TA-3.

3-009(c) A disturbed area has been noted south of TA-3-66, and concrete and building debris are visible.

3-009(d) A building fill area is located along the north rim of Two-Mile Canyon between TA-3-40 and TA-3-16.

3-009(e) A soil fill area is located in Upper Mortandad Canyon, southeast of TA-3-29.

3-009(f) There have been reports of a landfill north of TA-3-16.

3-009(g) A large soil fill area is located south of Two-Mile Canyon Bridge.

3-009(h) Asphalt piles are located near the salvage yard and on Sigma Mesa. Also on Sigma Mesa there is concrete debris near the test rack.

3-009(i) A debris area is located east of TA-3-170; concrete, asphalt, electrical cable, metal, VCP and large mound of soil were visible.

→ 3-009(j) A soil fill area is reported to be located west of TA-3-142. An old water tank, pieces of wire, and assorted debris are reported to comprise the fill material.

WASTE INFORMATION

The fill areas appear to contain fill and building debris.

RELEASE INFORMATION

It is unknown whether a hazardous release has occurred.

NOTES

Asphalt piles near TA-3-381, part of 3-009(h), are now in TA-60. See 60-002.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-009(a)	TA3-10-OL/L-A/I-HW		Tsk 19 : 65 66 Tsk 21 : 1160 1173 1193	TA-3-70, -73, -271 NEAR TA-3-41
3-009(b)	**		Tsk 20 : 56	SOUTH OF TA-3-66
3-009(c)	**		Tsk 21 : 1190	NEAR TA-3-40, -16
3-009(d)	TA3-10-OL/L-A/I-HW		Tsk 20 : 55	SOUTHEAST OF TA-3-29
3-009(e)	**		Tsk 21 : 1191	NORTH OF TA-3-16
3-009(f)	TA3-10-OL/L-A/I-HW		Tsk 21 : 1189	TWO-MILE CANYON
3-009(g)	TA3-10-OL/L-A/I-HW			NEAR SALVAGE YARD, SIGMA MESA
3-009(h)	**		Tsk 20 : 60	EAST OF TA-3-170
3-009(i)	**		Tsk 21 : 1192	WEST OF TA-3-142
3-009(j)	**			

** No corresponding E. R. Program unit.

Attachment B

[redacted]

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Michael Bailey, JCI/JENV, A199/M68 DATE: June 2, 1993

FROM: Ed Griggs, CLS-DO Ed MAIL STOP/TELEPHONE: E525/7-5544

SYMBOL: CLS-ER/EG-93:061

SUBJECT: **DEBRIS PILES EAST OF TA-3-170 AND NORTHWEST OF TA-3-142**

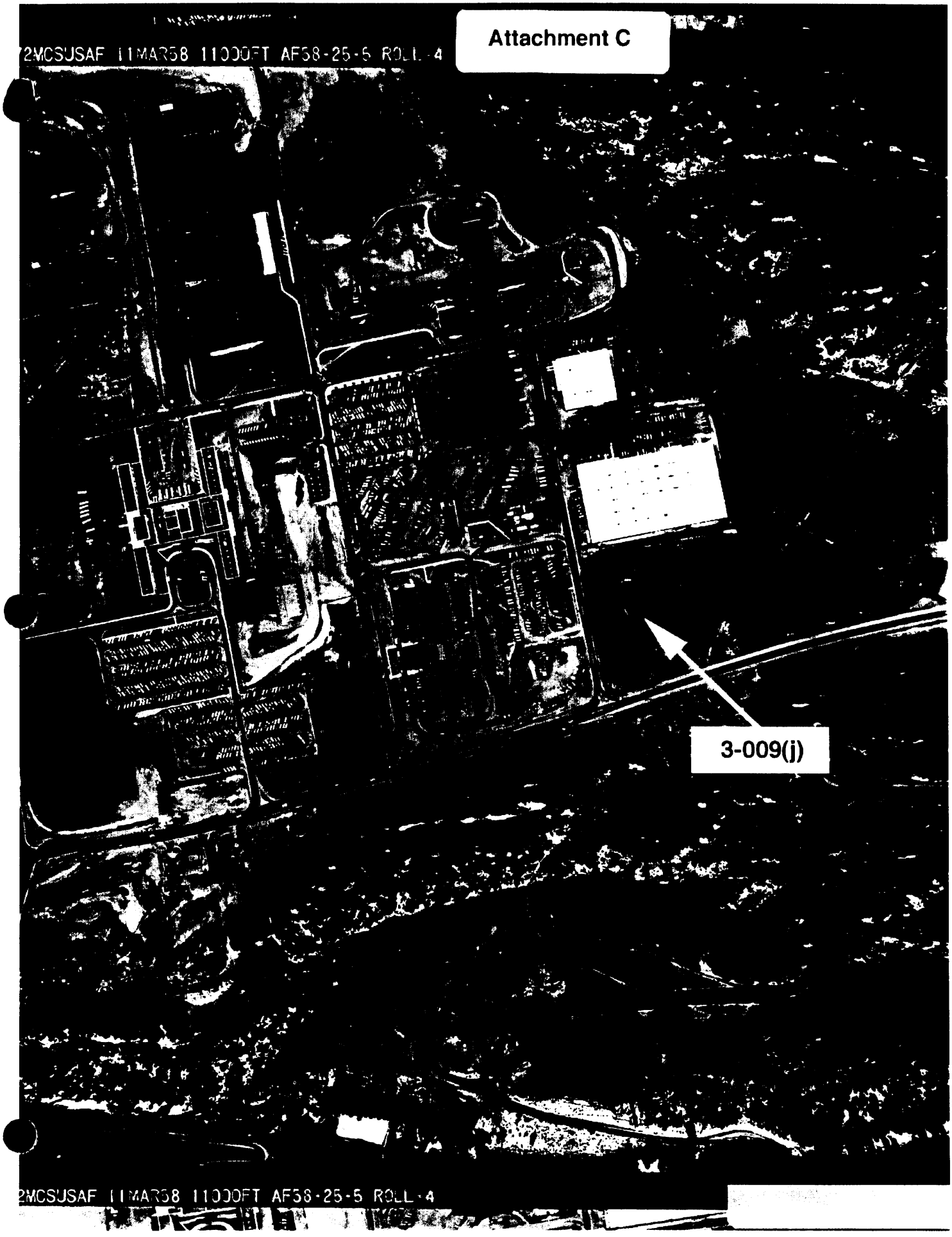
Per our conversation concerning the debris pile, SWMU 3-009(i), east of TA-3-170, it is believed that the material in the large debris pile is from past construction projects in the TA-3 area and, to the best of your knowledge, that it contains only non-contaminated materials such as tuff, concrete, rock, and other construction related items.

Also discussed was the debris pile, SWMU 3-009(j), northwest of TA-3-142. This area has been paved over and is currently used as a parking lot for TA-3-142 and TA-3-1663. It is believed that this area also contains only non-contaminated materials such as tuff, concrete, rock, and other construction related items.

If you agree with this information, please initial this memorandum next to your name and return it to me for my archives to be used in the development of the RCRA Facility Investigation Work Plan for the solid waste management units (SWMUs) located in TA-3.

Thank you.

Cy: Griggs ER File


Attachment C
2MCSUSAF 11MAR58 11000FT AF58-25-5 ROLL-4
3-009(j)
2MCSUSAF 11MAR58 11000FT AF58-25-5 ROLL-4

SWMU 3-019 — Septic Tank

1.0 Introduction

SWMU 3-019 is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-019 (Map 3-019) is a 4 ft x 9 ft x 5 ft septic tank, TA-3-15, listed in the SWMU Report as having once served the Van de Graaff Facility, TA-3-16, -17, -18 (LANL 1990, 0145) (Attachment A). Engineering records indicate that the tank was in operation only during the first year of building construction, then abandoned in January of 1951. The three buildings that compose the Van de Graaff Facility (TA-3-16, -17, -18) were completed between 1951 and 1952. In 1952, the sanitary sewer lines from the Van de Graaff Facility were connected with the main sewer line; therefore, the septic tank was used only during the first year of construction of the facility and not used once the facility began operations (ENG R 116, R 2410) (Attachments B and C). In 1964, septic tank TA-3-15 was removed during a building addition, and the three buildings were renumbered as one facility, TA-3-16 (Engineering drawings ENG-C 7384, 7389, 7398, and 7400) (Attachments D, E, F, and G).

1.2 No Further Action Basis

SWMU 3-019 is recommended for NFA because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. Engineering records show that the septic tank was abandoned a few years prior to its removal during the construction of the Van de Graaff Facility well before the facility began operation. Therefore, it was impossible for the septic tank to have received hazardous waste or constituents from the Van de Graaff Facility.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-019 be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Septic tank received sanitary waste only.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-019.

Attachment B: LASL, Engineering Drawing ENG R 116.

Attachment C: LASL, Engineering Drawing ENG R 2410.

Attachment D: LASL, Engineering Drawing ENG-C 7384.

Attachment E: LASL, Engineering Drawing. ENG-C 7389.

Attachment F: LASL, Engineering Drawing. ENG-C 7398.

Attachment G: LASL, Engineering Drawing. ENG-C 7400.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Section 1.0, no unacceptable risk is presented by this SWMU.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Section 1.0, SWMU 3-019 is recommended for NFA under Criterion 2.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos Scientific Laboratory, "Structure Location Plan, TA-3, South Mesa Site," Drawing No. ENG R 116, (July 15, 1955).

Los Alamos Scientific Laboratory, "Index Sheet, Structure Location Plan, TA-3, South Mesa Site," Drawing No. ENG R 2410, (August 15, 1961).

Los Alamos Scientific Laboratory, "General Layout—Sanitary Sewers," Drawing ENG-C 7384 (June 1, 1950).

Los Alamos Scientific Laboratory, "Sanitary Sewer—M-3," Drawing. ENG-C 7389 (June 1, 1950)

Los Alamos Scientific Laboratory, "General Layout—Acid Sewer," Drawing. ENG-C 7398 (June 1, 1950)

Los Alamos Scientific Laboratory, "Acid Sewer M-2, Central Site Facilities-Project E," ENG-C 7400 (June 1, 1950)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, page 6-6. (LANL 1995, 1291)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-019. (LANL 1990, 0145)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

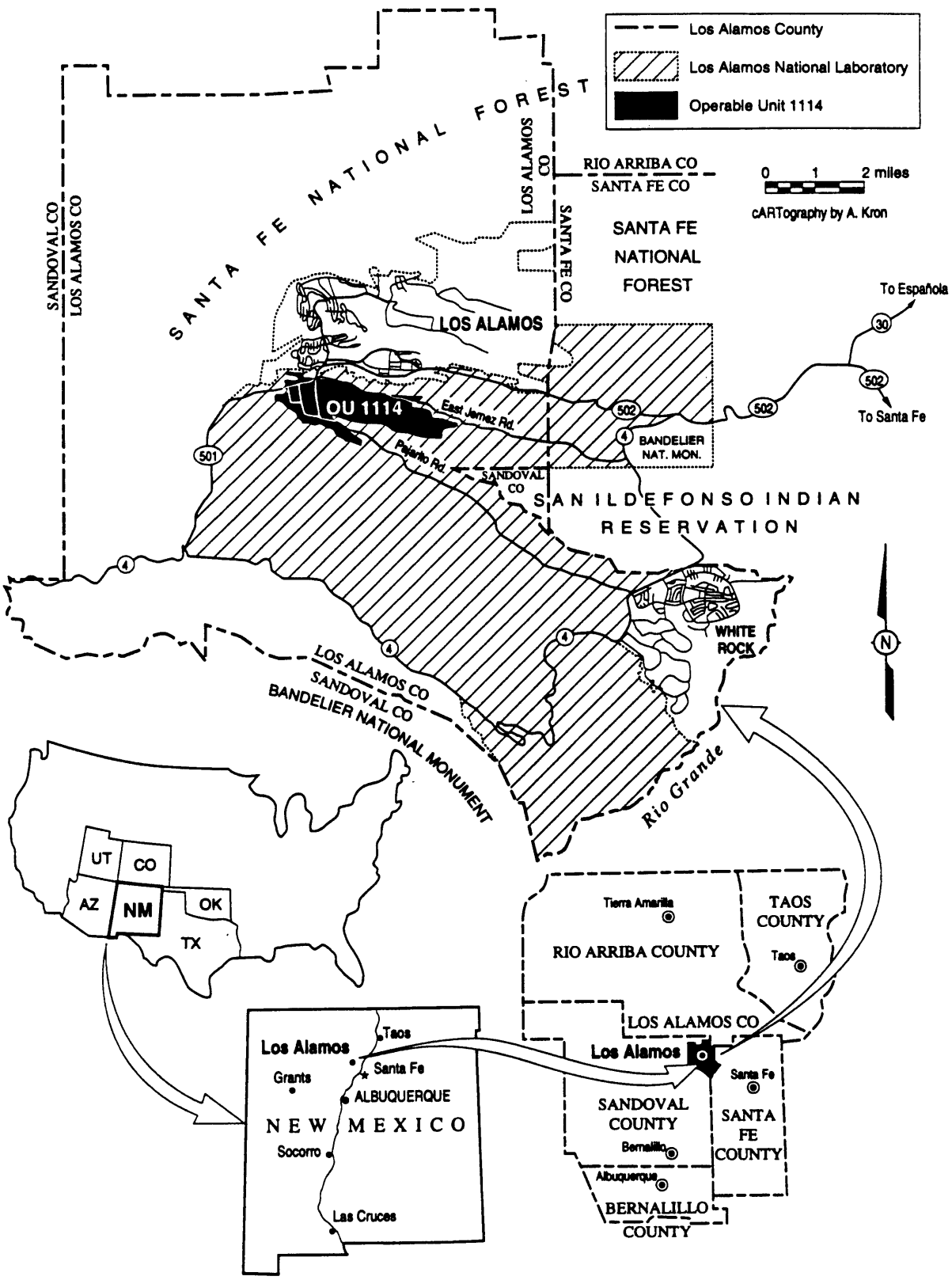


Fig. 1-1. Location of Operable Unit 1114.

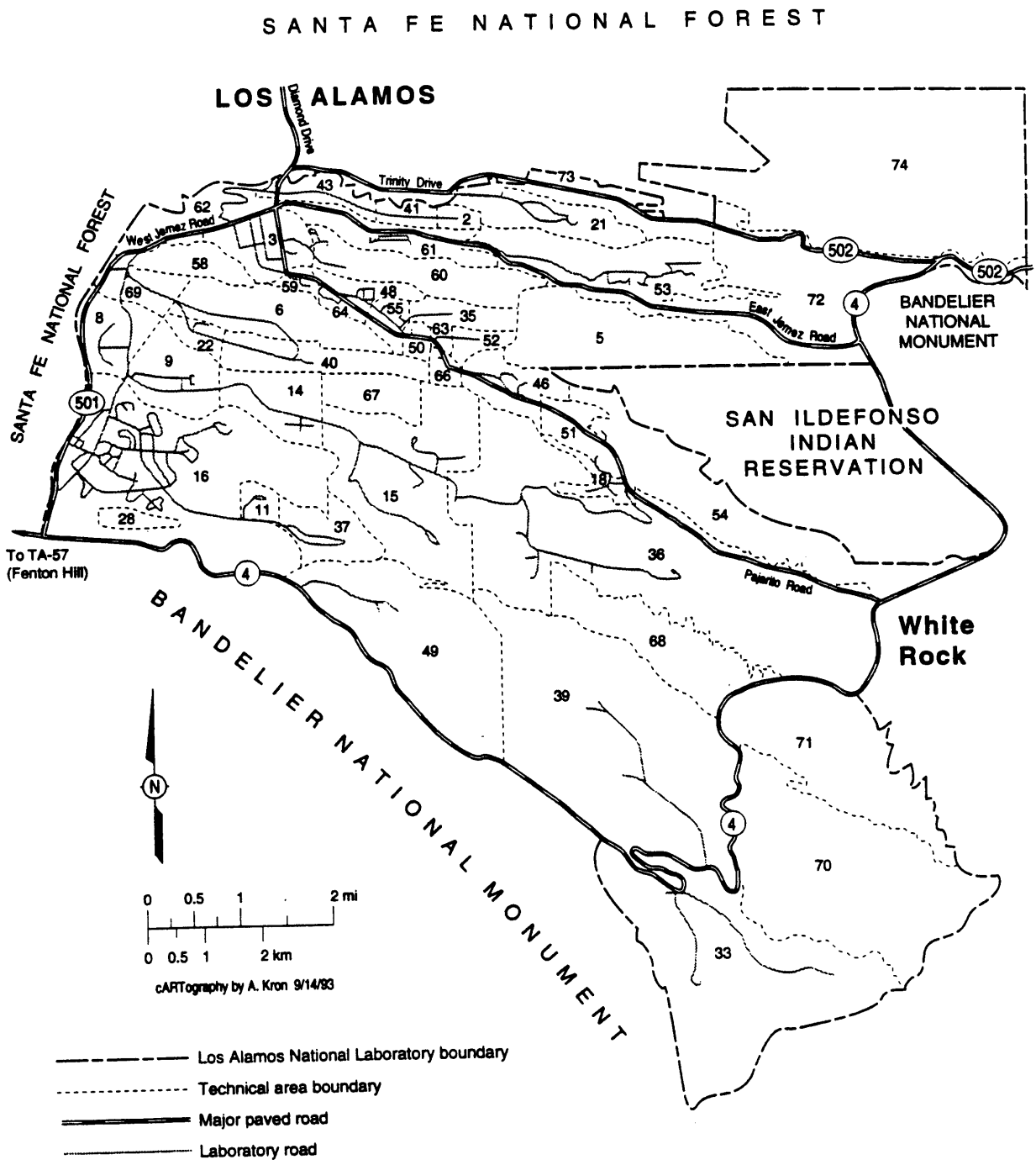
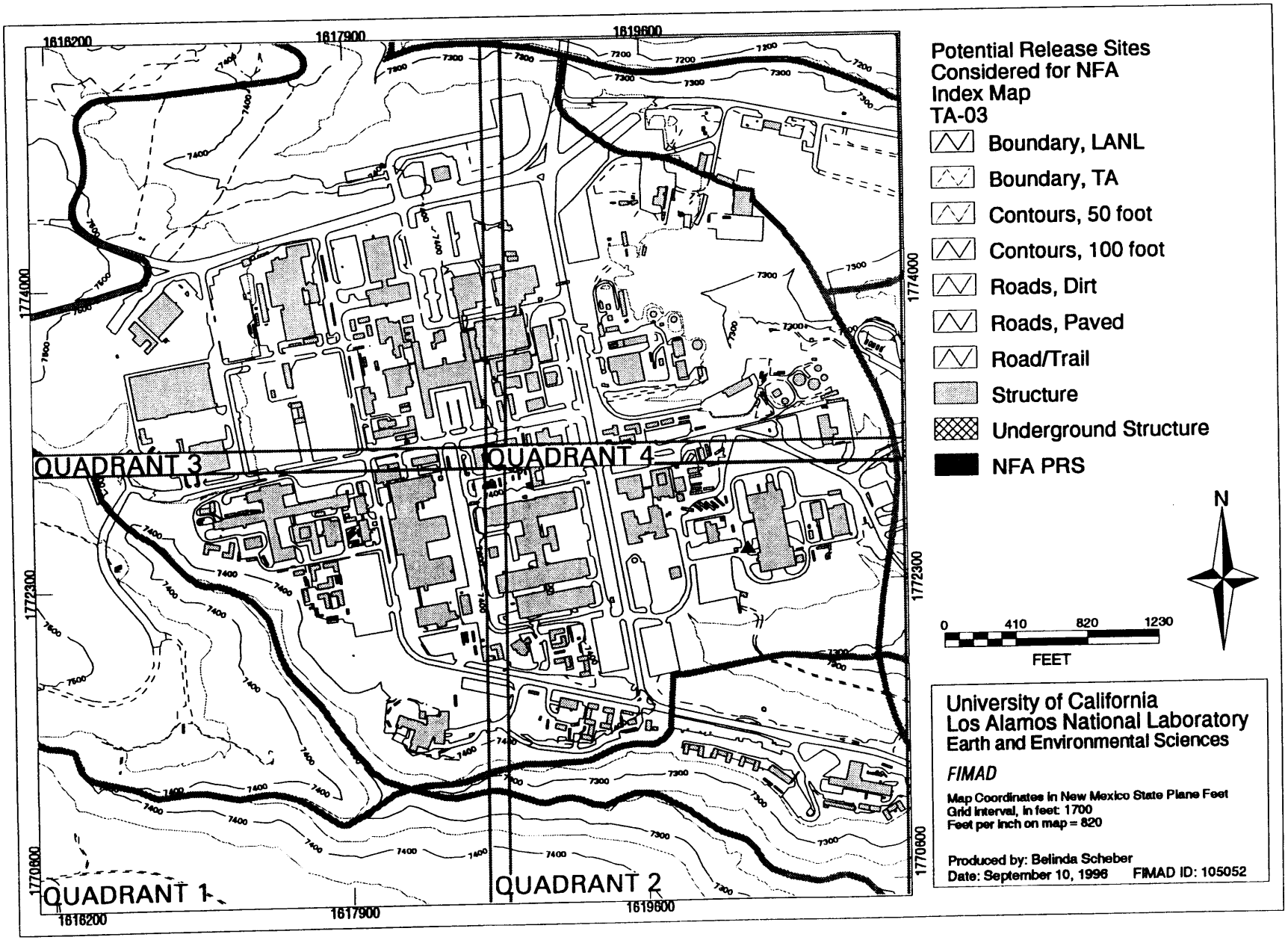
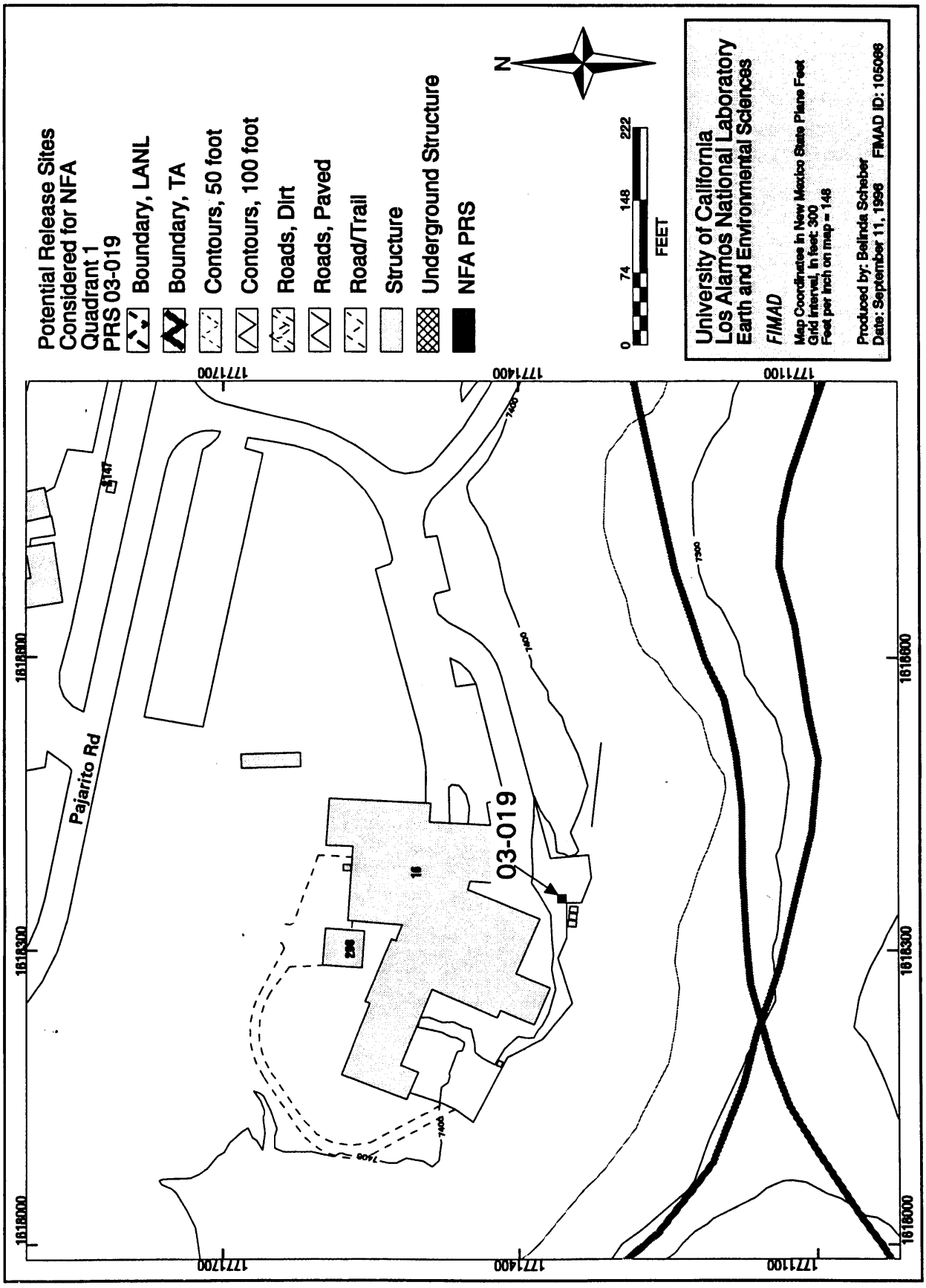


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-019

6.3 Other Survey/Investigation Data

Section not applicable.

3-019

ATTACHMENTS

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : SEPTIC SYSTEM
UNIT USE : TREATMENT/DISPOSAL
OPERATIONAL STATUS : DECOMMISSIONED
PERIOD OF USE : 1950 - 1964
HAZARDOUS RELEASE : UNKNOWN
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : SUSPECTED MIXED WASTE
SUSPECTED HAZARDOUS WASTE
SUSPECTED RADIOACTIVE WASTE
SANITARY WASTE

UNIT INFORMATION

Tank TA-3-15 served the Van de Graaff facility. The facility included a darkroom and laboratory area where solvents and chemicals were handled. Small quantities of radionuclides, including tritium, may be present in liquids placed in the industrial drains; the drains probably discharged to this tank in previous years. It was built in 1950, was made of concrete, and had the dimensions of 4' x 9' x 5'. It is believed to have been abandoned in 1951 when the sewer line was completed. It was removed in 1964 according to engineering drawings; however, another report indicates that the tank was included as a component of a waste line. Before septic tank TA-3-15 was tied into the industrial waste line, the tank may have discharged into Two Mile Canyon. The outfall pipe has not been located.

WASTE INFORMATION

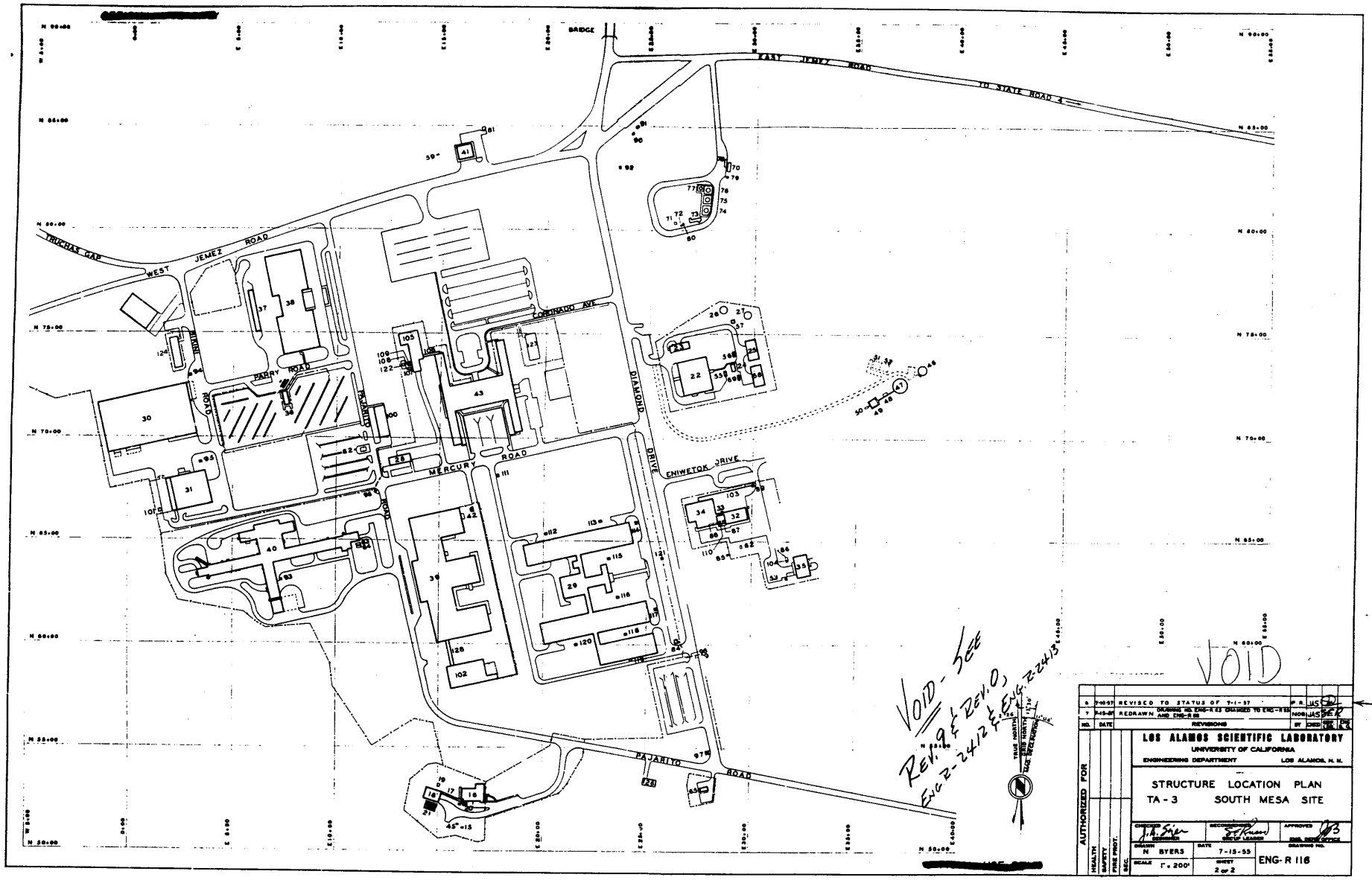
The waste is expected to have been sanitary but may have included industrial type wastes containing small quantities of chemicals, solvents, and possibly radionuclides.

RELEASE INFORMATION

It is unknown whether a hazardous release occurred from this tank.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-019	TA3-2-CA/ST-A/I-HW/RW	3.091	Tsk 21 : 1223 1113	TA-3-15



VOID -

Attachment B

STRUCTURE NUMBER	STRUCTURE DESIGNATION	STRUCTURE NOMENCLATURE	REMARKS	APPROXIMATE GRID LOCATION
TA-3-1	SM-1		REMOVED 1949	
TA-3-2	SM-2		REMOVED 1949	
TA-3-3	SM-3		REMOVED 1949	
TA-3-4	SM-4		REMOVED 1949	
TA-3-5	SM-5		REMOVED 1949	
TA-3-6	SM-6		REMOVED 1949	
TA-3-7	SM-7		REMOVED 1949	
TA-3-8	SM-8		REMOVED 1949	
TA-3-9	SM-9		REMOVED 1949	
TA-3-10	SM-10		REMOVED 1949	
TA-3-11	SM-11		REMOVED 1949	
TA-3-12	SM-12		REMOVED 1949	
TA-3-13	SM-13		REMOVED 1949	
TA-3-14	SM-14		REMOVED 1949	
TA-3-15	SM-15		REMOVED 1964	
TA-3-16	SM-16	VAN DE GRAAFF LABORATORY		N55+00 E15+00
TA-3-17	SM-17	VAN DE GRAAFF CORRIDOR	INCORPORATED WITH SM-16	N55+00 E15+00
TA-3-18	SM-18	VAN DE GRAAFF ACCEL. BLDG.	INCORPORATED WITH SM-16	N55+00 E15+00
TA-3-19	SM-19		REMOVED 1966	
TA-3-20	SM-20		REMOVED 1964	
TA-3-21	SM-21	CYLINDER TANK STORAGE		N50+00 E15+00
TA-3-22	SM-22	STEAM PLANT		N75+00 E25+00
TA-3-23	SM-23	SWITCHGEAR STATION		N75+00 E25+00
TA-3-24	SM-24	WATER TREATMENT HOUSE		N75+00 E30+00
TA-3-25	SM-25	COOLING TOWER		N75+00 E30+00
TA-3-26	SM-26	TANK, FUEL		N75+00 E30+00
TA-3-27	SM-27	TANK, FUEL		N75+00 E30+00
TA-3-28	SM-28	COMMUNICATIONS BUILDING		N70+00 E15+00
TA-3-29	SM-29	CMR LABORATORY		N65+00 E20+00
TA-3-30	SM-30	GENERAL WAREHOUSE		N70+00 0+00
TA-3-31	SM-31	CHEMICAL WAREHOUSE		N65+00 E 5+00
TA-3-32	SM-32	CRYOGENICS BLDG. A		N65+00 E30+00
TA-3-33	SM-33	CRYOGENICS PASSAGEWAY	SM-32 TO SM-34	N65+00 E30+00
TA-3-34	SM-34	CRYOGENICS BLDG. B		N65+00 E30+00
TA-3-35	SM-35	PRESS BUILDING		N65+00 E35+00
TA-3-36	SM-36	SERVICE STATION		N70+00 E10+00
TA-3-37	SM-37	ZIA MAINTENANCE STORAGE		N75+00 E 5+00
TA-3-38	SM-38	ZIA MAINTENANCE SHOPS		N75+00 E10+00
TA-3-39	SM-39	TECH SHOPS		N65+00 E15+00
TA-3-40	SM-40	PHYSICS BUILDING		N65+00 E 5+00
TA-3-41	SM-41	FIRE STATION NO. 3		N65+00 E15+00
TA-3-42	SM-42	GUARD HOUSE		N65+00 E15+00
TA-3-43	SM-43	ADMINISTRATION BLDG.		N70+00 E15+00
TA-3-44	SM-44	INCINERATOR	REMOVED 1949	
TA-3-45	SM-45	CESS POOL	REMOVED 1964	
TA-3-46	SM-46	TANK, FINAL SETTLING	SEWAGE PLANT	N75+00 E40+00
TA-3-47	SM-47	TRICKLING FILTER	SEWAGE PLANT	N75+00 E35+00
TA-3-48	SM-48	TANK, DOSING	SEWAGE PLANT	N70+00 E35+00
TA-3-49	SM-49	TANK, IMHOFF	SEWAGE PLANT	N70+00 E35+00
TA-3-50	SM-50	INLET STRUCTURE	SEWAGE PLANT	N70+00 E35+00
TA-3-51	SM-51		REMOVED 1964	
TA-3-52	SM-52		REMOVED 1964	
TA-3-53	SM-53		REMOVED 1959	
TA-3-54	SM-54		CANCELLED	
TA-3-55	SM-55	GAS HOUSE		N75+00 E30+00
TA-3-56	SM-56	UNIT SUBSTATION		N75+00 E30+00
TA-3-57	SM-57	OIL PUMP HOUSE		N75+00 E30+00
TA-3-58	SM-58	COOLING TOWER		N75+00 E30+00
TA-3-59	SM-59	SEWAGE LIFT STATION	SANITARY	N65+00 E15+00
TA-3-60	SM-60		REMOVED 1955	
TA-3-61	SM-61		REMOVED 1955	
TA-3-62	SM-62		REMOVED 1960	
TA-3-63	SM-63		REMOVED 1967	
TA-3-64	SM-64		REMOVED 1967	
TA-3-65	SM-65	SOURCE STORAGE BLDG.		N55+00 E30+00
TA-3-66	SM-66	SIGMA BUILDING		N65+00 E35+00
TA-3-67	SM-67	GUARD HOUSE		N65+00 E35+00
TA-3-68	SM-68		REMOVED 1955	
TA-3-69	SM-69	UNIT SUBSTATION		N75+00 E30+00
TA-3-70	SM-70	OFFICE BUILDING	BATCH PLANT	N65+00 E30+00
TA-3-71	SM-71	STORAGE BUILDING	BATCH PLANT	N80+00 E25+00
TA-3-72	SM-72	BULKHEAD GRAVEL	BATCH PLANT	N80+00 E25+00
TA-3-73	SM-73	ASPHALTIC CONC. PLANT	BATCH PLANT	N80+00 E25+00
TA-3-74	SM-74		REMOVED 1963	
TA-3-75	SM-75	TANK, ASPHALT 20,000 GAL.	BATCH PLANT	N80+00 E30+00
TA-3-76	SM-76	TANK, ASPHALT 20,000 GAL.	BATCH PLANT	N80+00 E30+00
TA-3-77	SM-77	TANK, ASPHALT 10,000 GAL.	BATCH PLANT	N80+00 E25+00
TA-3-78	SM-78	TRUCK SCALE	BATCH PLANT	N85+00 E30+00
TA-3-79	SM-79	TANK, SEPTIC	BATCH PLANT	N80+00 E30+00
TA-3-80	SM-80	TRANSFORMER STATION	BATCH PLANT	N80+00 E25+00
TA-3-81	SM-81	SUBSTATION		N85+00 E15+00
[illegible]	[illegible]		REMOVED 1973	
[illegible]	[illegible]		REMOVED 1953	
[illegible]	[illegible]	GUARD HOUSE		N80+00 E25+00
[illegible]	[illegible]	MANHOLE	GAS	N85+00 E30+00
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[illegible]	[illegible]	SWITCHGEAR STATION		N85+00 E30+00
[illegible]	[illegible]	SUBSTATION		N85+00 E30+00
[illegible]	[illegible]	GUARD HOUSE		N70+00 E30+00
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[illegible]	[illegible]	MANHOLE	WATER	N75+00 E 5+00
[illegible]	[illegible]	MANHOLE	WATER	N70+00 E 5+00
[illegible]	[illegible]		REMOVED 1963	
[illegible]	[illegible]	GUARD HOUSE		N70+00 E15+00

STRUCTURE NUMBER	STRUCTURE DESIGNATION	STRUCTURE NOMENCLATURE	REMARKS	APPROXIMATE GRID LOCATION
TA-3-98	SM-98		REMOVED 1960	
TA-3-99	SM-99		REMOVED 1965	
TA-3-100	SM-100	CAFETERIA		N70+00 E15+00
TA-3-101	SM-101	CARBOY WASHING PLATFORM		N65+00 0+00
TA-3-102	SM-102	TECH SHOPS ADDITION		N60+00 E15+00
TA-3-103	SM-103	RETAINING WALL		N70+00 E30+00
TA-3-104	SM-104	SUBSTATION		N65+00 E30+00
TA-3-105	SM-105	SHERWOOD BUILDING		N75+00 E15+00
TA-3-106	SM-106	PASSAGEWAY	INCORPORATED SM-105	N75+00 E15+00
TA-3-107	SM-107	TANK, OIL	UNDERGROUND	N75+00 E15+00
TA-3-108	SM-108	TANK, OIL	UNDERGROUND	N75+00 E15+00
TA-3-109	SM-109	TANK, OIL	UNDERGROUND	N75+00 E15+00
TA-3-110	SM-110	STORAGE RACK		N65+00 E30+00
TA-3-111	SM-111	MANHOLE	WATER	N70+00 E20+00
TA-3-112	SM-112	MANHOLE	WATER	N65+00 E20+00
TA-3-113	SM-113	MANHOLE	WATER	N65+00 E25+00
TA-3-114	SM-114	MANHOLE	WATER	N65+00 E25+00
TA-3-115	SM-115	MANHOLE	WATER	N65+00 E25+00
TA-3-116	SM-116	MANHOLE	WATER	N60+00 E25+00
TA-3-117	SM-117	MANHOLE	WATER	N60+00 E25+00
TA-3-118	SM-118	MANHOLE	WATER	N60+00 E25+00
TA-3-119	SM-119	MANHOLE	WATER	N60+00 E25+00
TA-3-120	SM-120	MANHOLE	WATER	N60+00 E20+00
TA-3-121	SM-121	MANHOLE	GAS	N65+00 E25+00
TA-3-122	SM-122	SUBSTATION		N75+00 E15+00
TA-3-123	SM-123	PERSONNEL & SUP. & PROP. BLDG.		N75+00 E20+00
TA-3-124	SM-124		CANCELLED	
TA-3-125	SM-125		CANCELLED	
TA-3-126	SM-126		CANCELLED	
TA-3-127	SM-127	COOLING TOWER		N65+00 E40+00
TA-3-128	SM-128	PASSAGEWAY	SM-30 TO SM-102	N60+00 E15+00
TA-3-129	SM-129		REMOVED FY1971	
TA-3-130	SM-130	CALIBRATION BUILDING		N55+00 E30+00
TA-3-131	SM-131		REMOVED 1957	
TA-3-132	SM-132	COMPUTER BUILDING		N75+00 E20+00
TA-3-133	SM-133		CANCELLED	
TA-3-134	SM-134		CANCELLED	
TA-3-135	SM-135		CANCELLED	
TA-3-136	SM-136		CANCELLED	
TA-3-137	SM-137		CANCELLED	
TA-3-138	SM-138		CANCELLED	
TA-3-139	SM-139	DRUM STORAGE	TO ZIA 12-3-7	
TA-3-140	SM-140	MANHOLE	GAS	N70+00 E15+00
TA-3-141	SM-141	ROLLING MILL BUILDING		N65+00 E40+00
TA-3-142	SM-142	WAREHOUSE		N75+00 0+00
TA-3-143	SM-143		CANCELLED	
TA-3-144	SM-144	SUBSTATION		N75+00 E25+00
TA-3-145	SM-145	SWITCHGEAR STATION		N65+00 E35+00
TA-3-146	SM-146	SUBSTATION		N65+00 E40+00
TA-3-147	SM-147	AIR PLENUM & FAN BLDG.		N65+00 E40+00
TA-3-148	SM-148	MANHOLE	OIL SUMP	N75+00 E15+00
TA-3-149	SM-149	SWITCHGEAR STATION		N65+00 E15+00
TA-3-150	SM-150		REMOVED 1963	
TA-3-151	SM-151	VALVE BOX	WATER	N70+00 E30+00
TA-3-152	SM-152		CANCELLED	
TA-3-153	SM-153		CANCELLED	
TA-3-154	SM-154	HOT WASTE PUMP HOUSE		N60+00 E20+00
TA-3-155	SM-155	DOCK		N70+00 E30+00
TA-3-156	SM-156	COOLING TOWER		N75+00 E10+00
TA-3-157	SM-157	GENERATOR HOUSE		N70+00 E15+00
TA-3-158	SM-158	GAS MANIFOLD PLATFORM		N65+00 E40+00
TA-3-159	SM-159	FORMING BUILDING		N60+00 E40+00
TA-3-160	SM-160	FIRING POINT		N65+00 E40+00
TA-3-161	SM-161	MAGAZINE		N65+00 E40+00
TA-3-162	SM-162	MANIFOLD		N70+00 E30+00
TA-3-163	SM-163	PUMP HOUSE		N75+00 E10+00
TA-3-164	SM-164	SHOP STORAGE BUILDING		N60+00 E20+00
TA-3-165	SM-165	CONVERTER BUILDING		N70+30 E30+00
TA-3-166	SM-166	EFFLUENT PUMP PIT		N75+00 E40+00
TA-3-167	SM-167	SHIELD WALL		N50+00 E30+00
TA-3-168	SM-168	SHIELD WALL		N50+00 E30+00
TA-3-169	SM-169	WAREHOUSE		N65+00 E40+00
TA-3-170	SM-170	LIQUID & COMPRESSED GAS FAC.		N70+00 E40+00
TA-3-171	SM-171	LIQUID HYDROGEN TANK SHED		N65+00 E30+00
TA-3-172	SM-172	TANK, LIQUID HYDROGEN		N70+00 E30+00
TA-3-173	SM-173		CANCELLED	
TA-3-174	SM-174	PUMP PIT	PROCESS WATER	N65+00 E40+00
TA-3-175	SM-175	MANIFOLD	GAS	N65+00 E40+00
TA-3-176	SM-176	SUBSTATION		N65+00 E40+00
TA-3-177	SM-177	STORAGE BUILDING	FORMERLY TA-10-20	N55+00 E30+00
TA-3-178	SM-178	TANK, ASPHALT 30000 GAL.	FORMERLY TA-49-66	N80+00 E25+00
TA-3-179	SM-179		CANCELLED	
TA-3-180	SM-180	STAIRWAY		N70+00 E30+00
TA-3-181	SM-181	MANIFOLD		N80+00 E25+00
TA-3-182	SM-182	MANHOLE	WATER	N65+00 E35+00
TA-3-183	SM-183	TRAILER SHELTER		N65+00 E45+00
TA-3-184	SM-184	OCCUPATIONAL HEALTH LAB.		N30+00 E40+00
TA-3-185	SM-185	MANIFOLD		N60+00 E35+00
TA-3-186	SM-186	MANIFOLD		N60+00 E35+00
TA-3-187	SM-187	COOLING TOWER		N65+00 E35+00
TA-3-188	SM-188	MANHOLE	SPRINKLER VALVE	N65+00 E40+00
TA-3-189	SM-189	MANIFOLD		N50+00 E15+00
TA-3-190	SM-190	SUBSTATION		N55+00 E15+00
TA-3-191	SM-191	TANK, FUEL		N50+00 E15+00
TA-3-192	SM-192	TANK, IMHOFF		N70+00 E35+00
TA-3-193	SM-193	TANK, DOSING		N70+00 E35+00
TA-3-194	SM-194	TRICKLING FILTER		N70+00 E40+00

STRUCTURE NUMBER	STRUCTURE DESIGNATION	STRUCTURE NOMENCLATURE	REMARKS	APPROXIMATE GRID LOCATION
TA-3-195	SM-195	SECONDARY CLARIFIER		N75+00 E40+00
TA-3-196	SM-196	SLUDGE DRYING BED		N75+00 E35+00
TA-3-197	SM-197	SLUDGE DRYING BED		N75+00 E35+00
TA-3-198	SM-198	SLUDGE DRYING BED		N75+00 E35+00
TA-3-199	SM-199	SLUDGE DRYING BED		N75+00 E35+00
TA-3-200	SM-200	OFFICE BUILDING		N75+00 E20+00
TA-3-201	SM-201		REMOVED 1965	
TA-3-202	SM-202	PASSAGEWAY		N75+00 E20+00
TA-3-203	SM-203	PASSAGEWAY		N75+00 E20+00
TA-3-204	SM-204	FIELD OFFICE	RELOCATED & RENUMBERED TA-0-194, TA-53	
TA-3-205	SM-205	MANIFOLD		N65+00 E35+00
TA-3-206	SM-206	EQUIPMENT BUILDING		N65+00 E10+00
TA-3-207	SM-207			
TA-3-208	SM-208	EQUIPMENT BUILDING		N50+00 E15+00
TA-3-209	SM-209	BINS, BATCH, W/SCALES		N80+00 E25+00
TA-3-210	SM-210		CANCELLED	
TA-3-211	SM-211	RETAINING WALL		N80+00 E25+00
TA-3-212	SM-212	TANK, CEMENT SILO		N80+00 E25+00
TA-3-213	SM-213	RETAINING WALL		N50+00 E15+00
TA-3-214	SM 214	PASSAGEWAY		N65+00 E10+00
TA-3-215	SM-215	PHYSICS ANALYTICAL CENTER		N65+00 E10+00
TA-3-216	SM-216	WEAPONS TEST SUPPORT FAC.		N70+00 E20+00
TA-3-217	SM-217	FLAGPOLE		N75+00 E15+00
TA-3-218	SM-218	MAGNETIC ENERGY & STORAGE		N65+00 E10+00
TA-3-219	SM-219	HIGH FREQUENCY RADIO FAC.		N60+00 E65+00
TA-3-220	SM-220	MANHOLE	GAS VALVE	N75+00 E30+00
TA-3-221	SM-221	PASSAGEWAY		N75+00 E20+00
TA-3-222	SM-222	PASSAGEWAY		N75+00 E20+00
TA-3-223	SM-223	UTILITIES CONTROL CENTER		N70+00 E35+00
TA-3-224	SM-224	LUMBER STORAGE SHED		N70+00 E 5+00
TA-3-225	SM-225	STORAGE SHED		N80+00 E25+00
TA-3-226	SM-226	GREENHOUSE		N80+00 E30+00
TA-3-227	SM-227	PIPE TRENCH		N65+00 E10+00
TA-3-228	SM-228	SERVICE SUPPORT BLDG.		N65+00 E10+00
TA-3-229	SM-229	SUBSTATION		N65+00 E10+00
TA-3-230	SM-230	RELAY BUILDING		N75+00 E25+00
TA-3-231	SM-231	RADIO TOWER		N75+00 E25+00
TA-3-232	SM-232	SUBSTATION	115 KV	N75+00 E25+00
TA-3-233	SM-233	SUBSTATION	115 KV	N75+00 E25+00
TA-3-234	SM-234		REMOVED 1972	
TA-3-235	SM-235	WAREHOUSE BUILDING		N85+00 E30+00
TA-3-236	SM-236	STORAGE BUILDING		N80+00 E30+00
TA-3-237	SM-237	TANK, FUEL		N50+00 E40+00
TA-3-238	SM-238	COOLING TOWER		N50+00 E45+00
TA-3-239	SM-239	TANK, SEPTIC		N50+00 E40+00
TA-3-240	SM-240	DISTRIBUTION BOX		N50+00 E40+00
TA-3-241	SM-241	MANHOLE	WATER P.I.V.	N80+00 E25+00
TA-3-242	SM-242	MANHOLE	EFFLUENT	N75+00 E30+00
TA-3-243	SM-243	CONCRETE PAD		N80+00 E 5+00
TA-3-244	SM-244	TEST HOLE		N80+00 E 5+00
TA-3-245	SM-245	TEST HOLE		N80+00 E 5+00
TA-3-246	SM-246	CONTROL BUILDING		N75+00 E 5+00
TA-3-247	SM-247	CABLE STRESSER	REMOVED 1974	N75+00 E 5+00
TA-3-248	SM-248			
TA-3-249	SM-249	ROLLING MILL PAD		N75+00 E 5+00
TA-3-250	SM-250	SUBSTATION	STREET LIGHTING	N80+00 E25+00
TA-3-251	SM-251	VALVE HOUSE	WATER	N75+00 E30+00
TA-3-252	SM-252	CABLE STORAGE SHED		N75+00 E15+00
TA-3-253	SM-253	ELECTRON PROTOTYPE LAB.		N65+00 E10+00
TA-3-254	SM-254	PASSAGEWAY		N65+00 E10+00
TA-3-255	SM-255	OFFICE BUILDING		N65+00 E10+00
TA-3-256	SM-256	TRANSFORMER RECTIFIER PAD		N65+00 E10+00
TA-3-257	SM-257	OFFICE BUILDING	RELOCATED & RENUMBERED TA-53 MPF-44	
TA-3-258	SM-258	OFFICE BUILDING	RELOCATED & RENUMBERED TA-53 MPF-45	
TA-3-259	SM-259	OFFICE BUILDING	RELOCATED & RENUMBERED TA-53 MPF-46	
TA-3-260	SM-260	OFFICE BUILDING	RELOCATED & RENUMBERED TA-53 MPF-47	
TA-3-261	SM-261		UNASSIGNED	
TA-3-262	SM-262		UNASSIGNED	
TA-3-263	SM-263		UNASSIGNED	
TA-3-264	SM-264		UNASSIGNED	
TA-3-265	SM-265	SEWAGE LIFT STATION		N70+00 E35+00

NOTE:
THIS SET OF EIGHT DRAWINGS CONSISTS OF:
ENG-R2410, INDEX SHEET, 1 OF 8
ENG-R2411, INDEX SHEET, 2 OF 8
ENG-R2412, INDEX SHEET, 3 OF 8
ENG-R2413, INDEX SHEET, 4 OF 8
ENG-R2414, SITE MAP, 5 OF 8
ENG-R2415, SITE MAP, 6 OF 8
ENG-R2416, SITE MAP, MANHOLES, 7 OF 8
ENG-R2417, SITE MAP, MANHOLES, 8 OF 8
THIS SET SUPERSEDES DRAWINGS
ENG-R2410, REV. NO. 11, DATED 5-13-64
ENG-R2411, REV. NO. 11, DATED 5-13-64
ENG-R2412, REV. NO. 10, DATED 5-13-64
ENG-R2413, REV. NO. 1, DATED 5-13-64

NO.	DATE	REVISIONS	BY
23	12-10-74	REVISED TO STATUS OF 12-10-74	B.H.
22	11-21-74	REVISED TO STATUS OF 11-21-74	B.H.
21	7-30-74	REVISED TO STATUS OF 7-30-74	DAD
20	7-18-73	REVISED TO STATUS OF 7-18-73	DAD
19	10-13-72	REVISED TO STATUS OF 10-13-72	CRL
18	8-11-71	REVISED TO STATUS OF 8-11-71	DAD

AUTHORIZED FOR: HEALTH / SAFETY / FIRE PROT. / SEC.

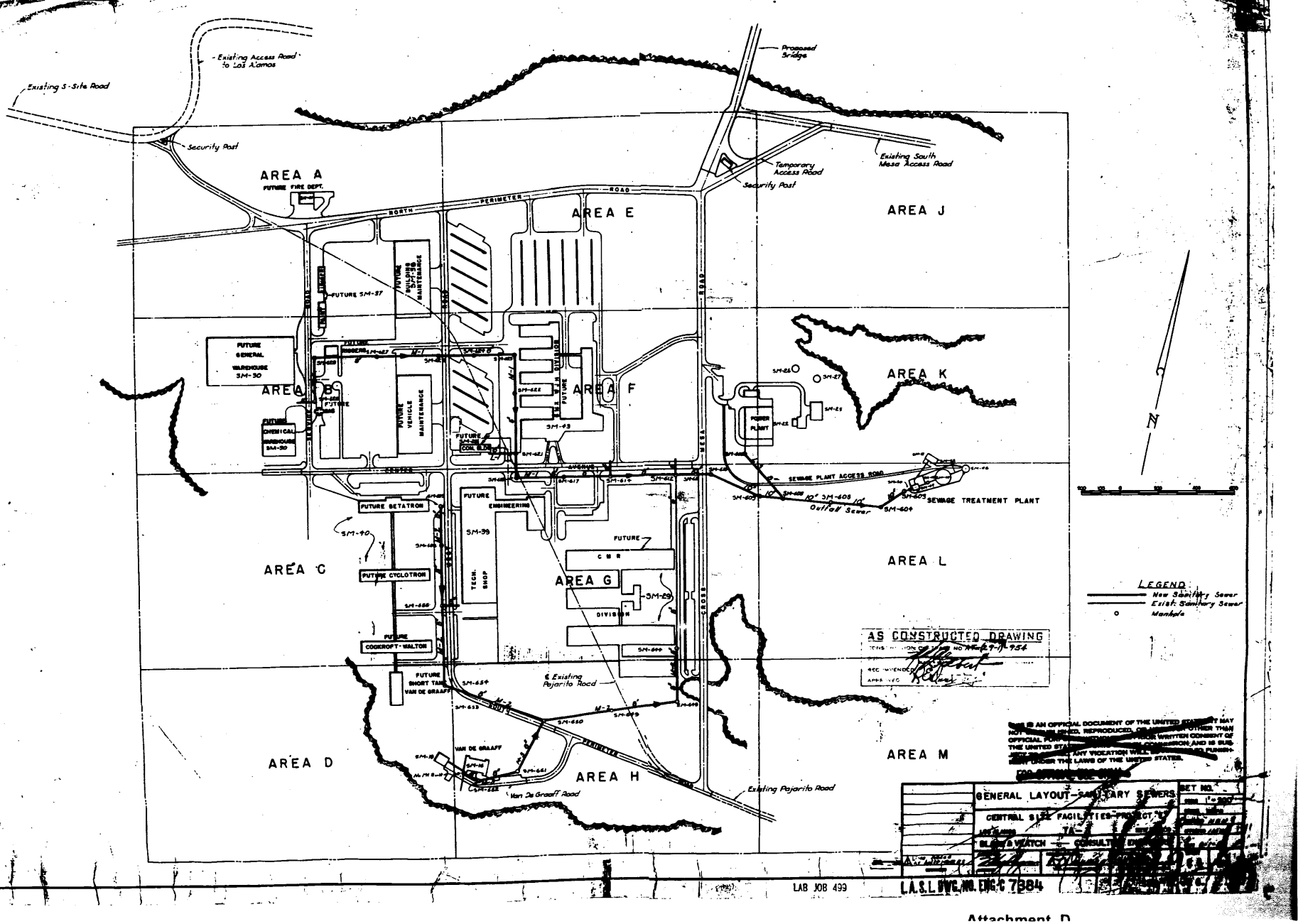
LOS ALAMOS SCIENTIFIC LABORATORY
ENGINEERING DEPARTMENT
UNIVERSITY OF CALIFORNIA — LOS ALAMOS, NEW MEXICO

INDEX SHEET
STRUCTURE LOCATION PLAN
TA-3 SOUTH MESA SITE

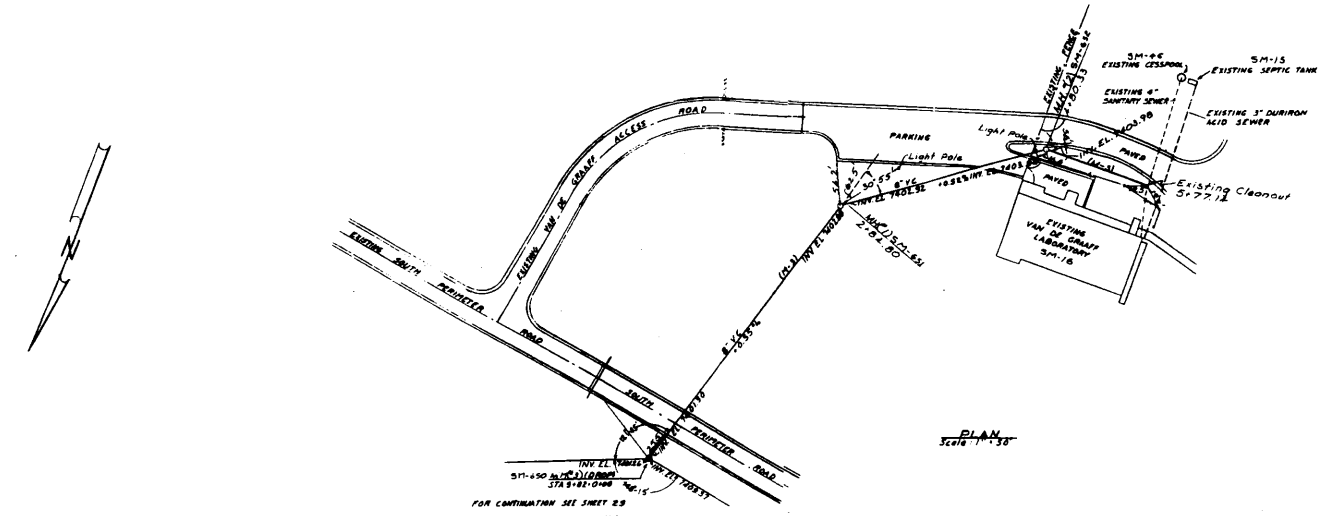
DRAWN: D.D.SIMES
DATE: 8-15-61
SCALE: NONE
SHEET: 1 OF 8
ENG-R 2410

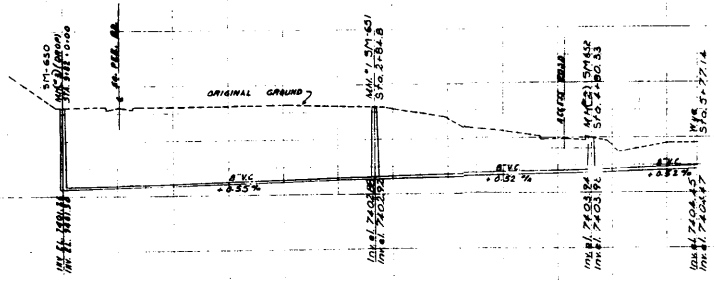
REVIEWER [signature]
CLASS U DATE 12/12/74

Attachment C



Attachment D





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Jay Brown FSS-16 9/24/96

AS CONSTRUCTED DRAWING

SANITARY SEWER- M-3

CENTRAL SITE FACILITIES-PROJECT

LOS ALAMOS NEW MEXICO

BLACK & VEATCH — CONSULTING ENGINEERS

SET NO.

SHEET 31 OF 91

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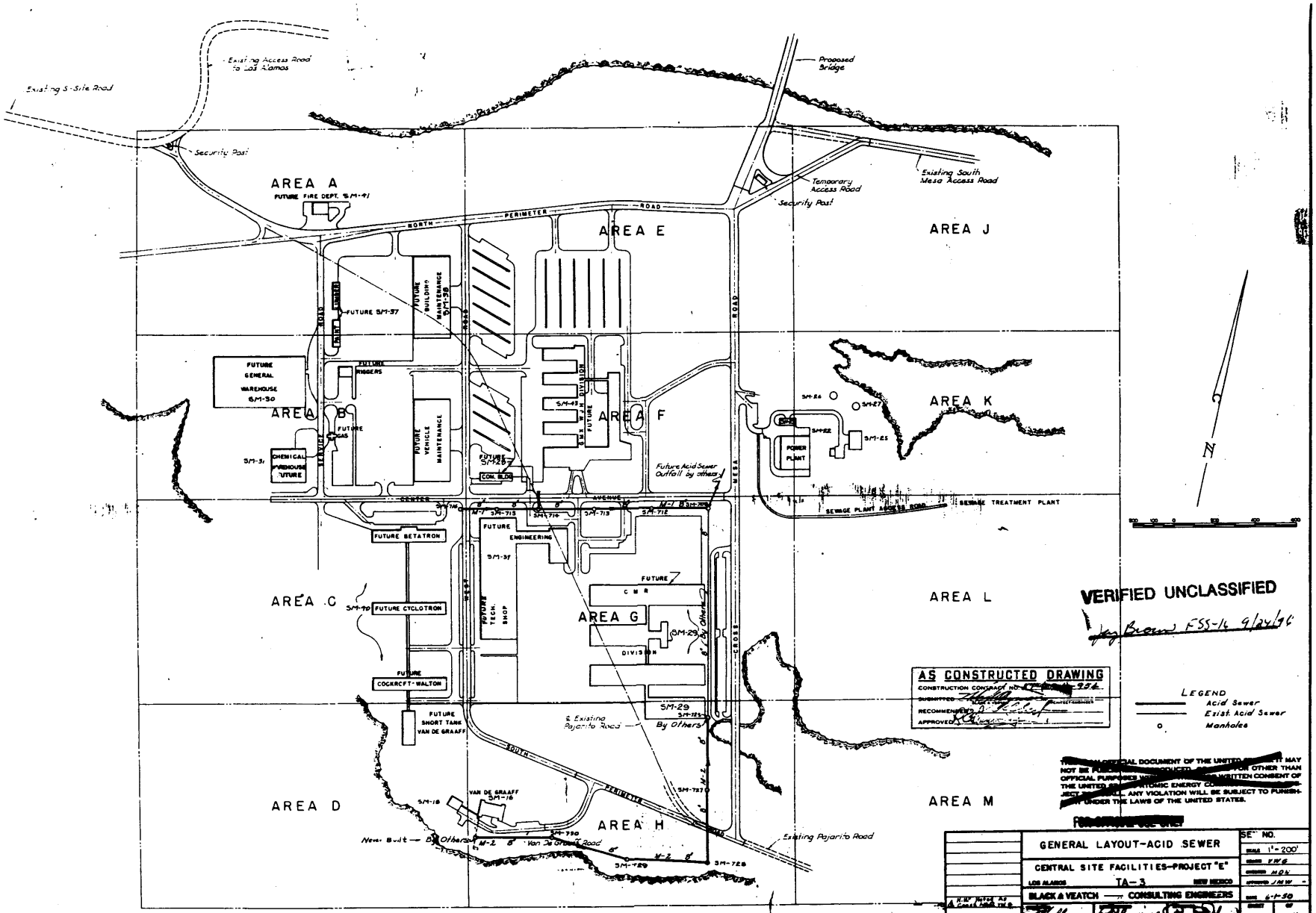
LAB JOB 499

L.A.S.L. DWG. NO. ENG-C 7389

SFA—HC—31.1

Attachment E



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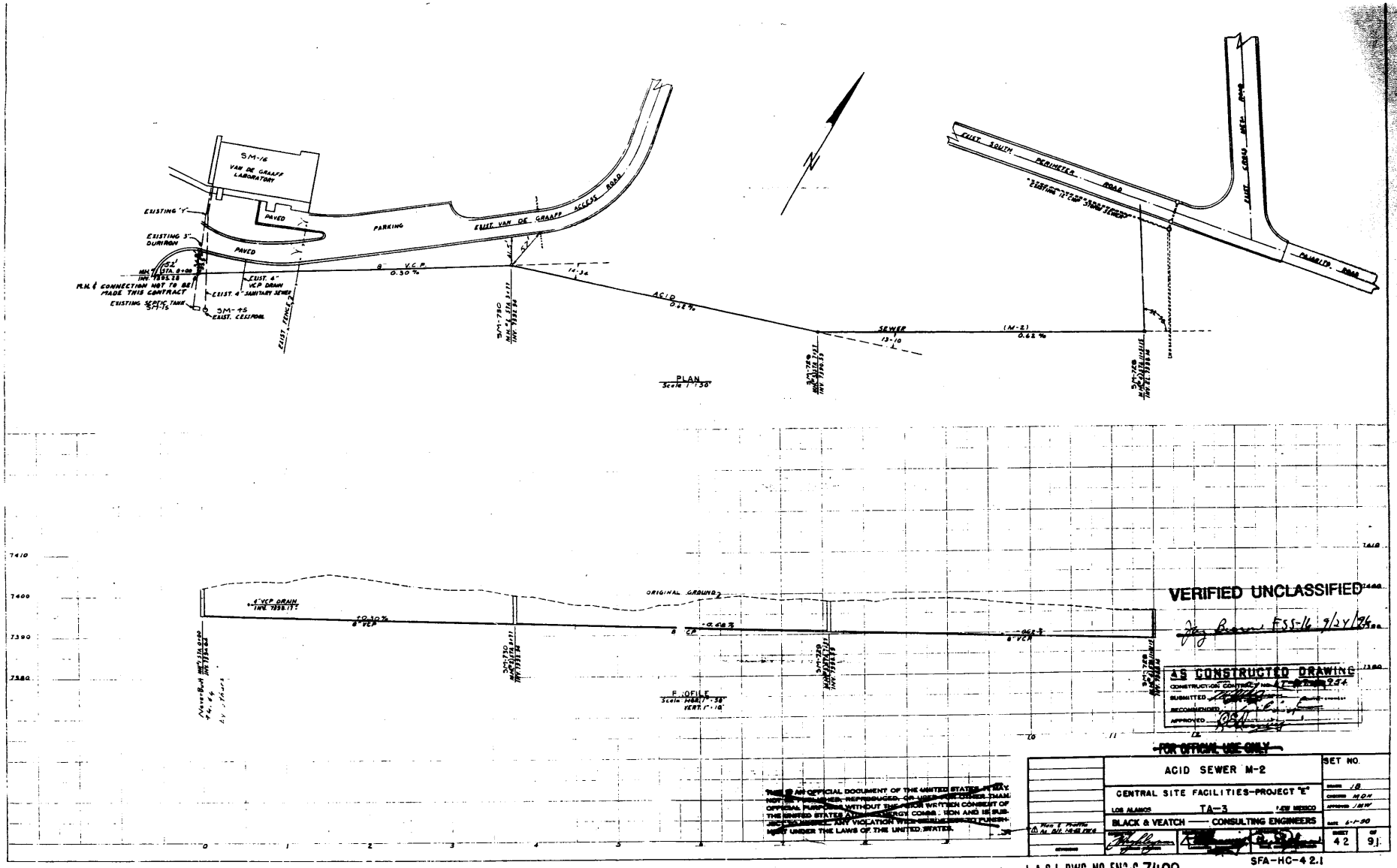
LAB JOB 499 L.A.S.L. DWG. NO. ENG-C 7398 SFA-HC-40.1

Attachment F



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ACID SEWER M-2

SET NO.

CENTRAL SITE FACILITIES—PROJECT "E"

LOS ALAMOS TA-3 NEW MEXICO

BLACK & VEATCH — CONSULTING ENGINEERS

DRAWN JB CHECKED MDH APPROVED JBW DATE 6-1-90

SHEET 42 OF 91

LAB JOB 499 L.A.S.L. DWG. NO. ENG-C 7400

SFA-HC-4 2.1

Attachment G

SWMU 3-024 — Tank and/or Associated Equipment

1.0 Introduction

SWMU 3-024 is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-024 (Map 3-024) is a pump pit (concrete vault) built of reinforced concrete with a steel and concrete cover. The pump pit is 19.6 ft long x 13.6 ft wide x 11.8 ft deep, with a capacity of 3,200 ft^3. The system is a closed-circuit pump unit used to pump noncontact cooling water for electric furnaces located at building TA-3-141, the Rolling Mill Facility located within the Sigma Complex. The noncontact cooling water flows through a roof-mounted water chiller, through operating equipment in the building, and back through the pump. The unit has been active since 1962.

1.2 No Further Action Basis

SWMU 3-024 is recommended for NFA because it has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. Furthermore, no known releases to the environment have occurred from the system (Griggs 1993, 17-844) (Attachment A). Nor are any likely to occur in the future, because more than 3,200 ft^3 of water would have to accumulate in order for the tank to overflow (Griggs 1993, 17-844) (Attachment A). No contaminants are associated with the pump pit because it handles only noncontact cooling water for electric furnaces.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-024 be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Pump pit of a closed system used to pump noncontact cooling water for electric furnaces.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Memorandum CLS-ER/EG-93:069, Griggs 1993.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-024 is recommended for NFA under Criterion 2.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Griggs, E., June 10, 1993. "Status of SWMU 3-024 at TA-3-141," Los Alamos National Laboratory Memorandum CLS-ER/EG-93:069 to File from E. Griggs (CLS-DO), Los Alamos, New Mexico. (Griggs 1993, 17-844)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-51. (LANL 1995, 1291)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

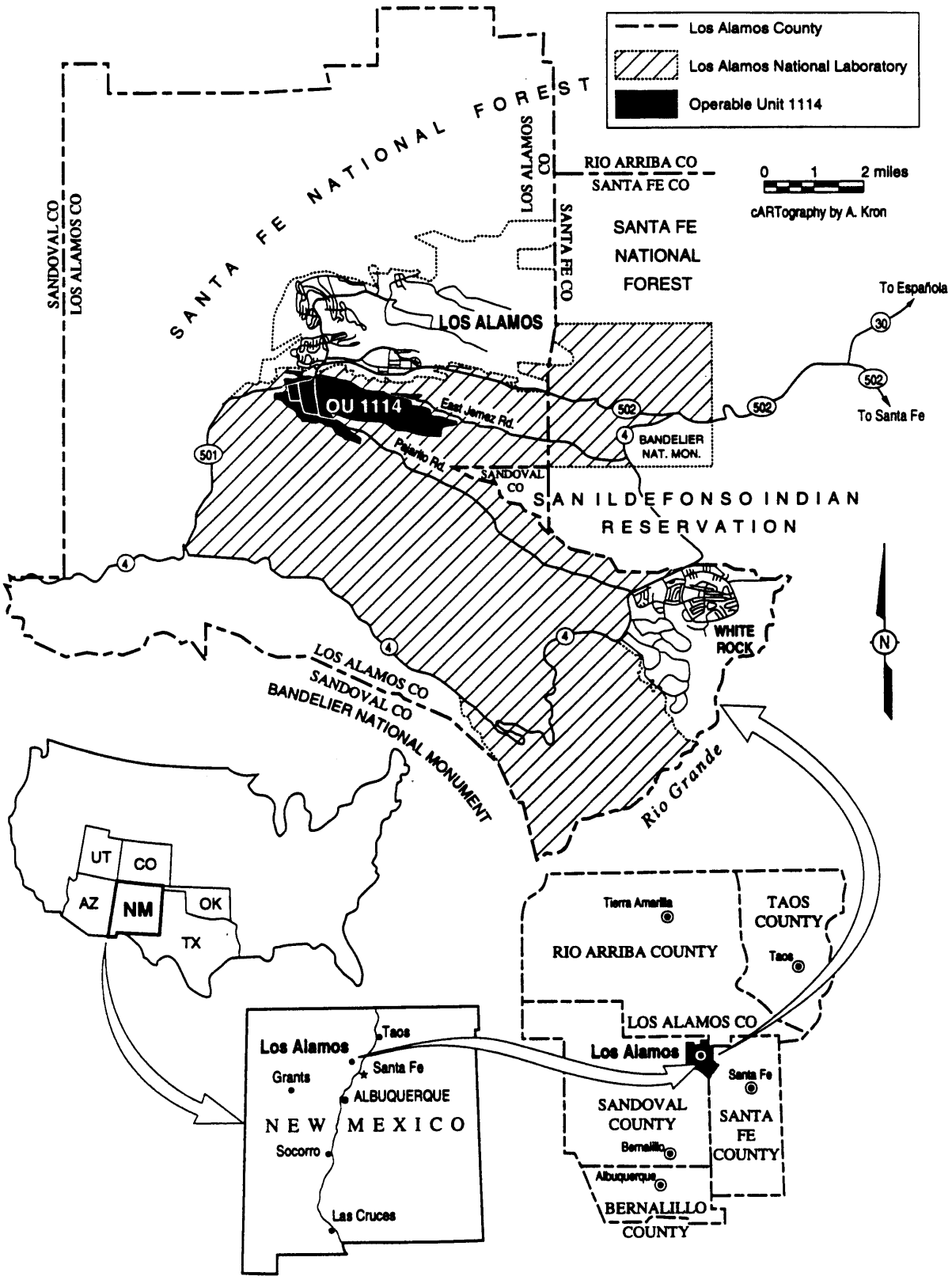


Fig. 1-1. Location of Operable Unit 1114.

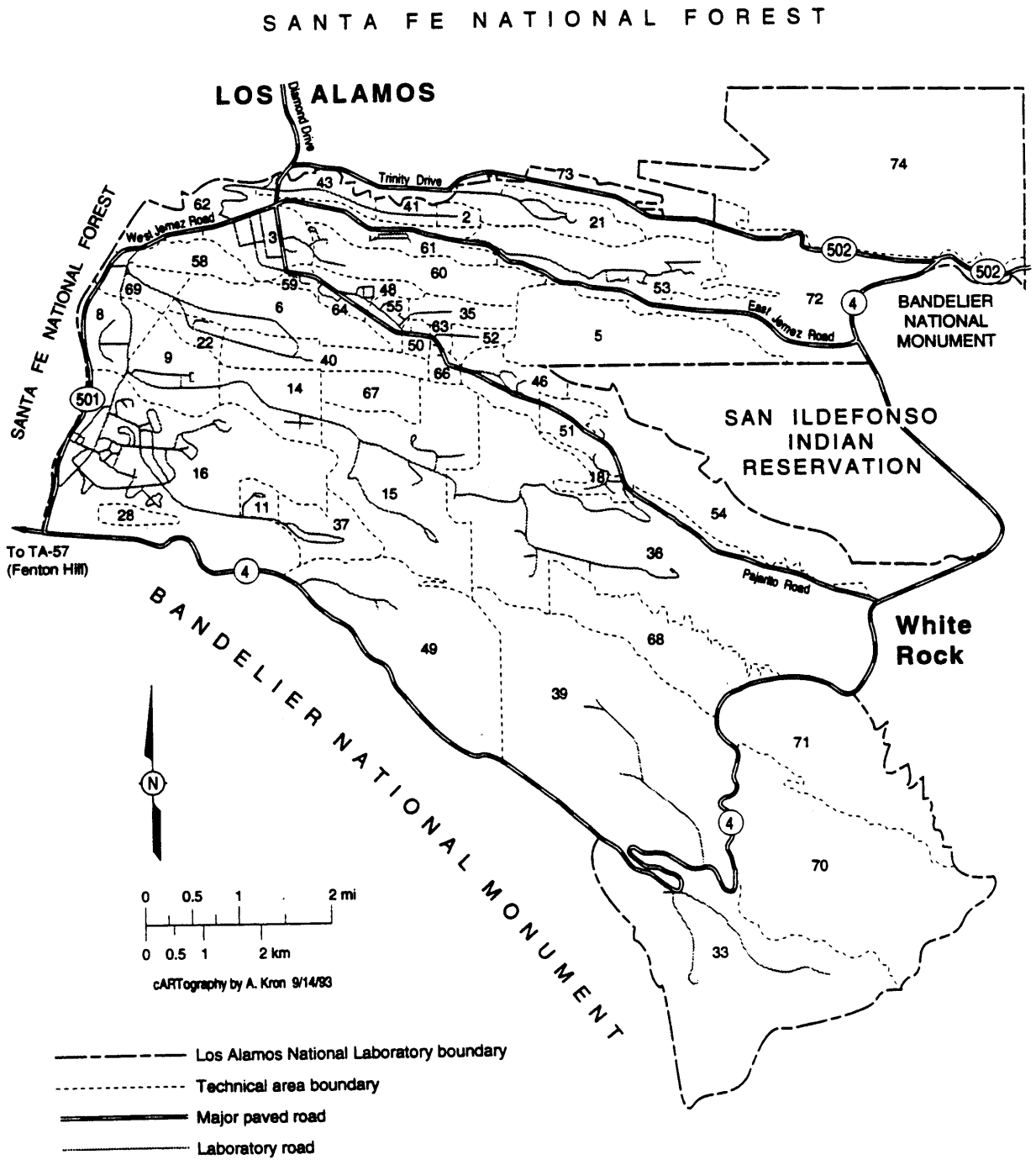
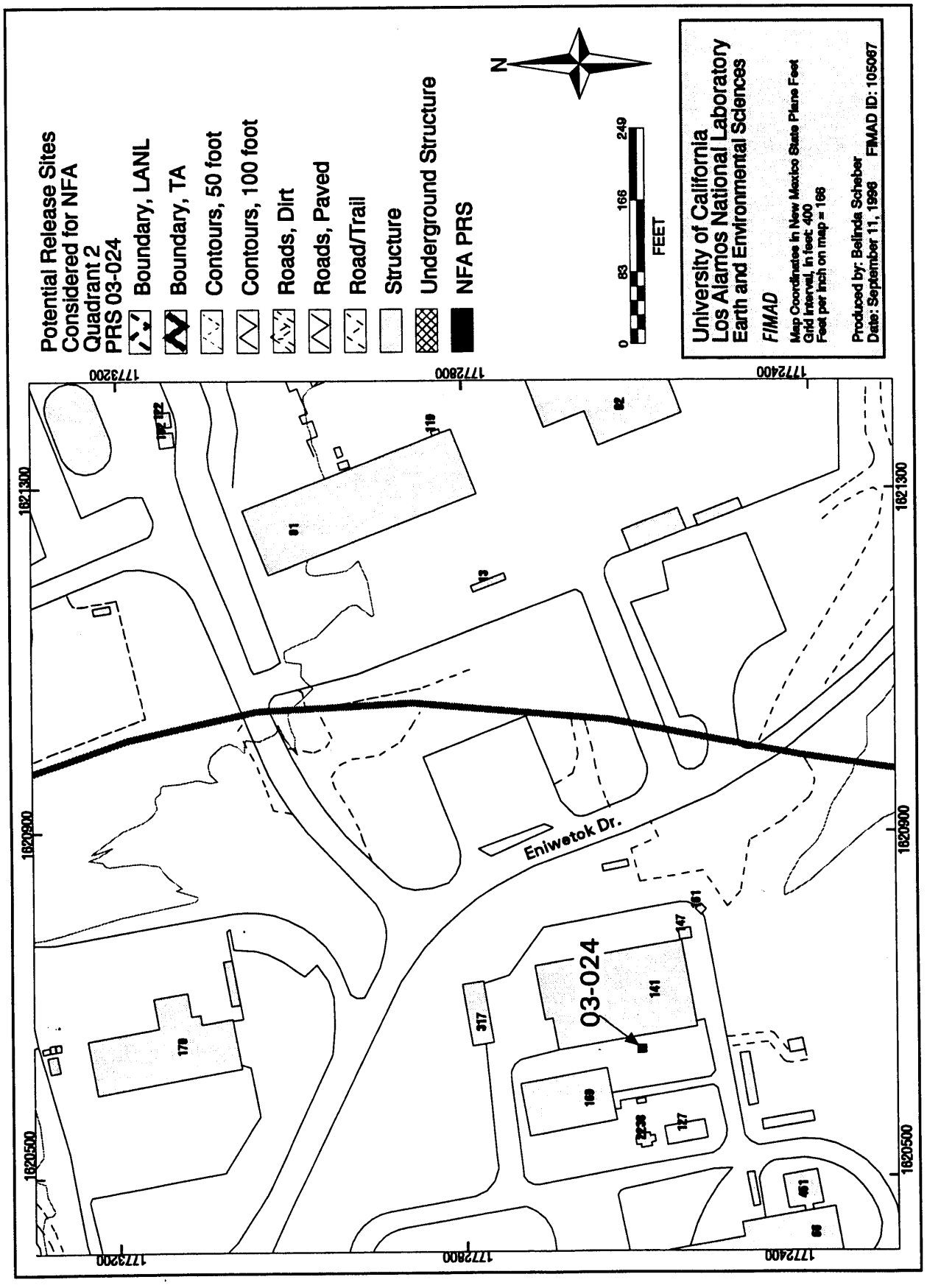


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03, PRS 03-024

6.3 Other Survey/Investigation Data

Section not applicable.

3-024

ATTACHMENTS

Attachment A

3-000844

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: File

DATE: June 10, 1993

FROM: Ed Griggs, CLS-DO

MAIL STOP/TELEPHONE: E525/7-5544

SYMBOL: CLS-ER/EG-93:069

SUBJECT: **STATUS OF SWMU 3-024 AT TA-3-141**

The 1988 SWMU Report identified a pump pit associated with the rolling mill building, TA-3-141, process water system.

Ed Griggs visited the site with Joe Mitchell, MST-DO Building Manager, on 6/8/93. The pump pit houses the pumping unit for the building process water system which is a closed-circuit pump unit for the TA-3-141 building. The process water flows from the pump pit through a roof-mounted water chiller, through operating equipment within the building, and back through the pump. The pump pit is built of reinforced concrete, about 13 ft 8 in. square x 11 ft 10 in. average depth, with steel and concrete cover. The unit has been in operation since 1962 and remains operative today. There have been no known leaks from the system.

Cy: Griggs ER File

SWMU 3-025(a) — Tank and/or Associated Equipment

1.0 Introduction

SWMU 3-025(a) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-025(a) [Map 3-025(a)] is described in the SWMU Report as an oil trap sump connecting a steam cleaning drain from the shops in TA-3-34 to the industrial waste line (LANL 1990, 0145) (Attachment A).

1.2 No Further Action Basis

SWMU 3-025(a) is recommended for NFA because the site does not exist. The SWMU Report incorrectly identifies this SWMU as an oil trap sump. There is only one shop at TA-3-34 and no oil trap sump exists between the drains and drain lines to the industrial waste line (Bohn 1989, 17-883; Engineering drawing ENG-C 17680) (Attachments B and C).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-025(a) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Section not applicable.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-025.

Attachment B: LANL Memorandum HSE 8-89-758, Bohn, 1989.

Attachment C: LASL, Engineering Drawing ENG-C 17680.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-025(a) is recommended for NFA under Criterion 1.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Bohn, R., December 12, 1989. "Survey of Basement Floor Drains In Building SM-34," Los Alamos National Laboratory Memorandum HSE 8-89-758 to H. Haagenstad (P-10) from R. Bohn (HSE-8), Los Alamos, New Mexico. (Bohn 1989, 17-883)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-38 through 6-39. (LANL 1995, 1291)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-025. (LANL 1990, 0145)

Los Alamos Scientific Laboratory, "Cryogenics Laboratory SM-34, Vacuum Piping and Equipment," Drawing No. ENG-C 17680 (October 9, 1953).

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

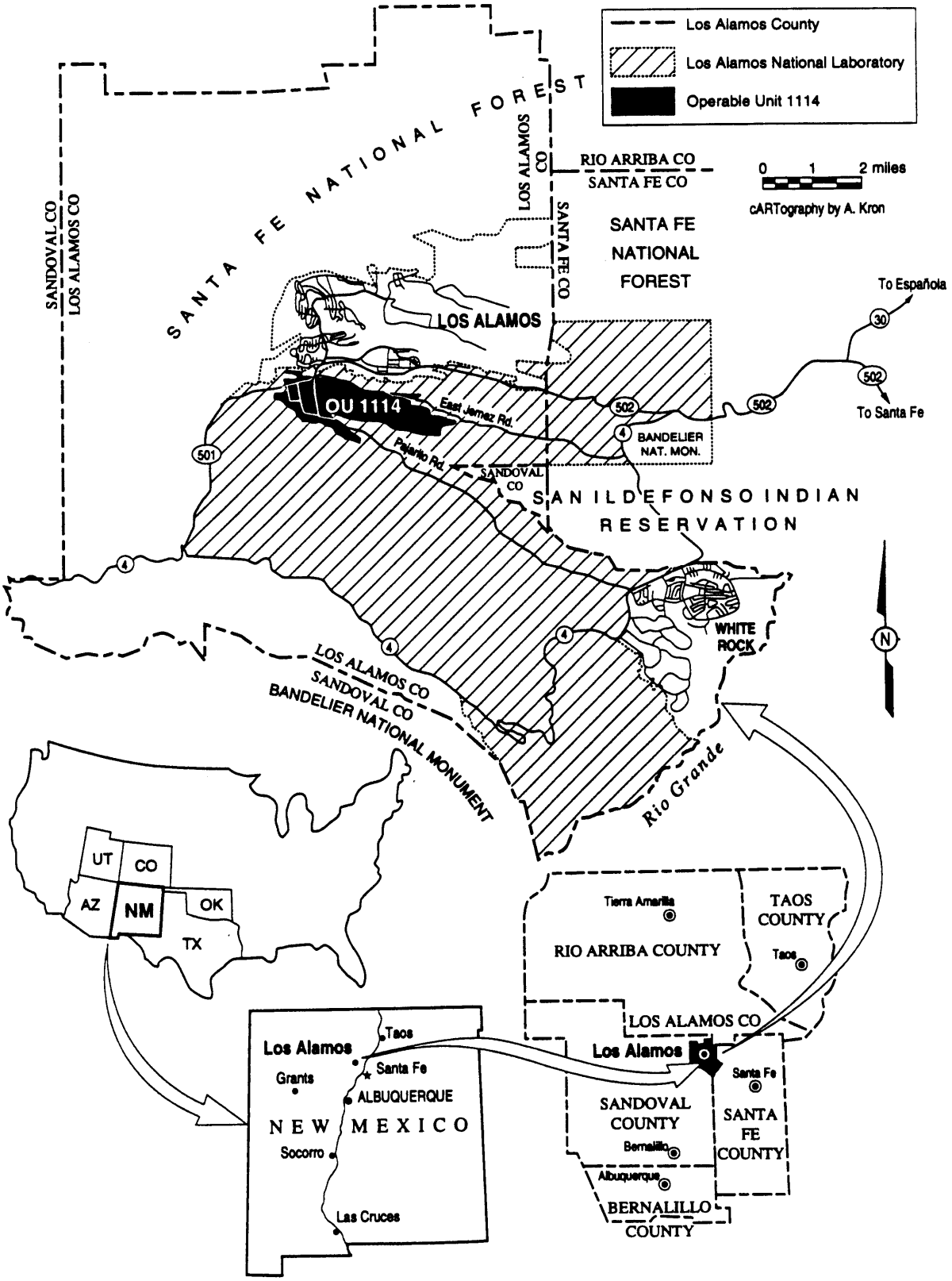
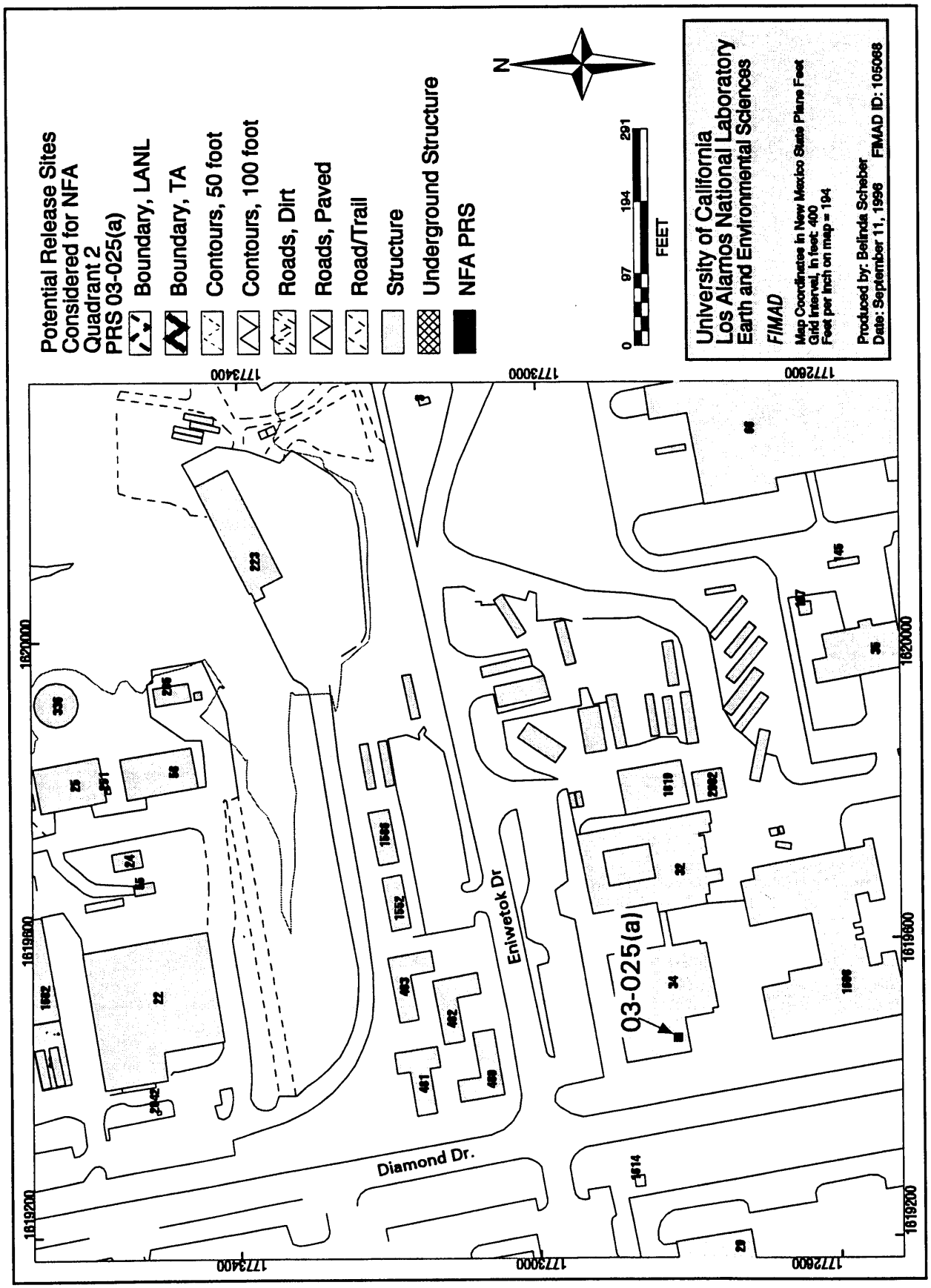


Fig. 1-1. Location of Operable Unit 1114.



Potential release sites considered for NFA, TA-03, PRS 03-025(a)

6.3 Other Survey/Investigation Data

Section not applicable.

3-025(a)

ATTACHMENTS

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : SUMP
UNIT USE : TREATMENT
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : ? - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : SOLID WASTE
RADIOACTIVE WASTE
SUSPECTED HAZARDOUS WASTE

UNIT INFORMATION

In the shops of Building TA-3-34 [3-025(a)], the steam cleaning drain connects via an oil trap sump to the industrial waste line sewer to TA-50. In Building TA-3-102 [3-025(b)], the industrial drains connect via an oil trap into the industrial drain to TA-50. Since radioactive materials are handled in TA-3-102, the oil trap residues are absorbed in vermiculite and sent to the radioactive disposal site (MDA-G). Another sump [3-025(c)] receives waste from the steam cleaning room in the south end of TA-3-39. The sump is no longer used. This sump feeds into the sump in TA-3-102.

WASTE INFORMATION

The waste managed by the traps is radionuclide-contaminated oil and grease.

RELEASE INFORMATION

The sump in TA-3-39 is known to have overflowed in the past. The other units have had no known releases of hazardous constituents.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-025(a)	TA3-4-S-A/I-PP		Tsk 20 : 16	TA-3-34
3-025(b)	TA3-4-S-A/I-PP		Tsk 20 : 19	TA-3-102
3-025(c)	**		Tsk 20 : 31	TA-3-39

** No corresponding E. R. Program unit.

Attachment B SWMU 3-025(a)

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Harvey Haagenstad, P-10, MS K764 DATE: December 12, 1989

FROM: Roy Bohn, HSE-8 MAIL STOP/TELEPHONE: K490/5-0452

SYMBOL: HSE8-89-758

SUBJECT: **SURVEY OF BASEMENT FLOOR DRAINS IN BUILDING SM-34**

In your memo dated December 8, 1989, you requested a survey of floor drains located in the basement of SM-34 to determine where they discharge.

On December 11, 1989, the Environmental Protection Group (HSE-8) dye tested a sink located in the basement of SM-34, room B-10, inside a radioactive contaminated hood. The sink discharges wastewater into a floor drain located in room B-11. The fluorescent dye was traced to the TA-3 Sewage Treatment Plant. 7/12/93

Since this sink is potentially radioactively contaminated, the wastewater it generates must be replumbed to the radioactive liquid waste collection system and may no longer discharge to the sanitary sewer system.

If you have any questions, please contact me at 665-0452.

RB:bjh

Cy: C. King, P-DO, MS D408
C. Nylander, HSE-8, MS K490
R. Romero, HSE-8, MS K490
L. Andrews, HSE-1, MS K487
T. Mirabal, ENG-5, MS G770

B-2 is changed; should Read B-11

SWMU 3-026(b) — Sumps (Active)

1.0 Introduction

SWMU 3-026(b) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-026(b) [Map 3-026(b)] consists of five active sump pumps in the basement of the Computer Science Building, TA-3-132. The sumps receive waste from toilets, sink drains, and floor drains. The sumps have been active since 1953 and are connected to the sanitary sewer line, which feeds to the TA-3 Wastewater Treatment Plant. The Wastewater Treatment Plant was sampled in 1994 as SWMUs 3-014 (a-z). Two photo-processing laboratories in TA-3-132 previously emptied spent processing solutions that contained small quantities of silver and cyanide into the drains. Wastewater was collected in the sumps and pumped to the sanitary sewer line. According to records, 1,038 gallons of spent solution and 44,060 gallons of rinse water discharged to the sanitary sewer per month (Trezona 1991, 17-870) (Attachment A). Currently, spill pads cover the floor drains in TA-3-132, the spent solution is captured in carboys, and disposed of properly.

1.2 No Further Action Basis

SWMU 3-026(b) is recommended for NFA because there is no historical documentation or evidence to suggest a systematic release has occurred from the sumps to the environment., nor is one likely to occur in the future. There was no silver or cyanide discovered in the outfall soil samples at the Wastewater Treatment Plant. Any release that may have occurred from the sump to the environment would have contained only miniscule quantities of silver and/or cyanide. Furthermore, because the sumps are contained in the basement of the building, there is no exposure pathway unless the building or the sump is removed. When the Computer Science Building and/or sumps are decomissioned, any contamination resulting from the sumps (should any exist) will be cleaned. There is no date for decomissioning the Computer Building at this time.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-026(b) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Two photo processing laboratories.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Memorandum C-1/FILMCHEM, Trezona, 1991.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-026(b) is recommended for NFA under Criterion 3.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, p 6-51. (LANL 1995, 1291)

Trezona, T., January 16, 1992. "Film Processing Chemical Waste Disposal," Los Alamos National Laboratory Memorandum C-1/FILMCHEM to M. Alexander (EM-8) from T. Trezona (C-1), Los Alamos, New Mexico. (Trezona 1991, 17-870)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

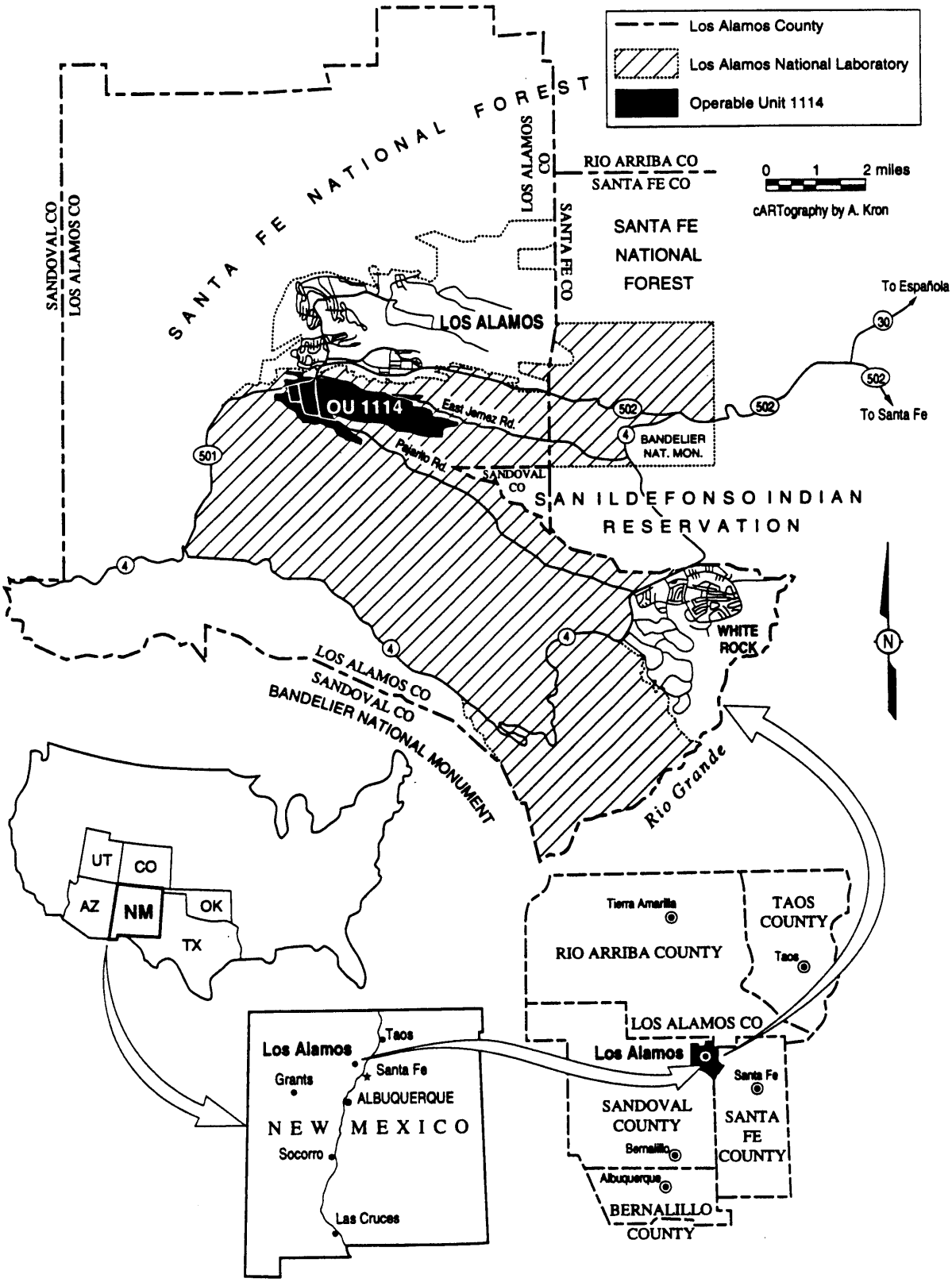


Fig. 1-1. Location of Operable Unit 1114.

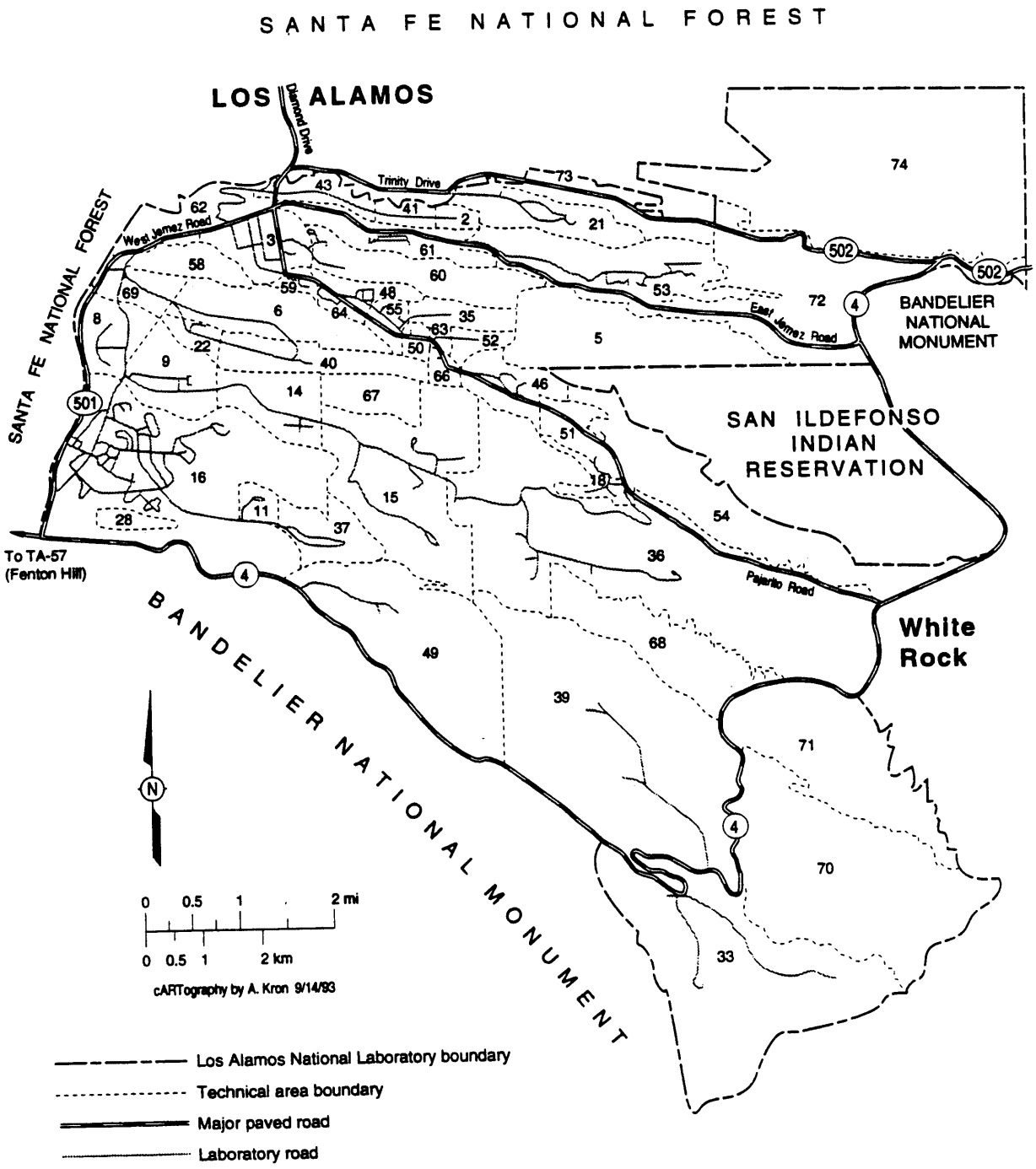
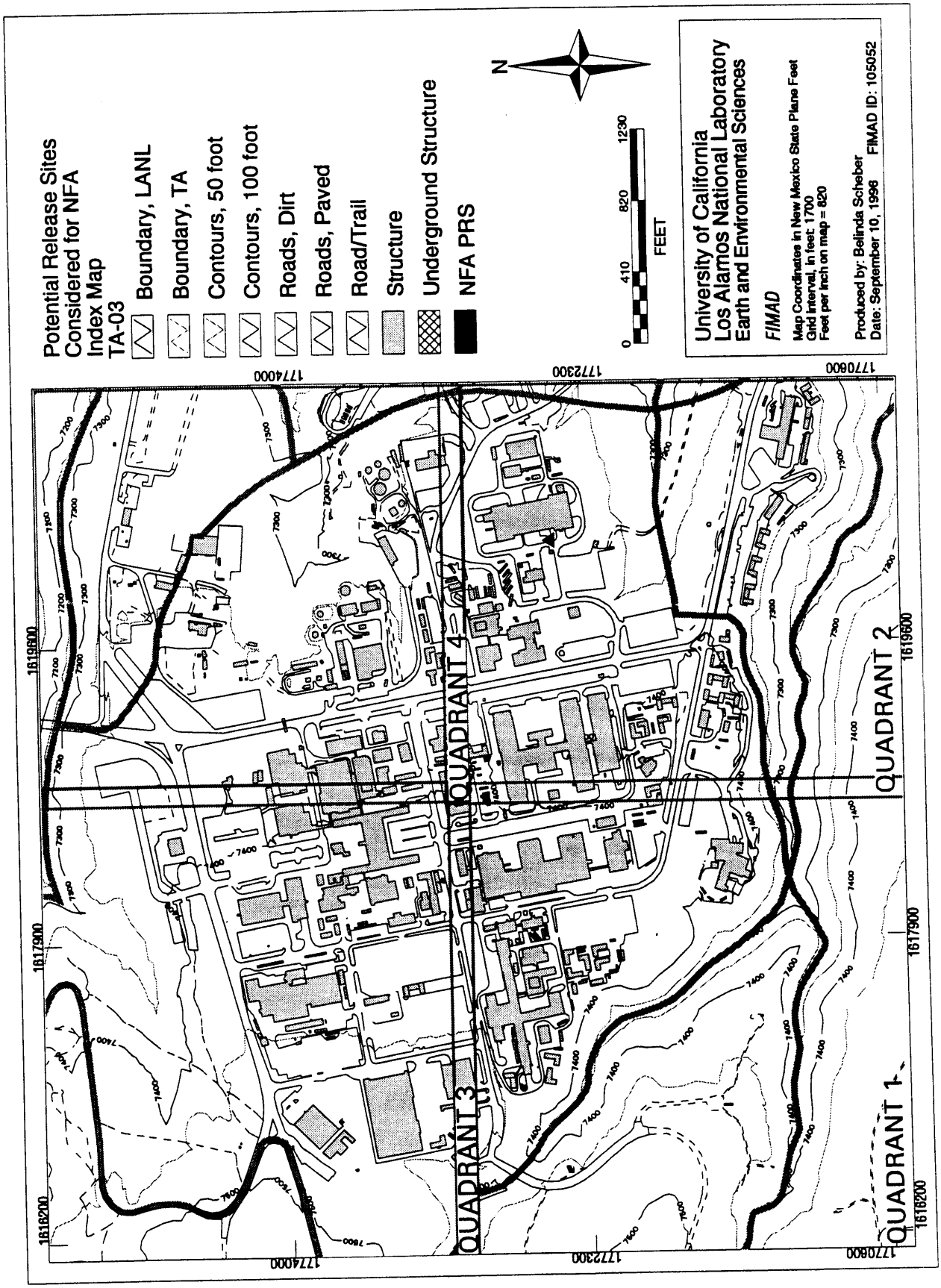
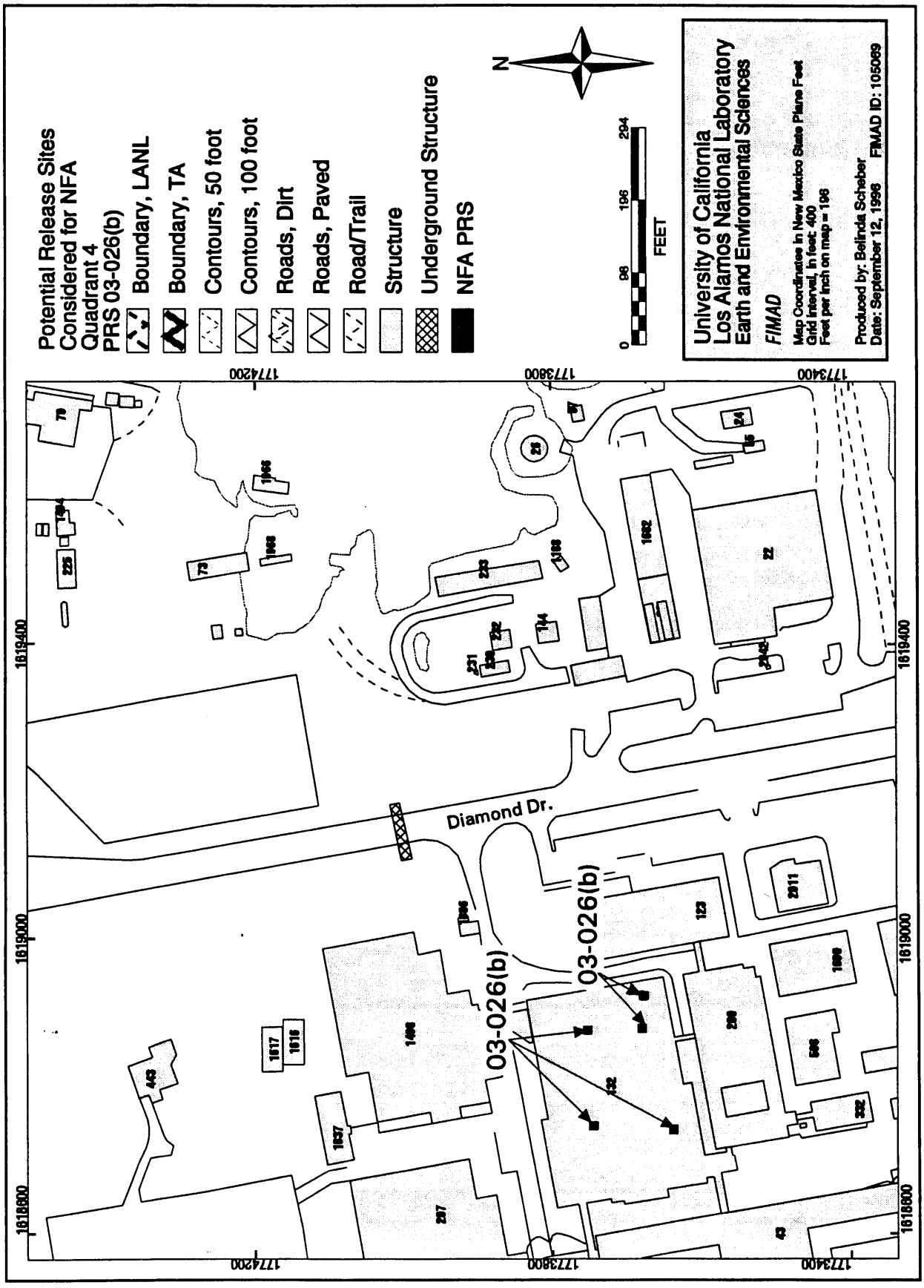


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-026(b)

6.3 Other Survey/Investigation Data

Section not applicable.

3-026(b)

ATTACHMENTS

Attachment A 3-000870

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Michael Alexander, EM-8, MS K490 DATE: January 16, 1992

THRU: Hassan Dayem, C-DO, MS B260 MAIL STOP/TELEPHONE: B252/7-4890

FROM: Thomas Trezona SYMBOL: C-1/FILMCHEM

SUBJECT: **FILM PROCESSING CHEMICAL WASTE DISPOSAL**

I am requesting your assistance to fund, design, and construct a containment and disposal system for film processing chemical waste that will meet or exceed Laboratory, state, and federal environmental regulations. Attached is "*A Proposal for Collecting and Disposing of Hazardous Photographic Waste in Group C-1, TA-3, SM-132 (CCF)*" dated September 17, 1991, that provides an overview of the present film processing operation, the chemicals involved (with average monthly quantities), the processing facilities, and a recommended alternative to using the sanitary sewer for disposal. This proposal involves excessive handling and storage of spent chemicals by C-1 personnel that I now find unacceptable. I would be more interested in a waste collection system that involves minimal handling by C-1 personnel and one in which the chemicals are transferred directly from holding tanks to an authorized disposal service. However, the proposal does provide other valuable and related information that can be used as a starting point for this project. Please contact me at 667-4890 at your earliest convenience to discuss this request further. Your assistance in this matter is greatly appreciated.

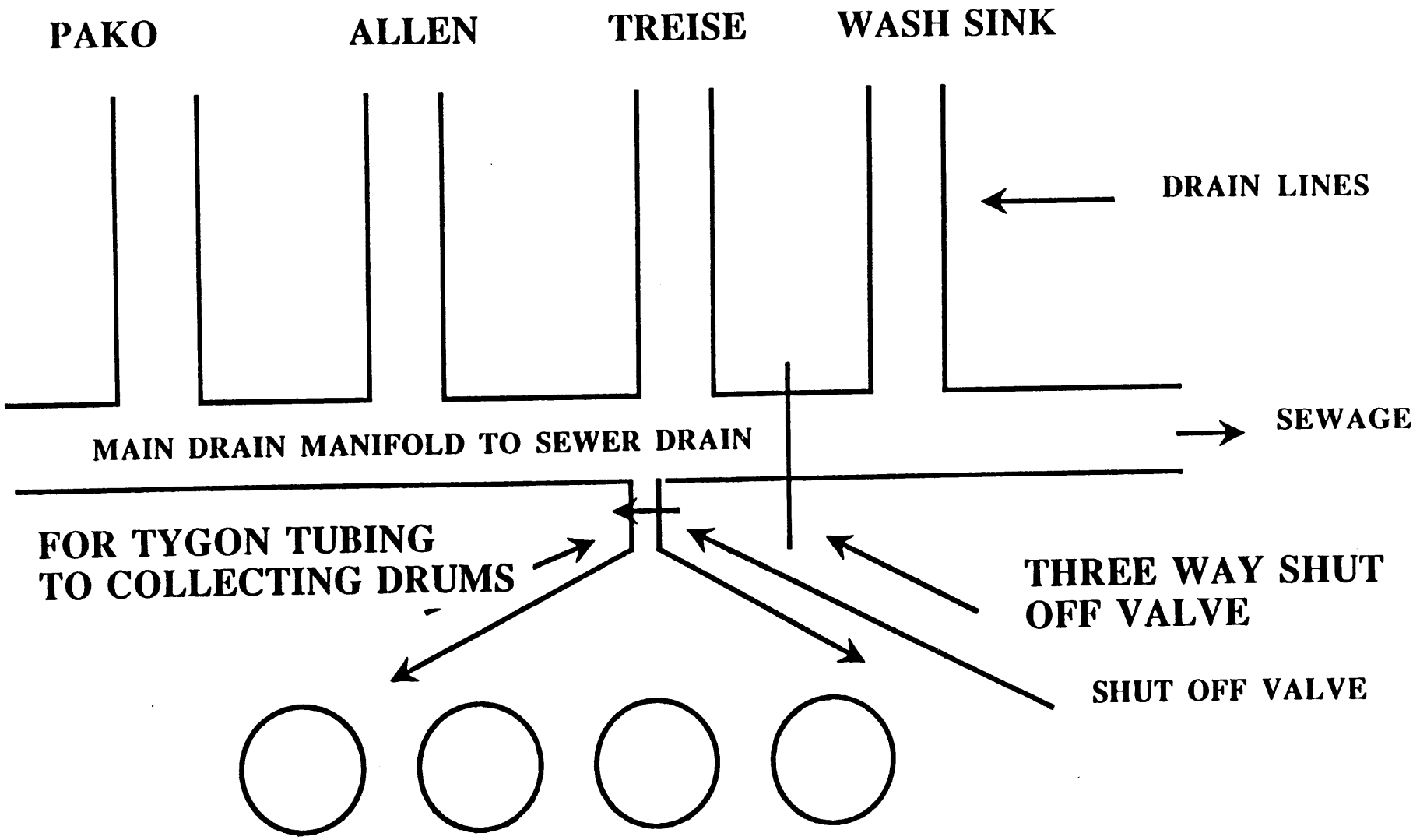
TT:tn

Att. a/s above

Cy: Carol Sutcliffe w/att., EM-9, MS D434
Daniel Torres w/att., C-1, MS B252
Raymond Elliott w/att., C-DO, MS B260
C-1 files w/att.

Complete attachment is not included but is readily available upon request. Phone the Environmental Restoration Project Office at (505) 667-0808.

DRAIN LINES FROM THREE FILM PROCESSORRS AND A WASH SINK FROM TA-3-132, GROUP C-1



Attachment A

Attachment A

EQUIPMENT PROCESS CHEMISTRY USAGE

PROCESSOR	CHEMICAL	UNT/MO	VOL/UNT	VOL/MO	GAL/MO
TREISE COLOR	1ST DEVELOPER	5.2	100 L	520 L	137 G
	STOP BATH	1.4	400 L	560 L	148 G
	COLOR DEVELOPER	7.2	100 L	720 L	190 G
	BLEACH	1.4	100 L	140 L	37 G
	FIXER	2.5	100 L	250 L	66 G
	STABILIZER	0.85	100 L	85 L	23 G
	TOTAL	18.55		2,275 L	601 G

	CHEMICAL	UNT/MO	MIX RATIO	GAL/MO
ALLEN 105 MM	DEVELOPER	5.9	5:1	148 G
	BLEACH	6.1	2:1	61 G
	CLEAR	2.5	3:1	38 G
	FIX	0.4	7:1	14 G
	TOTAL	14.9		261 G

	CHEMICAL	UNT/MO	MIX RATIO	GAL/MO
PAKO 26-RA	DEVELOPER RA	3.8	4:1	78 G
	FIXER RA	1.9	5:1	48 G
	TOTAL	5.7		128 G

	CHEMICAL	GAL/MO
ILFORD COLOR	DEVELOPER	10 G
	STOP BATH	10 G
	COLOR DEVELOPER	10 G
	BLEACH-FIX	10 G
	STABILIZER	10 G
	TOTAL	50 G

TOTAL CHEMISTRY GALLONS PER MONTH 1,038 G

Attachment A

PROCESSOR	WASH WATER FLOW GAL/MO
TREISE COLOR	19,800 G
ALLEN 105 MM	19,800 G
ALLEN 35 MM	1,300 G
PAKO 26-RA	3,160 G
ILFORD COLOR	0 G
TOTAL	44,060 G

SWMU 3-031 — Tank and/or Associated Equipment

1.0 Introduction

SWMU 3-031 is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-031 (Map 3-031), a radioactive liquid waste system located within building TA-3-29, consists of tanks, sumps, drain lines, and double-encased stainless steel vaults. Liquid waste from TA-3-29 was carried through the radioactive liquid waste line to the TA-45 Radioactive Liquid Waste Treatment Plant in TA-1 until it was decommissioned in the 1960s (LANL 1992, 0781) (Attachment A). In 1963 the radioactive liquid waste from TA-29 was routed to TA-3-700, the pumping station at the corner of Diamond Drive and West Jemez Road, and then to the new Radioactive Liquid Waste Treatment Plant at TA-50 (LANL 1996, 03-1275) (Attachment B).

From 1953 to 1982, diverse chemical and metallurgical operations at TA-3-29 drained liquid radioactive waste through sumps and tanks. Floor drains, air duct wash water, and, in some cases, the perchloric acid scrubber, drained into 10,800-gal. concrete tanks and associated sumps in the basement of TA-3-29. Engineering drawings illustrating the construction of TA-3-29 show two 10,800-gal.-capacity tanks sited in the basement of each of 5 wings. The tanks are adjacent to each other and constructed of 6-in.-thick concrete walls. The dimensions of the tanks are 10 ft long x 6 ft wide x 6 ft high (Engineering drawing ENG-C 8006) (Attachment C). Although the tanks were designed as holding tanks, they were used more frequently as a pass-through system. The valve at the bottom of each tank was always in the open position; therefore, all liquids drained directly to the radioactive liquid waste line. The tanks served as holding tanks only when the inflow to the tank was greater than the rate of outflow.

Pumping station TA-3-700 was removed in the early 1980s. The present TA-3-29 system, which routes waste directly to TA-50, has been in operation since 1982. Waste currently discharged to the sumps and tanks contains radioactive and mixed waste constituents. The tanks are expected to handle solids, liquids, gases, and sludges containing corrosives, flammables, reactives, toxics, inorganics, and metals (LANL 1990, 0145) (Attachment D). The liquid is directly transferred to TA-50 via the radioactive liquid waste line. According to AR 10-1, a computerized leak detection and valve control system at TA-50 monitors the lines for leaks (LANL 1992, 0333, page 6 of 6) (Attachment E). Of the five sets of concrete retention tanks (vaults) no cracks or exposed rebar were observed during the 1982-1987 visual inspection and upgrade. The upgrade consisted of sandblasting, sealing, and epoxying the vault interiors, and replacing the valving. In addition, level detectors were placed in all the tanks to electronically monitor the liquid level in the tank and relay the information to the TA-50 plant. Since the upgrade , the 6 retention tanks (three sets) drain by gravity directly to TA-50. The other two sets of tanks have additional fiberglass tanks installed so that the contents could be pumped to the closest manhole then flow by gravity to TA-50. The fiberglass tanks were installed because the original concrete retentional tanks were not in position to work with a gravity feed system (too far upslope). (LANL 1996, 03-1275) (Attachment B)

1.2 No Further Action Basis

SWMU 3-031 is recommended for NFA because no release to the environment has occurred, nor is likely to occur in the future. No releases from the tank vaults were observed during visual inspection and none have been reported in the past. Engineered controls prevent releases to the environment and the monitoring system would immediately alert the operating group to a problem. In addition, the industrial waste system is completely contained in the building with no pathway to the environment.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-031 be proposed for removal from the HSWA Module of the Laboratory's

Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

From 1953 to 1982, diverse chemical and metallurgical operations at TA-3-29 drained liquid radioactive waste through sumps and tanks for discharge to the Radioactive Liquid Waste Treatment Facility.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, "RFI Workplan for Operable Unit 1071," page 5-44. (LANL 1992, 0781)

Attachment B: LANL, Email from Lynda Hartman to Issac Suazo.

Attachment C: LASL, Engineering Drawing ENG-C 8006.

Attachment A:LANL, November 1990. "Solid Waste Management Units Report," page 3-031.

Attachment E: *The Laboratory Manual-Environment, Safety, and Health*, Section AR 10-1.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-031 is recommended for NFA under Criterion 3.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, September 20, 1996. "Retention tank upgrade in the basement of the CMR building," Email from L. Hartman to I. Suazo, Los Alamos, New Mexico.

Los Alamos National Laboratory, May 29, 1992. *The Laboratory Manual - Environment, Safety, and Health*, AR 10-1, Los Alamos, New Mexico. (LANL 1992, 0333)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-43 through 6-44. (LANL 1995, 1291)

Los Alamos National Laboratory, May 1992. "RFI Work Plan for Operable Unit 1071," Los Alamos National Laboratory Report LA-UR-92-810, Los Alamos, New Mexico, page 5-44. (LANL 1992, 0781)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-031. (LANL 1990, 0145)

Los Alamos Scientific Laboratory, "Laboratory, TA-3, Project D, Piping, Wing #3 Basement," Drawing No. ENG-C 8006 (February 4, 1960).

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

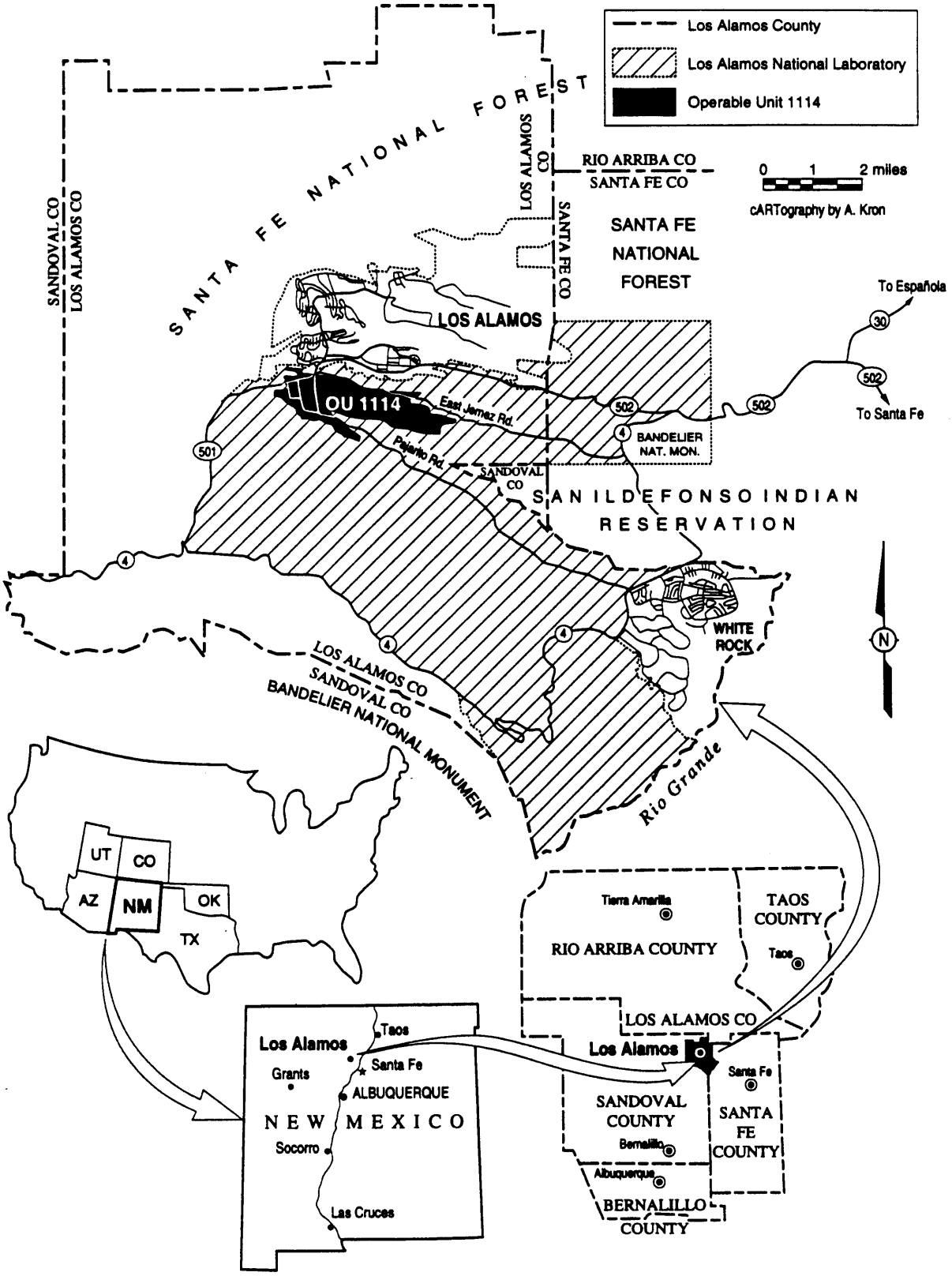


Fig. 1-1. Location of Operable Unit 1114.

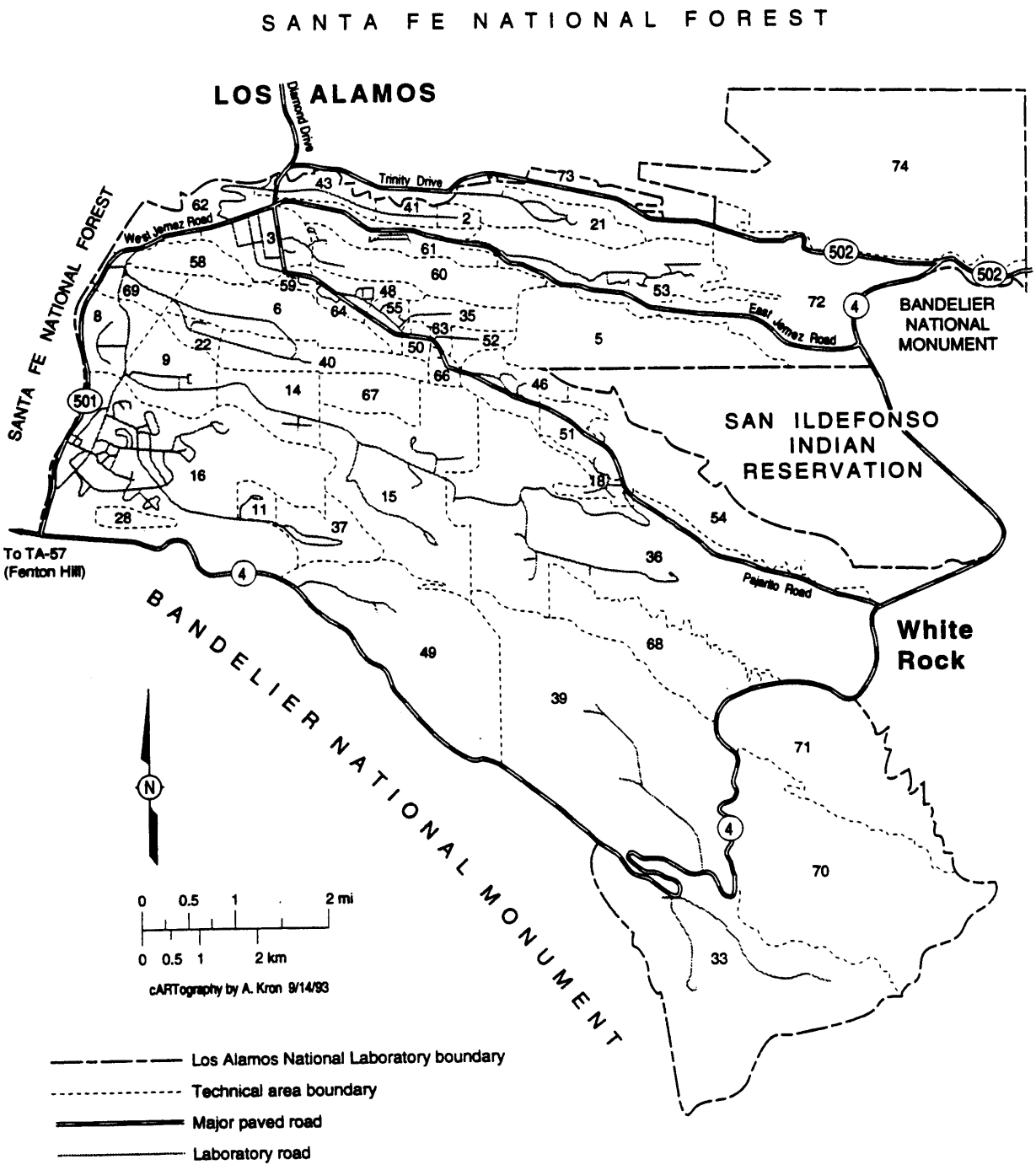
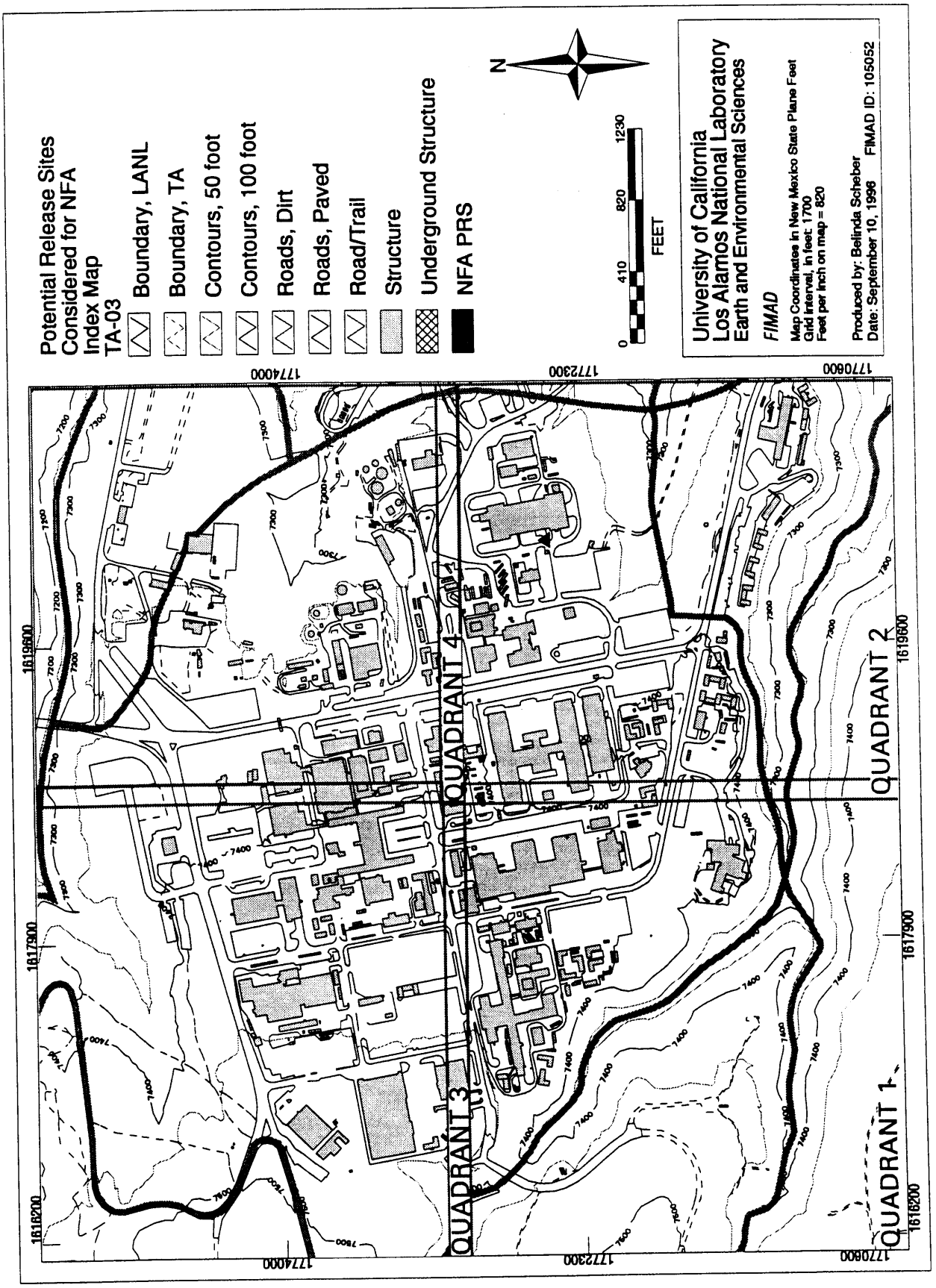
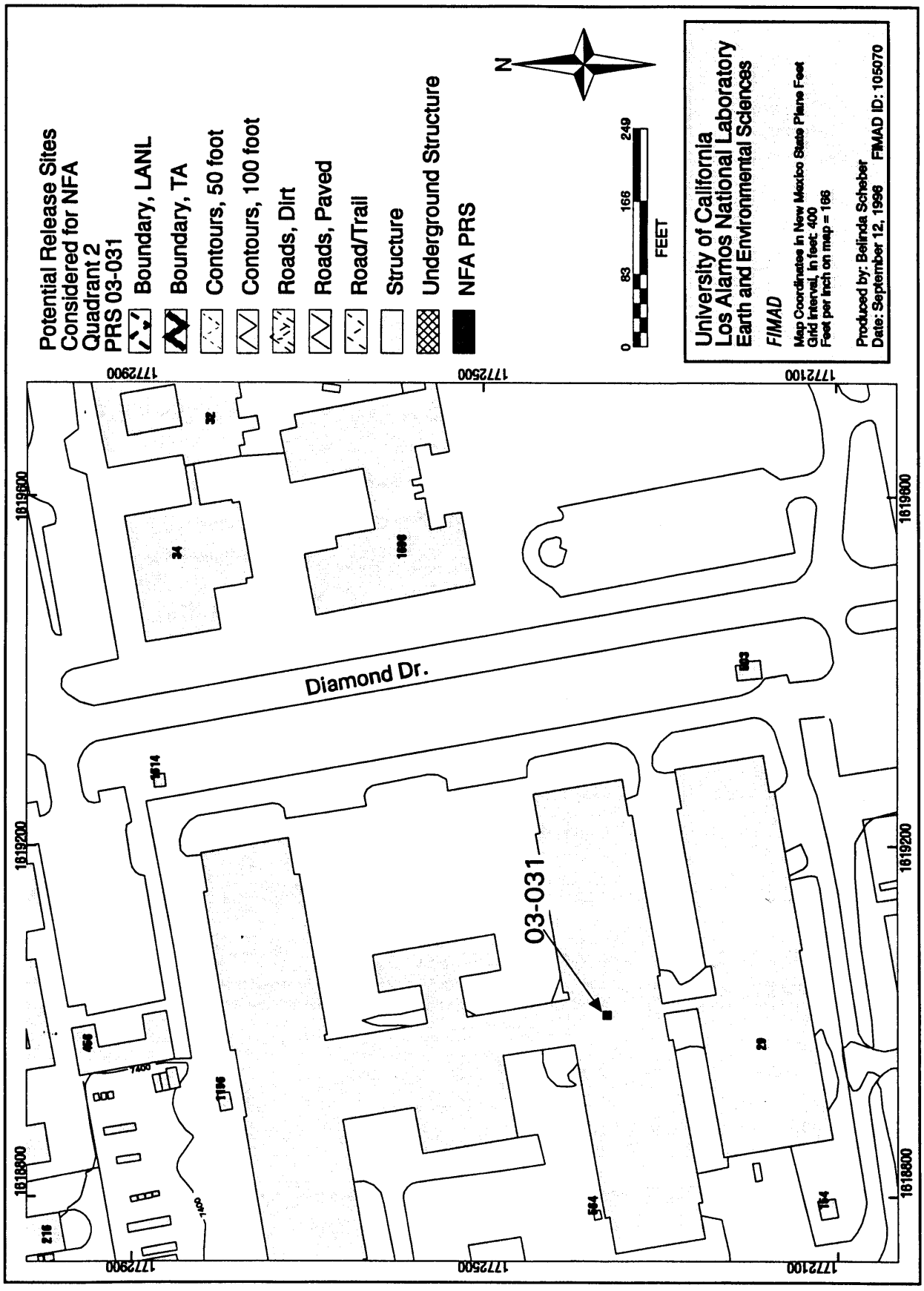


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-031

6.3 Other Survey/Investigation Data

Section not applicable.

3-031

ATTACHMENTS

5.5 SWMU 0-017 (Waste Lines)

SWMU 0-017 consists of waste lines that were or are located in TA-0 on privately owned and Los Alamos County lands (Figure 3-3).

5.5.1 Description and History

In 1943, the Laboratory began to install underground industrial waste lines. These waste lines and associated sumps and pumps were used to transport contaminated liquid wastes generated by Laboratory operations to various treatment facilities. Between 1953 and 1963, wastes from the Health Research Laboratory (HRL) in TA-43 were piped into the line. After 1963, TA-43 wastes were rerouted to the sanitary sewer system.

Most of the contaminated waste lines have been removed; however, some small isolated sections of waste line remain in place (Figure 5-17). This discussion is limited to the contaminated liquid waste lines that were or are within the boundaries of TA-0, with the exception of the line that connected TA-1 to TA-45, which is addressed in the work plan for OU 1078.

The contaminated liquid waste lines in TA-0 were located as follows: one set originated in TA-1 in the south-central part of the townsite and ran northward to TA-45 near the rim of Acid Canyon; the other main line ran from TA-3 down through Los Alamos Canyon under Omega Bridge, splitting into two branches north of the HRL building. These two lines ran northeast, roughly parallel to Diamond Drive, reconnecting near the intersection of Diamond Drive and Trinity Drive. The line continued northeast to a point north of Canyon Road, where it turned eastward, eventually terminating at the TA-45 treatment plant (Elder et al. 1986, 0456). Contaminated waste lines in TA-0 were constructed of either VCP or cast iron pipe. Both types of pipe have the potential for leaks at connections and/or via breaks in the lines. Releases from VCP occurred more frequently because of the fragility of the material and the nature of the connections. Leaks are also known to have occurred in the sumps associated with the waste lines. Releases occasionally occurred while the pipes were being decommissioned.

Portions of the abandoned contaminated liquid waste lines and associated structures in TA-0 were removed between 1964 and 1967 (DOE circa 1980, 05-0034). During this period, the lines from TA-1 to TA-45 and from the intersection of Trinity Drive and Diamond Drive to TA-45 were excavated and disposed in the Laboratory's radioactive waste disposal area. Sections of waste line not removed were located under Central Avenue, Rose Street, Canyon Road, and the intersections of Diamond Drive with Trinity Drive and Canyon Road. Details on decontamination conducted during the decommissioning are lacking.

An additional 1,300 ft of waste line and associated structures were removed from Laboratory and Los Alamos County lands during an 11-week project in 1977. The items removed were several manholes, a section of pipe under the north end of Omega Bridge, and a length of line from just west of the HRL building to a point past the intersection of Trinity Drive and Diamond Drive. Decontamination levels during the project were based on the stated DOE policy of "as low as practicable." Economic and practical considerations were weighed, along with health and safety issues, to determine cleanup levels on an individual basis. DOE's LAAO had the responsibility for determining the level of decontamination.

To: ils@lanl.gov
From: lls@lanl.gov (Lynda Sobojinski)
Subject: Retention tank upgrade in the basement of the CMR building
Cc:
Bcc:
X-Attachments:

03-1275

Dear Mr. Issac Suazo,

Since you are familiar with the upgrade of retention tanks (SWMU 3-031) in the basement of the CMR building I am asking you to review the information I received from you regarding this issue. I understand you worked with the Radioactive Liquid Waste Line group HSE-7 (now CST-13) for many years and were working as a member of this group while the upgrade occured.

From 1953 to 1982, operations at TA-3-29 drained liquid radioactive waste through sumps and tanks. Floor drains, air duct washwater, and ,in some cases, the perchloric acid scrubber, drained into 10,800-gal. concrete retention tanks and associated sumps in the basement of the CMR building. Engineering drawings illustrating the construction of TA-3-29 show two 10,800-gal. capacity tanks sited in the basement of each of 5 wings. These tanks are adjacent to each other and made of 6-in.-thick concrete walls. The dimensions of the tanks are 10 ft long x 6 ft wide x 6 ft high (Engineering drawing ENG-C8006). Although the tanks were designed as holding tanks, they were used more as a pass-through system. The valve at the bottom of tank was always in the open position; therefore, all liquids drained directly to the radioactive liquid waste line.

Liquid from TA-3-29 was carried through the radioactive liquid waste line to the TA-45 Radioactive Liquid Waste Treatment Plant in TA-1 until it was decommissioned in the 1960's. In 1963 the radioactive liquid waste from TA-29 was routed to TA-3-700 the pumping station at the corner of Diamond Drive and West Jemez Road and then to the new Radioactive Liquid Waste Treatment Plant at TA-50. Pumping station TA-3-700 was removed in the early 1980's. The present TA-3-29 waste system, which routes waste directly to TA-50, has been in operation since 1982.

The retention tanks did retain liquids if the inflow to the tank was greater than the outflow, as they were designed to do. Of the five sets of concrete retention tanks no cracks or exposed rebar was observed during the 1982-1987 visual inspection and upgrade. The upgrade consisted of sandblasting, sealing, and epoxying the tank interiors, and replacing the valves. In addition, level detectors were placed in all the tanks to electronically monitor the liquid level in the tank and relay the information to the TA-50 plant. Six retention tanks (three sets) drain by gravity directly to TA-50 since the upgrade. The other two sets of tanks have additional fiberglass tanks installed so the contents can be pumped to the closest manhole then flow by gravity to TA-50. The fiberglass tanks were installed because the original concrete retention tanks were not in position to work with a gravity feed system (too far upgrade).

If this information is accurate please initial a hard copy of this e-mail and fax it back to me at 665-4632. If changes need to be made, please make them to the electronic copy before sending me the initialed hard copy.

Thanks, Lynda Hartman

3-031 **BUILDING 29 DISPOSAL COMPLEX** 10/31/90

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : SUMP
UNIT USE : STORAGE/DISPOSAL
OPERATIONAL STATUS : ACTIVE/INACTIVE
PERIOD OF USE : 1950s - PRESENT
HAZARDOUS RELEASE : NONE
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : HAZARDOUS WASTE
RADIOACTIVE WASTE
MIXED WASTE

UNIT INFORMATION

The industrial sewer system within TA-3-29 (CMR) consists of double encased stainless steel sewer vaults, tanks, sumps, and drainlines which discharge to the industrial waste line for treatment at TA-50. Liquid radioactive waste from operations at the CMR building either drain directly to this waste line or through the sumps and/or tanks and then to the waste line. In addition, floor drains, air duct washwater, and in some cases, the perchloric acid scrubber were serviced by two 10,800-gallon concrete tanks in the basement of each wing of the building. These tanks are currently on stand-by and, if used, would also drain to the industrial waste line. The present TA-3-29 system has been in operation since 1982.

WASTE INFORMATION

The waste discharged to the sumps and tanks contains radioactive and mixed waste constituents. The vaults are expected to handle solids, liquids, gases, and sludges containing corrosives, flammables, reactives, EP toxics, inorganics, and metals.

RELEASE INFORMATION

A computerized leak detection and valve control system at TA-50 monitors the sewer lines for leaks. No releases from the sewer vaults were observed during the VSI or have been reported in the past. The tanks and sumps have leaked, but the releases have been contained within the building.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-031	TA3-5-CA/S/UST/SST-A/I-HW/RW	3.002-3.007 3.013-3.024 3.065-3.066 3.069-3.070	Tsk 20 : 14 15	TA-3-29

Introduction

Laboratory and Department of Energy (DOE) policies require that the volume of radioactive liquid waste generated by Laboratory operations be reduced to a minimum and that the radioactivity of waste released to the environment be kept as low as reasonably achievable (ALARA). This document summarizes the requirements of DOE Order 5820.2A, "Radioactive Waste Management," and the Environmental Protection Agency (EPA) Clean Water Act for managing and disposing of radioactive liquid waste at the Laboratory. Additional guidance is available in Technical Bulletin (TB) 1001, "Radioactive Liquid Waste Collection System," and TB 1002, "Radioactive Liquid Waste Treatment and Disposal."

Definitions

Batch Volume—An amount (up to a few thousand liters) of radioactive liquid waste that is segregated from the main radioactive waste stream because it needs separate treatment or because the generating site is not served by the radioactive liquid waste pipeline.

Radioactive Liquid Waste—Liquid waste contaminated or potentially contaminated with radionuclides.

Radioactive Liquid Waste Pipelines—Pipelines that carry radioactive liquid waste from various Laboratory sites to liquid waste storage and treatment facilities. (The network of pipelines was formerly referred to as the acid or industrial waste sewer system.) The Waste Management Group (EM-7) operates the waste treatment plants and maintains the radioactive liquid waste collection system from the point where a building connects to the radioactive liquid waste pipeline. See the appendix for additional information.

Radioactive Liquid Waste Transport—The transfer of radioactive liquid waste from Laboratory sites that are not served by radioactive liquid waste pipelines and of materials that are not allowed to be carried through the pipeline to liquid waste storage and treatment facilities.

Overall Responsibility

Unless otherwise stated in this document, line managers must ensure that the requirements specified herein are met.

Waste Management Review

Standard Operating Procedures. Each operation involving the generation or handling of radioactive liquid waste requires a standard operating procedure (SOP), which must be prepared, reviewed, and approved as specified in Administrative Requirement (AR) 1-3, "Standard Operating Procedures and Special Work Permits."

In addition to the review required by AR 1-3, the Waste Management Group (EM-7) must review and approve SOPs involving the generation of radioactive liquid waste before they are implemented.

Annual Review. To ensure compliance with SOPs and appropriate regulations, as well as to determine where program improvements are needed, EM-7 is responsible for periodic field operational reviews of these SOPs. The frequency of the reviews shall be commensurate with the need of the particular operation involved.

Waste Management Coordinator

A waste management coordinator must be identified for each group or division that generates radioactive liquid waste. At some sites, one person may represent several groups. The waste management coordinator shall be the primary contact between generators and EM-7 and should have the authority to approve of and implement waste management matters for the group or division represented. The waste management coordinator may be the same person as the hazardous waste coordinator identified in AR 10-3, "Chemical, Hazardous, and Mixed Waste."

The coordinator must ensure that

- every operation that generates radioactive liquid waste is covered in an SOP;
- operating personnel are familiar with pertinent administrative requirements, SOPs, and waste management regulations;
- the volume of the radioactive liquid waste is kept to a minimum;
- the radioactivity level of liquid waste is kept to a minimum and does not exceed EM-7 recommended limits;
- hazardous waste, as defined by the Environmental Protection Agency (EPA) in the Resource Conservation and Recovery Act (RCRA), and materials regulated by the Toxic Substances Control Act (TSCA) are not discharged into the radioactive liquid waste pipeline;
- waste streams not identified and listed under the Laboratory's National Pollutant Discharge Elimination System (NPDES) permit are not discharged into the radioactive liquid waste pipeline;
- EM-7 is notified immediately of unusual or accidental discharges that may violate waste management regulations;
- EM-7 is contacted to coordinate collection of liquid waste that does not meet requirements for discharge to the radioactive liquid waste pipeline (see "Disposal Restrictions"); and
- radioactive liquid waste is not released to any other waste collection system. EM-7 personnel can assist in identifying connections to the radioactive liquid waste pipeline; also see the appendix.

Disposal Methods

At Buildings Connected to the Radioactive Liquid Waste Pipeline. Radioactive liquid waste (except as described under "Disposal Restrictions") must be discarded into sinks or drains that are connected to the radioactive liquid waste pipeline or to special storage tanks.

At Buildings Not Connected to the Radioactive Liquid Waste Pipeline. Radioactive liquid waste generated at sites not connected to the radioactive liquid waste pipeline or to special storage tanks must be collected in containers approved by EM-7 and transported to one of the treatment plants in compliance with Department of Transportation (DOT) regulations. Generators must store radioactive liquid waste in properly labeled containers that are located in properly posted and authorized areas. The containers must meet the requirements for secondary containment. Contact EM-7 for container specifications.

Documentation, Certification, and Audits

Documentation. EM-7 is developing a document titled "Waste Acceptance Criteria for Liquid Radioactive Waste Receipt for Processing by Group EM-7" as required by Department of Energy (DOE) Order 5820.2A. When the document has been completed and approved, the generator of liquid radioactive waste who uses a connection to the radioactive liquid waste pipeline will be required to file a Form 1346 (ES&H Form 10-3B), Waste Profile Request (WPR), with the Environmental Protection Group (EM-8). EM-8 will review the form, assign a unique identification number, and return it to the generator. It is then the generator's responsibility to send the completed form to EM-7. This form needs to be filed only at the beginning of an operation and when there is a significant change in the composition or volume of the discharge.

The generator of liquid radioactive wastes who uses barrels, tanks, or small containers for transferring liquid waste to EM-7 for treatment will be required to submit a WPR form for each shipment of wastes. This requirement is in addition to the requirements specified in AR 3-5, "Shipment of Radioactive Materials."

The waste acceptance criteria will also require that a Liquid Radioactive Waste Disposal Request (LRWDR) form (which is being developed) be completed and forwarded to EM-7 before transferring any liquid waste to EM-7 operations. This form will be submitted whenever a WPR form is required.

Certification. By signing and dating the WPR and LRWDR forms, the generators of radioactive liquid waste certify that the waste characterization information provided is complete and accurate.

Audits. The waste characterization information on the WPR and LRWDR forms will be audited periodically to determine accuracy. Generators must provide accurate information to the best of their knowledge. Inaccurate certifications may result in ceasing service to the generator until the problems are remedied.

Disposal Restrictions

Radioactivity Limits. Waste-generating groups must make special arrangements with EM-7 personnel for the disposal of radioactive liquid waste having an activity greater than 0.5 µCi/liter. In the case of acid and alkaline process waste from TA-55-4, total alpha concentration is limited to 60 µCi/liter for acid waste and to 4500 µCi/liter for alkaline waste. Generators of waste having an activity greater than 0.5 µCi/liter must provide EM-7 with biweekly summaries of volumes and activity levels of each of the wastes discharged.

Solvents, Oils, and Liquid Chemical Wastes. Solvents, oils, and certain liquid chemical waste must not be discarded into the sinks or drains connected to the radioactive liquid waste pipeline. See AR 10-2, "Low-Level Radioactive Solid Waste," and AR 10-3, "Chemical, Hazardous, and Mixed Waste." For specific guidance on RCRA, TSCA, and NPDES, contact EM-7 or EM-8.

New Connections to the Radioactive Liquid Waste Pipeline

New connections to the radioactive liquid waste pipeline must meet specific design criteria. When new connections are proposed, EM-7 and EM-8 should be consulted early in the project to ensure that all criteria are met. EM-7 provides typical specifications, drawings, and sketches for the pipeline, manholes, and electronics; EM-8 provides NPDES permit requirements.

Radioactive Liquid Waste Transport

The waste management coordinator shall arrange radioactive liquid waste transport with EM-7. Before they are transported, containers of radioactive liquid waste must be monitored and tagged. The method of tagging and transport must be consistent with requirements in AR 3-5, "Shipment of Radioactive Materials," and the *Hazardous Materials Transportation Manual*. A properly completed ES&H Form 10-1A, Disposal of Batch Liquid Waste, must accompany the shipment, and all packages must have the proper DOT shipping labels attached to the transfer containers.

References

Authorization to Discharge Under the National Pollutant Discharge Elimination System, Environmental Protection Agency, Permit Number NM28355, effective January 31, 1990.

"Chemical, Hazardous, and Mixed Waste," Administrative Requirement 10-3, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

Federal Water Pollution Control Act, as amended, 33 U.S.C. Sec. 1251–1387.

Hazardous Materials Transportation Manual, Los Alamos National Laboratory document (most recent edition).

"Low-Level Radioactive Solid Waste," Administrative Requirement 10-2, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

"Radiation Protection of the Public and the Environment," Department of Energy Order 5400.5 (February 8, 1990).

"Radioactive Liquid Waste Collection System," Technical Bulletin 1001, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

"Radioactive Liquid Waste Treatment and Disposal," Technical Bulletin 1002, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

"Radioactive Waste Management," Department of Energy Order 5820.2A (most recent edition).

Resource Conservation and Recovery Act, as amended, 42 U.S.C. Sec. 6901–6992k.

"Shipment of Radioactive Materials," Administrative Requirement 3-5, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

"Standard Operating Procedures and Special Work Permits," Administrative Requirement 1-3, in *Environment, Safety, and Health Manual*, Los Alamos National Laboratory Manual, Chapter 1 (most recent edition).

Toxic Substances Control Act, as amended, 15 U.S.C. Sec. 2601–2671.

Referrals	Environmental Protection Group (EM-8), 7-5021
	Health Physics Operations Group (HS-1), 7-7171
	Liquid Waste Section of the Waste Management Group (EM-7), 7-5834, 7-6904, or 7-4301
	Packaging and Transportation Safety Group of the Materials Management (MAT) Division, 7-8509
	Waste Management Group (EM-7), 7-7391
Appendix	Appendix. Radioactive Liquid Waste Pipelines
Forms	ES&H Form 10-1A, Disposal of Batch Liquid Waste
	Form 1346 (ES&H Form 10-3B), Waste Profile Request (found in AR 10-3)

Appendix. Radioactive Liquid Waste Pipelines

Introduction

Radioactive liquid waste pipelines carry radioactive liquid waste from various Laboratory sites to liquid waste storage and treatment facilities. The system of pipelines includes a line that transfers untreated waste from storage tanks at TA-2 and treated waste from a branch treatment plant at TA-21 to the main treatment plant at TA-50.

Buildings Connected to the Radioactive Liquid Waste Pipeline

Laboratory-Wide. The following buildings are connected to a radioactive liquid waste pipeline that carries waste to the main treatment plant at TA-50:

- at TA-2, building Omega-1, -44, and -57;
- at TA-3, buildings SM-16, -29, -34, -35, -39, -65, -66, -102, -141, -154, -216, and -1264;
- at TA-21, building 257;
- at TA-35, building TSL-213;
- at TA-48, buildings RC-1 and RC-45;
- at TA-50, buildings WM-1, -37, and -69
- at TA-55, buildings PF-4 and PF-41; and
- at TA-59, building OH-1.

TA-53. The following buildings at TA-53 are connected to radioactive liquid waste pipelines that transport waste to storage tanks: buildings MPF-1 (laboratories), the beam channel, MPF-3S, -3M, -3N, -7, -28, -30, and -622. From the storage tanks, the waste is pumped either directly into the lined lagoon at the east end of TA-53 or into tank trucks, which then transfer the waste to the lagoon or to TA-50.

TA-21. The following buildings at TA-21 are connected to the radioactive liquid waste pipeline that transports waste to the branch treatment plant at TA-21-257: buildings DP-3, -4, -5, -150, -152, -155, and -209.

Monitoring Flow

Radioactive liquid waste pipelines at each generator site are equipped with metering devices that transmit flow data through intelligent remote multiplexers to a computer at TA-50-1. A graphical plot of these data informs waste management personnel of normal flow volumes and any unusual conditions.

Monitoring Leaks

The main radioactive liquid waste pipeline is double-contained; that is, radioactive liquid waste flows through an inner pipe that is surrounded by an outer pipe. If the inner pipe leaks, the liquid drains into the outer pipe and flows downstream to the nearest manhole, where a detector transmits an alarm to the computer at TA-50-1.

If both lines rupture accidentally, the Waste Management Group (EM-7) must be informed as soon as possible to take corrective actions and to alert emergency personnel. Upon notification by EM-7, personnel from the Health Physics Operations Group (HS-1) and the Environmental Protection Group (EM-8) immediately begin sampling and monitoring the leak.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Attachment E

DISPOSAL OF BATCH LIQUID WASTE

ONE COMPLETED COPY OF THIS FORM SHOULD ACCOMPANY EACH DIFFERENT BATCH OF WASTE

Group	Location (Tech Area, Building, Room Number)	Date
Name of Sender(s)		
Isotope(s)		Volume

APPROXIMATE ASSAY

Constituent	Concentration

Type of Solution (General Description)

Certified Free of External Contamination (HSE-1/10/11 Signature)	Date
Certified not to be a RCRA Hazardous Waste (Generator's Signature)	Date
Delivered to HSE-7 by (Deliverer's Signature)	Date

TO BE COMPLETED BY HSE-7

Batch Number	Received by (Signature)
Approved for Disposal (Supervisor's Signature)	
Method of Disposal	
	Disposal Date

ES & H Form 10-1A (2/91)

SWMU 3-032 — Tank and/or Associated Equipment

1.0 Introduction

SWMU 3-032 is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-032 (Map 3-032) is an aboveground recirculation tank used to store water for an air scrubber system located in a paint spray booth at TA-3-38, a shop building. The tank is approximately 3 ft long x 2 ft wide x 3 ft deep. A vacuum pulls air contaminated with paint particulate through a curtain of water. The water is passed through a filtration system that removes all paint particulate; the filtered water is then returned to the recirculation tank. Prior to 1987, the liquid in the tank was periodically discharged to floor drains connected to the sanitary sewer. In 1987 the practice of discharging paint spray wastes to the floor drains was discontinued. From 1987 - 1991, liquid paint spray wastes were emptied into drums that were removed for off-site disposal. From 1991 to present day, the filtration water is passed through a secondary filtration system that removes all paint particulate from the water. When dirty, the new system's water filter is disposed of as solid waste.

1.2 No Further Action Basis

SWMU 3-032 is recommended for NFA because no release to the environment has occurred, nor is likely to occur in the future. This tank has no history of leaking; furthermore, the only pathway to the environment is through the sanitary wastewater treatment plant. The outfall from the plant has been sampled under SWMU 3-014(b2) in the RFI Report for 53 Potential Release Sites in TA-3, TA-59, TA-60, and TA-61 (LANL 1996, 1352) (Attachment A).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-032 be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Water cleaning system used to remove paint particulate from air.

2.2 Previous Audits, Inspections, and Findings

Attachment A: Analytical results from sampling SWMU 3-014(b2), the outfall from the waste treatment plant, (LANL 1996, 1352), pp 93 through 102.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Water cleaning system used to remove paint particulate from air.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Based on evidence outlined in Sections 1.0 and 2.0, no unacceptable risk is presented by this site.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-032 is recommended for NFA under Criterion 3.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-51 through 6-52. (LANL 1995, 1291)

Los Alamos National Laboratory, February 1996. "RFI Report for 53 Potential Release Sites in TA-3, TA-59, TA-60, and TA-61, Field Unit 1," Los Alamos National Laboratory Report LA-UR-96-726, Los Alamos, New Mexico; pp 93 through 102. (LANL 1993, 1352)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

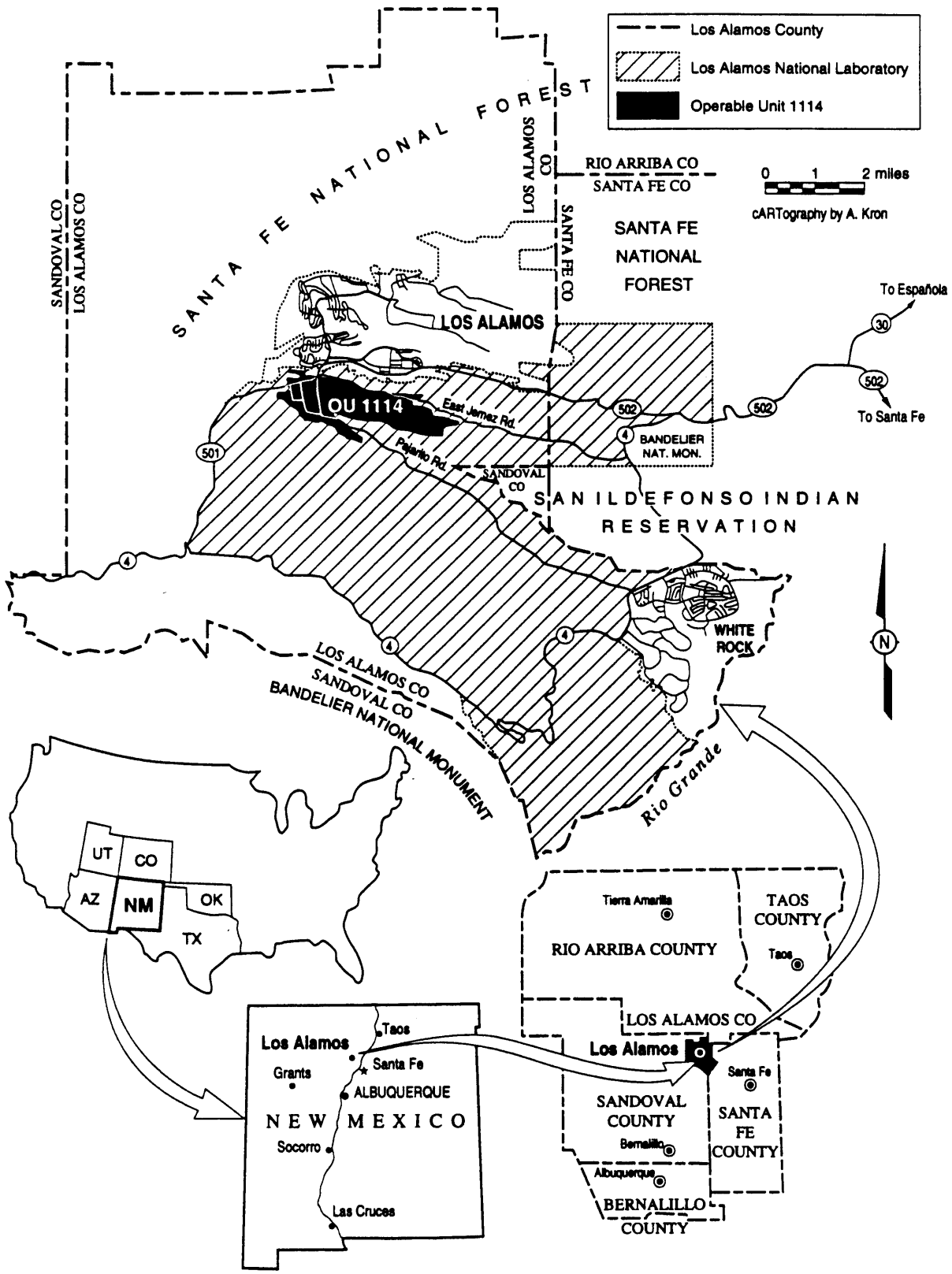


Fig. 1-1. Location of Operable Unit 1114.

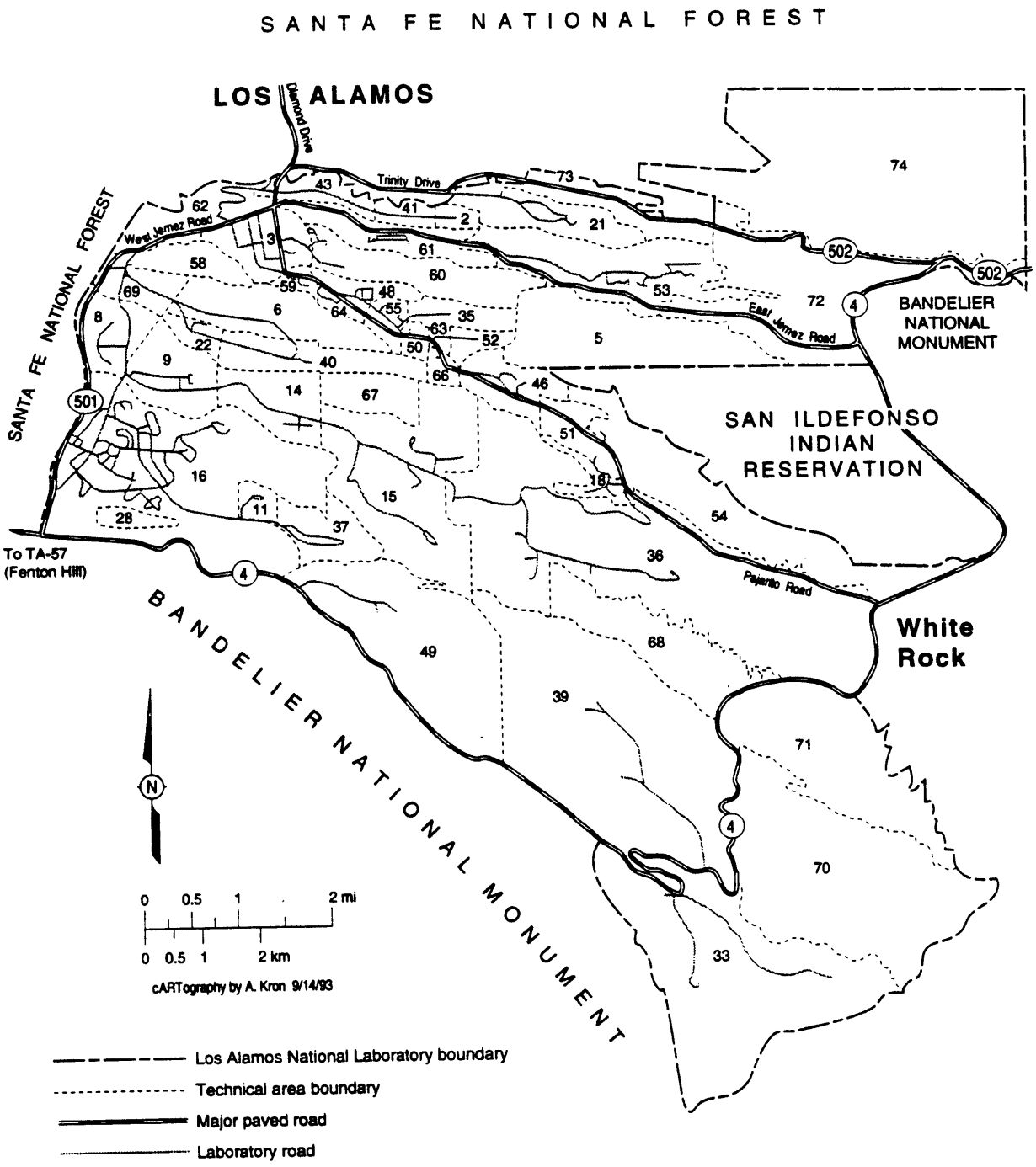
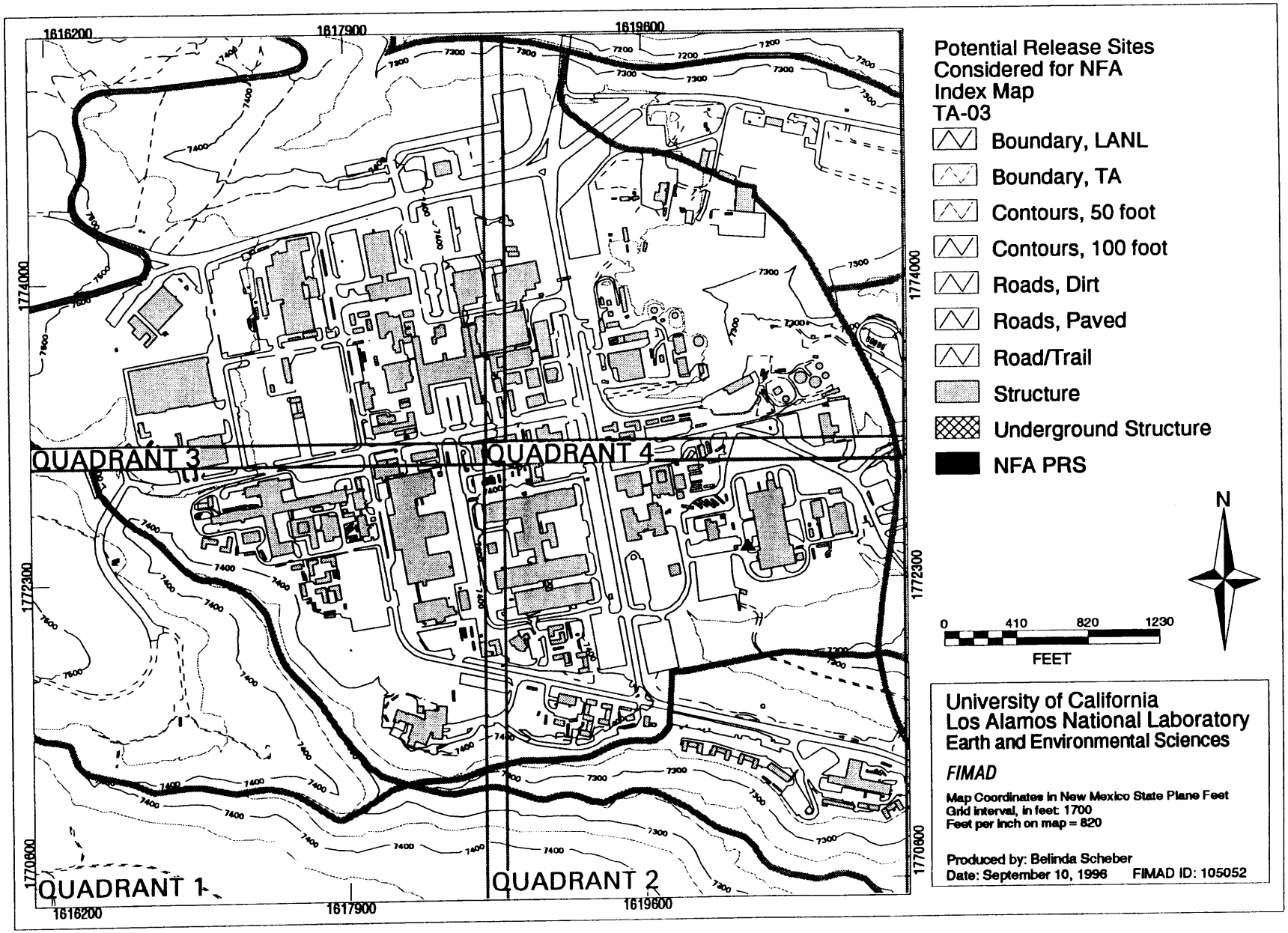
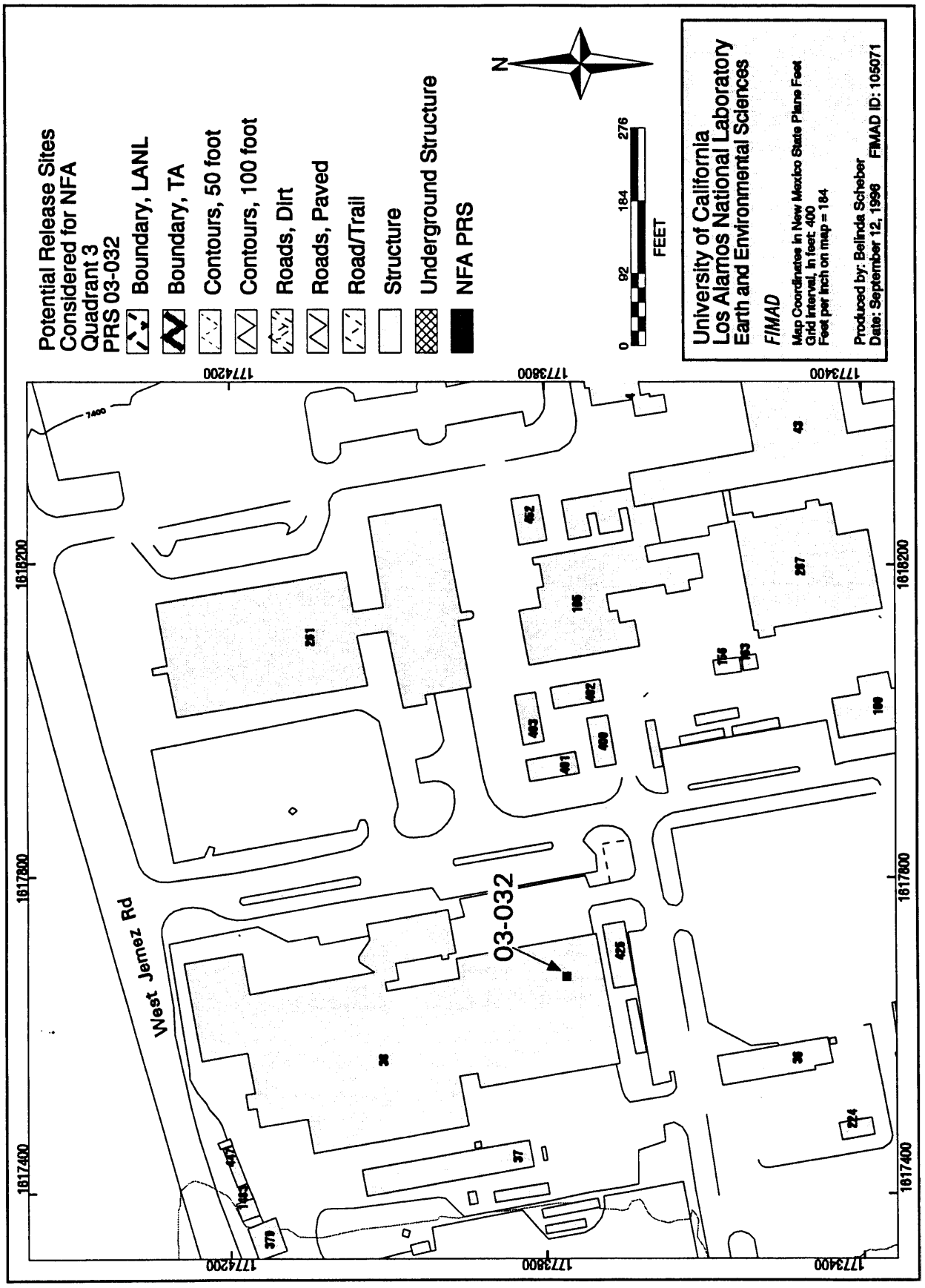


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-032

6.3 Other Survey/Investigation Data

Section not applicable.

3-032

ATTACHMENTS

5.5.7.2 Risk Assessment

No human health risk assessment was performed for this site.

5.5.8 Ecological

5.5.8.1 Ecotoxicological Screening Assessment

PRSs 3-014(a,e) received a landscape condition score of two in the habitat-based exposure rating (Myers and Ferenbaugh in preparation, 1250). This indicates that the site is disturbed by human activities but still may be used by ecological receptors. The PRSs received a receptor access score of one because only small habitat parcel areas exist within the industrial area. PRSs 3-014(a,e) will be further evaluated within the scope of an upcoming ecological investigation that evaluates landscape and receptor factors in the context of ecological exposure units rather than on a PRS-by-PRS basis.

5.5.8.2 Ecological Risk Assessment

No ecological risk assessment was performed for these PRSs.

5.5.9 Extent of Contamination

Sampling was designed to support the screening assessment with samples collected from the most likely locations of potential contamination. The results of the screening assessment are presented above. All chemical concentrations except chromium are less than SALs and the multiple chemical evaluation is less than one.

5.5.10 Conclusions, Actions, and Recommendations

Only one chemical, chromium, slightly exceeded its SAL in one sample collected at PRSs 3-014(a,e) (239 mg/kg in contrast to 210 mg/kg). The presence of chromium at this concentration should not pose an unacceptable risk given that the SALs are derived based on conservative residential exposure assumptions and this PRS is within the primary industrial part of the Laboratory. In addition, it is unlikely that chromium exists in its hexavalent form, which is the carcinogenic variety of chromium.

Therefore, PRSs 3-014(a,e) are recommended for NFA. In addition, associated PRSs 3-014(b-d, f-j, p-z, and a2) are recommended for NFA. Based on LANL's No Further Action Criteria Policy, Criterion 4 (which states that the PRS has been characterized in accordance with current state or federal regulations, and that COPCs are not present in concentrations that would pose an unacceptable risk under the projected industrial future land use), a Class III permit modification

will be requested to remove these PRSs from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.6 PRS 3-014(b2), Wastewater Treatment Plant Current Outfall

PRS 3-014(b2) is an outfall from the WWTP. Based on analytical results from the Phase I investigation, PRS 3-014(b2) is recommended for NFA. In addition, associated PRSs 3-014(b-d, f-j, p-z, and a2) are recommended for NFA.

5.6.1 History

PRS 3-014(b2), the current outfall from the WWTP, is discussed in detail in Subsection 5.5 of the RFI Work Plan for OU 1114 (LANL 1993, 1090). The outfall discharges to a small tributary of Sandia Canyon south of TA-3-22 (the Power Plant). The NPDES permit number of the outfall is EPASSS01S. The outfall discharges at a rocky outcrop on the canyon's edge and flows down a steep, rocky channel to a wetlands area on the canyon floor; however, the plan was to collect samples from the immediate area around the outfall pipe.

In conjunction with sampling at PRSs 3-014(a,e), sampling at PRS 3-014(b2) was intended to identify any COPCs that might be present at PRSs associated with the WWTP. As explained in Subsection 5.5.1 of this report, the RFI Work Plan for OU 1114 (LANL 1993, 1090) lists 30 PRSs associated with the TA-3 WWTP. Four of these PRSs were sampled because they were believed to be the areas most likely to have received and retained any COPCs associated with the WWTP. PRSs 3-014(a,e) were selected for sampling because treated sludge was directly applied to the soil in the grassy area around the Imhoff tanks. PRSs 3-014(b2,c2) were selected for sampling because PRS 3-014(b2) is a current NPDES permitted outfall for treated effluent and PRS 3-014(c2) was believed to be an abandoned outfall trench (it was later identified as a storm drain trench and overflow outlet pipe outfall).

5.6.2 Description

The outfall disgorges onto bedrock (Bandelier Tuff) along the side of Sandia Canyon. The effluent spills across the surface of the bedrock for 15–20 ft and into a mat of vegetation before dropping into the canyon. Bedrock is overlain by from zero to several feet of soil and fill. At this location the natural soil and alluvium is very thin (less than one foot), but immediately adjacent areas have been heavily disturbed. The outlet pipe is covered by fill excavated from material adjacent to the pipe.

5.6.3 Previous Investigations

No previous investigations of the soils surrounding PRS 3-014(b2) have been conducted. However, the effluent at the outfall point is monitored three times a month in compliance with the NPDES permit. The monitored parameters include biochemical oxygen demand, total suspended solids, pH, fecal coliform, total chlorine, and radioactive components.

5.6.4 Field Investigation

The sampling approach for PRS 3-014(b2) in the RFI Work Plan for OU 1114 was designed to determine whether discharge at the outfall resulted in the release of any contaminants to the site (LANL 1993, 1090). Information obtained through this sampling approach is tied to associated WWTP PRSs 3-014(b-d, f-j, p-z, and a2). The program described in the work plan was modified to include additional radiochemical analyses.

The biased sample locations indicated in Fig. 5-10 of the RFI Work Plan for OU 1114 were located using the outfall channel and the outfall as reference points (LANL 1993, 1090). However, the actual sample locations as shown on Fig. 5.6.4-1 were adjusted in the field from those specified in the work plan to meet the sampling objectives. Table 5.6.4-1 summarizes the samples collected at PRS 3-014(b2) The sediment areas sampled were along the channel and in the outfall flow path. Because of the tuff outcrop at the outfall, effluent drained mainly over exposed tuff, with few areas containing sediments. The areas sampled included sediments trapped by vegetation roots. Because most of the steep, rocky outfall is continually washed by the effluent, the most significant area of sediment accumulation downgradient from the outfall was located within a wetlands area on the canyon floor. This area will be sampled by the Canyons Field Unit of the Environmental Restoration Project.

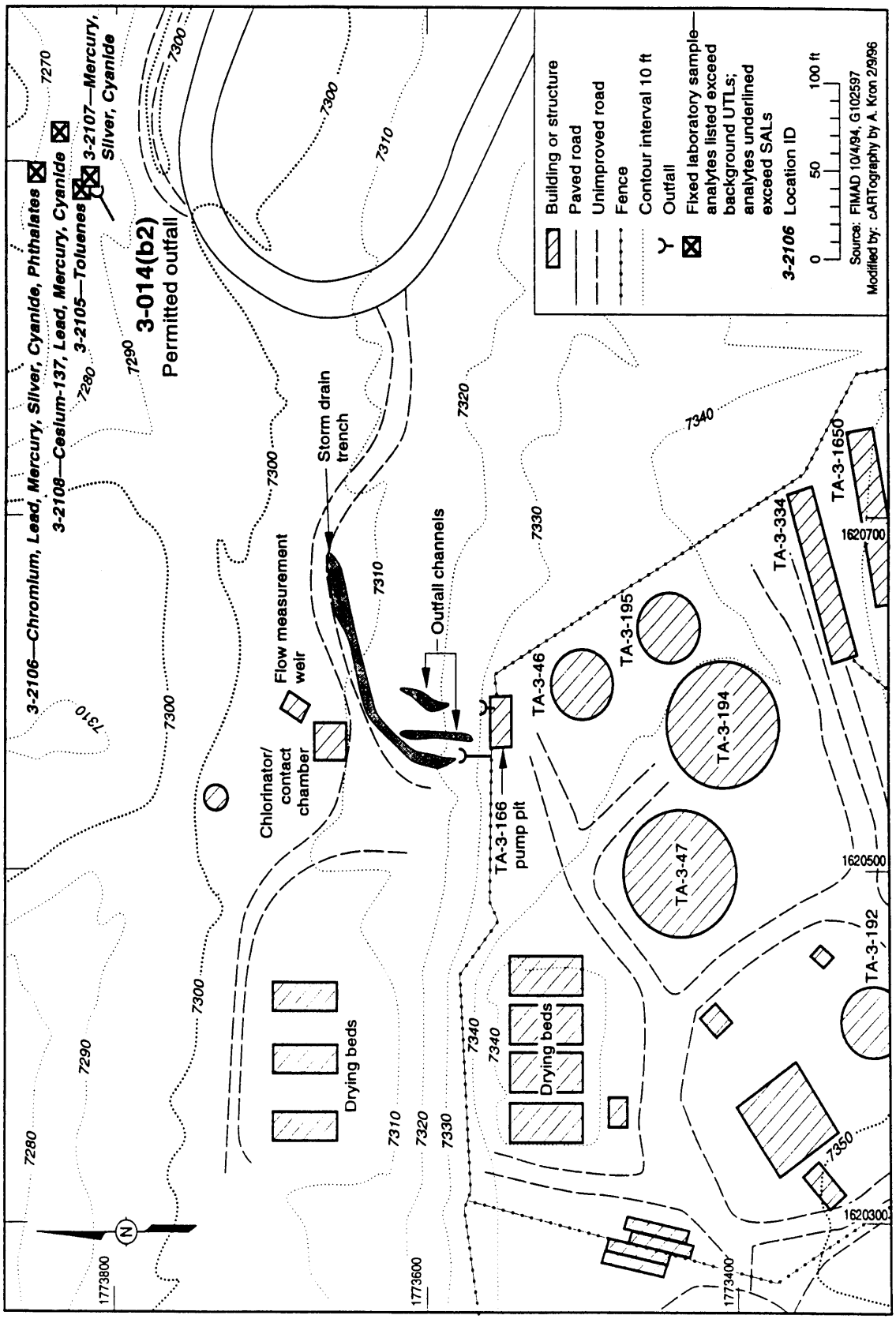


Fig. 5.6.4-1. PRS 3-014(b2) 1994 sample collection locations.

TABLE 5.6.4-1

SUMMARY OF SAMPLES COLLECTED AT PRS 3-014(b2)

SAMPLE INFORMATION				ANALYTICAL SUITE AND ANALYTICAL REQUEST NUMBER						
LOCATION ID	SAMPLE ID	DEPTH (in.)	MATRIX	VOCs[a]	SVOCs[b]	HERBI-CIDES	PESTI-CIDES/ PCBs[c]	INORG-ANICS	RADIO-NUCLIDES	MRAL[d]
03-2105	AAB5930	0 - 12	soil	18186	18186	18186	18186	20225	19954	21698
03-2105	AAB5932	12 - 18	soil	N/A[e]	N/A	N/A	N/A	20225	N/A	N/A
03-2106	AAB5931	0 - 12	soil	18186	18186	18186	18186	20225	19954	21698
03-2106	AAB5933	12 - 18	soil	N/A	N/A	N/A	N/A	20225	N/A	N/A
03-2107	AAB5934	0 - 12	soil	N/A	18186	18186	18186	20225	19954	21698
03-2107	AAB5936	12 - 18	soil	18186	N/A	N/A	N/A	N/A	N/A	N/A
03-2108	AAB5935	0 - 6	soil	N/A	18186	18186	18186	20225	19954	21698
03-2108	AAB5937	0 - 6	soil	18186	N/A	N/A	N/A	N/A	N/A	N/A
03-2108	AAB5938[f]	0 - 6	soil	N/A	18186	18186	18186	20225	19954	21698
03-2108	AAB5939[g]	0 - 6	soil	18186	N/A	N/A	N/A	N/A	N/A	N/A
03-2108	AAB7670	0 - 6	soil	N/A	N/A	18550	N/A	N/A	N/A	20714
03-2108	AAB7701	0 - 2	soil	N/A	N/A	19136	19136[h]	N/A	N/A	20520
03-N/A	AAB5940	N/A	water	N/A	18186	18186	18186	20225	N/A	N/A
03-N/A	AAB5941	N/A	water	18186	N/A	N/A	N/A	N/A	N/A	N/A
03-N/A	AAB5942	N/A	water	18186	N/A	N/A	N/A	N/A	N/A	N/A

[a] VOCs = Volatile organic compounds.
[b] SVOCs = Semivolatile organic compounds.
[c] PCBs = Polychlorinated biphenyls.
[d] MRAL = Mobile radiological analytical laboratory.
[e] N/A = Not applicable.
[f] Field split sample.
[g] Collocated sample.
[h] PCB only analysis was performed.

Samples were collected using LANL-ER-SOP-06.09, Spade and Scoop Method for Collection of Soil Samples. Using the FID, all sample locations were screened for VOCs within the hole during sample collection. Samples were documented and preserved following ER SOPs, with the exception that samples to be analyzed for VOCs were collected using 125 ml glass wide-mouth containers with Teflon™-lined lids.

Eight soil samples were collected at four locations (03-2105 through 03-2108) at PRS 3-014(b2). Two additional samples were collected, one as a field split and one as a collocated sample. Five samples were submitted for analysis of SVOCs, organochlorine pesticides, herbicides, TAL metals, and radionuclides. QC samples included field and trip blanks submitted for analysis of VOCs and a rinsate blank submitted for the same analyses as the investigative samples. These QC samples are also associated with the sample collected at PRS 3-012(b), because they were sampled on the same day.

Because the holding times for EPA method SW-846 8080 analyses were exceeded for the original PCB and herbicide samples collected from PRS 3-014(b2), a second sampling event was conducted on August 9, 1994. A single sample (AAB7670) was collected from the 0- to 6-in. interval at location 03-2108 and submitted for analysis of PCBs and herbicides. This sample was left at room temperature for a week before being cooled, sent offsite for analyses, and analyzed within holding times; however, PCB data from this sample can be used because the surface sample had been exposed to the environment for years, was sealed in an approved container and cooled before analysis, and was in an air-conditioned environment during the week it was left at room temperature. However, a third sample (AAB7701) was collected on September 15, 1994, and submitted for analyses of herbicides and PCBs for additional information.

5.6.5 Background Comparisons

Six metals, including antimony, beryllium, cadmium, nickel, selenium, and thallium were not detected in the samples analyzed. All detected inorganics, with the exception of chromium, cyanide, lead, mercury, and silver were reported at concentrations less than their respective background screening values. Note that cyanide and silver do not have background screening values, so the detection limit is used as a surrogate background comparison. The results that exceeded background are summarized in Table 5.6.5-1, and the sampling locations are identified on Fig. 5.6.4-1. Chromium, cyanide, lead, mercury, and silver are carried forward in the screening process to the SAL comparison step.

TABLE 5.6.5-1

INORGANIC CHEMICALS WITH CONCENTRATIONS GREATER THAN BACKGROUND AT PRS 3-014(b2)

SAMPLE ID	DEPTH (in.)	CHROMIUM (mg/kg)	CYANIDE (mg/kg)	LEAD (mg/kg)	MERCURY (mg/kg)	SILVER (mg/kg)
UTL[a]	N/A[b]	19.3	NA[c]	23.3	0.1	NA
SAL[d]	N/A	210	1 300	400	23	380
AAB5931	0 - 12	86	N/A	30.5	0.19 (J)[e]	42.4
AAB5933	12 - 18	N/A	33.9 (J)	N/A	N/A	N/A
AAB5934	0 - 12	10.8	2.2 (J)	17.7	0.2 (J)	5.5
AAB5935	0 - 6	4.1	0.93 (J)	30.2	0.14 (J)	<0.62
AAB5938	0 - 6	3.4	<0.61 (UJ)[f]	23.9	<0.06 (UJ)	<0.28

[a] UTL = Upper tolerance limit.
[b] N/A = Not applicable.
[c] NA = Not available.
[d] SAL = Screening action level.
[e] (J) = Estimated detected quantity.
[f] (UJ) = Estimated undetected quantity.

All detected radionuclides, with the exception of cesium-137, were reported at concentrations less than their respective background screening values. The results that exceeded background are summarized in Table 5.6.5-2 and the sampling locations are identified on Fig. 5.6.4-1. Cesium-137 is carried forward in the screening process to the SAL comparison step.

Radionuclides that were detected and do not have background screening values are addressed in Subsection 4.6.3 of this report.

TABLE 5.6.5-2

RADIONUCLIDE WITH CONCENTRATION GREATER THAN BACKGROUND AT PRS 3-014(b2)

[a] UTL = Upper tolerance limit.

SAMPLE ID	DEPTH (in.)	CESIUM-137
UTL[a]	N/A[b]	1.4
SAL[c]	N/A	5.1
AAB5935	0 - 6	2.44
AAB5938	0 - 6	2.49

[b] N/A = Not applicable
[c] SAL = Screening action level.

5.6.6 Evaluation of Organics

Three organic chemicals, bis(2-ethylhexyl)phthalate, 4-isopropyltoluene, and toluene were detected in samples collected at PRS 3-014(b2). Results for these detected organics are summarized in Table 5.6.6-1 and sampling locations are identified on Fig. 5.6.4-1. All three organic chemicals are carried forward in the screening process to the SAL comparison step.

TABLE 5.6.6-1

ORGANIC CHEMICALS WITH CONCENTRATIONS GREATER THAN THE LIMIT OF DETECTION AT PRS 3-014(b2)

SAMPLE ID	DEPTH (in.)	BIS(2-ETHYLHEXYL)PHTHALATE (mg/kg)	ISOPROPYL-TOLUENE [4-] (mg/kg)	TOLUENE (mg/kg)
SAL[a]	N/A[b]	32	NA[d]	1 900
EQL[c]	N/A	0.33	NA	0.01
AAB5930	0 - 12	<0.43	0.28	0.008
AAB5931	0 - 12	0.6	<0.011	<0.011

[a] SAL = Screening action level.
[b] N/A = Not applicable.
[c] EQL = Estimated quantitation limit.
[d] NA = Not available.

5.6.7 Human Health

5.6.7.1 Screening Assessment

None of the chemicals identified by the background comparison or the detection limit screening exceeded their respective SALs (Tables 5.6.5-1, 5.6.5-2, and 5.6.6-1).

Only one class of chemicals, noncarcinogens, was evaluated for multiple chemical effects for SWMU 3-014(b2) because only one chemical each was detected in the carcinogen and radionuclide classes. The maximum detected value for each chemical was used, the most conservative method for evaluating multiple chemical effects. Even so, results of the noncarcinogen multiple chemical evaluations were less than unity (Table 5.6.7-4), indicating that health effects caused by the additivity of multiple chemicals is unlikely. Thus, no COPCs were identified by the multiple chemical evaluation or the SAL comparison.

TABLE 5.6.7-4

MULTIPLE CHEMICAL EVALUATION FOR PRS 3-014(b2) DATA

ANALYTE	SAMPLE ID	SAMPLE VALUE (mg/kg)	SAL[a] (mg/kg)	NORMALIZED VALUE
NONCARCINOGENIC EFFECTS				
Chromium	AAB5931	86	210	0.41
Cyanide	AAB5933	33.9 (J)[b]	1 300	0.026
Lead	AAB5931	30.5	400	0.076
Mercury	AAB5934	0.2 (J)	23	0.009
Silver	AAB5931	42.4	380	0.112
Toluene	AAB5930	0.008	1900	0.000004
			Total:	0.632

[a] SAL = Screening action level.
[b] (J) = Estimated detected quantity.

5.6.7.2 Risk Assessment

No human health risk assessment was performed for this site.

5.6.8 Ecological

5.6.8.1 Ecotoxicological Screening Assessment

PRS 3-014(b2) received a landscape score of three in the habitat-based exposure rating (Myers and Ferenbaugh in preparation, 1250). This indicates that the site is relatively undisturbed by human activities. The PRS also received a receptor access score of three because the potential for COPC transport to other habitats is high in an outfall area such as

this. PRS 3-014(b2) will be further evaluated within the scope of an upcoming ecological investigation that evaluates landscape and receptor factors in the context of ecological exposure units rather than on a PRS-by-PRS basis.

5.6.8.2 Ecological Risk Assessment

No ecological risk assessment was performed for this PRS.

5.6.9 Extent of Contamination

Sampling was designed to support the screening assessment with samples collected from the most likely locations of potential contamination. The results of the screening assessment are presented above. All chemical concentrations are less than SALs and the multiple chemical evaluation is less than one.

5.6.10 Conclusions and Recommendations

No chemicals were retained as COPCs by the screening assessment process for PRS 3-014(b2). Therefore, PRS 3-014(b2) is recommended for NFA. In addition, associated PRSs 3-014(b-d, f-j, p-z, and a2) are recommended for NFA. Based on LANL's No Further Action Criteria Policy, Criterion 4 (which states that the PRS has been characterized in accordance with current state or federal regulations, and that COPCs are not present in concentrations that would pose an unacceptable risk under the most conservative assumption of residential future land use), a Class III permit modification will be requested to remove this PRS from the HSWA Module of LANL's RCRA operating permit (Environmental Restoration Project 1995, 1173).

5.7 PRS 3-014(c2), Wastewater Treatment Plant Pump House Overflow Outfall

PRS 3-014(c2) is an abandoned overflow outfall area associated with the WWTP and located north of TA-3-166, the pump building. Because analytical results of the Phase I site investigation revealed several constituents in soil at concentrations exceeding SALs, PRS 3-014(c2) is recommended for a Phase II investigation. In addition, associated WWTP PRSs 3-014(k,l,m,n, and o) will be included in the Phase II investigation.

5.7.1 History

PRS 3-014(c2), the overflow outfall area associated with the WWTP, is discussed in detail in Subsection 5.5 of the RFI Work Plan for OU 1114 (LANL 1993, 1090). The WWTP was decommissioned in the autumn of 1992 when the Sanitary Waste Consolidation System (SWSC) came on line at TA-46. However, the treated effluent is still routed from the SWSC plant to the TA-3 WWTP's outfall because of NPDES permit issues. The PRS is located on the

SWMU 3-043(c) — Tank and/or Associated Equipment

1.0 Introduction

SWMU 3-043(c) was located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-043(c) [Map 3-043(c)] is described in the SWMU Report as a decommissioned tank (structure number TA-3-718) for storage of mixed, corrosive waste (LANL 1990, 0145) (Attachment A). According to the Radioactive Liquid Waste Lines Removal Project report, TA-3-718 was actually a former manhole, part of the radioactive liquid waste line system that transported wastes from TA-3-40 to TA-45, and then on to TA-50, the Radioactive Liquid Waste Treatment Facility (Elder et al. 1986, 17-001) (Attachment B). The report further states that manhole TA-3-718 was removed in 1984 and remediated as part of the Radioactive Liquid Waste Lines Removal Project, which took place during 1981-1986.

Manhole TA-3-718 was 3 ft long x 4 ft wide x 4 ft deep, located below grade on the northeast side of building TA-3-40, and constructed of steel-reinforced concrete with 8-in.-thick walls (Engineering drawing ENG-C 11340) (Attachment C). The 6-in.-diameter industrial waste line passed directly through the bottom of the manhole. Upon removal in 1984, the manhole was found to be intact with no signs of cracking. In addition, no fluid was observed within the manhole.

1.2 No Further Action Basis

SWMU 3-043(c) was described incorrectly in the SWMU Report as a decommissioned tank for storage of mixed, corrosive waste. In actuality, it was manhole TA-3-718, part of the LANL liquid industrial waste line system. The manhole was removed in 1984 (Elder et al. 1986, 17-001; LANL 1994, 17-1170) (Attachments B, D). SWMU 3-043(c) is being proposed for NFA because it has been remediated in accordance with current applicable state or federal regulations and the available data indicate that contaminants pose an acceptable level of risk under current and projected land use.

The removal project included the collection of soil samples at appropriate intervals from representative locations along the bottom and walls of the trench and analyses for gross alpha, beta, and gamma radiation and for tritium. The removal project report does not provide sampling results for manhole TA-3-718 (Elder et al. 1986, 17-001; Attachment B). However, the report indicates that the pipeline connected to the manhole had less than 75 pCi/g of gross alpha and beta radiation, less than 20 μR/hr of external penetrating gamma radiation, and no tritium. The report also states that the average radioactivity at a manhole approximately 500 ft from manhole TA-3-718 was less than background levels (25 pCi/g, presumably of total alpha, beta, and gamma radiation). Further, the report states that tritium was found in only Pipeline 18 near manhole TA-3-710, which is on the other side of TA-3 (Quadrant 4 on the Index Map).

Based on these data, it is concluded that radiation levels at manhole TA-3-718 were less than 75 pCi/g of gross alpha and beta radiation and less than 20 μR/hr of external penetrating gamma radiation, and that there was no tritium at the manhole. Using these gross radiation levels and making further assumptions that the radionuclides most likely to be present from LANL operations were plutonium-239 (the source of alpha radiation), strontium-90 (the source of beta radiation), and cesium-137 (the source of external penetrating gamma radiation) and that current and projected land use is as an industrial site, the committed effective dose equivalent to a worker is approximately 10 mrem/y (determined using RESRAD, version 5.61, Code for Calculating Residual Radioactivity in Soil). This is well below the 100 mrem/y allowed by DOE regulations to a member of the public.

International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-043. (LANL 1990, 0145)

Los Alamos National Laboratory, May 24, 1994. "Telephone Conversation with Bosco Hohner – ERM Golder – Regarding Removal of the Former TA-3-718 Manhole Adjacent to TA-3-40," Los Alamos National Laboratory Memorandum 923-c010.000 to File from D. West, Los Alamos, New Mexico. (LANL 1994, 17-1170)

Los Alamos Scientific Laboratory, "Physics Building, TA-3, Project 'N' Phase 'B' SM-40," Drawing No. ENG-C 11340 (November 8, 1951).

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

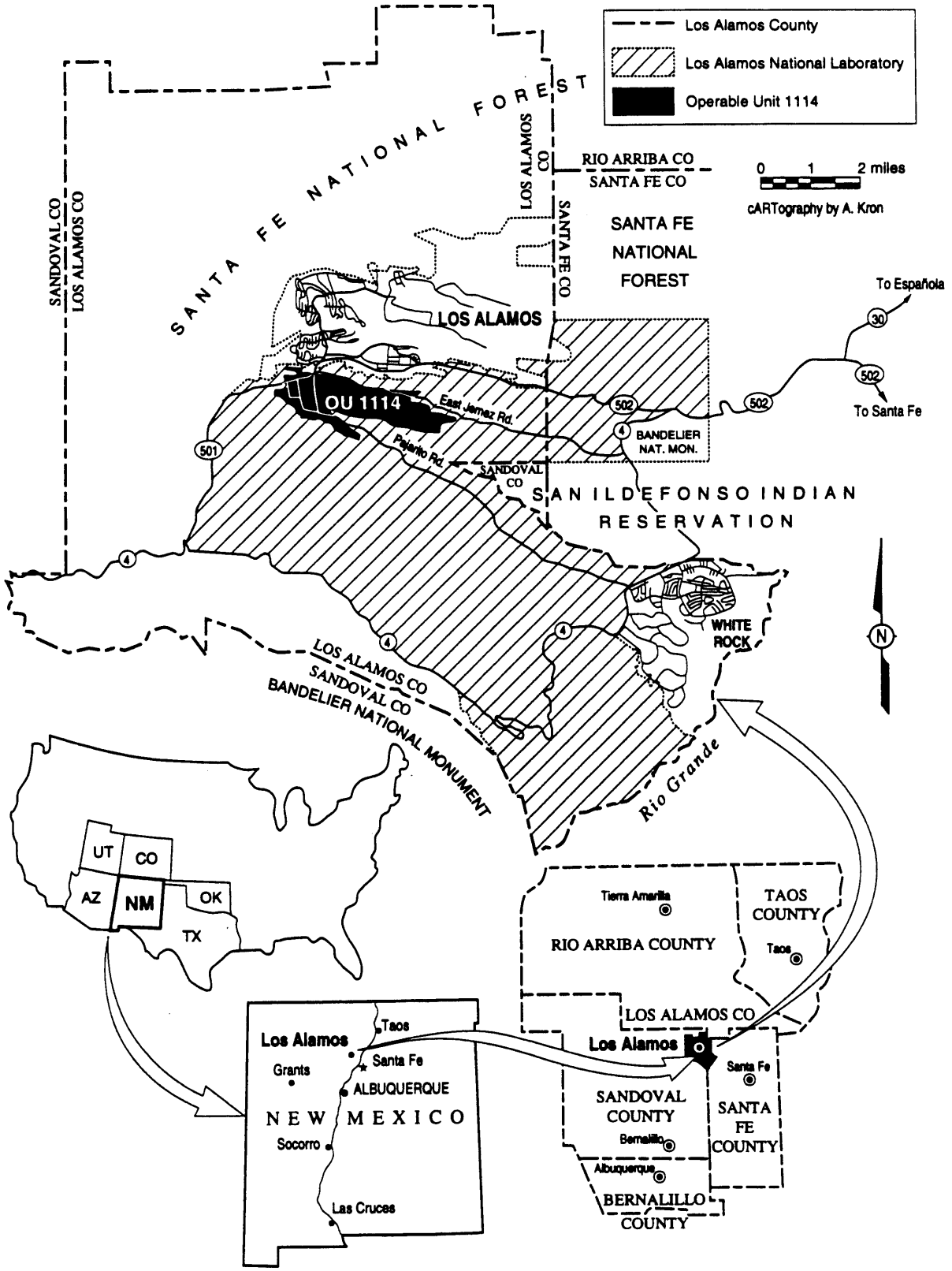


Fig. 1-1. Location of Operable Unit 1114.

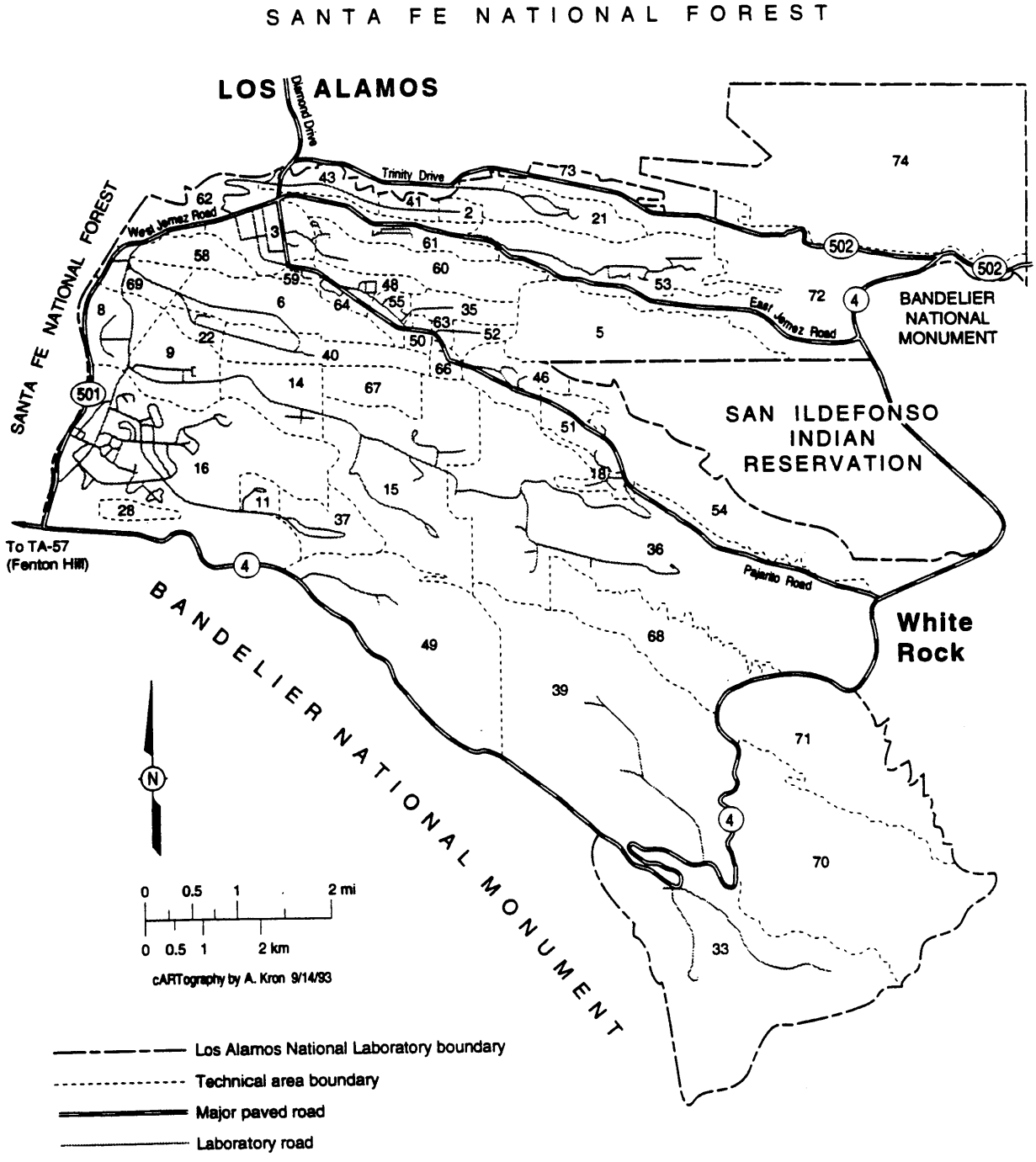
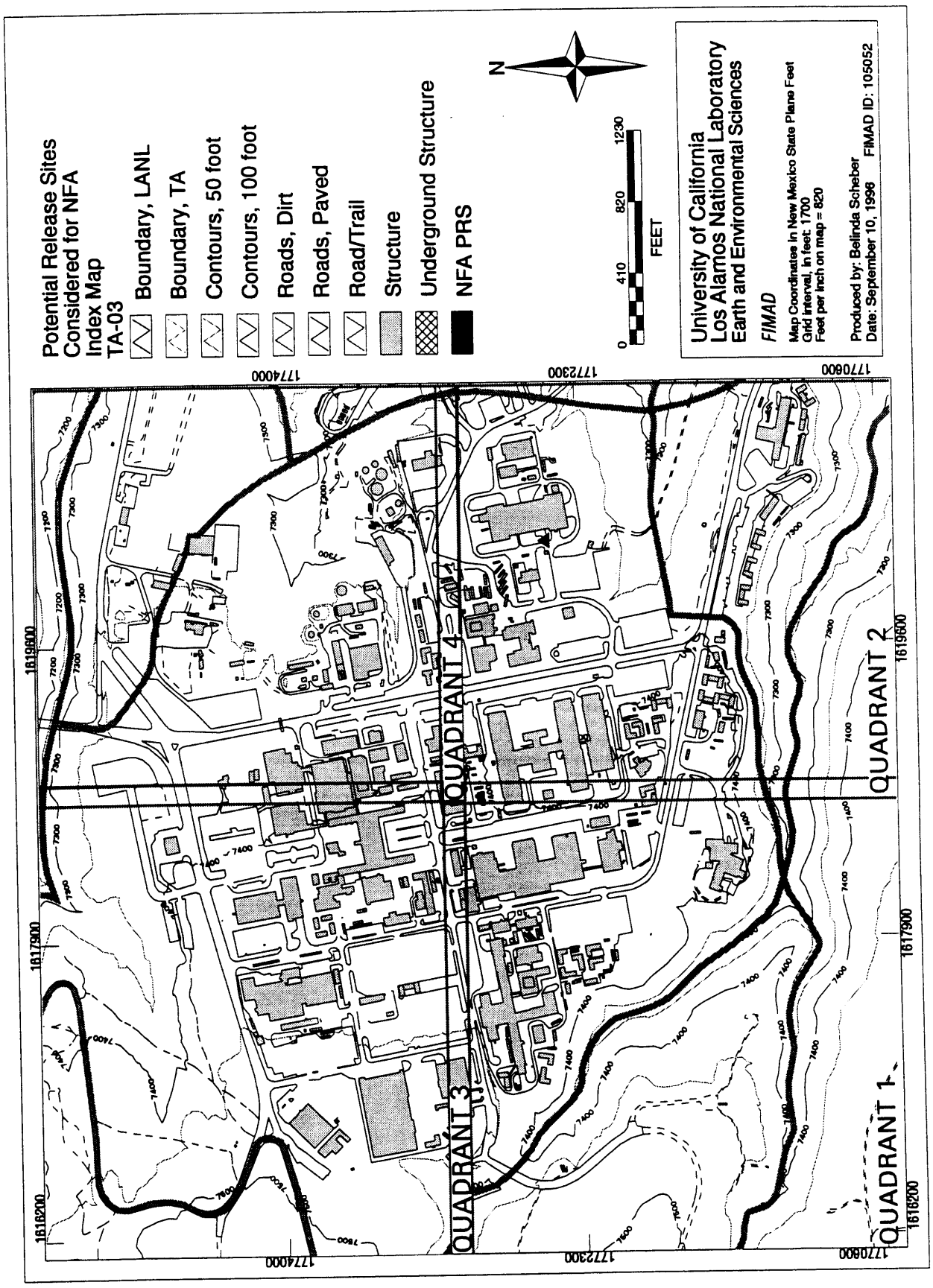
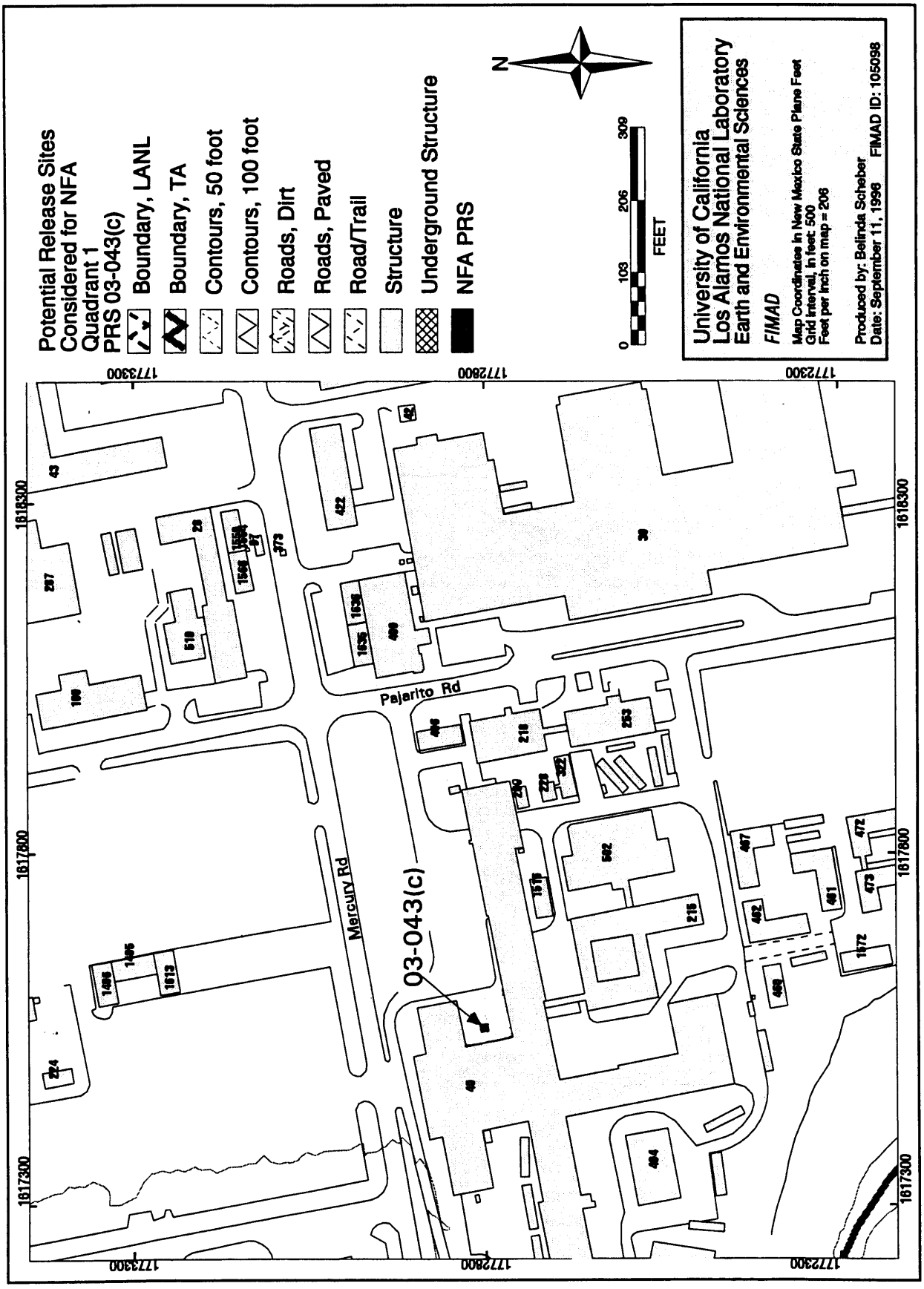


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-043(c)

6.3 Other Survey/Investigation Data

Section not applicable.

3-043(c)

ATTACHMENTS

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : TANK
UNIT USE : TREATMENT/STORAGE
OPERATIONAL STATUS : DECOMMISSIONED
PERIOD OF USE : EST. 1953 - 1989
HAZARDOUS RELEASE : KNOWN
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : MIXED WASTE
HAZARDOUS WASTE

UNIT INFORMATION

Several tanks have been decommissioned at TA-3.

SWMU NO.	STRUCTURE	CAPACITY (GAL.)	DATE REMOVED	ASSOCIATED STRUCTURE
3-043(a)	TA-3-74	20,000	1963	TA-3-73
3-043(b)	TA-3-77	10,000	1980	TA-3-73
3-043(c)	TA-3-718	unknown	1983	TA-3-40
3-043(d)	TA-3-76	20,000	1988	TA-3-73
3-043(e)	TA-3-36-1	10,000	1989	TA-3-36
3-043(f)	TA-3-178	30,000	1989	TA-3-73
3-043(g)	TA-3-335	10,000	1989	TA-3-73
3-043(h)	TA-3-75	20,000	1989	TA-3-73
3-043(i)	TA-3-93	unknown	1966	TA-3-40

Tank TA-3-36-1 was removed in 1989; it was replaced by a 10,000-gallon, double-wall tank.

WASTE INFORMATION

The substances stored in the tanks, prior to decommissioning, are described below.

SWMU NO.	STRUCTURE	SUBSTANCE STORED
3-043(a)	TA-3-74	asphalt emulsion
3-043(b)	TA-3-77	asphalt emulsion
3-043(c)	TA-3-718	mixed, corrosive wastes
3-043(d)	TA-3-76	asphalt emulsion
3-043(e)	TA-3-36-1	unleaded gasoline
3-043(f)	TA-3-178	asphalt emulsion
3-043(g)	TA-3-335	85-100 oil
3-043(h)	TA-3-75	asphalt emulsion
3-043(i)	TA-3-93	oil

RELEASE INFORMATION

Information on past releases and decommissioning is lacking for most of the tanks. During an E.R. Program site survey, stains and discolored soil were observed in the areas that tanks TA-3-75 and -76 had occupied. It is believed that leaks did occur from those two tanks during their years of operation. Testing indicated that tank TA-3-36-1 was leaking at a rate greater than 4.0 gal/hr while it was in commission. It is not known how long the tank leaked.

NOTES

SWMU No. 3-043(e) was formerly SWMU No. 3-035(a).

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-043(a)	**		Tsk 19 : 165	TA-3-74, -73
3-043(b)	**		Tsk 19 : 165	TA-3-77, -73
3-043(c)	**		Tsk 21 : 1226	TA-3-718, -40
3-043(d)	**		Tsk 19 : 166	TA-3-76, -73

(continued)

SWMU CROSS-REFERENCE LIST
(continued)

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-043(e)	**		Tsk 19 : 181	TA-3-36-1, -36
3-043(f)	**		Tsk 19 : 182	TA-3-178, -73
3-043(g)	**		Tsk 19 : 182	TA-3-335, -73
3-043(h)	**		Tsk 19 : 166	TA-3-75, -73
3-043(i)	TA3-3-CA/UST/SST-A/I-PP		Tsk 21 : 1231	TA-3-93, -40

** No corresponding E. R. Program unit.

Attachment B

LA-10821-MS

UC-41
Issued: September 1986

Radioactive Liquid Waste Lines Removal Project at Los Alamos (1981–1986)

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On July 27, 1963, the system between TA-3-700 and TA-45 was abandoned and a new pumping station that had been added to SM-700 was placed in operation to redirect the wastes to the new treatment plant at TA-50. TA-45 continued to treat waste from TA-1 until May 26, 1964, after which it was decommissioned, along with much of the liquid waste system in the townsite, during the period 1965-1967.

Abandoned waste line removal activity in the period 1967-1976 was limited to construction locations such as TA-55 where abandoned waste lines were removed as part of site preparation. In 1977 removal of waste lines was coordinated with a planned improvement of the Trinity Drive-Diamond Drive intersection by the County of Los Alamos (Gunderson 1979). Waste line removal work was not started again until 1981 when the activities described in this report were initiated. Removal of the remaining sections of the system in the townsite and in technical areas south of Los Alamos Canyon is the topic of this report.

II. OPERATIONAL METHODS

A. Radiological Survey Methods

1. Soil Cleanup Guidelines. Guidelines for residual radioactivity concentrations in soil after removal of waste lines and structures were based on the general principle of as low as reasonably achievable (ALARA). Under this principle, the primary guidance was to keep any future exposure of the general public to remaining radioactivity to as low a level as technically and economically reasonable. To expedite decision making concerning this principle, de minimus levels of soil contamination and upper-limit concentration guides were used. De minimus levels are those below which no environmental or physical effect is expected. These levels were recommended by the Laboratory's Environmental Surveillance Group (HSE-8). Establishing de minimus levels addressed the use of unreasonably long sample counting times in quest of continually lower detection limits. The upper limit concen-

tration guides, also recommended by HSE-8, were selected to ensure conformance to the secondary requirement that no member of the public receive a dose, as a result of exposure to residual contamination, exceeding 500 mrem/yr to any organ of the body. These latter limits were derived by calculations of potential dose equivalents associated with important radionuclides transported by various possible pathways. Appendix B describes the derivation of these limits.

The initial step in the application of these guidelines was excavation of soil in the trenches until no above-background readings were obtained using phoswich and beta-gamma survey meters and alpha survey meters or until it was impractical to proceed further (i.e., depth greater than backhoe reach or interference from obstacles).

Soil samples were obtained at appropriate intervals from representative locations along the bottom and walls of the trench or from the location where the excavated soil was placed. The number of soil sampling locations was dependent on relative radionuclide levels.

Soil samples were analyzed for various constituents such as gross alpha, gross beta, tritium, or gamma spectrum, depending upon Laboratory records of what radionuclides were discharged into a particular line. Previous sample results were also observed. Sample analysis results were compared to the de minimus guidelines shown in Table II.

If the soil sample results were below the levels given in the table, the area was considered acceptably free of contamination. If soil sample results exceeded the guidelines, additional cleanup was requested and the monitoring and sampling procedures were repeated until the guidelines were met or it was determined that further cleanup to the guides was impractical due to safety, economics, or other reasons.

Administrative procedures by which ALARA decisions were made are provided in Appendix C.

TABLE II

SOIL CONCENTRATION GUIDELINES (ABOVE BACKGROUND)
CONFORMING TO DE MINIMUS LEVELS

	Surface Soil[a]	Subsurface Soil[b]
Gross Alpha	Nondetectable[c]	75 pCi/g
Gross Beta	25 pCi/g	75 pCi/g
External Gamma[d]	5 μR/h	20 μR/h
Tritium	100 pCi/ml	250 pCi/ml

[a]Surface soil is defined as soil located within 5 ft (1.5 m) from the surface.

[b]Subsurface soil is located at any depth greater than 5 ft (1.5 m).

[c]Detector background plus 3 sigma counting error (see Appendix B for details.)

[d]If ^{137}Cs is present.

If the de minimus guidelines could not be reasonably met, the measured levels were compared to those in Table III, which gives the upper limit concentration guidelines based on the 500 mrem/yr dose limit. The concentrations in Table III are based upon the scenarios presented in Appendix B and as such were not construed as absolute limits. Conservative assumptions made in the scenarios might be very different from the field situation encountered. Thus, flexibility was used in applying the guidelines and consideration was given on a case-by-case basis to factors such as the extent, depth, and location of the contamination zone, the radionuclides present and their concentrations, the nature of the contaminated soil, and the safety, economic, and operational impact of further decontamination. Taking these factors into account

and using Table III guidelines as reference points, decisions were made as to whether the contamination would result in a 500 mrem/yr dose to any organ of any member of the public. Decontamination continued until it was felt that the occurrence of the 500 mrem/yr dose was very improbable.

TABLE III

SOIL CONCENTRATION GUIDELINES (pCi/g ABOVE BACKGROUND)
BASED ON 500 mrem/yr ORGAN LIMIT

Radionuclide	Surface Soil[a]	Subsurface Soil[a]
^{241}Am	50	600
^{241}Pu[b]	1 670	20 400
$^{239-240}Pu$	200	1 900
^{238}Pu	350	3 200
^{238}U	80	960
^{235}U	80	960
^{234}U	80	960
^{137}Cs	80	960
^{90}Sr	100	1 200
^{3}H[c]	8 870	120 000

[a] See definition in notes a and b, Table II.

[b] ^{241}Pu limit derived from the ^{241}Am concentration.

[c] In pCi/ml of soil moisture.

In all cases, the residual radioactivity levels were recorded in the HSE-8 project log book and on soil drawings (ENG-C-43943S series) provided as permanent record of the project.

2. Surveying During Operations. A trained Radiation Protection Group (HSE-1) health protection technician provided continuous surveillance of excavation, waste removal, and backfilling work. For detection of radioactivity in soil, the technician was equipped with a portable phoswich detector,

H. TA-3 (Work Package II.6)

1. Description of Work. Eighteen contaminated waste lines and 18 manholes were removed from the TA-3 vicinity in 1984, 1985, and 1986. The lines and their major features are summarized in Table XI. Their routings are shown in simplified form in Figure 15 and on drawing ENG-C-43943, sheets 66-70 and 75-88. Some sections of the following lines were left and are discussed in more detail in As-Left Conditions: 1, 2, 5, 7, 8, 9, 11, 12, 13, 17, 17C, 17D, 17E, and 30A. The removal of the manholes is discussed in Special Topics.

2. As-Left Conditions. Lines 2A, 3, 9A, 9B, 15, 15A, 23, and 30 were completely removed in 1984 and 1985 with the TA-3 work. Several sections of other lines were left in place, primarily because of interference by many utility lines in the area. Left lines were plugged at each end. The sections left in place are discussed below.

Line 1. A 140-ft section of Line 1 was left in place (see memo Montoya to Valentine, March 10, 1986). This section extends northward from as-left manhole SM-708 (see memo Cox to Valentine, September 12, 1985) toward the original location of manhole SM-707. Its depth ranges from 12 to 20 ft. A separate section of Line 1 was left during the SM-700 work (see Section III.F.).

Several major leaks occurred over the years in Line 1 between manholes SM-706 and SM-707. The contaminated zone was encountered several feet above and to the side of the pipe at these locations. Contaminated soil containing up to 5 nCi/g of alpha activity was removed. The trench was enlarged at times to 12-ft width and 16-ft depth to reach all contaminated soil (see Figure 16). The guidelines were met at all locations.

Line 2. An 8-ft section of Line 2 was left under the nitrogen dewar tank at SM-216 (see memo Cox to Garde, July 27,

Attachment B

TABLE XI

TA-3 LINES SUMMARY

LINE NO.	DESCRIPTION	REMOVED LENGTH (ft)	DIAM. (in)	RANGE OF DEPTH (ft)	TYPE[a]	AS-LEFT CONDITION
1	Line from MH-SM-703 to MH-SM-708.	901	8	7-14	VCP	Partially removed in 1985 and 1986. Left a 140-ft section north from MH-SM-708 (see As-Left Conditions).
2	Line from MH-SM-716 to MH-SM-708.	1111	8	6-7	VCP	Partially removed in 1984. Left several sections (see As-Left Conditions).
2A	Line running alongside Line 2.	116	8	6-11	VCP	Completely removed in 1984.
3	Line from SM-40 to MH-SM-716.	497	6	4-7	VCP	Completely removed in 1984.
5	Line from SM-28 to MH-SM-714.	169	3	3-9	CIP	Partially removed in 1984. Left 12-ft section (see As-Left Conditions).
7	Line from MH-SM-725 to MH-SM-708.	0	8	18-20	VCP	Left 1040-ft section east of SM-29 including manholes MH-708, -719, -722, and -725 (see As-Left Conditions).
8	Line from SM-29 (Wings 2 and 4) to MH-SM-719.	110	6	19-20	VCP	Left a 471-ft section along the north side of SM-29, Wing 2. Left a 19-ft section entering Wing 4 from the north (see As-Left Conditions).
9	Line from SM-29 (Wings 3 and 5) to MH-SM-722.	245	6	5-20	VCP	Left 390-ft section (including MH-SM-723) along the north side of SM-29, Wing 3 (see As-left Conditions).
9A	Line from SM-29 (Wing 1, north side) to Line 9.	187	6	7	VCP	Completely removed in 1985.
9B	Line from SM-29 (Wing 1, south side) to Line 9.	75	6	5-7	VCP	Completely removed in 1985.
10	Line from MH-SM-726 to MH-SM-725.	NA	6	---	VCP	This line considered part of Lines 17 and 17E. Completely removed.
11	Line from MH-SM-728 to MH-SM-725.	674	8	12	VCP	Partially removed in 1984. Left 4-ft section at south edge of Pajarito Road; left a 23-ft section under SM-177 (see As-Left Conditions).
12	Line from MH-SM-725 to MH-SM-728.	1010	8	5-15	VCP	Partially removed in 1984. Left 63-ft section east of SM-16 (see As-Left Conditions).
13	Line from SM-102 to MH-SM-730.	660	6	13-16	VCP	Partially removed in 1984. Left 5-ft section and 3-ft section south of SM-102 (see As-Left Conditions).

TABLE XI (Continued)

TA-3 LINES SUMMARY

LINE NO.	DESCRIPTION	REMOVED LENGTH (ft)	DIAM. (in)	RANGE OF DEPTH (ft)	TYPE[a]	AS-LEFT CONDITION
14	Line from SM-16 to MH-SM-737.	100	8	---	VCP	Completely removed during new waste system installation.
15	Line from SM-65 to MH-SM-728.	31	4	6	VCP	Completely removed in 1984.
15A	Line from change trailer SM-1502/03 to MH-SM-728.	55	4	2	PVC	Completely removed in 1984.
17	Line from SM-154 to MH-SM-726.	599	6	18-21	VCP	Partially removed in 1985. Left 12-ft section on south side of SM-29 (see As-Left Conditions).
17A	Line from SM-29 Wing 9 to SM-154.	NA	6	5	CIP	A 177-ft section was retained as part of the new waste system.
17B	Line from SM-29 Wing 9 to SM-154.	NA	4	5	SS	A 190-ft section was retained as part of the new waste system.
17C	Line from SM-29 Wing 9 to Line 17.	0	6	18-21	VCP	A 35-ft section was left on the south side of Wing 9, SM-29 (see As-Left Conditions).
17D	Line from SM-29 Wing 7 to Line 17.	0	6	20	VCP	A 14-ft section was left on on the south side of Wing 7, SM-29 (see As-Left Conditions).
17E	Line from SM-29 Wing 7 to Line 17.	36	6	16-19	SS/ VCP	Partially removed in 1985. A 3-ft SS section was left on south wall of Wing 7 (see As-Left Conditions).
23	Line from MH-SM-703 to MH-SM-736.	2887	6	4-12	CIP	Completely removed in 1985.
25	Line from MH-SM-736 to cleanout (Station 70 + 78).	85	6	4	CI/ VCP	Completely removed in 1984.
30	Line from MH-SM-727 to MH-SM-736.	136	6	4-6	CIP	Completely removed in 1984.
30A	Line from MH-SM-727 to SM-97, an old guard station removed in 1955.	176	8	6-8	VCP	Partially removed in 1984. Left a a 5-ft section 60 ft west of Diamond Drive (see As-Left Conditions).

[a]Type symbols are defined in Table IV.

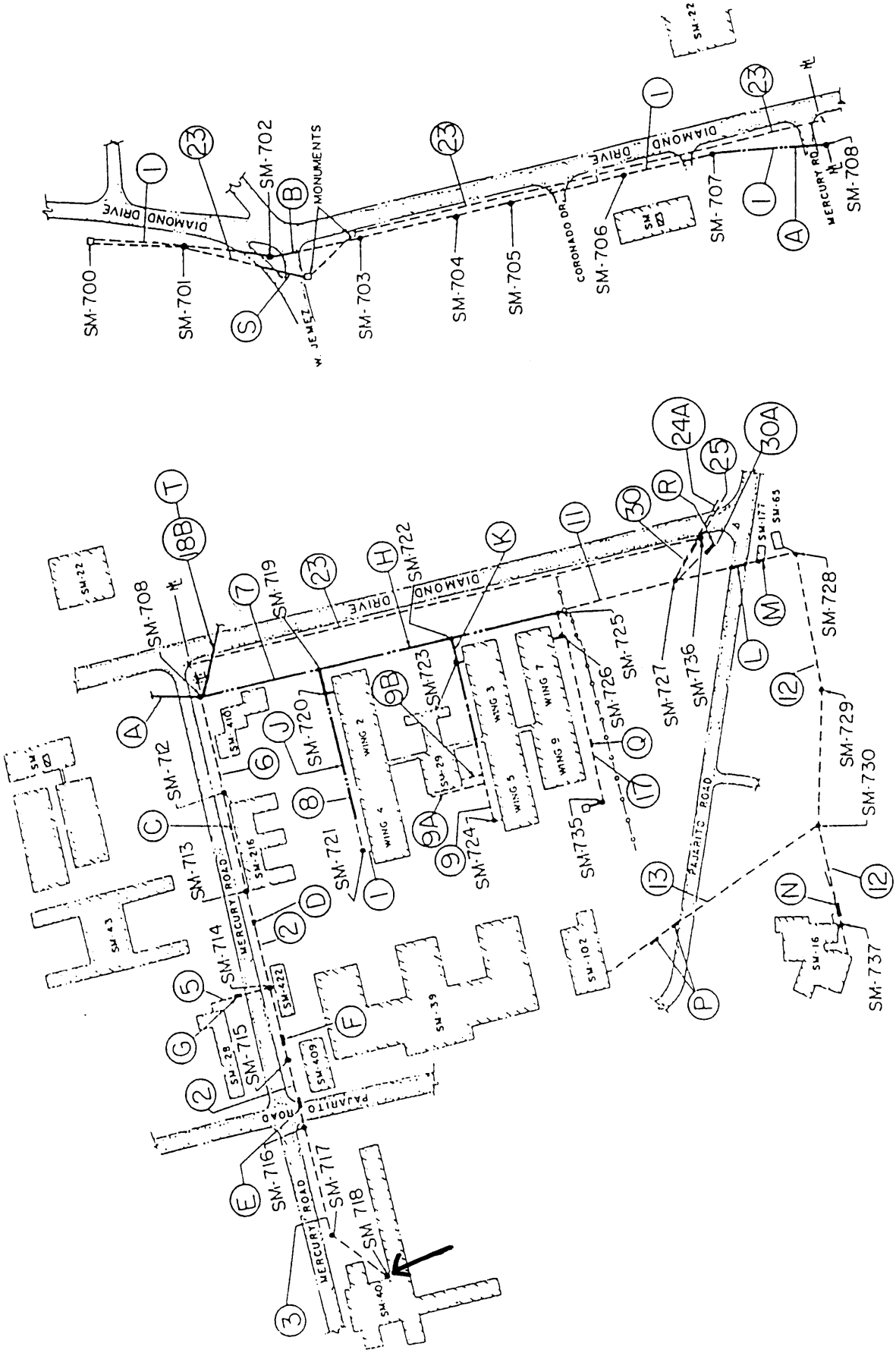


Fig. 15. Simplified diagram of TA-3 and related lines.

Fig. 15 (Continued)

NOTES:

A. Line 1 - 140 ft left under a parking lot and utilities.

B. Line 1 - 250 ft left under West Jemez Road (see SM-700 work).

C. Line 2 - 8 ft left under a nitrogen dewar.

D. Line 2 - 23 ft left under conduits and water main.

E. Line 2 - 40 ft left under Pajarito Road.

F. Line 2 - 7 ft left under conduits.

G. Line 5 - 12 ft left under utilities.

H. Line 7 - 1040 ft and manholes SM-708, -719, -722, and -725 left under utilities.

I. Line 8 - 19 ft left under utilities.

J. Line 8 - 471 ft left under transformer and utilities.

K. Line 9 - 390 ft left.

L. Line 11 - 4 ft left at south edge of Pajarito Road.

M. Line 11 - 23 ft left under Building SM-177.

N. Line 12 - 63 ft left under retaining wall.

P. Line 13 - 5 ft and 3 ft left under utilities.

Q. Lines 17, 17C, 17D, 17E - 12-ft, 5-ft, 35-ft, 14-ft, and 3-ft sections left under obstructions.

R. Line 30A - 5 ft left under conduit.

S. Line 23 - 160 ft left under West Jemez Road (see SM-700 work).

T. Line 18B - 190 ft left under Diamond Drive (see Sigma work).

Fig. 16. Excavation to remove contaminated soil along Line 1.

1984); a 4.5-ft section was left at 6.5-ft depth under Pajarito Road (see memo Cox to Garde, November 13, 1984). A 7-ft section of Line 2 was left at 5-ft depth near Building SM-422 under 16 conduits encased in concrete (see memo Cox to Garde, September 11, 1984). A 40-ft section was left at 5-ft depth under Pajarito Road at Mercury Road (see memo Cox to Valentine, March 20, 1985); this section included the 4.5-ft section above. A 23-ft section of Line 2 was left under 12 conduits and encased water main west of Bldg SM-216 (see memo Cox to Garde, August 13, 1984).

Line 5. A 12-ft section of Line 5 was left at 5-ft depth under water and gas lines encased in concrete at Mercury Road (see memo Cox to Garde, September 28, 1984).

Line 7. Approximately 1040 ft of Line 7 and four manholes (708, 719, 722, and 725) were left at 18- to 20-ft depth east of SM-29. The line lies under numerous utility lines (see memo Cox to Valentine, September 12, 1985).

Line 8. A 19-ft section of Line 8 was left where it enters the northwest corner of SM-29, Wing 4. Utility lines crossed over Line 8 at that point. A 471-ft section of Line 8 was left north of Wing 2, beginning at a transformer and ending at MH-SM-719 (see memo Montoya to Valentine, December 17, 1985). Manhole SM-720 in Line 8 was removed.

Line 9. A 390-ft section of Line 9 was left at a 19-20-ft depth. This section was left under the Wing 1-to-Wings 3/5 corridor and eastward to MH-SM-722 (see memo Montoya to Valentine, December 17, 1985). Utility lines, lawn sprinklers, and trees lay over this section of Line 9, which also includes manhole SM-723.

Line 11. A 4-ft section of Line 11 was left at the south edge of Pajarito Road. Its location under a 16-in water line and a storm sewer and its depth (16 ft) rendered it too difficult to remove (see memo Cox to Garde, July 18, 1984). A 23-ft section of Line 11 was left under Building SM-177 at a depth of 13 ft (see memo Cox to Garde, July 3, 1984).

Line 12. A 63-ft section of Line 12 was left under a retaining wall of the upper parking lot at SM-16 (see memo Cox to Garde, June 27, 1984).

Line 13. A 5-ft section of Line 13 was left at 16-ft depth under a steam and condensate line (see memo Cox to Garde,

June 28, 1984). A 3-ft section of Line 13 was left at 17-ft depth under a sanitary sewer line (see memo Cox to Garde, June 28, 1984). These sections are both south of Building SM-102.

Line 17. A 12-ft section of Line 17 was left at a depth of 21 ft under the new waste line, storm drains, and a concrete encasement south of SM-29 Wing 9 (see memo Cox to Valentine, June 10, 1985). Contaminated soil (up to 400 pCi/g beta activity) was left at two locations along Line 17 south of SM-29 (see memo Cox to Valentine, July 22, 1985). A 5-ft section of Line 17 was left west of manhole-SM-725 (see log 7/11/85). Figure 17 shows the deep trenching required to remove Line 17.

Line 17C. A 35-ft section of Line 17C was left at a depth of 21 ft under the same interferences listed for Line 17 above (see memo Cox to Valentine, June 10, 1985).

Line 17D. A 14-ft section of Line 17D was left under a retaining wall and the floor of SM-29 Wing 7 generator room (see memo Cox to Valentine, July 23, 1985). The section is at 20-ft depth south of Wing 7.

Line 17E. A 3-ft length of Line 17E, a 6-in stainless steel pipe, was plugged and left protruding from the south side of SM-29 Wing 7.

Line 30A. A 5-ft section of Line 30A was left in place west of Diamond Drive at a depth of 5 ft (see memo Cox to Garde, June 21, 1984). This section is encased in concrete under a 13 KV electrical conductor.

Fig. 17. Deep trenching to remove Line 17 south of SM-29.

3. Special Topics. The manholes listed below were removed in 1984, 1985, and 1986 as part of the TA-3 work:

SM-704 (12 tons)	SM-720 (3 tons)
SM-705 (10 tons)	SM-721 (2 tons)
SM-706 (19 tons)	SM-724 (1.5 tons)
SM-707 (10 tons)	SM-726 (1.3 tons)
SM-712 (12 tons)	SM-727 (15 tons)

SM-713 (9 tons)	SM-728 (3.2 tons)
SM-714 (6 tons)	SM-729 (3.4 tons)
SM-715 (7 tons)	SM-730 (3.4 tons)
SM-716 (8 tons)	SM-735 (1.5 tons)
SM-717 (8 tons)	SM-736 (6 tons)
→ SM-718 (fragmented)	SM-737 (weight unknown)

Manholes SM-708, -719, -722, and -725 were left in place with Line 7 due to overlying utilities, as stated under Line 7 above. Manhole SM-723 was left in place near Wing 3 of Building SM-29 with a section of Line 9 (see memo Montoya to Valentine, December 17, 1985). The cover of each manhole was sealed with silicone adhesive and tack-welded closed.

I. TA-21 (Work Package II.7)

1. Description of Work. This work involved removal of abandoned tanks, piping, and equipment associated with past waste disposal operations at Building TA-21-257. Liquid contaminated with plutonium, uranium, americium, and tritium was delivered to the facility in mobile tanks. There it was neutralized, mixed with cement in a pug mill, and delivered by transfer pipe (later a hose) into forms (24-in diameter corrigated metal pipes 21 ft long). These concrete shapes were stored vertically in the ground in an outdoor storage area a few hundred feet to the northwest of Building 257. Contaminated pipe, scaffolding, tanks, the pug mill, and the walls of the room containing the pug mill were removed in 1986. A transfer pipe filled with concrete which solidified during a transfer breakdown was removed. Also removed was a fiberglass casing through which a transfer hose passed from Building 257 to the outdoor storage area. The concrete shapes containing retrievable amounts of TRU waste will be transferred from TA-21 to TA-54 as a separate project in the near future.

3-001170

Attachment D

D. West
923-C010.000
5/24/94

Telephone Conversation with Bosco Hohner (661-9688) - ERM/Golder - Regarding Removal of the Former TA-3-718 Manhole Adjacent to TA-3-40 - 9:00 am, MDT:

- Bosco said that the proposed acid neutralization tank at the location of Manhole TA-3-718, shown on the 10/26/51 Construction As Built Drawing (Drawing No. SFA-KL-1/10; LANL No. ENG-C-11349), was never built, but was replaced with the manhole/waste line system; this change is documented on Construction As Built Drawing No. SFA-KL-1/16 (LANL No. ENG-C-11340) that shows in Rev. 3 (dated 11/5/52) that the neutralization tank [sic "pit"] is to be deleted and replaced with the acid sewer and manholes

- Bosco also mentioned that Line 3 (from Manhole TA-3-718 to Manhole TA-3-716) was the "cleanest" of the removed lines in terms of radioactivity

- Bosco indicated that Manhole TA-3-718 was intact when excavated (it was not cracked or broken), and was broken-up with jackhammers to expedite removal

SWMU 3-044(a) — Container Storage Area

1.0 Introduction

SWMU 3-044(a) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-044(a) [Map 3-044(a)] was a container storage area, located on the western portion of a 30 ft x 100 ft concrete pad approximately 75 ft southeast of TA-3-70, the Laboratory's Parks and Refuse office. [The eastern portion of the concrete pad was occupied by SWMU 3-056(b)]. The concrete pad is currently surrounded by sand piles varying from 6 to 15 ft in height. Through 1993, heavy equipment, such as forklifts, operated throughout the storage area constantly removing and adding reels of cable and storage drums.

The western portion of the pad, i.e., SWMU 3-044(a), was used by the Laboratory Roads and Grounds Crew for the storage of drums containing waste diesel fuel, kerosene, and oil emulsion prior to pickup for recycling by Mesa Oil, Inc., of Albuquerque. After 1993, the only drum that remained was one 55-gallon drum used as a satellite storage area (an asphalt berm was placed around a 6 ft square area on the concrete), and now even that drum has been removed.

No staining was observed during site visits or from historical aerial photographs of the area where the pad is located. Recent photographs taken with improved equipment provide a better view of the area (LANL Photograph 1983, 83-124-50; LANL/ER Photograph 1991, 6-33) (Attachments A and B).

1.2 No Further Action Basis

SWMU 3-044(a) is proposed for NFA because there are no known releases from the drum storage and the small amount of 10W-30 motor oil released into the environment from forklift activities is not considered a hazardous waste, or a threat to the environment (Unocal 1992, 17-1253). (Attachment C).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-044 (a) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Storage of drums containing waste diesel fuel, kerosene, and oil emulsion prior to pickup for recycling.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Photograph 1983, 83-124-50.

Attachment B: LANL/ER Photograph 1991, 6-33.

Attachment C: Unocal, "Material Safety Data Sheet for 03326XX13 Oil," (Unocal 1992, 17-1253).

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

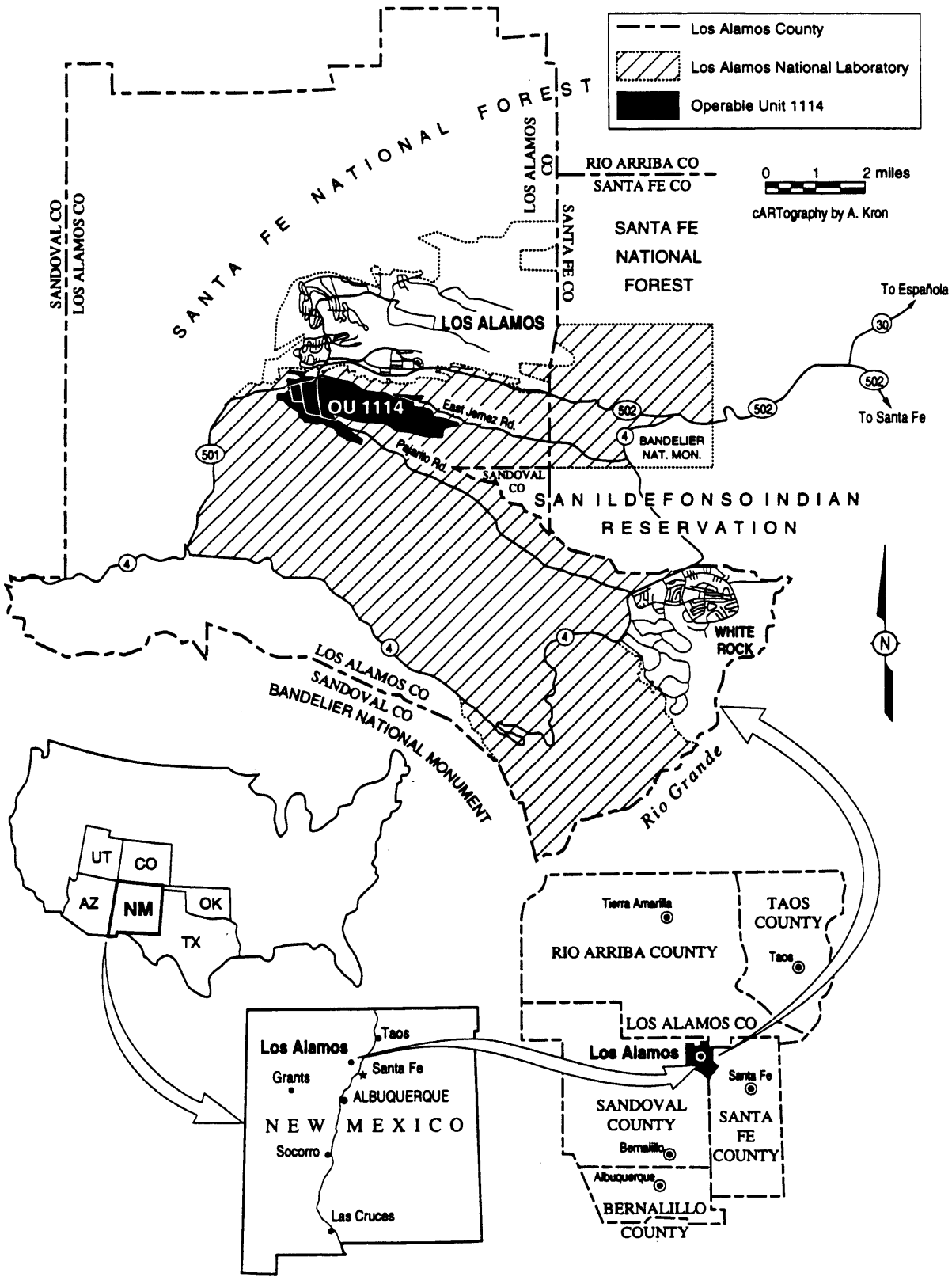


Fig. 1-1. Location of Operable Unit 1114.

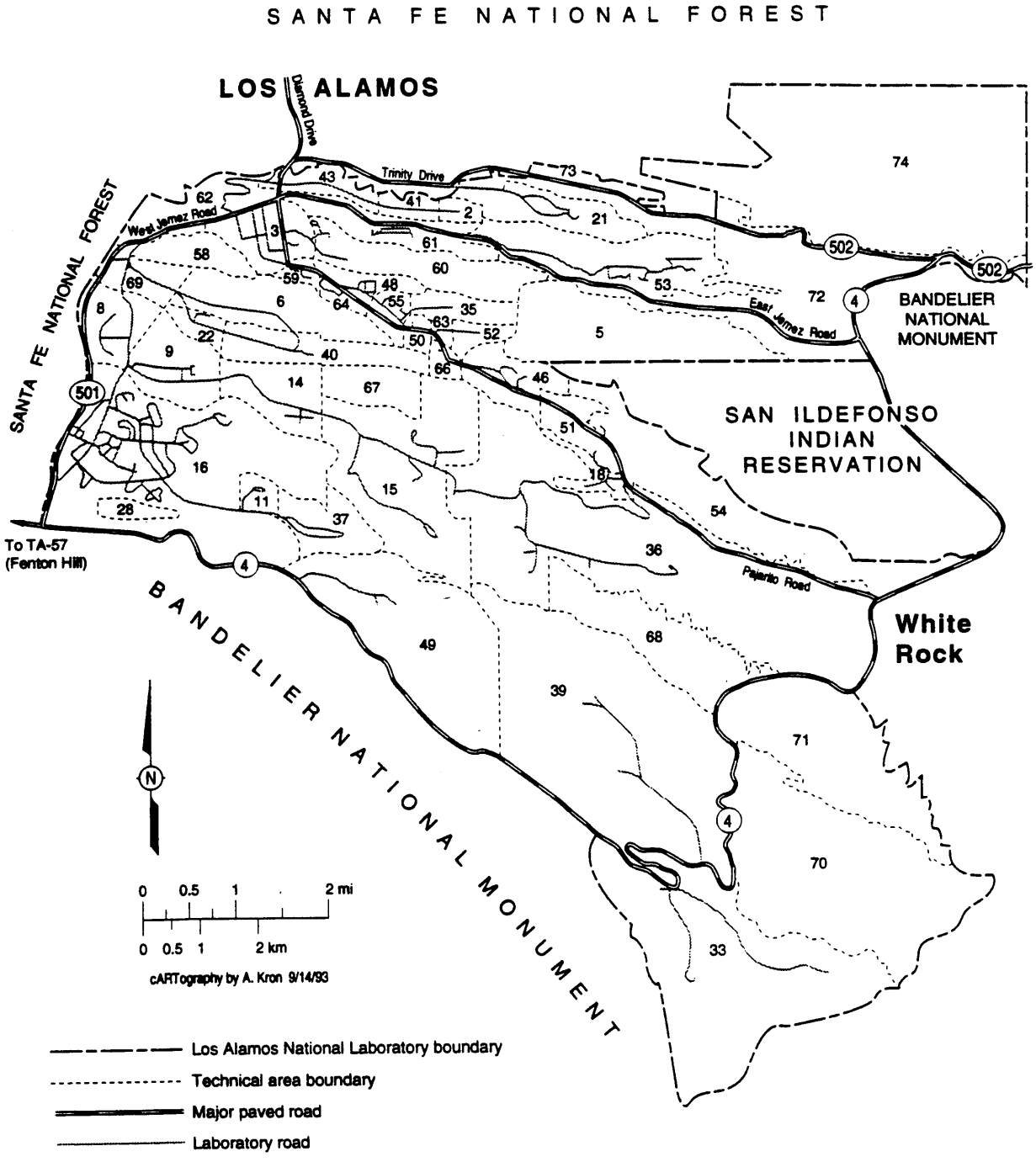
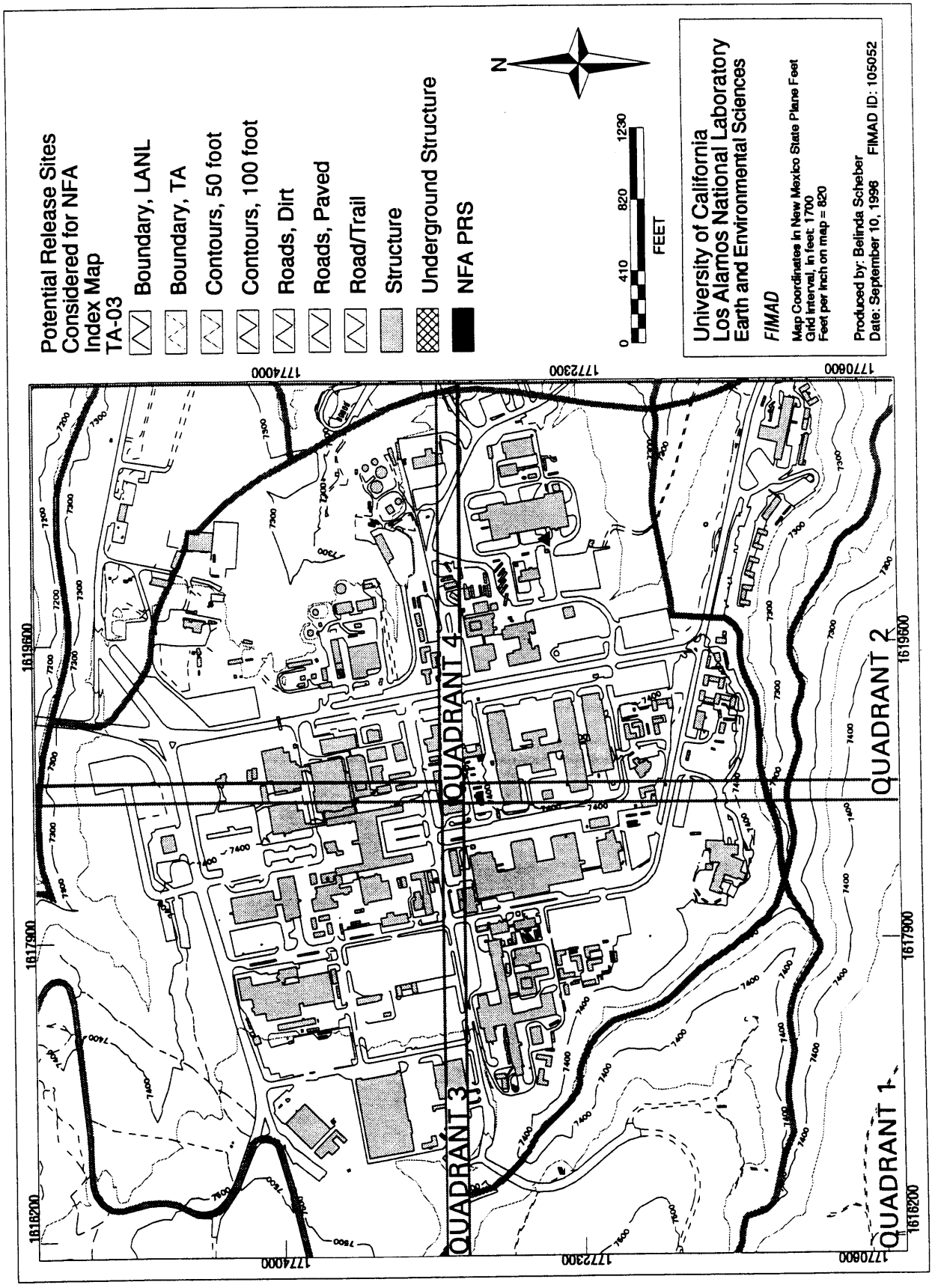
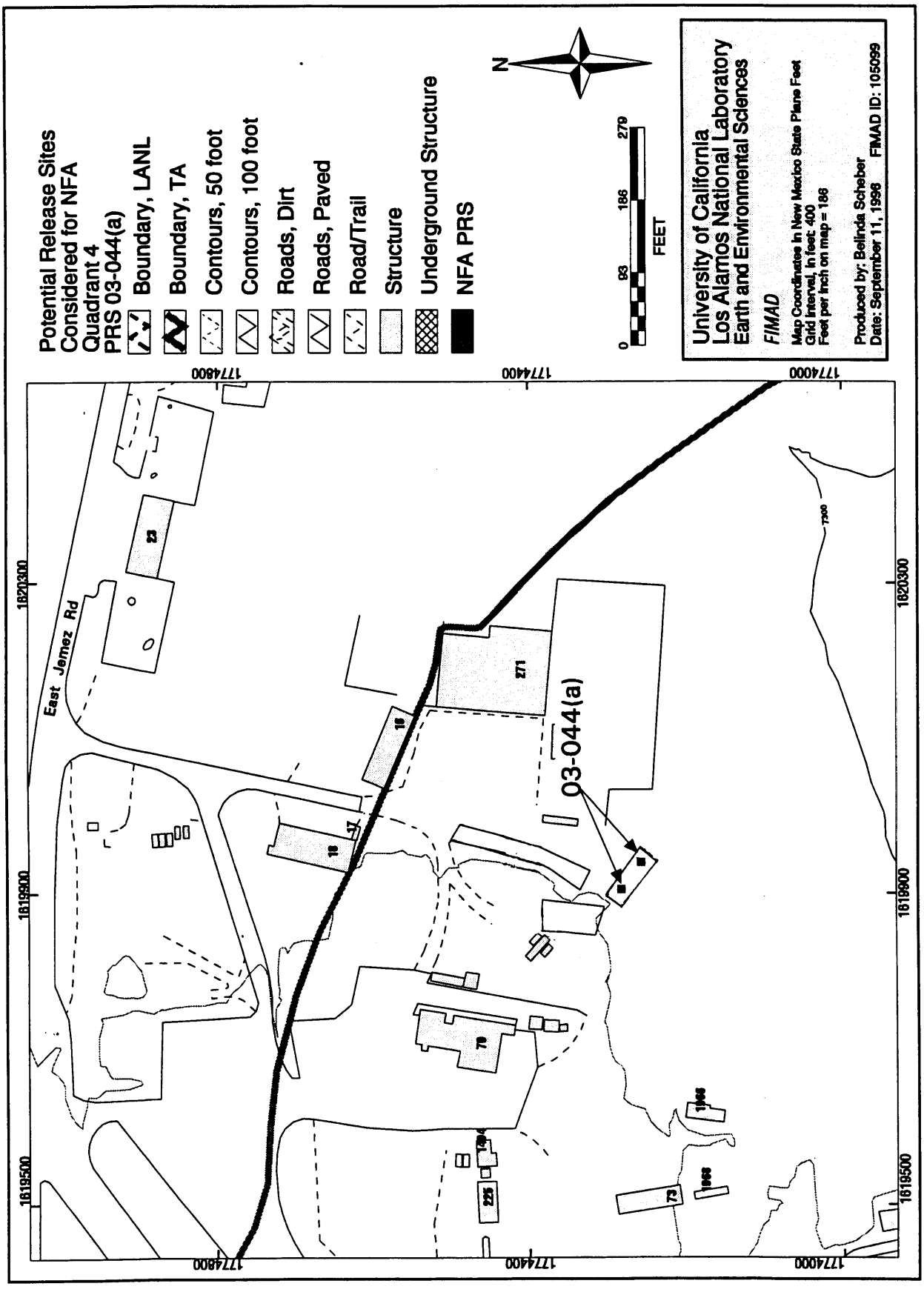


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-044(a)

6.3 Other Survey/Investigation Data

Section not applicable.

3-044(a)

ATTACHMENTS

Attachment A

Attachment C

MATERIAL SAFETY DATA SHEET

Unocal Corporation
1201 West 5th Street
Los Angeles, California 90017

Product Name: GENERIC MOTOR OIL 10W-30
Product Code No: 03326XX13

Issue Date: 10/21/92
Status: FINAL

Responsible Party:	Transportation Emergencies:
UNOCAL PETROLEUM PRODUCTS & CHEMICALS DIV. REFINING & MARKETING GROUP UNION OIL COMPANY OF CALIFORNIA 1201 WEST 5TH STREET LOS ANGELES, CALIFORNIA 90017 FOR FURTHER INFORMATION CONTACT: MSDS COORDINATOR 213-977-7589	CHEMTREC (800) 424-9300 Cont. U.S. from Alaska & Hawaii Health Emergencies: LOS ANGELES POISON CONTROL CENTER (24 hrs) (800) 356-3129

PRODUCT IDENTIFICATION

PRODUCT NAME: GENERIC MOTOR OIL 10W-30

GENERIC NAME: CRANKCASE OIL

CHEMICAL FAMILY: PETROLEUM HYDROCARBON

DOT PROPER SHIPPING NAME: NOT APPLICABLE

ID NUMBER: NONE

DOT HAZARD CLASSIFICATION: NOT REGULATED

PRECAUTIONARY WARNING

WARNING!
OVEREXPOSURE MAY CAUSE LIVER DAMAGE. USED MOTOR OIL IS A POSSIBLE SKIN CANCER HAZARD BASED ON ANIMAL DATA. DO NOT GET INTO EYES, ON SKIN OR ON CLOTHING. AVOID PROLONGED OR REPEATED SKIN CONTACT. WASH THOROUGHLY AFTER HANDLING. LIQUID OR VAPOR MAY IGNITE. KEEP AWAY FROM ALL SOURCES OF IGNITION. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, GRIND OR DRILL ON OR NEAR CONTAINER. "EMPTY" CONTAINER RETAINS RESIDUE (LIQUID AND/OR VAPOR) AND MAY EXPLODE IN HEAT OF A FIRE. DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. AVOID BREATHING VAPORS OR MISTS. DO NOT TASTE OR SWALLOW. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.

SECTION I - COMPONENTS	PERCENT	EXPOSURE LIMIT	UNITS	AGENCY	TYPE
HAZARDOUS COMPONENTS					
OIL MIST, IF GENERATED CAS #: 8012-95-1		5.000	mg/m3	ACGIH	TWA
		10.000	mg/m3	ACGIH	STEL
		5.000	mg/m3	OSHA	TWA
		5.000	mg/m3	OSHA	TWA
		5.000	mg/m3	CAL OSHA	TWA
PROPRIETARY ZINC COMPOUND CAS #: PROPRIETARY	2	NOT ESTABLISHED			

Attachment C

UNOCAL

Product Name: GENERIC MOTOR OIL 10W-30
Product Code No: 03326XX13

Issue Date: 10/21/
Status: FINAL

SECTION I - COMPONENTS	PERCENT	EXPOSURE LIMIT	UNITS	AGENCY	TYPE
OTHER COMPONENTS					
SOLVENT DEWAXED DISTILLATE, HEAVY PARAFFIN CAS #: 64742-65-0	53	(SEE OIL MIST EXPOSURE LIMIT)			
HYDROTREATED DISTILLATE, LIGHT PARAFFIN CAS #: 64742-55-8	26	(SEE OIL MIST EXPOSURE LIMIT)			
TRADE SECRET CAS #: PROPRIETARY	19	NOT ESTABLISHED			

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA 313 AND 40 CFR 372:	CAS NUMBER	WEIGHT %
PROPRIETARY ZINC COMPOUND	PROPRIETARY	2

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EMERGENCY
Have physician call LOS ANGELES POISON CONTROL CENTER (24 hrs) (800) 356-3129

EYE CONTACT:

IF IRRITATION OR REDNESS DEVELOPS, MOVE VICTIM AWAY FROM EXPOSURE AND INTO FRESH AIR. FLUSH EYES WITH CLEAN WATER. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.

SKIN CONTACT:

WIPE MATERIAL FROM SKIN AND REMOVE CONTAMINATED SHOES AND CLOTHING. CLEANSE AFFECTED AREA(S) THOROUGHLY BY WASHING WITH MILD SOAP AND WATER AND, IF NECESSARY, A WATERLESS SKIN CLEANSER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

INHALATION (BREATHING):

IF RESPIRATORY SYMPTOMS DEVELOP, MOVE VICTIM AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING, IMMEDIATELY BEGIN ARTIFICIAL RESPIRATION. IF BREATHING DIFFICULTIES DEVELOP, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION (SWALLOWING):

NO FIRST AID IS NORMALLY REQUIRED; HOWEVER, IF SWALLOWED, AND SYMPTOMS DEVELOP, SEEK MEDICAL ATTENTION.

SECTION III - HEALTH HAZARDS/ROUTES OF ENTRY

EYE CONTACT:

THIS MATERIAL MAY CAUSE MILD EYE IRRITATION. DIRECT CONTACT WITH THE LIQUID OR EXPOSURE TO VAPORS OR MISTS MAY CAUSE STINGING, TEARING AND REDNESS.

SKIN CONTACT:

THIS MATERIAL MAY CAUSE MILD SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE REDNESS, BURNING, AND DRYING AND CRACKING OF THE SKIN. NO HARMFUL EFFECTS ARE EXPECTED FROM SKIN ABSORPTION OF THIS MATERIAL. PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS MATERIAL.

INHALATION (BREATHING):

WHILE THIS MATERIAL HAS A LOW DEGREE OF TOXICITY, BREATHING HIGH CONCENTRATIONS OF VAPORS OR MISTS MAY CAUSE IRRITATION OF THE NOSE AND THROAT.

Attachment C

UNOCAL

Product Name: GENERIC MOTOR OIL 10W-30
Product Code No: 03326X*13

Issue Date: 10/21/92
Status: FINAL

SECTION III - HEALTH HAZARDS/ROUTES OF ENTRY

INGESTION (SWALLOWING):

WHILE THIS MATERIAL HAS A LOW DEGREE OF TOXICITY, INGESTION OF EXCESSIVE QUANTITIES MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT.

COMMENTS:

USED MOTOR OIL IS A POSSIBLE SKIN CANCER HAZARD BASED ON TESTS IN LABORATORY ANIMALS AND HAS BEEN IDENTIFIED AS A POSSIBLE CARCINOGEN BY IARC. HYDROTREATED DISTILLATE, LIGHT PARAFFIN CAUSED LIVER DAMAGE IN LONG TERM STUDIES IN LABORATORY ANIMALS. PRE-EXISTING LIVER DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION:

IF CURRENT VENTILATION PRACTICES ARE NOT ADEQUATE TO MAINTAIN AIRBORNE CONCENTRATIONS BELOW THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I), ADDITIONAL VENTILATION OR EXHAUST SYSTEMS MAY BE REQUIRED. WHERE EXPLOSIVE MIXTURES MAY BE PRESENT, ELECTRICAL SYSTEMS SAFE FOR SUCH LOCATIONS MUST BE USED.

RESPIRATORY PROTECTION:

THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I). DEPENDING ON THE AIRBORNE CONCENTRATION, USE A RESPIRATOR OR GAS MASK WITH APPROPRIATE CARTRIDGES AND CANNISTERS (NIOSH APPROVED, IF AVAILABLE) OR SUPPLIED AIR EQUIPMENT.

PROTECTIVE GLOVES:

THE USE OF GLOVES IMPERMEABLE TO THE SPECIFIC MATERIAL HANDLED IS ADVISED TO PREVENT SKIN CONTACT AND POSSIBLE IRRITATION.

EYE PROTECTION:

APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY IS RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN. IMPERVIOUS CLOTHING SHOULD BE WORN AS NEEDED.

SECTION V - REACTIVITY DATA

REACTIVITY:

STABLE UNDER NORMAL CONDITIONS OF STORAGE AND HANDLING.

CONDITIONS AFFECTING REACTIVITY:

EXTENDED EXPOSURE TO HIGH TEMPERATURES MAY CAUSE DECOMPOSITION.

INCOMPATIBLE MATERIALS:

AVOID CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS

COMBUSTION MAY YIELD MAJOR AMOUNTS OF OXIDES OF CARBON AND MINOR AMOUNTS OF OXIDES OF SULFUR AND NITROGEN.

Attachment C

UNOCAL

Product Name: GENERIC MOTOR OIL 10W-30
Product Code No: 03326XX13

Issue Date: 10/21/92
Status: FINAL

SECTION V - REACTIVITY DATA

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

POLYMERIZATION CONDITIONS TO AVOID:

NONE KNOWN

SECTION VI - SPILL AND LEAK PROCEDURES

HIGHWAY OR RAILWAY SPILLS
Call CHEMTREC (800) 424-9300 Cont. U.S.
(Collect) (202) 483-7616 from Alaska & Hawaii

PRECAUTIONS IN CASE OF RELEASE OR SPILL:

MAY IGNITE. KEEP ALL SOURCES OF IGNITION AWAY FROM SPILL/RELEASE. STAY UPWIND AND AWAY FROM SPILL/RELEASE. ISOLATE HAZARD AREA AND LIMIT ENTRY TO AUTHORIZED PERSONNEL. STOP SPILL/RELEASE IF IT CAN BE DONE WITHOUT RISK. WEAR APPROPRIATE PROTECTIVE EQUIPMENT INCLUDING RESPIRATORY PROTECTION AS CONDITIONS WARRANT (SEE SECTION IV). PREVENT SPILLED MATERIAL FROM ENTERING SEWERS, STORM DRAINS, OTHER UNAUTHORIZED TREATMENT DRAINAGE SYSTEMS AND NATURAL WATERWAYS. DIKE FAR AHEAD OF SPILL FOR LATER RECOVERY OR DISPOSAL. SPILLED MATERIAL MAY BE ABSORBED INTO AN APPROPRIATE ABSORBENT MATERIAL. NOTIFY FIRE AUTHORITIES AND APPROPRIATE FEDERAL, STATE AND LOCAL AGENCIES. IMMEDIATE CLEANUP OF ANY SPILL IS RECOMMENDED. IF SPILL OF ANY AMOUNT IS MADE INTO OR UPON U.S. NAVIGABLE WATERS, THE CONTIGUOUS ZONE, OR ADJOINING SHORELINES, NOTIFY THE NATIONAL RESPONSE CENTER (PHONE NUMBER 800-424-8802).

WASTE DISPOSAL METHOD:

DISPOSE OF PRODUCT IN ACCORDANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL REGULATIONS.

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS:

USE AND STORE THIS MATERIAL IN COOL, DRY, WELL VENTILATED AREAS AWAY FROM HEAT AND ALL SOURCES OF IGNITION. KEEP CONTAINER(S) CLOSED. STORE ONLY IN APPROVED CONTAINERS. KEEP AWAY FROM ANY INCOMPATIBLE MATERIALS (SEE SECTION V). PROTECT CONTAINER(S) AGAINST PHYSICAL DAMAGE. DO NOT ENTER CONFINED SPACES SUCH AS TANKS OR PITS WITHOUT FOLLOWING PROPER ENTRY PROCEDURES SUCH AS ASTM D-4276. THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED ANY ESTABLISHED EXPOSURE LIMITS (SEE SECTIONS I AND IV). WASH THOROUGHLY AFTER HANDLING. DO NOT WEAR CONTAMINATED CLOTHING OR SHOES. USE GOOD PERSONAL HYGIENE PRACTICE. "EMPTY" CONTAINERS RETAIN RESIDUE (LIQUID AND/OR VAPOR) AND CAN BE DANGEROUS. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. "EMPTY" DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY SHIPPED TO THE SUPPLIER OR A DRUM RECONDITIONER. ALL OTHER CONTAINERS SHOULD BE DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH GOVERNMENTAL REGULATIONS. BEFORE WORKING ON OR IN TANKS WHICH CONTAIN OR HAVE CONTAINED THIS PRODUCT, REFER TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ANSI Z49.1, AND OTHER GOVERNMENTAL AND INDUSTRIAL REFERENCES PERTAINING TO CLEANING, REPAIRING, WELDING, OR OTHER CONTEMPLATED OPERATIONS.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

NFPA HAZARD CLASS			HAZARD RANKING	FLASH POINT
	HEALTH HAZARD:	0	0 - LEAST	
	FLAMMABILITY:	1	1 - SLIGHT	
	REACTIVITY:	0	2 - MODERATE	399 F (COC)
	OTHER:		3 - HIGH	204 C
			4 - EXTREME	

Attachment C

UNOCAL

Product Name: GENERIC MOTOR OIL 10W-30
Product Code No: 03326XX13

Issue Date: 10/21/92
Status: FINAL

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, HALON, FOAM OR WATER SPRAY IS RECOMMENDED.

UNUSUAL FIRE & EXPLOSION HAZARDS:

THIS MATERIAL MAY BURN, BUT WILL NOT IGNITE READILY. IF CONTAINER IS NOT PROPERLY COOLED, IT MAY EXPLODE IN THE HEAT OF A FIRE. VAPORS ARE HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW AREAS.

SPECIAL FIRE FIGHTING PROCEDURES:

WEAR APPROPRIATE PROTECTIVE EQUIPMENT INCLUDING RESPIRATORY PROTECTION AS CONDITIONS WARRANT (SEE SECTION IV). STOP SPILL/RELEASE IF IT CAN BE DONE WITHOUT RISK. MOVE UNDAMAGED CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. WATER SPRAY MAY BE USEFUL IN MINIMIZING OR DISPERSING VAPORS AND COOLING EQUIPMENT EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES.

SECTION IX - PHYSICAL DATA

***UNLESS OTHERWISE NOTED, VALUES ARE AT 20 C/68 F AND 760 mm Hg/1 atm.

APPROX. BOILING POINT	(AIR = 1) VAPOR DENSITY	(N-BUTYL ACETATE = 1) EVAPORATION RATE	% VOLATILE
>600F / 316C	>1	<1	NEGLIGIBLE

% SOLUBILITY IN WATER

NEGLIGIBLE

SPECIFIC GRAVITY

0.88-0.89

APPEARANCE

CLEAR, BROWN LIQUID

ODOR

CHARACTERISTIC PETROLEUM

SECTION X - DOCUMENTARY INFORMATION

ISSUE DATE: 10/21/92 PRODUCT CODE NO. 03326XX13

PREV. DATE: 09/04/92 PREV. PROD. CODE NO. NONE

MSDS NO: NONE PREV. MSDS NO: NONE

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

SWMU 3-045(a) — NPDES Permitted Outfall (Inactive)

1.0 Introduction

SWMU 3-045(a) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-045(a) [Map 3-045(a)] is an inactive outfall from the Steam Plant, TA-3-22. The outfall was NPDES EPA 04A151 (this outfall was incorrectly identified as A01A001 in the RFI Work Plan for Operable Unit 1114, Addendum 1). The Steam Plant was operational from the 1950s through May 1993. Water from floor drains in the basement, first floor, mezzanine, heater floor, platform, and roof drains of the Steam Plant discharged to the outfall. Steam condensate and floor wash water were also routed to the outfall (LANL 1991, 17-867) (Attachment A). The major flow into the outfall resulted from steam condensate. In 1989, an oil/water separator was installed near the outfall to prevent possible oil spills from reaching the outfall. The separator was removed in 1993 and the discharge pipe was capped (LANL 1993, 17-925) (Attachment B).

In 1991, a diesel fuel release associated with two diesel tanks at building TA-3-22, occurred near SWMU 3-045(a). As a result of the corrective action following this release, the soil surrounding SWMU 3-045(a) was removed and replaced with clean fill.

1.2 No Further Action Basis

SWMU 3-045(a) is recommended for NFA. Although SWMU 3-045(a) did not managed RCRA solid or hazardous waste, the area surounding this SWMU was remediated under another authority which adequately addressed corrective action. The soil surrounding SWMU 3-045(a) was removed and replaced with clean fill as part of the corrective action to clean up the contaminated soil resulting from the diesel fuel release. This corrective action is well documented (LANL 1992, 17-834; Bellows 1991, 17-835; Bohn, 1991; NMED 1992, 17-832) (Attachments C through F).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(a) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

NPDES permitted outfall for water from floor drains in the basement, first floor, mezzanine, heater floor, platform, and roof drains of the Steam Plant.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Report, Wastewater Stream Characterization Categories, (LANL 1991, 17-867).

Attachment B: LANL Memorandum prepared by ERM, (LANL 1993, 17-925).

Attachment C: LANL Occurrence Report, (LANL 1992, 17-834).

Attachment D: DOE Letter, "Notification of Discharge, NPDES Permit No. NM0028355," (Bellows 1991, 17-835).

Attachment E: LANL Memorandum, "TA-3 SM-22 Diesel Spill on 9/25/91," Bohn, Sept. 27, 1991.

Attachment F: NMED, "Spill Report pursuant to 1-203 A.3. and 1-203 A.6. of the New Mexico Quality Control Commission (WQCL) Regulations," (NMED 1992, 17-832)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

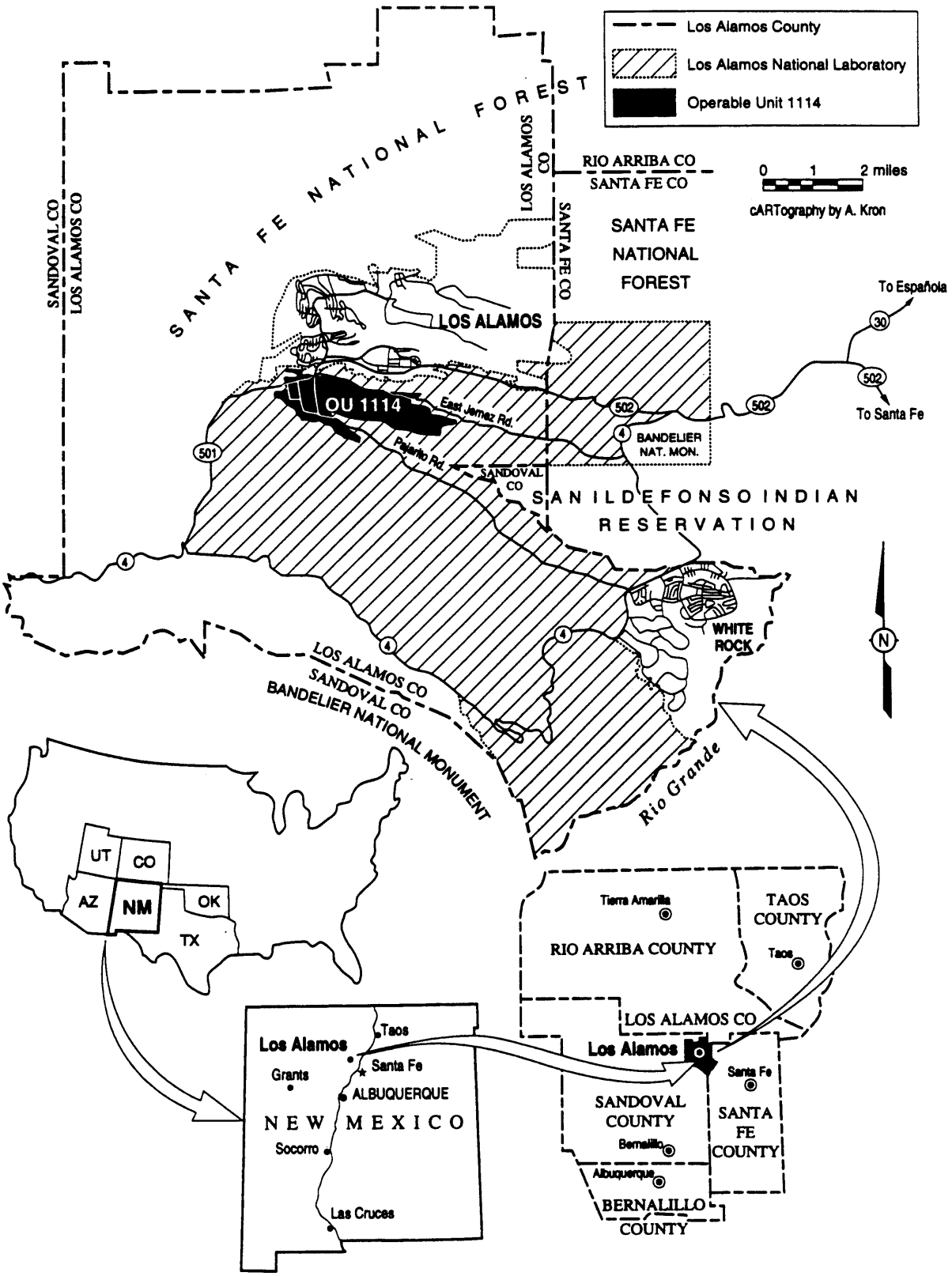


Fig. 1-1. Location of Operable Unit 1114.

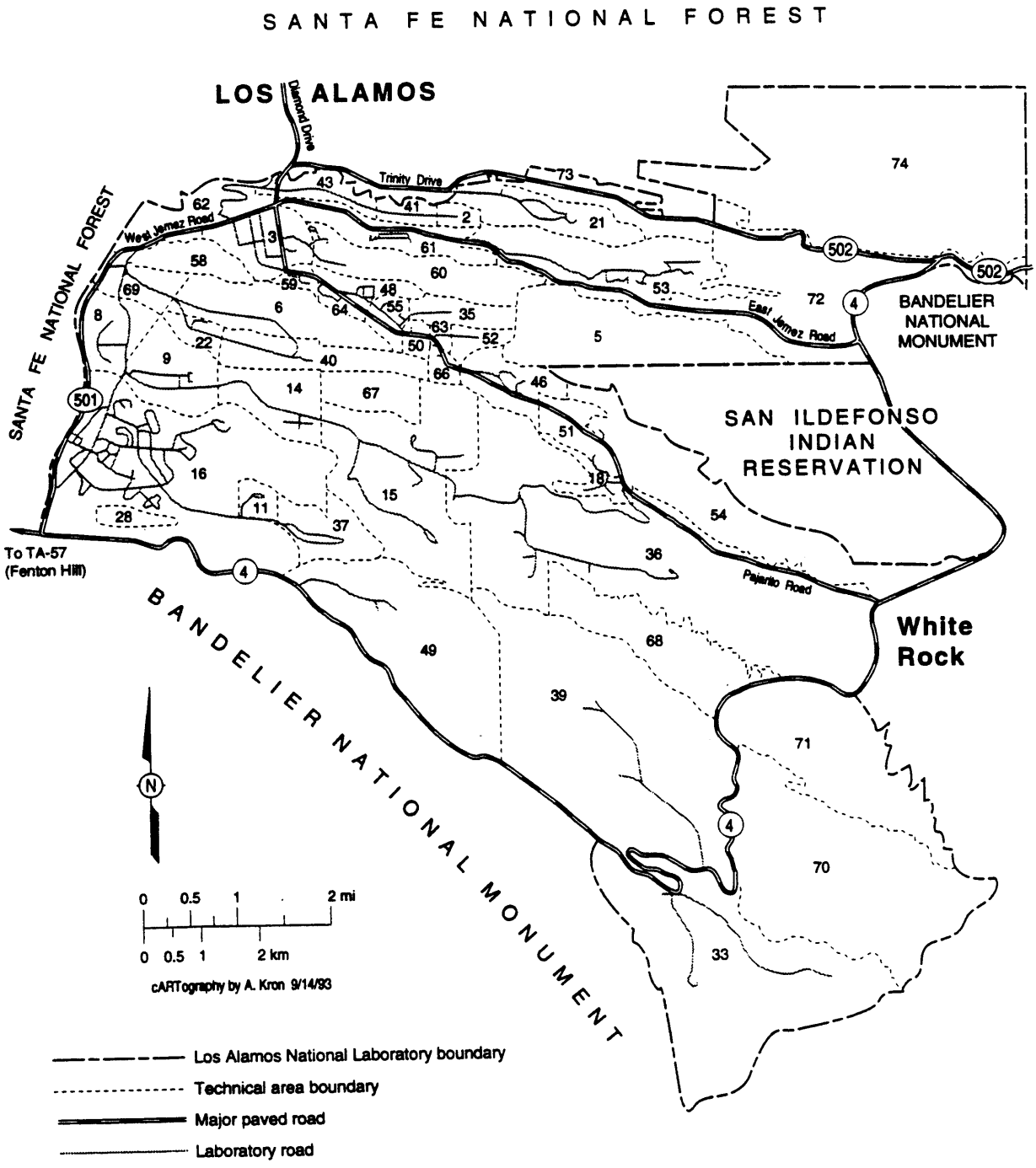
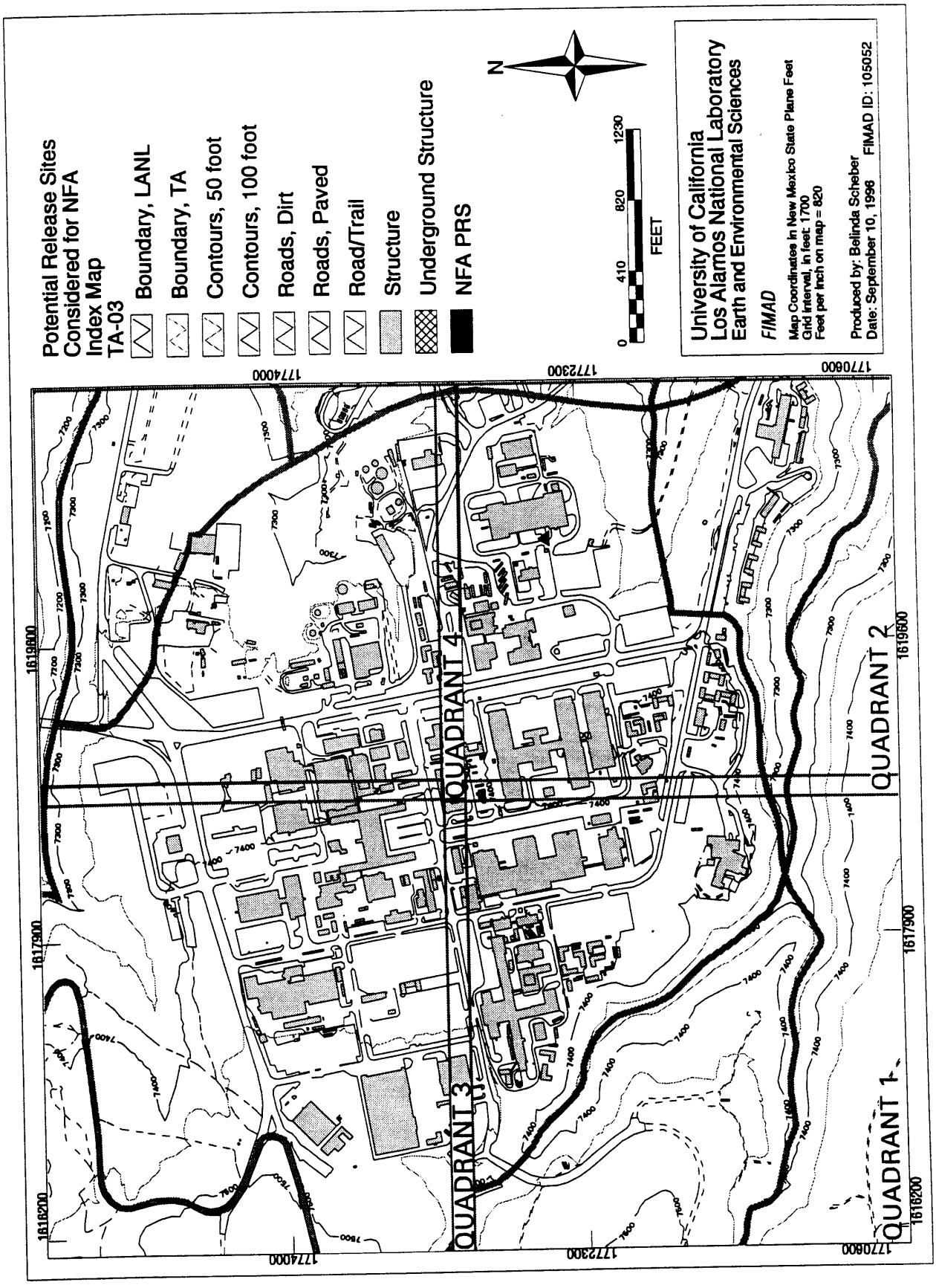
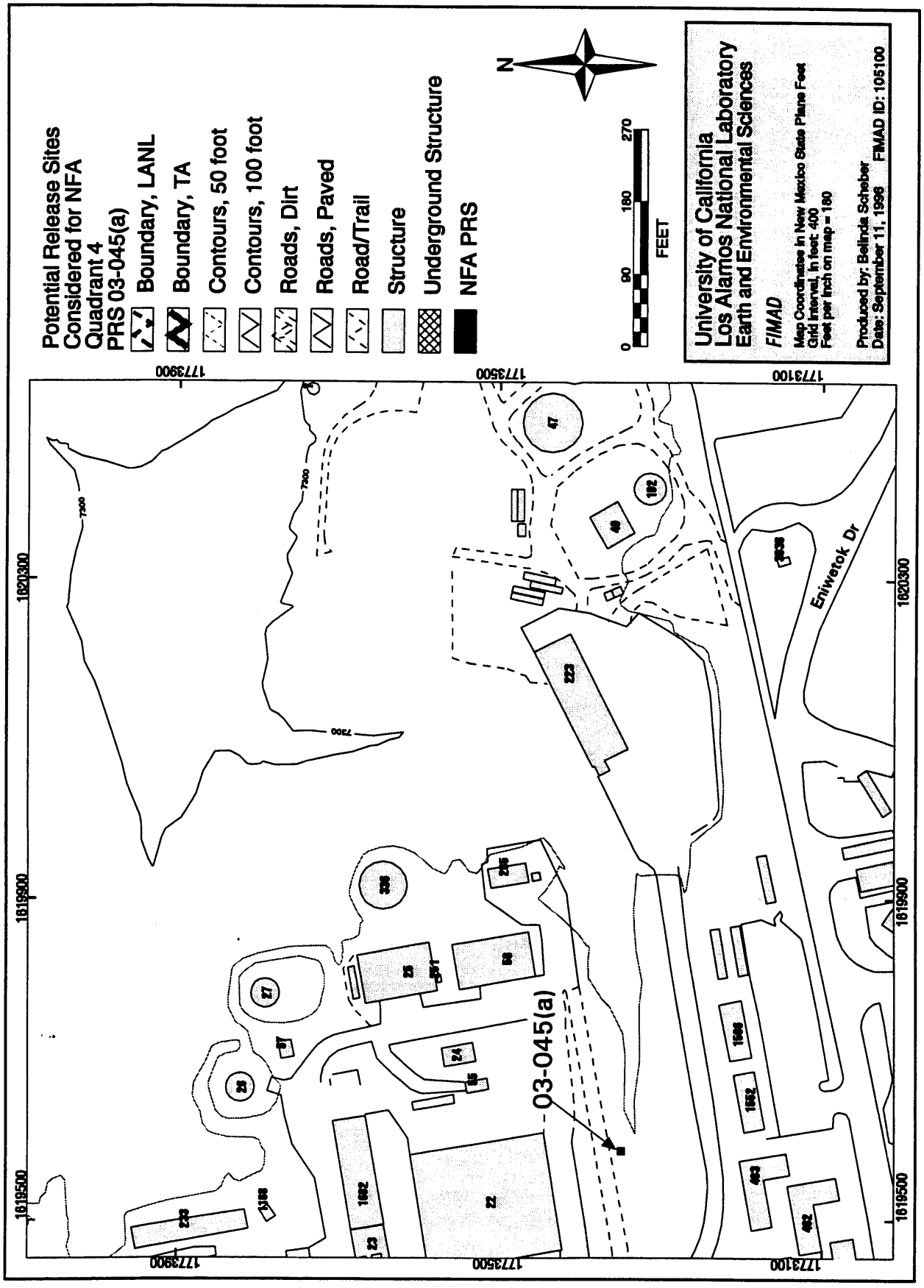


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-045(a)

6.3 Other Survey/Investigation Data

Section not applicable.

3-045(a)

ATTACHMENTS

Attachment A

WASTEWATER STREAM CHARACTERIZATION FOR CATEGORIES 01A (TA 3-22, 3-24, 3-25 & 3-58) AND 02A (TA 16-540 & TA 21-357) PLUS BUILDINGS TA 3-23, 3-26, 3-27, 3-55, 3-57, 3-144, 3-230, 3-231, 3-232, 3-233, 3-251, 3-336, 3-1188, 3-1535, 3-1651, 3-1790, 3-2042, 16-457 & 16-542

an
ENVIRONMENTAL STUDY

prepared for:
THE LOS ALAMOS NATIONAL LABORATORY
Los Alamos, New Mexico

under subcontract 9-XG8-2874P-1

by:
Santa Fe Engineering, Ltd.
1429 Second Street
Santa Fe, New Mexico 87501
(505) 988-7438

July, 1992

3.0 RECOMMENDATIONS FOR TA-3 POWER PLANT

Tables 1, 2, 3, 4, 5, 6 and 7 are lists of the drains to the outfalls for the buildings in the TA-3 Power Plant Area and Figures 2, 3, 4, 5, 6, 7, 8 and 9 are schematics of the piping. The table lists the drains that connect to each outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

3.1 Outfall 3-22-OPN-1

This outfall receives flow from a boiler feed water filter system. The water flows to the sanitary sewer system that is connected to the TA-3 sanitary treatment plant that discharges as 01S. The flow from this outfall will be high in Total Suspended Solids (TSS) from the diatomaceous earth used in the filters. This outfall should be repiped to the environmental tank so that it will be discharged through the 01A001 outfall to eliminate the solids loading to the TA-3 sanitary treatment plant. This outfall will be part of the 01A001 outfall. A revised EPA Form 2C was prepared for outfall 01A001.

3.2 Outfall 3-22-OPN-2

This outfall receives blow down from the boilers and is pumped to the environmental tank. No changes are recommended for this outfall. This outfall is included in the EPA Form 2C for 01A001.

3.3 Outfall 3-22-OPN-3

This outfall receives flow from floor drains in the basement, on the first floor, on the mezzanine, on the heater floor and on the platform and discharges to the arroyo. Any oil that might be spilled will be caught in the pump suction sump. This sump should be regularly checked for oil. Better lighting would be helpful to find any oil floating in the sump. Secondary

containment is needed around the batteries near floor drain MFD1 to eliminate the possibility of low pH water being discharged. This outfall is permitted as 04A151. The types of water received are steam condensate and floor washings. The flow of steam condensate is the major flow. During the site visit, steam condensate was the only flow. Repiping of this outfall to the environmental tank is recommended as the flow is primarily condensate, not cooling water as indicated by the category 04A. All needed repiping could be done inside the building. A revised EPA Form 2C was prepared for outfall 04A151

3.4 Outfall 3-22-OPN-4

This outfall receives water from the chemical treating area and flows to the environmental tank. No changes are recommended. This outfall is included in the EPA Form 2C prepared for outfall 01A001.

3.5 Outfall 3-22-OPN-5

This outfall can receive water from the environmental tank, two cooling towers and the chlorine building and flows to the arroyo. This outfall is permitted as 01A001. An EPA Form 2C is attached for this outfall.

3.6 Outfall 3-22-OPN-6

This outfall receives flow from the sanitary facilities in the building. All flows are appropriate for the sanitary sewer system. The flow goes to the TA-3 treatment plant which discharges as 01S. It is recommended that the sink in the Test Lab be labeled "NO CHEMICAL DISPOSAL". No permitting is recommended. No EPA forms were prepared.

Attachment B

3-000925

MEMORANDUM

ENVIRONMENTAL RESOURCES MANAGEMENT, INC.

To: OU 1114 File

From: Paula M. Bertino PMB

Date: 9 August 1993

Regarding: SWMU 3-045(a)

On June 17, 1993, Valarie Rhodes and myself met with Robert Montano, JCI at the Steam Plant (TA-3-22) regarding SWMU 3-045(a). SWMU 3-045(a) is identified as the outfall from floor drains throughout the Steam Plant (floor drains in the basement, mezzanine, heater floor, platform and from roof drains). Mr. Montano escorted us around the plant and to the outfall.

The outfall identified by NPDES permit number EPA04A151 (SWMU 3-045(a)) previously received steam condensate and floor washings. By 1991, steam condensate tended to make up the majority of the flow. According to Mr. Montano, the floor drains listed above all discharged directly to the outfall from 1951 until 1989. At that time, an oil/water separator was installed to prevent oil from possible spills reaching the outfall. However, the separator was removed in May 1993, the discharge pipe was capped, and the entire discharge was thereby eliminated. The outfall currently consists of an area that has been recently graded with fill.

In mid-1991, approximately 500 gallons of diesel fuel was released from the line transporting diesel from the pump house to the boilers on the south side of the Steam Plant. The diesel fuel ran down the slope south of the Steam Plant and into the drainage channel near the outfall. The drainage was blocked and an extensive cleanup carried out to remove all contaminated soil and diesel fuel.

There was no evidence of stressed vegetation or soil/tuff staining in the vicinity of the outfall.

ALO-LA-LANL-PHYSTECH-1991-1007

UNOFFICIAL COPY
OCCURRENCE REPORT

Final Report
(Submitted 6-3-92)

hysical and Technical Supt.

(Name of Facility)

Balance-of-Plant

(Facility Function Involved)

LOS ALAMOS NATIONAL LABORATORY

(Name of Laboratory, Site or Organization)

Name: Elliott, Alverton A.
Title: Occurrence Report Section Leader
Telephone No.: (505)665-0033 (FTS)855-0033

(Facility Manager/Designee)

Name: Gary Blauert
Title: JCI Utilities Superintendent
Telephone No.: (505)667-3657 (FTS)843-3657

(Originator)

1. OCCURRENCE REPORT NUMBER: ALO-LA-LANL-PHYSTECH-1991-1007

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification Report	09/26/91	1641 (MTZ)
[ ] 10 Day Report	10/09/91	
[ ] 10 Day Update (latest)	11/01/91	
[X] Final Report		

3. OCCURRENCE CATEGORY :

[ ] Emergency
[X] Unusual
[ ] Off-Normal

4. DIVISION OR PROJECT :

ENG-DO

5. DOE PROGRAM OFFICE :

DP - Defense Programs

ALO-LA-LANL-PHYSTECH-1991-1007

UNOFFICIAL COPY
OCCURRENCE REPORT

Final Report
(Submitted)

6. SYSTEM, BLDG., OR EQUIPMENT: TA-3-22

7. UCNI? : No

8. PLANT AREA : TA-3

9. DATE AND TIME DISCOVERED :

09/25/91 1605

10. DATE AND TIME CATEGORIZED :

09/25/91 1804

11. DOE NOTIFICATION :

09/25/91	1922	Manny Comar	DOE H

12. OTHER NOTIFICATIONS :

09/25/91	1855	Anne Young	NMED
09/25/91	1820	Jerry Bellows	LAAO
09/26/91	1657	Mike Peck	LAAO
09/26/91	1655	Sig Hecker	LAB D
09/26/91	0740	Mildred Williams	EPA/N

13. SUBJECT OR TITLE OF OCCURRENCE :

Release of 100-200 gallons of fuel oil

14. NATURE OF OCCURRENCE :

2) Environmental
B. Hazardous Substances/Regulated Pollutants/Oil Releases

15. DESCRIPTION OF OCCURRENCE :

An odor of natural gas was detected at 1515 hours. Analysis indicated that a fitting on a gas line needed to be replaced. The back-up fuel oil system was brought on line and pressurized. Johnson Controls, Inc. (JCI) personnel discovered an oil leak at 1605 from an underground line when JCI personnel noticed fuel oil was seeping from the ground. The spill was discovered on the south side of the plant. The storage tank with 160,000 gallon capacity is located above ground on the northeast side of the plant. Approximately 100 - 200 gallons are estimated to have been released into the ground, and some migrated into a storm sewer and then discharged into the adjacent canyon. There was no programmatic impact.

THE NAME APPEARING AS FACILITY MANAGER IN THIS REPORT IS AUTHORIZED TO ACT AS FACILITY MANAGER DESIGNEE FOR THE

ALO-LA-LANL-PHYSTECH-1991-1007

Final Report
(Submitted)

UNOFFICIAL COPY
OCCURRENCE REPORT

PURPOSE OF DATA TRANSMITTAL ONLY. THE ACCOUNTABLE FACILITY MANAGER FOR RESOLUTION IS George Vavra, (505) 667-2300.

16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE :

Maintenance on gas line fitting.

17. ACTIVITY CATEGORY :

Maintenance

18. IMMEDIATE ACTIONS TAKEN AND RESULTS :

The fuel oil was shut off and the Johnson Controls, Inc. (JCI) Environmental group and the Environmental Protection group (EM-8) were notified. The spill was contained approximately 100 yards east of the leak in a small area of the canyon and the oil contaminated soil was removed from the site and all oil was removed from the water. The gas fitting was replaced within an hour. The New Mexico Environmental Department (NMED) was notified. The Environmental Protection Agency (EPA) was also notified, and they in turn notified the National Response Center (NRC).

This report has been reviewed by an Authorized Derivative Classifier (Alverton A. Elliott) on June 2, 1992, and determined to be unclassified.

19. DIRECT CAUSE :

1) Equipment/Material Problem
A. Defective or Failed Part

20. CONTRIBUTING CAUSE(S) :

2) Procedure Problem
A. Defective or Inadequate Procedure

21. ROOT CAUSE :

6) Management Problem
A. Inadequate Administrative Control

22. DESCRIPTION OF CAUSE :

The Direct Cause has been identified as (1A) "Equipment/Material Problem, Defective or Failed Part" in that the fuel oil leak occurred when a break in the pipe occurred as the system was being pressurized in order to be used as a back-up fuel source for the steam plant. The 4" steel pipe is approximately 40 years old and the half inch diameter hole in the pipe was caused by corrosion. Corrective Action No. 4 will prevent recurrence of this causal factor in the long term. Corrective Action No. 3 will prevent recurrence in the short term.

The Contributing Cause has been identified as (2A) "Procedure Problem, Defective or Inadequate Procedure", in that a comprehensive preventative maintenance program/procedures for underground piping is lacking. Such a program would have assessed the condition of the pipe and probably prevented the occurrence. Furthermore, the back-up fuel oil system was not tested regularly. Switching over to fuel creates a puff of black smoke which violates air quality standards for opacity. Los Alamos National Laboratory (LANL) had requested permission from the NMED to regularly switch over to fuel oil in order to test reliability, train personnel, and to determine whether the air pollution problem could be mitigated. Corrective Action No. 2 will initiate prevention of a recurrence by monitoring the water flow for a period of one year. Corrective Action No. 5 is designed to prevent recurrence by completing annual leak tests on back-up fuel oil systems at all three steam plants.

The Root Cause has been identified as (6A) "Management Problem, Inadequate Administrative Control", because management did not properly assess the consequences of the lack of the comprehensive maintenance program in this area. Corrective Action No. 1 will formalize the spill containment plan. Corrective Action No. 5 will monitor the condition of the underground fuel on an annual basis.

23. EVALUATION : (By Facility Manager/Designee)

The occurrence had no effect on the operation of the plant. However, it brings to light the need to ensure we have adequate back-up systems for our utilities and the

need to put together a comprehensive maintenance program for our piping systems to prevent another occurrence with similar environmental impacts.

---

24. IS FURTHER EVALUATION REQUIRED? : Yes [ ] No [X]

IF YES - BEFORE FURTHER OPERATION? : Yes [ ] No [X]

BY WHOM? :

BY WHEN? : --/--/--

---

25. CORRECTIVE ACTIONS :
(* = Date added/revised since final report was signed off)

1) Oil Spill Containment Plan.
Write and implement an oil spill containment plan. All aspects of the containment plan will be implemented with the exception of monitoring the canyon water flow. (see corrective action item #2)

TARGET COMPLETION DATE: 09/25/91 COMPLETION DATE: 09/25/91

2) Ongoing Monitoring.
Ongoing monitoring of water flow in canyon for a period of one year.

Responsible Group/Division: JCI ENV

TARGET COMPLETION DATE: 11/01/92 COMPLETION DATE: 11/01/91

3) Temporary Replacement.
Install a temporary replacement fuel oil system.

Responsible Group/Division: JCI

TARGET COMPLETION DATE: 01/15/92 COMPLETION DATE: 12/23/91

4) Replacement of Fuel Oil System.
Design and install a permanent piping system to replace the fuel oil system.

Responsible Group/Division: JCI

TARGET COMPLETION DATE: 10/01/92 COMPLETION DATE: --/--/--

5) Annual Leak Testing.
Annual leak testing for the back-up fuel oil systems at all three steam plants will be conducted.

ALO-LA-LANL-PHYSTECH-1991-1007

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OCCURRENCE REPORT

Final Report
(Submitted)

Responsible Group/Division: JCI

TARGET COMPLETION DATE: 12/01/92 COMPLETION DATE: --/--/--

26. IMPACT ON ENVIRONMENT, SAFETY AND HEALTH :

Approximately 100 - 200 gallons of #2 diesel fuel were released to the environment. Rapid implementation of spill containment procedures by plant personnel minimized the impact of this spill. The oil was contained within a mall area of the canyon. Also, oil contaminated soil was removed from the site and all oil was removed from the water. Short term and long term environmental effects as a result of this release, if existent, are minimal.

---

27. PROGRAMMATIC IMPACT :

Operation of the plant was not affected by this incident, but a back-up fuel supply is not available until the temporary line is installed. Clean-up costs were estimated at $84,080.

---

28. IMPACT UPON CODES AND STANDARDS :

None

---

29. FINAL EVALUATION AND LESSONS LEARNED :

Final Evaluation: Back-up fuel oil systems were installed at each of the three central steam plants at the Los Alamos National Laboratory. Although all underground fuel tanks at these facilities have been replaced with above ground tanks, the supply piping is still underground. Annual leak surveys of these lines will be instituted and scheduled to start in 1992.

Lessons Learned: This incident reinforces the need to perform periodic leak testing for underground fuel oil lines, particularly those which were installed without automatic leak detection devices.

---

30. SIMILAR OCCURRENCE REPORT NUMBERS :

None

31. DOE FACILITY REPRESENTATIVE INPUT :

Entered by: Date: --/--/--

Attachment D 3-000835

Department of Energy
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jim Piatt, Chief
Surface Water Quality Bureau
New Mexico Environment Department
P. O. Box 26110, 1190 St. Francis Dr.
Harold Runnels Building
Santa Fe, New Mexico 87502

Dear Mr. Piatt:

Enclosed is a notification concerning a recent discharge at Los Alamos National Laboratory (LANL) which has been verbally reported to the New Mexico Environment Department and U. S. Environmental Protection Agency (EPA). The notification concerns the discharge of 100-200 gallons of diesel fuel from a broken fuel line at the Tecnical Area-3 Power Plant which occurred on September 25, 1991.

We are providing the enclosed written notification at the request of Mr. Peter Monahan of your staff and to document that the U. S. Department of Energy and LANL are making every effort to mitigate and to prevent recurrence of this discharge.

If you need any additional information concerning the enclosed notification, please call Donald George of my staff at 665-5046 or Steven Rae of LANL's Environmental Protection Group at 665-1859.

Sincerely,

Jerry L. Bellows
Area Manager

LESH:2DG-022

Enclosure:

cc w/enclosure:
Diane Ratkey, EPA, Region 6, Dallas, Texas
John Themelis, EPD, AL
Allen Tiedman, ADO, LANL, MS-A120
Tom Gunderson, EM-DO, LANL, MS-K491
Ken Hargis, EM-8, LANL, MS-K490
Steve Rae, EM-8, LANL, MS-K490

Attachment D

Notification of Discharge

Los Alamos National Laboratory
NPDES Permit No. NM0028355
October 2, 1991

1. **Location of Discharge**

Los Alamos National Laboratory
Technical Area (TA)-3, SM-22 (Power Plant)
Ephemeral Tributary to Sandia Canyon

2. **Nature of Discharge**

On September 25, 1991, at approximately 4:05 pm an underground diesel fuel transfer line broke during start-up of the TA-3 Power Plant's back-up fuel system. Diesel fuel oil #2 surfaced and was discharged across the ground and entered a storm water channel where it drained to a watercourse. The fuel line was shut off at approximately 4:20 pm on September 25, 1991, and the discharge ceased. The discharge occurred to a small drainage to Sandia Canyon which is an ephemeral tributary to the Rio Grande.

3. **Amount of Discharge**

The total discharge of diesel fuel oil #2 to the ephemeral watercourse was estimated to be 100-200 gallons.

4. **Discharge Discovery, Investigation and Notification**

The spill was discovered immediately by Johnson Control, Inc. (JCI), operators at the Power Plant. JCI notified the Laboratory's Emergency Management Office (EMO) of the diesel spill at approximately 4:45 pm on September 25, 1991. Ms. Ann Young of the New Mexico Environment Department (NMED) was notified of the diesel spill at 8:55 pm on September 25, 1991, by the Laboratory's Environmental Protection Group (EM-8). Ms. Mildred Williams of the U.S. Environmental Protection Agency (EPA), Region 6, was notified of the spill at 7:40 am on September 26, 1991. The National Response Center was notified of the spill at 11:00 am on September 26, 1991. Peter Monahan and Alex Puglesi from the NMED visited the site on September 26, 1991.

5. **Affected Area**

The 100 to 200 gallons of diesel discharged into the ephemeral watercourse and traveled downstream approximately 120 feet where it was contained.

6. Mitigation of Affected Area

The diesel spill was contained in the watercourse within minutes using absorbent booms and pillows which are maintained in stock by JCI. Pools of diesel were removed using a wet/dry vacuum and absorbents. The removed oil and absorbents were placed in drums and will be properly disposed of. Contaminated soil will be removed, sampled and properly disposed of. Contaminated rocks not removed will be cleaned with low pressure water and any discharge associated with the clean-up will be contained and properly disposed of. NPDES outfalls located downstream were controlled by re-routing or discontinuing their discharges to ensure that the spill was not carried downstream. The ephemeral watercourse is being monitored to detect any releases of water upstream from the spill which could affect cleanup operations.

7. Corrective Actions

Pumps to the fuel transfer pipe were immediately turned off after discovery of the spill. The pipe line is presently being repaired. Start-up procedures require external monitoring of the Power Plant stack during this operation and is the reason the spill was discovered immediately. Start-up procedures will be modified to include the monitoring of the entire fuel supply system for leaks.

Investigation is on-going to determine the cause of the fuel line failure. Corrective actions required to prevent another occurrence are being initiated. Possible actions may include the installation of pressure gauges in the fuel line to detect leaks and replacement of the entire fuel supply system depending on its condition.

8. Names, Phone Numbers and Addresses of Persons in Charge

Jerry L. Bellows (Owner and Co-operator)
Area Manager
US Department of Energy
Los Alamos Area Office
Los Alamos, New Mexico 87544
(505) 667-5105

Allen J. Tiedman (Co-operator)
Associate Director for Operations
University of California
Los Alamos National Laboratory
Los Alamos, New Mexico 87545
(505) 667-9390

Attachment E

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE September 27, 1991
IN REPLY REFER TO EM-8:91-349
MAIL STOP K490
TELEPHONE (505) 665-0452
(FTS) 855-0452

Mr. Robert Greuter
Johnson Controls World Services, Inc.
P. O. Box 50
UMDO, MS A199
Los Alamos, New Mexico 87544

THRU: Ken Hargis, EM-8 Group Leader

Dear Mr. Greuter:

SUBJECT: TA-3 SM-22 DIESEL SPILL ON 9/25/91

On September 27, 1991, two members of the Surface Water Bureau of the New Mexico Environment Department (NMED) inspected the diesel spill and clean-up operations at the TA-3, SM-22 Power Plant. Overall the inspectors were satisfied with the spill response and clean-up operations. The inspectors requested the additional following actions be completed.

1. Water samples be collected below the affected area of the spill and analyzed for total petroleum hydrocarbons (TPH). If TPH can not be performed, volatile organic analyses (VOA) and semi-volatile analyses (SVOA) will be performed. JCI-ENV has been instructed to collect these samples and submit them to EM-9 for analyses. When analytical results are known EM-8 will submit the data to NMED.

2. Identify, sample, and stop the low volume discharge (about 1gpm) seen discharging from the corrugated metal pipe at Outfall 151 until spill clean-up is completed. The procedures mentioned above for sampling and analyses will be used.

   I understand you have identified the discharge as originating from the permitted NPDES Outfall 04A151 and that the water is from floor drains located in the power plant. These floor drains receive leaks from once-through cooling systems. I am requesting that the by-pass pipe for the outfall be locked out/tagged out and formal operating procedures be implemented and submitted to myself prior to any discharge from that pipe.

3. Information concerning the frequency of testing these fuel transfer lines and the last time they were tested or used prior to the spill.

Please submit to me the information requested above so it may be submitted to NMED as soon as possible.

Sincerely,

Roy Bohn
Environmental Protection Group

RB:smm

Cy: K. Hargis, EM-8, MS K490
S. Rae, EM-8, MS K490
C. Richardson, ENG-8, MS M718
M. Brown, JCI/ENV, MS A199
CRM-4, MS A150
Circ. File

Attachment F

3-000832

State of New Mexico

ENVIRONMENT DEPARTMENT

BRUCE KING
GOVERNOR

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

June 10, 1992

Mr. Jerry L. Bellows
Area Manager
Department of Energy
Los Alamos Area Office
Los Alamos, NM 87544

Mr. Allen J. Tiedman
Associate Dir. of Support
University of California
P.O. Box 1663, MS A-120
Los Alamos, NM 87545

RE: Spill report pursuant to 1-203 A.3. and 1-203 A.6. of the New Mexico Water Quality Control Commission (WQCC) Regulations

Dear Sirs:

The Surface Water Quality Bureau of the New Mexico Environment Department (NMED), is in receipt of the spill reports submitted by DOE/UC-LANL. A list of the spill reports are as follows;

Spill Date	Type of Release	Location User Group
8/29/91	foam	TA-3 WWTP
9/10/91	foam	TA-3 WWTP
10/26/91	sewage overflow	TA-3 WWTP
12/18/91	sewage overflow	TA-3 WWTP
2/11/92	hydraulic fluid	TA-3 Bldg. 2011 ACI
8/1/91	oily sheen	TA-3 outfall 023
8/28/91	foam	TA-3 outfall 023
9/25/91	diesel spill	TA-3 Power Plant
9/4/91	white effluent	TA-3 cooling tower 1837
10/10/91	environmental tank effluent	disposed in TA-18 lagoon
1/27/92	manhole overflow	TA-41 Bldg. 50
2/9/92	steam condensate	TA-21 BLdg. 286
9/27/91	treated effluent	TA-21 outfall 050
2/27/92	discharge from clean out	TA-60

Each site was inspected on February 28, 1992. The corrective actions taken were satisfactory.

Spill reports are required by Section 1-203 of the New Mexico Water Quality Control Commission (WQCC) Regulations. The reports have been reviewed by technical staff of the NMED Surface Water Quality Bureau and they appear to be administratively complete. The NMED considers this letter as documentation for closing the files on these spills. NMED appreciates your voluntary cooperation in this matter.

DRUG FREE

If you have any questions regarding this matter do not hesitate to call Peter Monahan of my staff at 827-2794.

Sincerely,

Jim Piatt

Jim Piatt
Chief
Surface Water Quality Bureau

xc: NMED, Office of General Counsel
Courte Voorhees, NMED District II Office
Steve Rae, UC-LANL/HSE-8, MS K490

SWMU 3-045(d) — Storage Tank (Above Ground)

1.0 Introduction

1.1 Description

SWMU 3-045(d) is an aboveground storage tank located at the Power Plant, TA-3-22. This SWMU was duplicated as SWMU 3-014(q) in the SWMU Report (LANL 1990, 0145) (Attachment A); SWMU numbers 3-045(d) and 3-014(q) were both assigned to structure TA-3-336, a storage tank. Field Unit 1 opted to retain the number 3-014(q) for addressing the storage tank.

1.2 No Further Action Basis

SWMU 3-045(d) is recommended for NFA because it is a duplicate SWMU and has been investigated as SWMU 3-014(q) in the RFI Work Plan for OU 1114 (LANL 1993, 1090, page 5-48). This page has not been included as an attachment under Section 2.2 because it is not relevant to the decision of removing SWMU 3-045(d) from the HSWA Module. Copies of the SWMU Report descriptions of both SWMUs (Attachment A) have been included for verification of the error. For ease of inspection, each SWMU number is pointed to by an arrow, each structure number has been circled, and each structure type/associated structure underlined.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(d) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Section not applicable.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," pp 3-014 and 3-045.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, SWMU 3-045(d) is recommended for NFA under Criterion 1.

3-045(d)

ATTACHMENTS

Attachment A

3-045 SOIL CONTAMINATION FROM OUTFALLS IN SANDIA CANYON 10/31/90

SUMMARY

LOCATION	: TA-3	MATERIALS MANAGED	: SUSPECTED SOLID WASTE
TYPE OF UNIT(s)	: OUTFALL		HAZARDOUS WASTE
UNIT USE	: DISPOSAL		SUSPECTED RADIOACTIVE WASTE
OPERATIONAL STATUS	: INACTIVE/ACTIVE		
PERIOD OF USE	: 1950s - PRESENT		
HAZARDOUS RELEASE	: KNOWN		
RADIOACTIVE RELEASE	: SUSPECTED		

UNIT INFORMATION

Several outfalls serve as points of release for liquids into or near Sandia Canyon. Some of the outfalls are permitted and have been assigned NPDES numbers.

SWMU NO.	NPDES NO.	ASSOCIATED STRUCTURE	STATUS
3-045(a)	01A	floor drains in steam plant, TA-3-22	active
3-045(b)	EPA01A001	cooling towers TA-3-25 and -58	active
3-045(c)		cooling tower TA-3-285	active
3-045(d)		storage tank TA-3-336	active
3-045(e)		tanks TA-3-26 and -27 and pump building TA-3-57	active
3-045(f)		sink drains from machine shop in TA-3-223	active
3-045(g)	EPA04A109	storm drain at asphalt plant TA-3-73	active
3-045(h)		cooling tower TA-3-187	active
3-045(i)		floor and sink drains in TA-3-34	not known

The liquids from floor drains in the steam plant, TA-3-22, are routed to an oil/water separator prior to discharge to the outfall. An overflow pipe from effluent storage tank TA-3-336, east of the steam plant, discharges to a drainage area that trends toward Sandia Canyon. Two sludge drainlines from diesel storage tanks TA-3-26 and -27 connect with a floor drainline from the pump building TA-3-57, and together they discharge through a 4" cast iron pipe into Sandia Canyon. An outfall pipe from a sink drain in the machine shop in TA-3-223 discharges into a drainage area on the north side of the building. This drainage area also trends toward Sandia Canyon. The outfall from the cooling tower TA-3-187 discharges into a storm drain directly north of the cooling tower. The storm drain daylights just south of Eniwetok Drive, north of TA-3-66, in a discharge area that trends toward Sandia Canyon. The outfall from TA-3-34 serves floor drains in the basement and a sink in the radio-chemical room.

WASTE INFORMATION

The outfall from the steam plant, TA-3-22, is reported to have received, in the past, all wastes discharged from the building. The wastes included diesel oil from drains, turbine oil, and continuous blowdown from the boilers (associated solvents, oils, caustics, acids, and polymers). The outfall from the steam plant cooling towers may have received various chemicals prior to being NPDES permitted. Chemicals were used to inhibit corrosion, and algae growth and for cleaning purposes. Before the use of inhibitors for controlling pH, a line from a sulfuric tank was run to the water treatment house TA-3-24 for use in the cooling water in the towers. When inhibitors began to be used, this line was removed. The outfall associated with tanks TA-3-26 and -27 and the floor drain from the pump in TA-3-57 may have received wastes from blowdown or small spills, particularly from the pump house. The tanks contain No. 2 diesel fuel. After metal is machined in the shop in TA-3-223, the parts are rinsed off in a sink which discharges through the outfall nearby. The outfall area potential receives oils, solvents, and trace amounts of metals. The outfall near the asphalt plant TA-3-73 receives washwater from the cleaning of oil distributor trucks, washwater from a bleed stream at the two filter ponds, and may receive runoff from the area around TA-3-73. The effluent at the outfall has contained kerosene, asphalt, oil, and water. Effluent from TA-3-34 is anticipated to contain tritium, metals, oil, and grease, based on reported operational practices.

RELEASE INFORMATION

During construction activities in 1989, Pan Am personnel observed contamination of the soil in the canyon bottom near the outfall [3-045(a)] from the steam plant. The contamination became visible at a depth of 12 to 18 inches below the soil surface, and analyses of the soil indicated the presence of petroleum hydrocarbons. The extent of contamination is unknown. During a site visit, the area around the outfall from the effluent storage tank TA-3-336 was noticed to be scoured out, indicating past discharge from the pipe. If overflow has occurred, the liquid discharged would have been non-chlorinated effluent from the sewage treatment plant. The concrete and soil at the discharge point from the outfall associated with tanks TA-3-26 and -27 and the pump house were noted during a site survey to be stained with what appeared to be oil. In addition, it is thought that in the past, a significantly large quantity of kerosene was used to wash down the trucks at the asphalt plant. Through the years, this operation has led to a substantial quantity of kerosene and asphalt being released through the associated outfall [3-034(g)] to the canyon.

(continued)

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-045(a)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 3	TA-3-22
3-045(b)	TA3-6-CA/O-A/I-HW/RW	3.089	Tsk 19 : 4	TA-3-25, -58
3-045(c)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 5	TA-3-285
3-045(d)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 6	TA-3-336
3-045(e)	TA3-CA/UST/SST-A/I-PP		Tsk 19 : 7	TA-3-26, -27, -57
3-045(f)	**	3.093	Tsk 19 : 8	TA-3-223
3-045(g)	**	3.082 3.083	Tsk 19 : 9 44 51 52	TA-3-73
3-045(h)	**		Tsk 20 : 4	TA-3-187
3-045(i)	**		Tsk 20 : 5	TA-3-34

** No corresponding E. R. Program unit.

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : WASTEWATER TREATMENT PLANT
UNIT USE : TREATMENT
OPERATIONAL STATUS : ACTIVE
PERIOD OF USE : SEE BELOW
HAZARDOUS RELEASE : SUSPECTED
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : HAZARDOUS WASTE
SANITARY WASTE
RADIOACTIVE WASTE

UNIT INFORMATION

The TA-3 wastewater treatment plant is a large operation, and it consists of many separate components. The two main plants are designated 1 and 2. The following tables list the components in each plant.

PLANT 1				PLANT 2			
SWMU NO.	STRUCTURE	STRUCTURE TYPE	BUILT	SWMU NO.	STRUCTURE	STRUCTURE TYPE	BUILT
3-014(a)	TA-3-49	Imhoff Tank	1951	3-014(e)	TA-3-192	Imhoff Tank	1965
3-014(b)	TA-3-48	Dosing Siphon	1951	3-014(f)	TA-3-193	Dosing Siphon	1965
3-014(c)	TA-3-47	Trickling Filter	1951	3-014(g)	TA-3-194	Trickling Filter	1965
3-014(d)	TA-3-46	Secondary Clarifier	1951	3-014(h)	TA-3-195	Secondary Clarifier	1965

A concrete splitter box, bar screen and comminutor were built in 1951 and are located at TA-3-677 [3-014(i)]. The chlorination system is located at TA-3-166 [3-014(j)] and consists of a dosing chamber, a contact chamber and a pump pit. The contact chamber is a 15' x 15' x 6' concrete pit with a flow weir, 225 feet square, also made of concrete. The pump pit contains the effluent pump. It was built in 1957 of reinforced concrete. The pit is 9'4" x 11'4" x 10'10" deep and has a steel grating cover. The following table describes the sludge drying beds adjacent to the plant.

SWMU NO.	STRUCTURE	DIMENSIONS	COMPLETED
3-014(k)	TA-3-196	35' x 10'	1965
3-014(l)	TA-3-197	40' x 20'	1965
3-014(m)	TA-3-198	40' x 20'	1965
3-014(n)	TA-3-199	40' x 20'	1965
3-014(o)	TA-3-1871		1987

Note: Structures TA-3-51 and -52 were sludge drying beds built in 1951 and removed in 1965.

Auxiliary facilities associated with the wastewater treatment plant are as follows:

SWMU NO.	STRUCTURE	STRUCTURE TYPE	BUILT	CONSTRUCTION
3-014(p)	TA-3-265	sewage lift station	1966	reinforced concrete 6' x 10' x 5'4" deep over a 42" dia cast iron basin
3-014(q)	TA-3-336	effluent sewage storage tank	1967	steel, 500,000 gallons
3-014(r)	[illegible]	sewage pump station	1970s	2-7 1/2 hp pumps
3-014(s)	TA-3-1693	lift station		5' dia, 11' deep, 2 pumps
3-014(t)	TA-3-1869	lift station	1987	
3-014(u)	TA-3-1901	sanitary liquid holding tank	1988	1500 gallons

The plant components are used for the biological treatment of wastewater. All sanitary sewer lines from the TA-3 area join at the sewage treatment plant. In some cases, floor drains and sink drains from industrial areas are connected to the sanitary sewer. Numerous floor drains [3-014(v)] from the garage area of TA-3-36 connect to the sewer. Photographic waste from darkroom operations [3-014(w)] in Wing 9 of the CMR Building, TA-3-29, were found to go directly to the sanitary sewer line. In addition, spent photo processing solutions [3-014(x)] were discharged to the sanitary sewer from TA-3-66, the Sigma Building. Floor drains [3-014(y)] from the basement of TA-3-35 drain to the sanitary sewer, as do floor drains from the printer circuit board shop [3-014(z)] in TA-3-40 and the equipment shop [3-014(a2)] in TA-3-316. The effluent shop [3-014(q)], located east of the steam plant TA-3-22, receives and stores effluent from the sewage treatment plant to be used as cooling water for the towers TA-3-25 and -58. The plant has an outfall [3-014(b2)] to Sandia Canyon (see Appendix A) with NPDES No. EPASSS01S. The effluent from the treatment plant can be sent to either this outfall or to effluent storage tank TA-3-336 at the steam plant, to be used as cooling water for the towers. Prior to construction of the active chlorination system, effluent from the treatment plant was stored in the pump pit and discharged to an outfall [3-014(c2)] directly north of the present contact chamber. That outfall was abandoned in 1985 and effluent was routed to the current outfall, approximately 150 ft to the northeast.

(continued)

WASTE INFORMATION

The treatment plant manages sanitary waste from TA-3 and TA-43. At times the liquids removed from Laboratory septic tanks are taken to TA-3. Unknown quantities of industrial liquids may have been included in the waste in previous years. In a 1985 memo, it was noted that 167,000 gal/day of non-sanitary waste was being diverted to the sewage treatment plant. This non-sanitary waste apparently included plating rinse water from TA-3-66, laser cooling water commingled with administratively controlled radioactive/toxic contaminated process water from TA-43-1, and cooling water from TA-41 and TA-3-29. It was proposed to eliminate these waste streams in order to be able to obtain an NPDES permit for the treatment plant. In the past, Stoddard solvent was used in the TA-3-36 garage area and it is possible that solvent was washed or spilled down the floor drains. Photographic wastes from TA-3-29, -66, and other photo processing units in TA-3 may have contained acetic acid, silver, and hydroquinone. The printed wire board shop in TA-3-40 manages various plating operation chemicals and acids. It is known that mercury was released to the treatment plant during the change-out of seals containing mercury at the trickling filters.

RELEASE INFORMATION

The treated effluent is used either as cooling water for the electric generating plant or is discharged in the NPDES outfall. Recently, the piping in the sludge drying bed TA-3-199 became clogged and required replacement. During repair, it was noted that no oil had seeped through the sand, which makes up the upper layer of the bed, to the layer of gravel below. It is known that a few years ago, a drum of freon was spilled in the basement of TA-3-35 and entered the sanitary sewer system. There was evidence of significant spills in the printed circuit board shop in TA-3-40. The concrete floor and steel grate covering the drain were heavily stained and corroded from acid stains. The piping is visible in a crawl space below the floor of the shop. The pipes are corroded, causing large spills on the soils in the crawl space. Occasional historical releases of untreated effluent to Sandia Canyon occurred prior to 1988, when a holding tank with a chlorinator station (TA-3-1901) was built.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-014(a)	**	3.032	Tsk 19 : 10	TA-3-49
3-014(a2)	**		Tsk 21 : 1136	TA-3-316
3-014(b)	**	3.031	Tsk 19 : 10	TA-3-48
3-014(b2)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 1	TA-3 WASTEWATER TREATMENT PLANT
			Tsk 20 : 28 29 30 34	
3-014(c)	**	3.030	Tsk 19 : 10	TA-3-47
3-014(c2)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 2	
3-014(d)	**	3.029	Tsk 19 : 10	TA-3-46
3-014(e)	**	3.042	Tsk 19 : 10	TA-3-192
3-014(f)	**	3.043	Tsk 19 : 10	TA-3-193
3-014(g)	**	3.045	Tsk 19 : 10	TA-3-194
3-014(h)	**	3.044	Tsk 19 : 10	TA-3-195
3-014(i)	**	3.033	Tsk 19 : 10	TA-3-677
3-014(j)	**	3.039-3.041	Tsk 19 : 10 13	TA-3-166
3-014(k)	**	3.046	Tsk 19 : 10 33	TA-3-196
3-014(l)	**	3.047	Tsk 19 : 10 33	TA-3-197
3-014(m)	**	3.047	Tsk 19 : 10 33	TA-3-198
3-014(n)	**	3.047	Tsk 19 : 10 33	TA-3-199
3-014(o)	**		Tsk 19 : 10 34	TA-3-1871
3-014(p)	**		Tsk 19 : 11	TA-3-265
3-014(q)	**		Tsk 19 : 61 150	TA-3-336
3-014(r)	**		Tsk 19 : 11	TA-3-693
3-014(s)	**		Tsk 19 : 11	TA-3-1693
3-014(t)	**		Tsk 19 : 11	TA-3-1869
3-014(u)	**		Tsk 19 : 17	TA-3-1901
3-014(v)	**		Tsk 19 : 19	TA-3-36
3-014(w)	**		Tsk 19 : 23	TA-3-29
3-014(x)	**		Tsk 20 : 11	TA-3-66
3-014(y)	**		Tsk 20 : 13	TA-3-35
3-014(z)	**		Tsk 21 : 1134 1142	TA-3-40

** No corresponding E. R. Program unit.

SWMU 3-045(e) — Outfall (Inactive)

1.0 Introduction

SWMU 3-045(e) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-045(e) [Map 3-045(e)] is an inactive outfall from a floor drain in an oil pump house, TA-3-57, located at the Steam Plant, TA-3-22. One line from each diesel storage tank (TA-3-26 and -3-27) passed through the pump house to the Steam Plant. The pump house contained valves to operate each line allowing the flow of diesel fuel from either or both of the storage tanks. The drain was in place to prevent the pump house from filling with diesel fuel should a rupture or leak occur at the valve junction. A site worker, who worked at the Steam Plant for 14 years, stated that there have been no known releases of oil to the drain and that there have been no ruptures at the valve junction (Sobojinski 1995, 17-1266) (Attachment A). He also noted that the drain had been plugged in 1989. The drain line outfall area has a concrete apron to which the drainpipe discharges. This drainpipe was also plugged in 1989. During a site visit in August 1993, the concrete apron had minimal staining; the staining is believed to have resulted from the decay of organic matter (LANL 1993, 17-927). (Attachment B).

1.2 No Further Action Basis

SWMU 3-045(e) is recommended for NFA because no release to the environment has occurred, nor is likely to occur in the future because the drain is plugged. There is no history of releases from the valve junctions inside the pump house During a site visit in August 1993, the concrete apron had minimal staining, potentially from oil (LANL 1993, 17-927). Staining also extended up the side walls of the concrete apron above the out pipe. This staining is believed to be from the organic matter that was cleared away from the apron for the visual inspection.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(e) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Oil pumphouse floor drain.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Personnel Interview, (Sobojinski 1995, 17-1266).

Attachment B: LANL Memorandum prepared by ERM, (LANL 1993, 17-927)

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

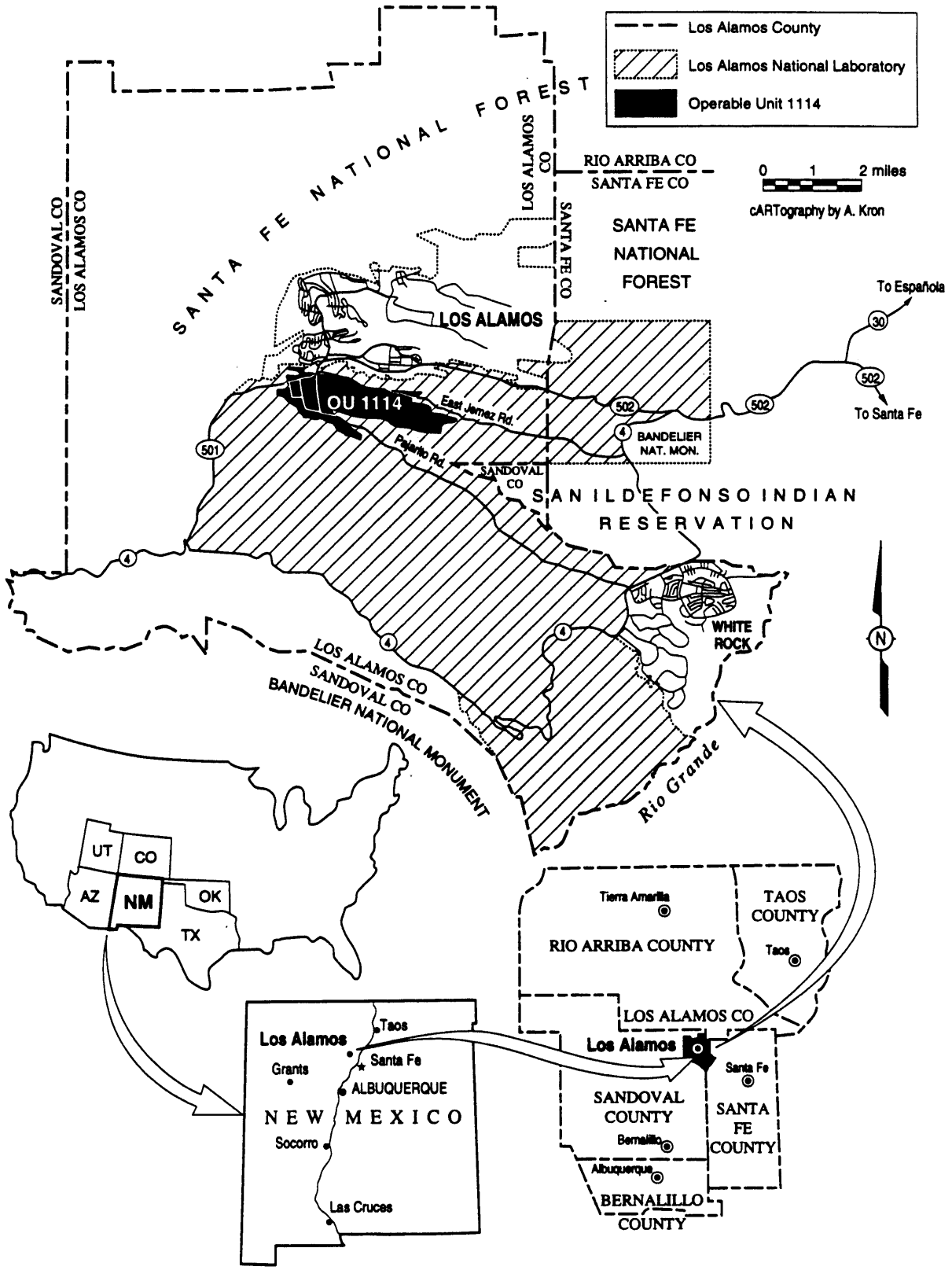


Fig. 1-1. Location of Operable Unit 1114.

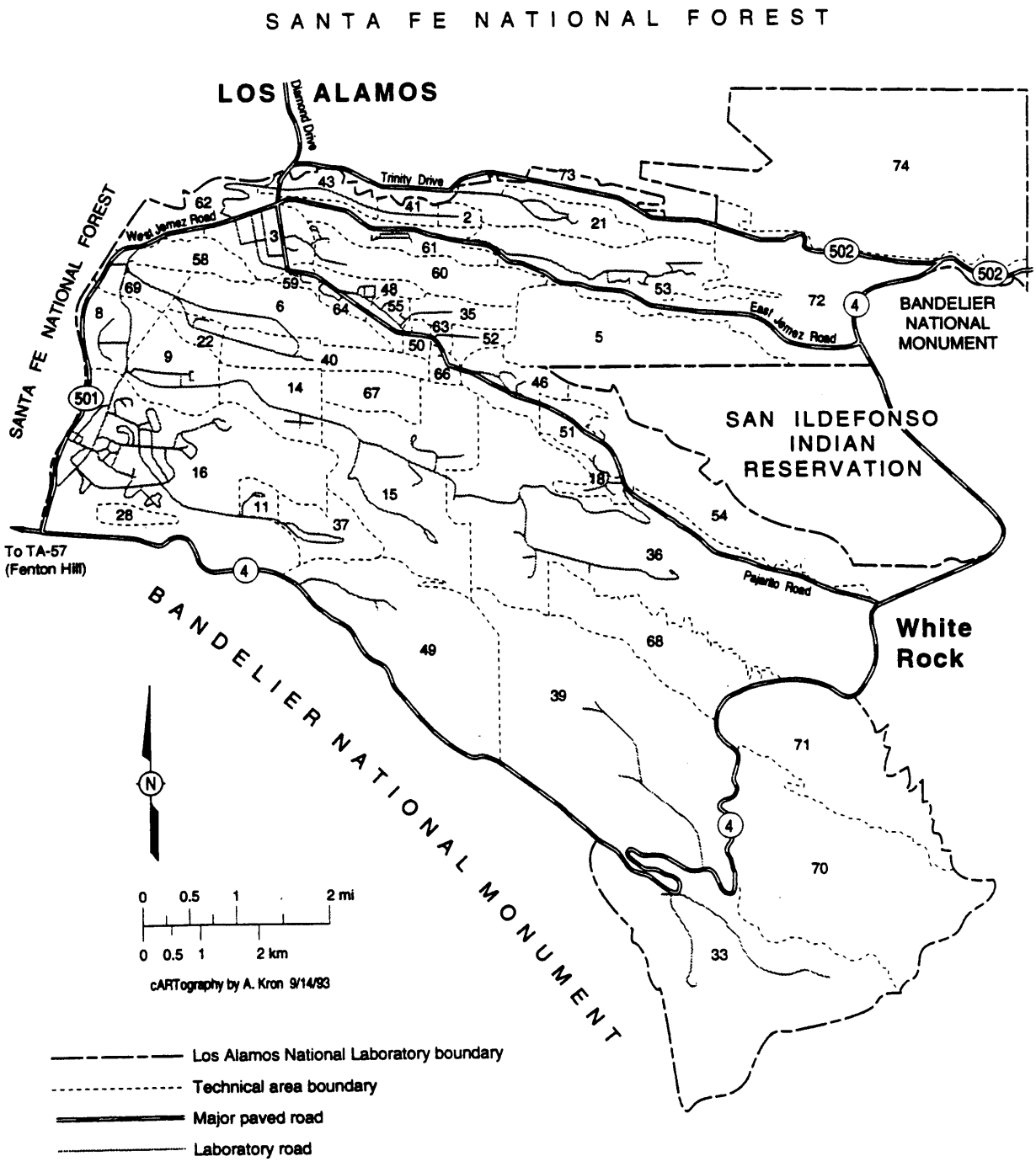
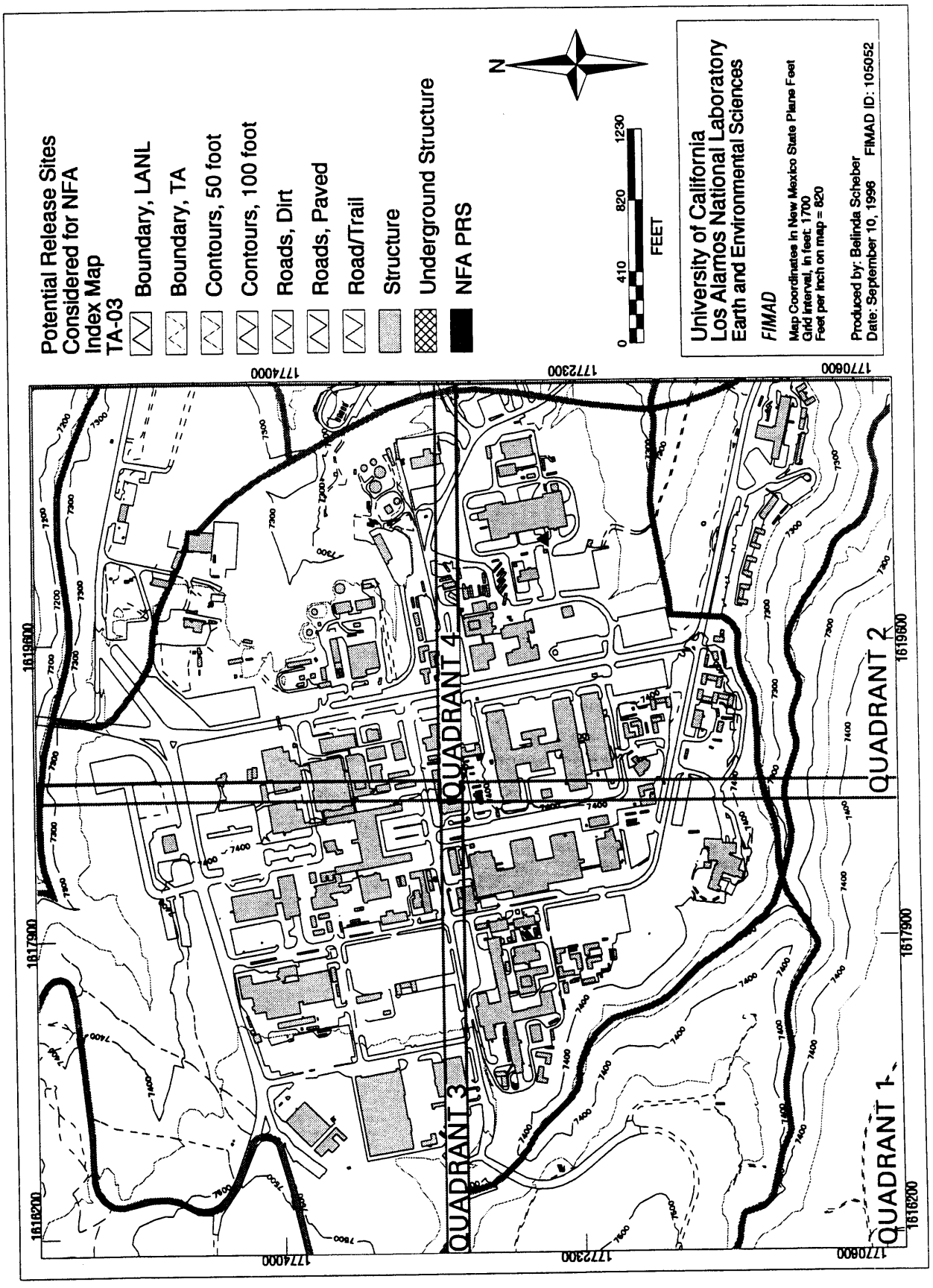
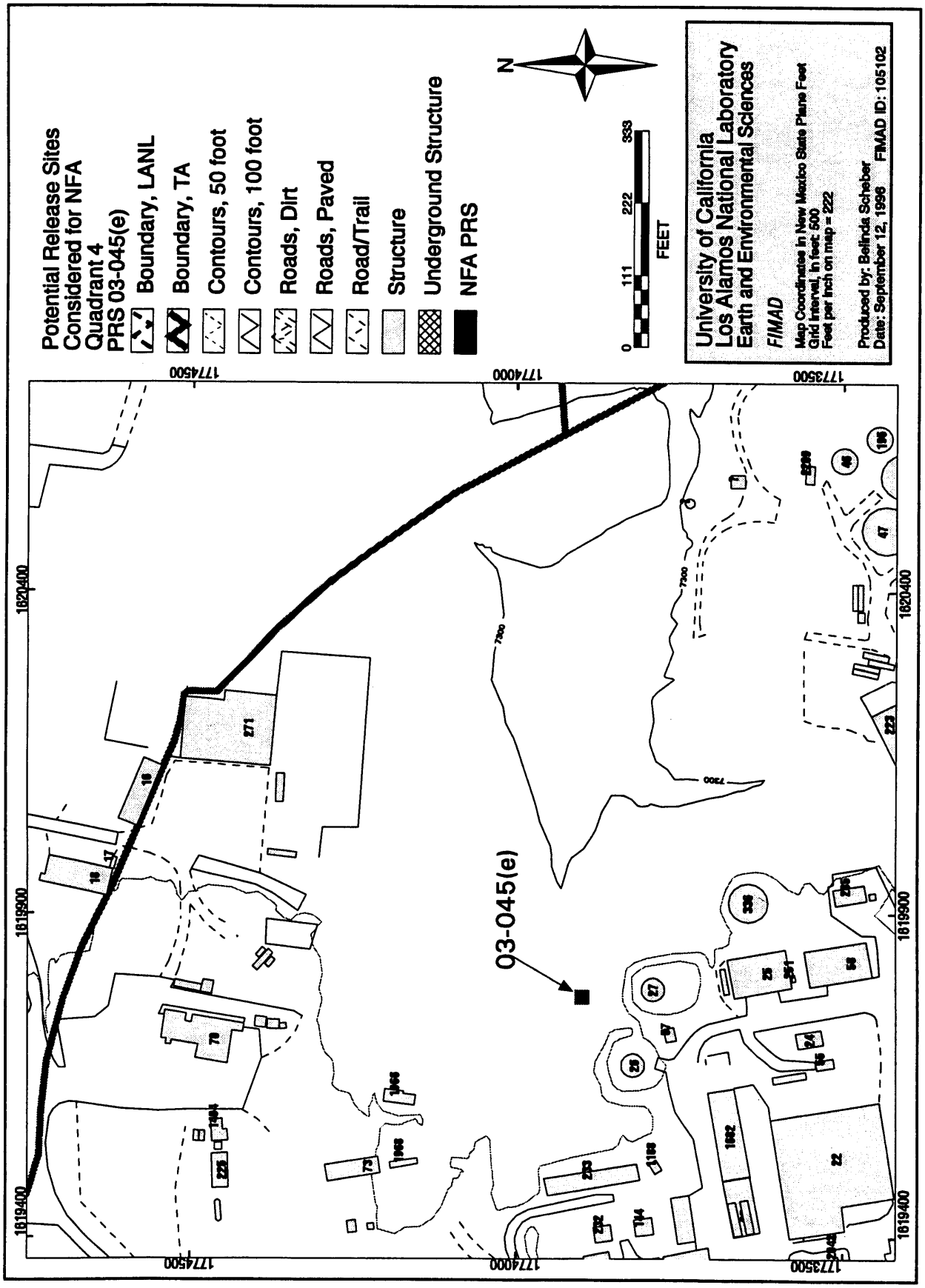


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-045(e)

6.3 Other Survey/Investigation Data

Section not applicable.

3-045(e)

ATTACHMENTS

3-001266

Attachment A

Los Alamos
NATIONAL LABORATORY
memorandum
Chemical Science and Technology
Responsible Chemistry for America
Environmental Restoration Program/CST-18
Los Alamos, New Mexico 87545

To/MS: Robert Montano, JCI
From/MS: Lynda Sobojinski, CST-18, E525
Phone/FAX: 665-8339/665-4632
Symbol: CST-18/LS-95:009
Date: 07/5/95

Reference # 3-001266

SUBJECT: SWMU 3-045(e), INACTIVE OUTFALL FROM A FLOOR DRAIN IN PUMP HOUSE, TA-3-57; PROPOSED NO FURTHER ACTION TO EPA JUSTIFICATION.

On July 5, 1995, I had a telephone interview with Robert Montano in regards to SWMU 3-045(e), at TA-3-22, the Steam Plant. Robert Montano has worked for JCI since 1981. He stated that the pump house, structure TA-3-57, has had no known releases of oil going down the drain. In addition, there is no history of ruptures at the valve junction, which would make it almost impossible for any oil to enter the drainage system.

Robert L Montano

Post-it® Fax Note 7671	Date	# of pages ▶
To ROBERT MONTANO	From MELISSA JACKSON	
Co./Dept. JCI	Co. LANL / CST-18	
Phone #	Phone # 5-8339	
Fax # 7-5861	Fax # 5-4632	

Attachment B

3-000927

MEMORANDUM

ENVIRONMENTAL RESOURCES MANAGEMENT, INC.

To: OU 1114 File

From: Paula M. Bertino PMB

Date: 5 August 1993

Regarding: SWMU 3-045(e)

On June 17, 1993, Valarie Rhodes and myself met with Robert Montano, JCI at the Steam Plant (TA-3-22) regarding SWMU 3-045(e). This SWMU is identified as the outfall from a floor drain in the pump house (TA-3-57). Reportedly, two sludge drainlines from diesel storage tanks (TA-3-26, -27) connected to the pump house, and together discharged through a 4-inch cast iron pipe into Sandia Canyon. Mr. Montano escorted us to the pump house where we observed that the drain was concreted over and the interior of the pump house had recently been painted. Mr. Montano stated that the drain was plugged in 1989. He then escorted us to the outfall where we observed a concrete apron and drain pipe which had also been plugged in 1989. The concrete apron was visibly stained with oil and soils just beneath the surface directly in front of the drain pipe appeared to be stained with oil as well. However, no staining or areas of stressed vegetation were apparent around the remainder of the outfall or in the drainage below.

SWMU 3-045(f) — Outfall (Inactive)

1.0 Introduction

SWMU 3-045(f) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-045(f) [Map 3-045(f)] is an inactive outfall from a sink drain that served TA-3-223, the Utilities Control Center, from 1950 through the late 1980s. The sink was used as a quench tank for welding and cutting operations. Because the sink contained water only to cool welded metal, no leaching of metals was possible. The outfall was located on the north side of the building and emptied into Sandia Canyon. The area is flat and shows no signs of erosion from discharge. There were no known releases of hazardous waste or constituents to the sink and its outfall (LANL 1993, 17-903). (Attachment A).

1.2 No Further Action Basis

SWMU 3-045(f) is recommended for NFA because the site has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. Building TA-3-223, the Utilities Control Center, did not handle or manage hazardous waste or constituents. No known contaminants were associated with use of the sink; therefore, there is no reasonable basis to suspect contamination of the outfall area.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(f) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

The Utilities Control Center maintains the Laboratory's utility pipes and electrical lines.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Memorandum prepared by ERM, (LANL 1993, 17-903).

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

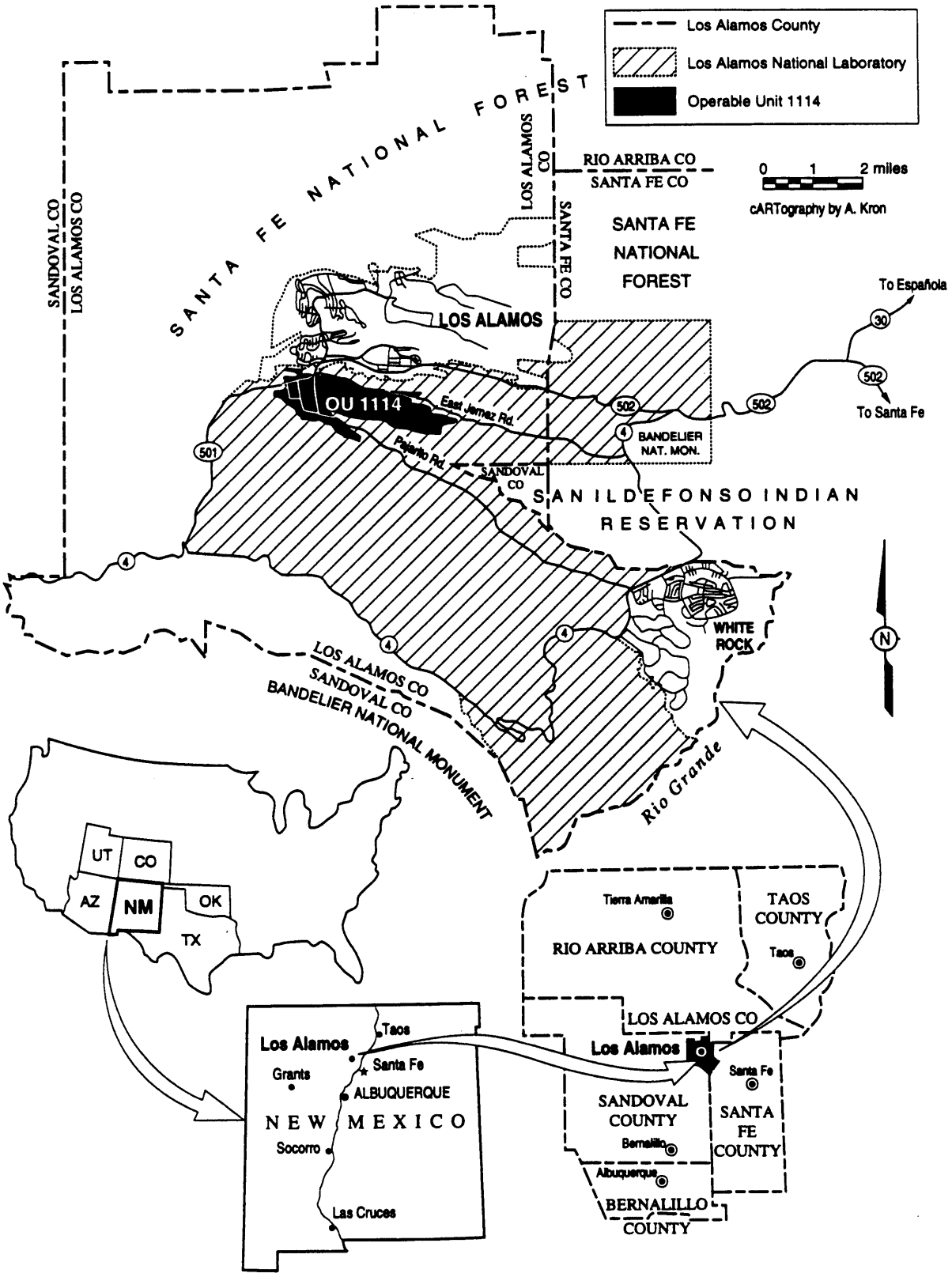


Fig. 1-1. Location of Operable Unit 1114.

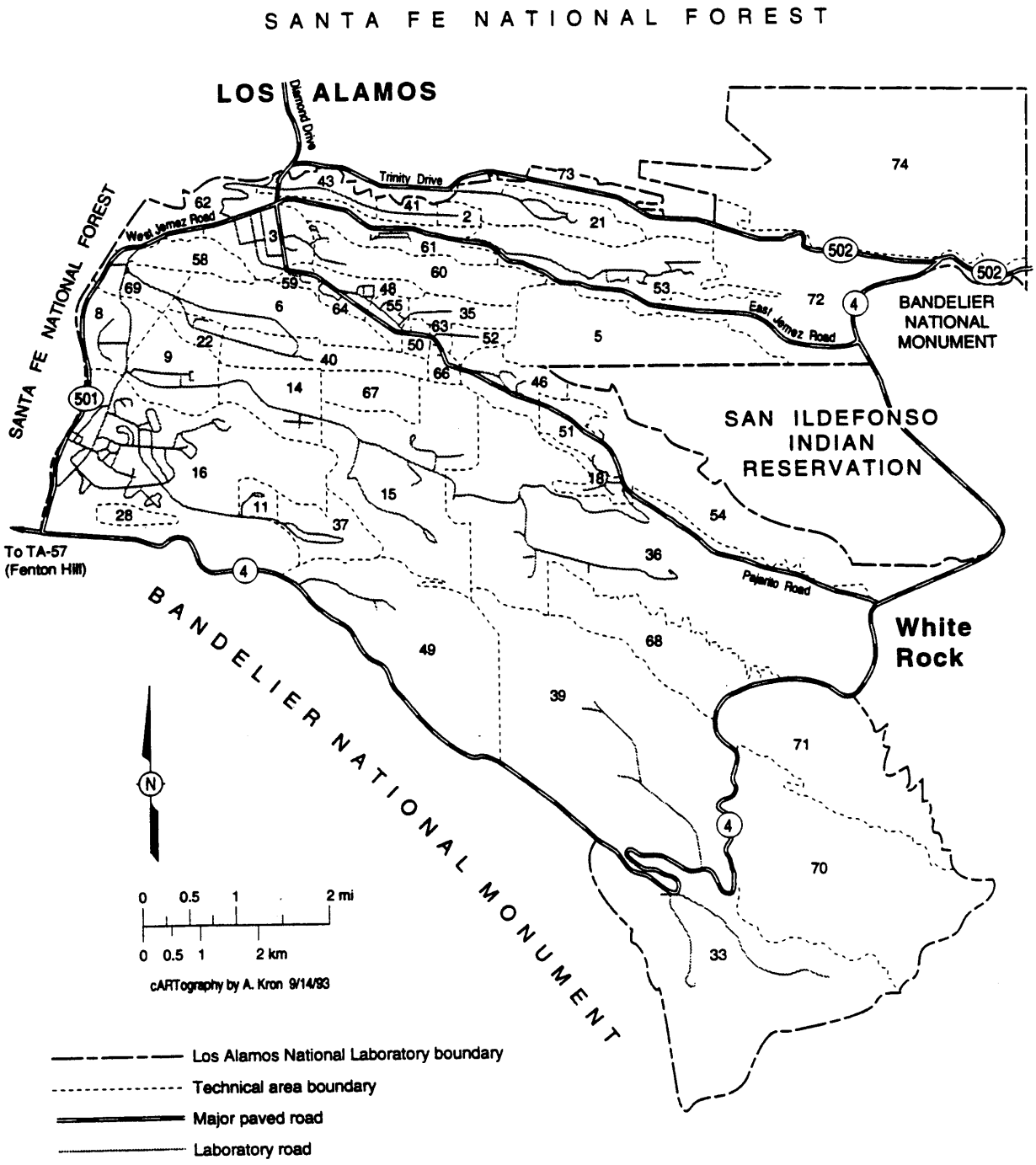
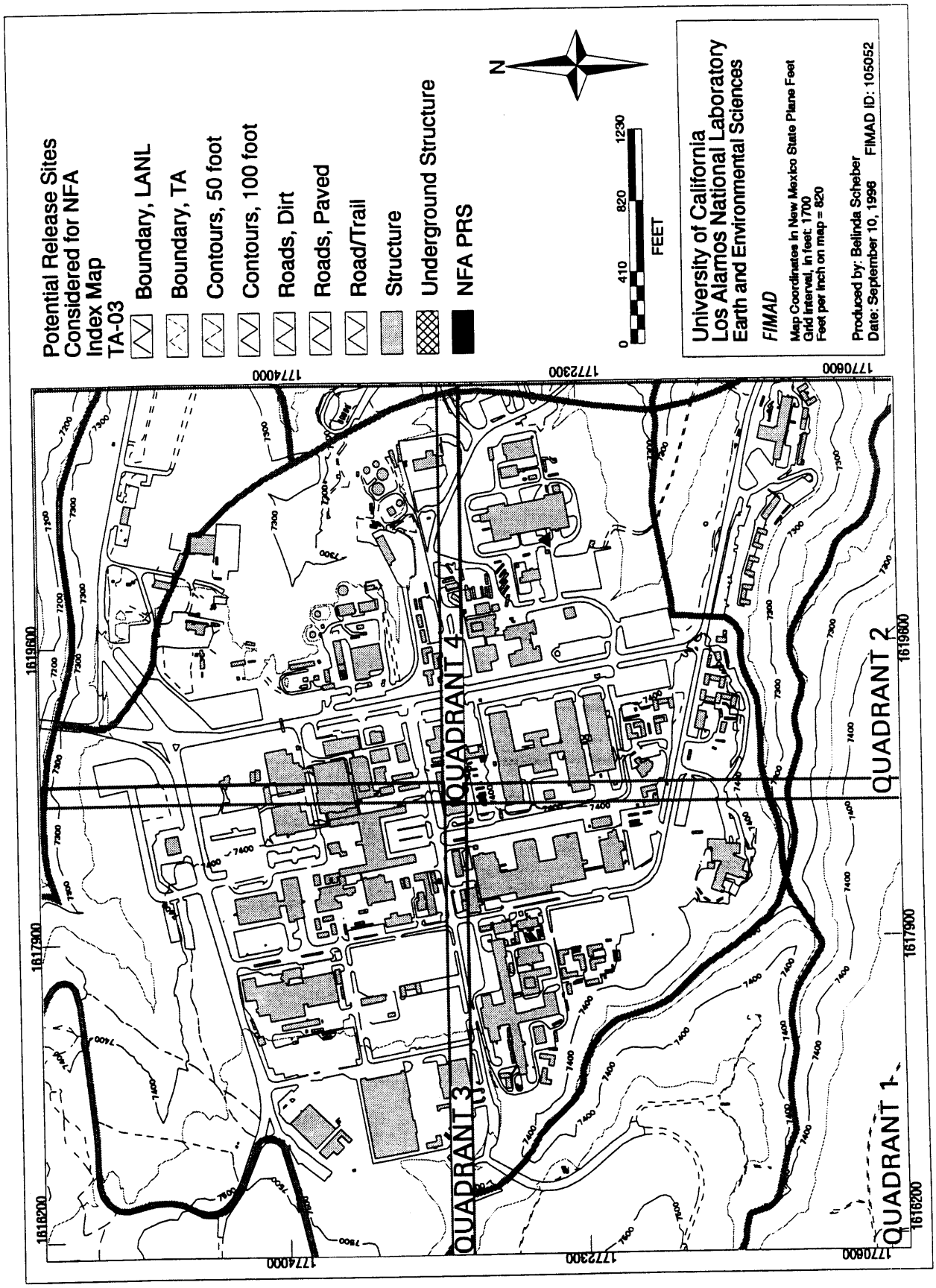
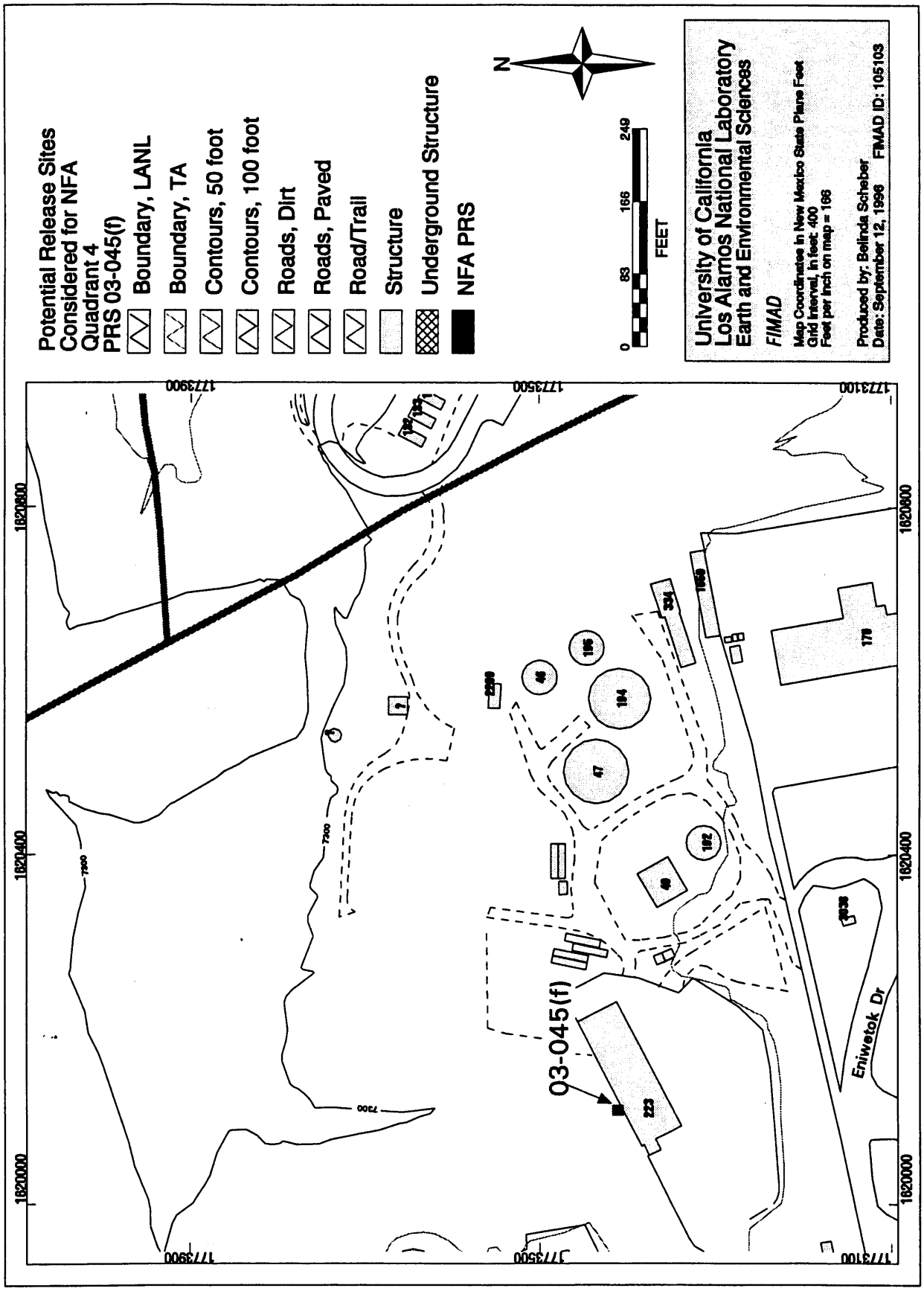


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-045(f)

6.3 Other Survey/Investigation Data

Section not applicable.

3-045(f)

ATTACHMENTS

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Bart J. Vanden Plas

Date: July 23, 1993

Regarding: MEETING AT SWMU 3-045(f) IN BUILDING TA-3-223

On 20 July 1993, Valarie Rhodes and I met with Dick Richards and Terry Norris to discuss SWMU 3-045(f). We met at building TA-3-223 since this SWMU is related to a sink that had been in the building. Mr. Richards showed us the former location of the sink and then took us outside to find the location of the outfall. When he could not positively identify the outfall, he called out Terry Norris to locate the outfall for us.

Terry Norris said that he was the person that took out the sink about 5 years ago and he said that he had installed it as well. Terry showed us the outfall and we took a picture of it. Terry said the sink was actually a "quench tank" used to cool metal pieces that were heated during welding and cutting operations. Terry also said that the sink was used sometimes by the employees to wash their hands. Terry said that there were never any hazardous materials drained from the sink into the outfall.

The outfall area was vegetated with grasses and bushes and there were no indications of any stressed vegetation or other indications of possible contamination at this outfall. There was not a distinct erosion channel leading from the outfall, indicating that the outfall did not receive large quantities of water or other liquids.

cc: Project File

SWMU 3-045(h) — NPDES Permitted Outfall (Active)

1.0 Introduction

SWMU 3-045(h) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-045(h) [Map 3-045(h)] is an active outfall at the north perimeter of the Sigma Complex security fence, approximately 50 ft north of cooling tower TA-3-187. The outfall area is designated National Pollutant Discharge Elimination System (NPDES) Environmental Protection Agency (EPA) 03A024 and is permitted to discharge treated cooling water from the 6,000-gal. cooling tower, TA-3-187. Constructed in 1953, the cooling tower serviced operations in the northern portion of building TA-3-35 until the late 1980s when it was deactivated. It was reactivated in early 1995.

Water in the cooling tower basin circulates through two water-to-water heat exchangers connected in series. The high-quality, chilled water is used to cool high-temperature furnaces. Routine treatment of the water began in 1968 to keep the tower, basin, and slats operating successfully (LANL no date, 17-1259) (Attachment A). The treatment involved the introduction of biocides and fungicides to reduce algae growth and chelating agents, such as ethylene diaminetetraacetic acid (EDTA), to inhibit corrosion (Radzinski 1995, 17-1126) (Attachment B).

The area at the outfall pipe consists of a small drainage approximately three feet wide and six feet long. Presently, both storm water runoff and the treated cooling tower water drain into a corrugated metal storm drainpipe that trends northeast. The storm drain emerges north of cooling tower TA-3-187 within a small drainage. There the effluent combines with additional storm water runoff from the surrounding areas. The drainage continues northward and joins a large channel north of Eniwetok Drive that ultimately drains into Sandia Canyon (LANL 1993, 17-902). (Attachment C).

1.2 No Further Action Basis

SWMU 3-045(h), an active outfall, is recommended for NFA because the site has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. Only storm water runoff, addressed by ESH-8, and cooling water were ever released at this outfall. Cooling tower TA-3-187 has no history of chromate use (LANL 1993, 17-930) (Attachment D). In addition, the outfall is NPDES permitted and, as such, is currently managed under another authority.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(h) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

NPDES outfall permitted to discharge treated cooling water from cooling tower, TA-3-187.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Report, "TA-3-187, CT-1, Cooling Tower Information," (LANL no date, 17-1259).

Attachment B: LANL Memorandum, "Cooling Tower Water Treatments," (Radzinski 1995, 17-1126).

Attachment C: LANL Memorandum, "Meeting at SWMU 3-045(h) Near Structure TA-3-187," (LANL 1993, 17-902).

Attachment D: LANL Memorandum, "Chromate Use in TA-3 Cooling Towers," (LANL 1993, 17-930).

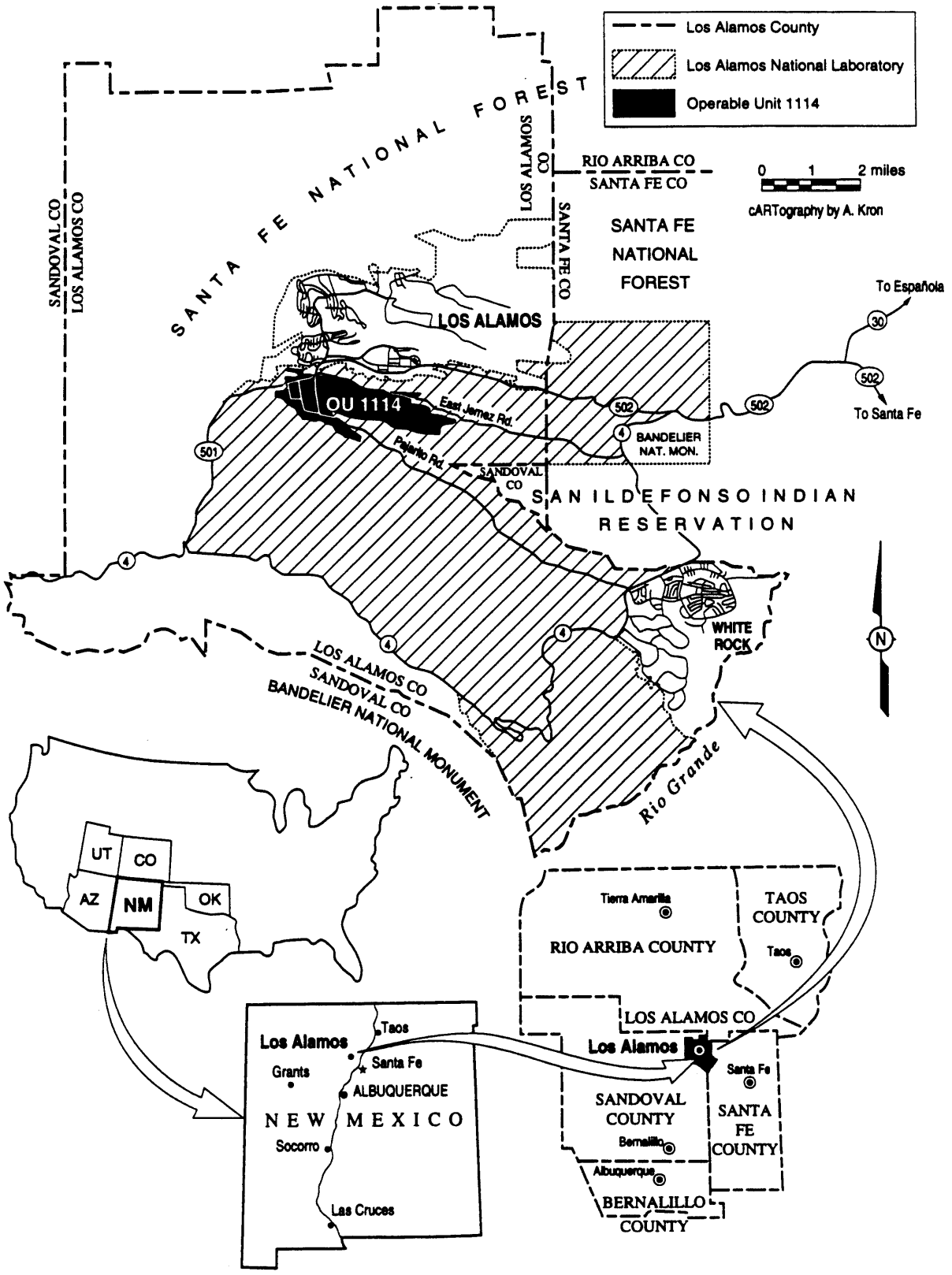


Fig. 1-1. Location of Operable Unit 1114.

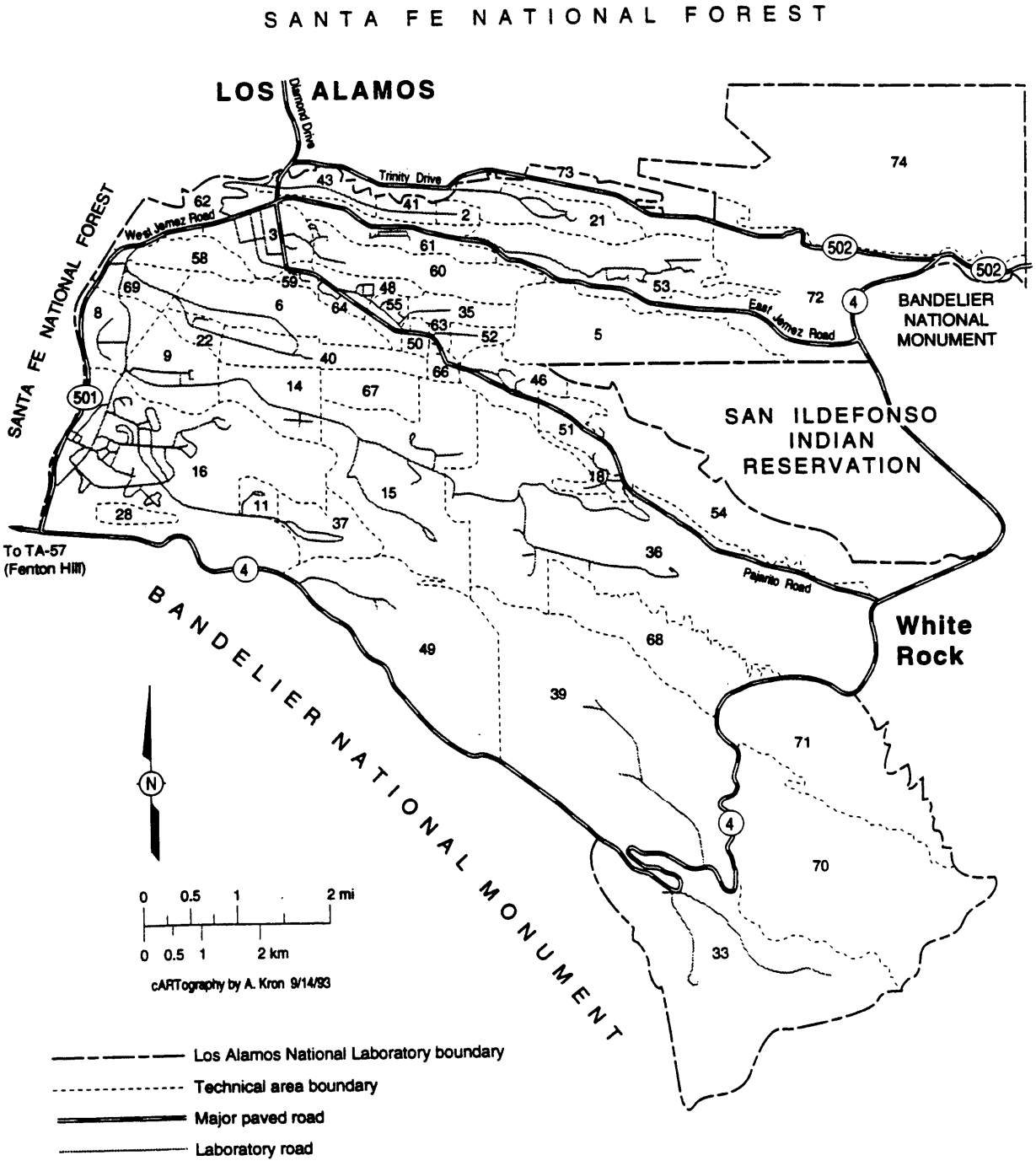
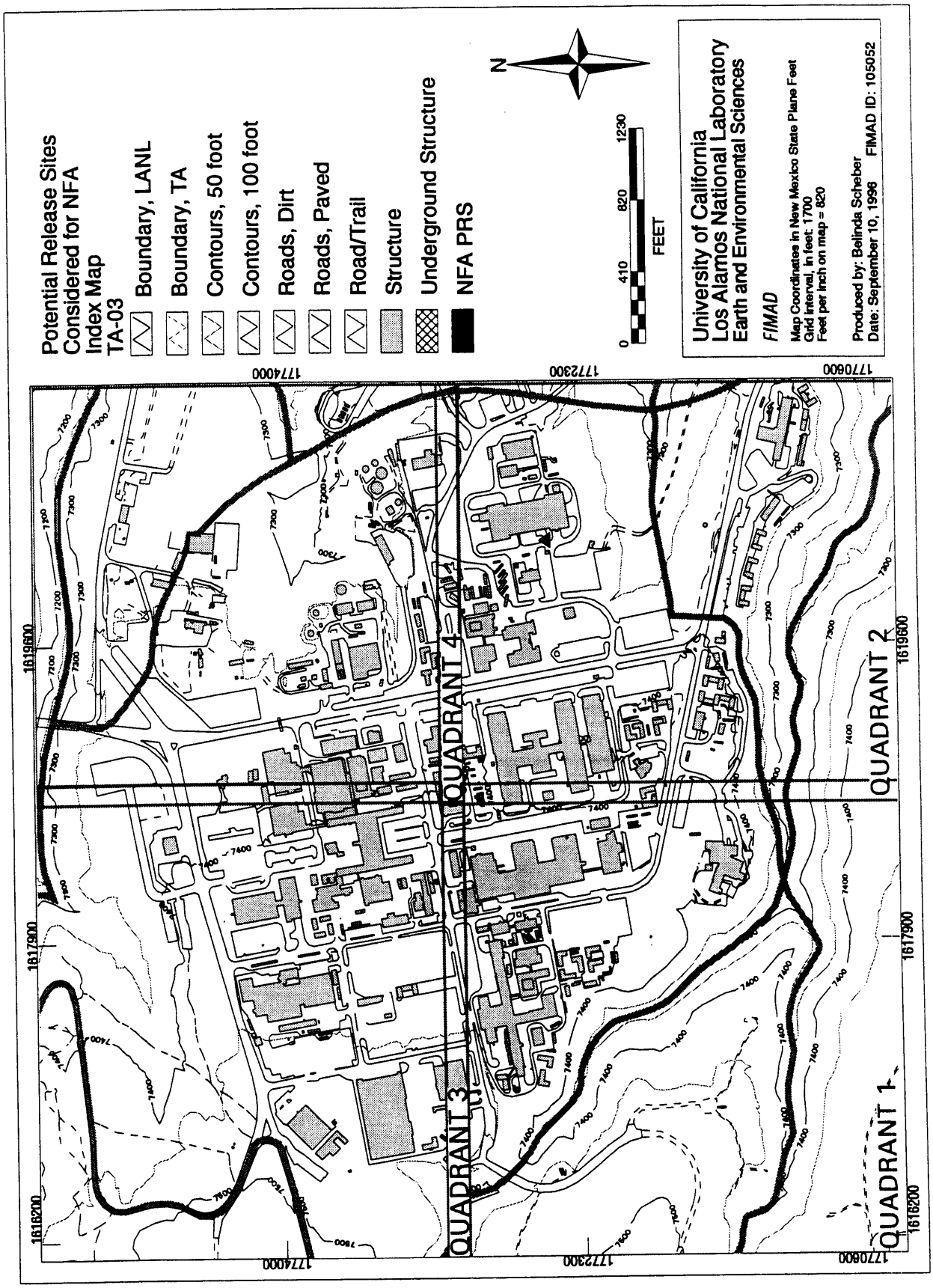
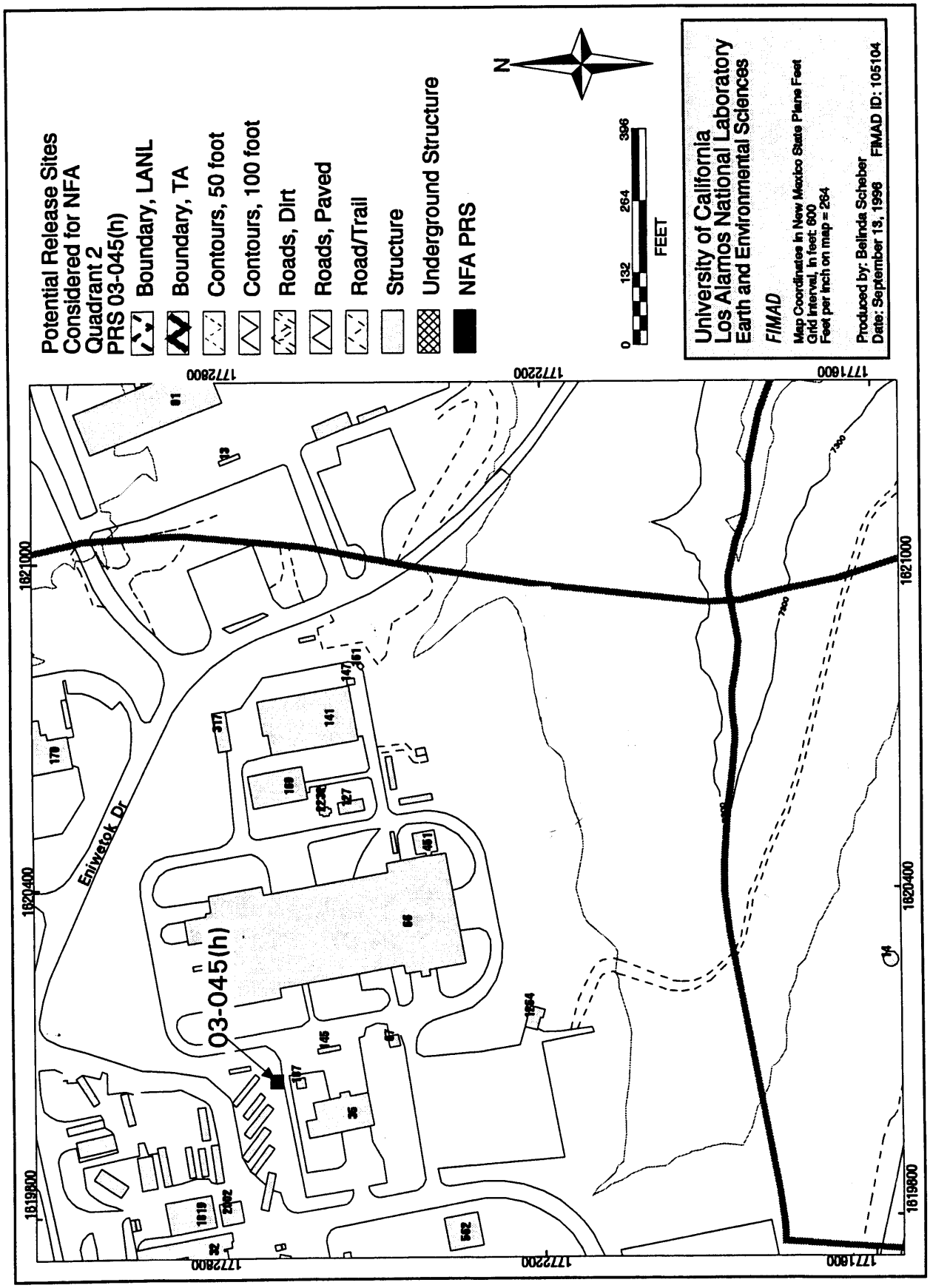


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-045(h)

6.3 Other Survey/Investigation Data

Section not applicable.

3-045(h)

ATTACHMENTS

3-001259

Attachment A

UNIT: TA-3, Building SM-187, CT-1, Cooling Tower

CAPACITY: 6,000 gallons

WATER SUPPLY: Pajarito Well No. 2

Total Alkalinity as $CaCO_3$	60-64	ppm
Total Hardness as $CaCO_3$	44-48	ppm
Chloride as Cl	4-7	ppm
Silica as SiO_2	75-82	ppm
Conductivity as Micromhos/cm	110-125	
pH	7.8-8.4	

CONTROL LIMITS:

Total Alkalinity	200-225	ppm

TREATMENT:

30 ppm Phoenix 277 in make-up

50 ppm Phoenix 315 biocide weekly

APPLICATION: Water in the cooling tower basin is circulated through two water-to-water heat exchangers in series. The high quality chilled water is used to cool high temperature furnaces.

HISTORY: Routine treatment was begun in 1968. Phoenix 92, 292, 255, 209, and 277 were used successively. The tower, basin, and slats cleaned up well. Operation through two heat exchangers was possible until a high heat source was installed in March 1974. The heat exchangers were cleaned by circulating 200 pounds of ammonium bifluoride on two occasions. The scale is still not completely removed. Heat transfer is good for cooling equipment operation.

WATER CONSUMPTION: Prior to the treatment program, the unit was on continuous blowdown at 7 gpm or 3,679,200 gallons per year. In 1970 water consumption was 611,920 gallons. In 1974 the unit was operated at 3-1/2 concentrations. Water consumption in 1974 was 451,970 gallons.

3-001126

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Attachment B

memorandum

To: Roy Michelotti

23 September 1992

From: Bill Radzinski B.S. Radzinski

667-2116

Subject: Cooling Tower Water Treatments

A considerable number of different chemicals have been used at Los Alamos to treat the water in cooling towers. The primary purpose of the chemicals has been to minimize corrosion and scaling problems, as well as to control the growth of algae, fungi and bacteria. Although their diversity has been relatively large since 1965, the treatments have been relatively benign to the environment.

The only water treatment chemical that has fallen into disfavor is the chromate family since hexavalent chromium is considered to be hazardous. Chromates have only been used at TA-2 where they could be continually monitored; they have not been used at TA-46.

The list I provided you on 26 March is a complete listing of the cooling water treatment chemicals used at Los Alamos. That list is shown below:

	Period of Use[1]	Cooling Water Treatment Chemicals
Corrosion and Scale Inhibitors		
EDTA	60's	x
NTA	60's	x
DTPA	60's	x
HEEDTA	60's	x
MBT	70's	x
TT	70's-80's	x
Benzotriazole	70's	x
Zinc Sulfate	70's-80's	x
Nitrilotri Acid	70's-80's	x
Sulfinated polystyrene polymer	70's-80's	x
Sodium Hydroxide	70's-80's	x
AMP	80's	x
HEDP	80's	x
Sodium Molybdate	85-present	x
Orthophosphates	late 80's	x
Polysphosphates	late 80's	x
Boric Acid	late 80's for 1 year	x
Glycerol	late 80's	x
Phosphonic Acid	late 80's	x
Citric Acid	60's-70's	
Malic Acid	60's-70's	
Acetic Acid	60's-70's	
Polyacrylates	60's-70's	
Hydroxyethylenediphosphonic Acid	60's-70's	x

[1] The period of use is general in nature. Different chemicals were used as the understanding of cooling tower operations improved. This information is intended to show the usage trend.

Attachment B

Microbiological Control		
Chloroisocyanurates	60's-70's	x
Sodium Hypochlorites	60's-80's	x
Calcium Hypochlorites	60's-80's	x
Dichlorodimethylhydantoin	85-present	x
Bromochlorodimethylhydantoin	85-present	x
Sodium Pentachlorophenate	60's-70's	
Sodium salt	60's-70's	
Alkyldimethylbenzyl ammonium chloride	late 80's	x
Chlorine Neutralization Compounds		
Sodium Bisulfate	late 80's	x

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Bart J. Vanden Plas BJV

Date: July 23, 1993

Regarding: **MEETING AT SWMU 3-045(h) NEAR STRUCTURE TA-3-187**

On 3 June 1993, Valarie Rhodes, Paula Bertino, and I met with Joe Mitchell and Billy Hogan to discuss SWMU 3-045(h). We met outside building TA-3-66 (the Sigma Building) since this SWMU is related to cooling tower TA-3-187 which is near the Sigma Building. Mr. Mitchell showed us the cooling tower and then took us over to the outfall. The outfall is permitted under NPDES permit number EPA-03A-024.

The outfall was about 20 feet north of the cooling tower and was at the fence line. The water from the outfall immediately enters a drainage pipe along with water that drains from the pavement in the area. This drainage pipe trends northeast and 'daylights' east of building TA-3-1787. The water from this drainage pipe then comingles with additional drainage water and ultimately flows into a large drainage channel north of Eniwetok Drive which outfalls into Sandia Canyon.

Neither Joe Mitchell or Billy Hogan knew if chromates were used in the cooling tower TA-3-187. There were no other possible contamination sources known to enter this outfall.

cc: Project File

Attachment D

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Valerie Rhodes VR

Date: 28 July 1993

Regarding: CHROMATE USE IN TA-3 COOLING TOWERS

On 27 July 1993, I spoke with Bill Radzinski (ENG-6) regarding the use of chromates in TA-3 cooling towers discharging into NPDES-permitted outfalls that are suspected SWMUs. The following list outlines the associated SWMUs, cooling towers, and NDPES permit numbers that are being investigated:

SWMU No.	Cooling Tower No.	NPDES No.
3-054(a)	TA-3-19	None
3-054(b)	TA-3-102	EPA03A009
3-054(c)	TA-3-156	EPA03A023
3-054(d)	TA-3-208	EPA03A025
3-045(h)	TA-3-187	EPA03A024
3-049(a)	TA-3-127	EPA03A022
3-021	TA-3-170	EPA04A094
3-045(a)	TA-3-22	EPA04A151
3-045(b)	TA-3-25/58	EPA01A001
3-045(c)	TA-3-285	EPA03A027
3-045(g)	asphalt plant/area	EPA04A109
"Dorothy's"	TA-3-29	EPA03A021

Mr. Radzinski reported that hexavalent chromium is/was used at only three facilities (all associated with power plants) at the Laboratory; these include TA-2, TA-16, and TA-3 (SM-38). No information was available regarding cooling tower TA-3-19 because it was dismantled in 1966 (prior to record-keeping); however, Mr. Radzinski maintained that if no green staining exists at the old site location, then chromate use in the cooling tower was highly unlikely. In addition, information pertaining to the cooling towers at the power plant (TA-3-25, 58, and 285) must be obtained from JCI (as the power plant has always been operated by LANL's contractor).

cc: Project File

SWMU 3-045(i) — Outfall (Active)

1.0 Introduction

SWMU 3-045(i) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-045(i) [Map 3-045(i)] is incorrectly described in the SWMU Report (LANL 1990, 0145) (Attachment A) as an outfall from floor and sink drains at TA-3-34, the Cryogenics Building. Engineering drawings clearly show that the drains discharge to the sanitary sewer system through manhole TA-3-66 (ENG-C 17676, 17679, 17618) (Attachment B, C, D). SWMU 3-045(i) is, in actuality, a runoff pipe draining storm water from a parking lot into the ditch on the south side of Eniwetok Drive, north of the Cryogenics Building (LANL 1993, 17-934) (Attachment E).

1.2 No Further Action Basis

SWMU 3-045(i) is recommended for NFA because the site has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. SWMU 3-045(i) was incorrectly identified in the SWMU Report. The outfall is, in actuality, merely a storm water runoff from a parking lot.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-045(i) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Section not applicable.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-045.

Attachment B: LASL, Engineering Drawing ENG-C 17676.

Attachment C: LASL, Engineering Drawing ENG-C 17679.

Attachment D: LASL, Engineering Drawing ENG-C 17618.

Attachment E: LANL Memorandum, "SWMU 3-045(i) Information," July 30, 1993, (LANL 1993, 17-934).

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

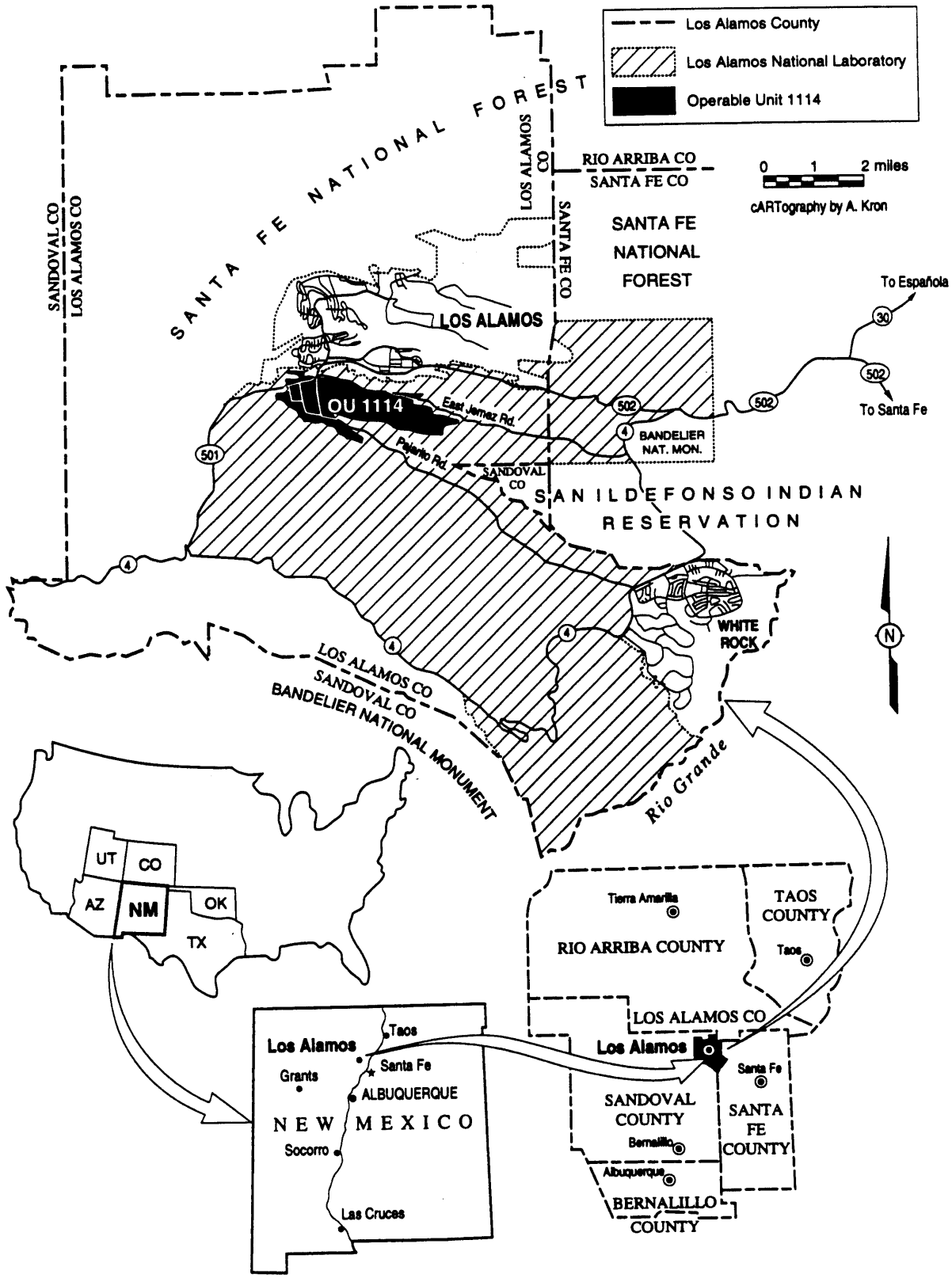


Fig. 1-1. Location of Operable Unit 1114.

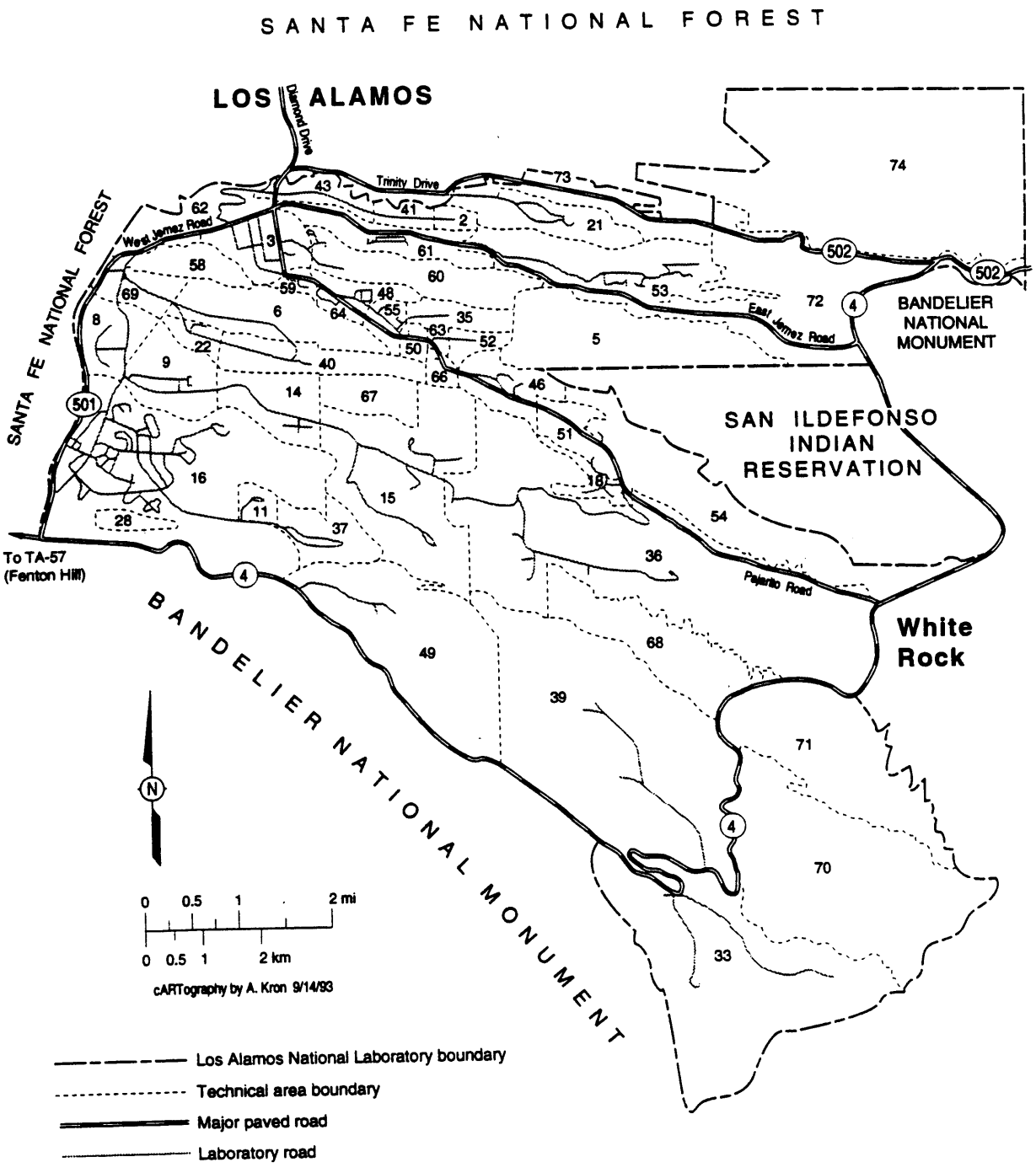
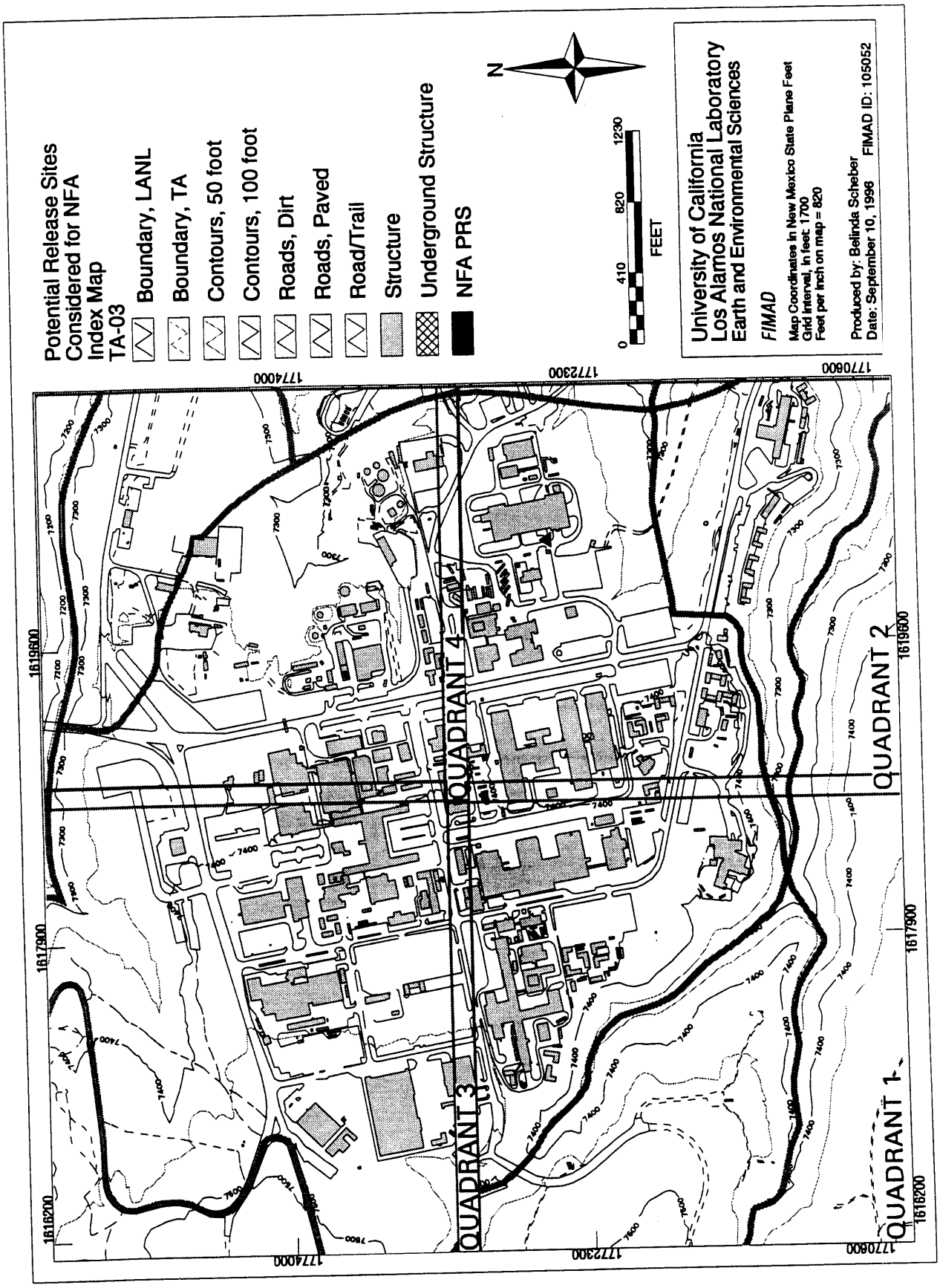
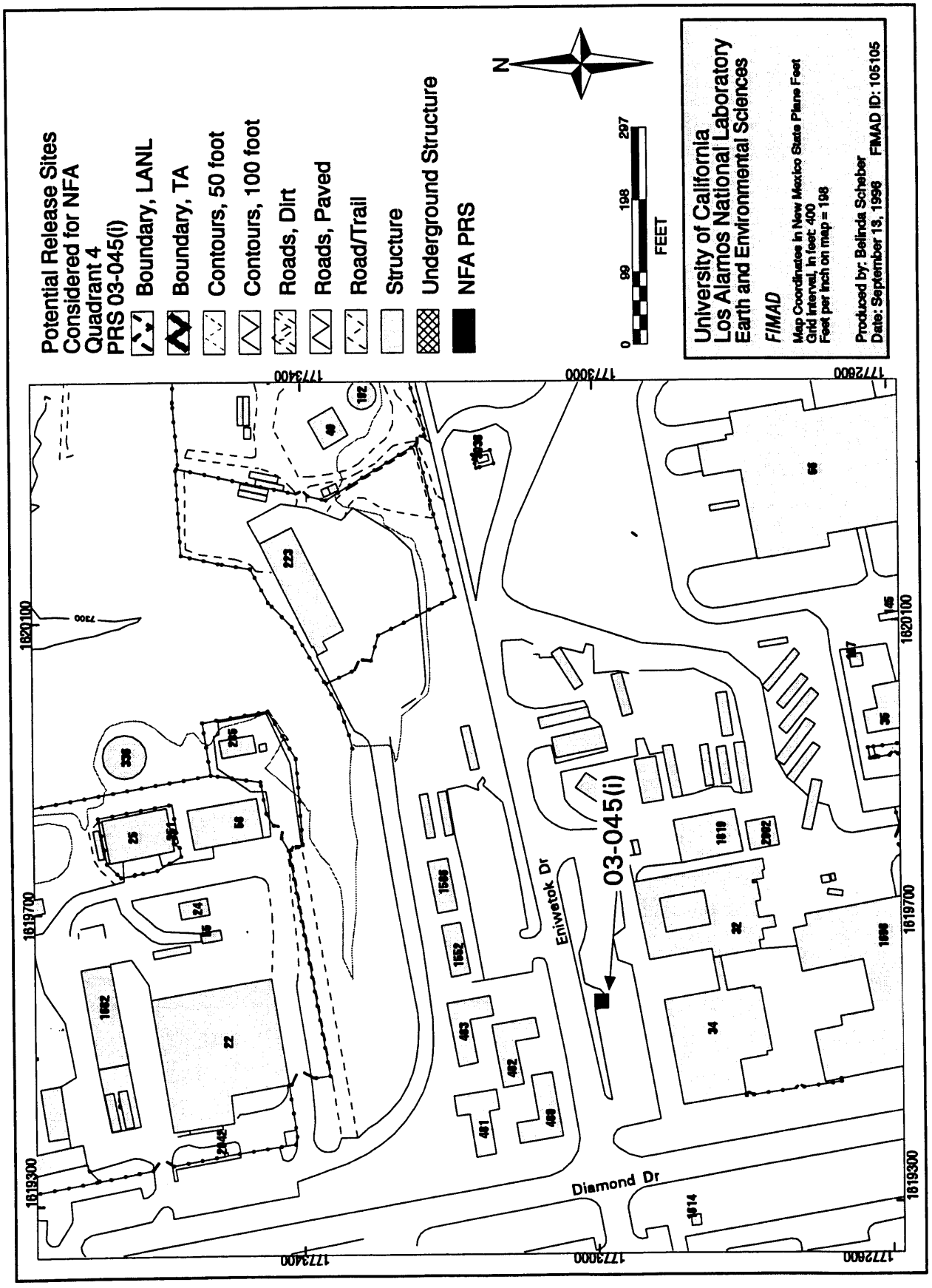


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-045(i)

6.3 Other Survey/Investigation Data

Section not applicable.

3-045(i)

ATTACHMENTS

3-045 SOIL CONTAMINATION FROM OUTFALLS IN SANDIA CANYON 10/31/90

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : OUTFALL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : INACTIVE/ACTIVE
PERIOD OF USE : 1950s - PRESENT
HAZARDOUS RELEASE : KNOWN
RADIOACTIVE RELEASE : SUSPECTED

MATERIALS MANAGED : SUSPECTED SOLID WASTE
HAZARDOUS WASTE
SUSPECTED RADIOACTIVE WASTE

UNIT INFORMATION

Several outfalls serve as points of release for liquids into or near Sandia Canyon. Some of the outfalls are permitted and have been assigned NPDES numbers.

	SWMU NO.	NPDES NO.	ASSOCIATED STRUCTURE	STATUS
	3-045(a)	01A	floor drains in steam plant, TA-3-22	active
	3-045(b)	EPA01A001	cooling towers TA-3-25 and -58	active
	3-045(c)		cooling tower TA-3-285	active
	3-045(d)		storage tank TA-3-336	active
	3-045(e)		tanks TA-3-26 and -27 and pump building TA-3-57	active
	3-045(f)		sink drains from machine shop in TA-3-223	active
	3-045(g)	EPA04A109	storm drain at asphalt plant TA-3-73	active
	3-045(h)		cooling tower TA-3-187	active
→	3-045(i)		floor and sink drains in TA-3-34	not known

The liquids from floor drains in the steam plant, TA-3-22, are routed to an oil/water separator prior to discharge to the outfall. An overflow pipe from effluent storage tank TA-3-336, east of the steam plant, discharges to a drainage area that trends toward Sandia Canyon. Two sludge drainlines from diesel storage tanks TA-3-26 and -27 connect with a floor drainline from the pump building TA-3-57, and together they discharge through a 4" cast iron pipe into Sandia Canyon. An outfall pipe from a sink drain in the machine shop in TA-3-223 discharges into a drainage area on the north side of the building. This drainage area also trends toward Sandia Canyon. The outfall from the cooling tower TA-3-187 discharges into a storm drain directly north of the cooling tower. The storm drain daylights just south of Eniwetok Drive, north of TA-3-66, in a discharge area that trends toward Sandia Canyon. The outfall from TA-3-34 serves floor drains in the basement and a sink in the radio-chemical room.

WASTE INFORMATION

The outfall from the steam plant, TA-3-22, is reported to have received, in the past, all wastes discharged from the building. The wastes included diesel oil from drains, turbine oil, and continuous blowdown from the boilers (associated solvents, oils, caustics, acids, and polymers). The outfall from the steam plant cooling towers may have received various chemicals prior to being NPDES permitted. Chemicals were used to inhibit corrosion, and algae growth and for cleaning purposes. Before the use of inhibitors for controlling pH, a line from a sulfuric tank was run to the water treatment house TA-3-24 for use in the cooling water in the towers. When inhibitors began to be used, this line was removed. The outfall associated with tanks TA-3-26 and -27 and the floor drain from the pump in TA-3-57 may have received wastes from blowdown or small spills, particularly from the pump house. The tanks contain No. 2 diesel fuel. After metal is machined in the shop in TA-3-223, the parts are rinsed off in a sink which discharges through the outfall nearby. The outfall area potential receives oils, solvents, and trace amounts of metals. The outfall near the asphalt plant TA-3-73 receives washwater from the cleaning of oil distributor trucks, washwater from a bleed stream at the two filter ponds, and may receive runoff from the area around TA-3-73. The effluent at the outfall has contained kerosene, asphalt, oil, and water. Effluent from TA-3-34 is anticipated to contain tritium, metals, oil, and grease, based on reported operational practices.

RELEASE INFORMATION

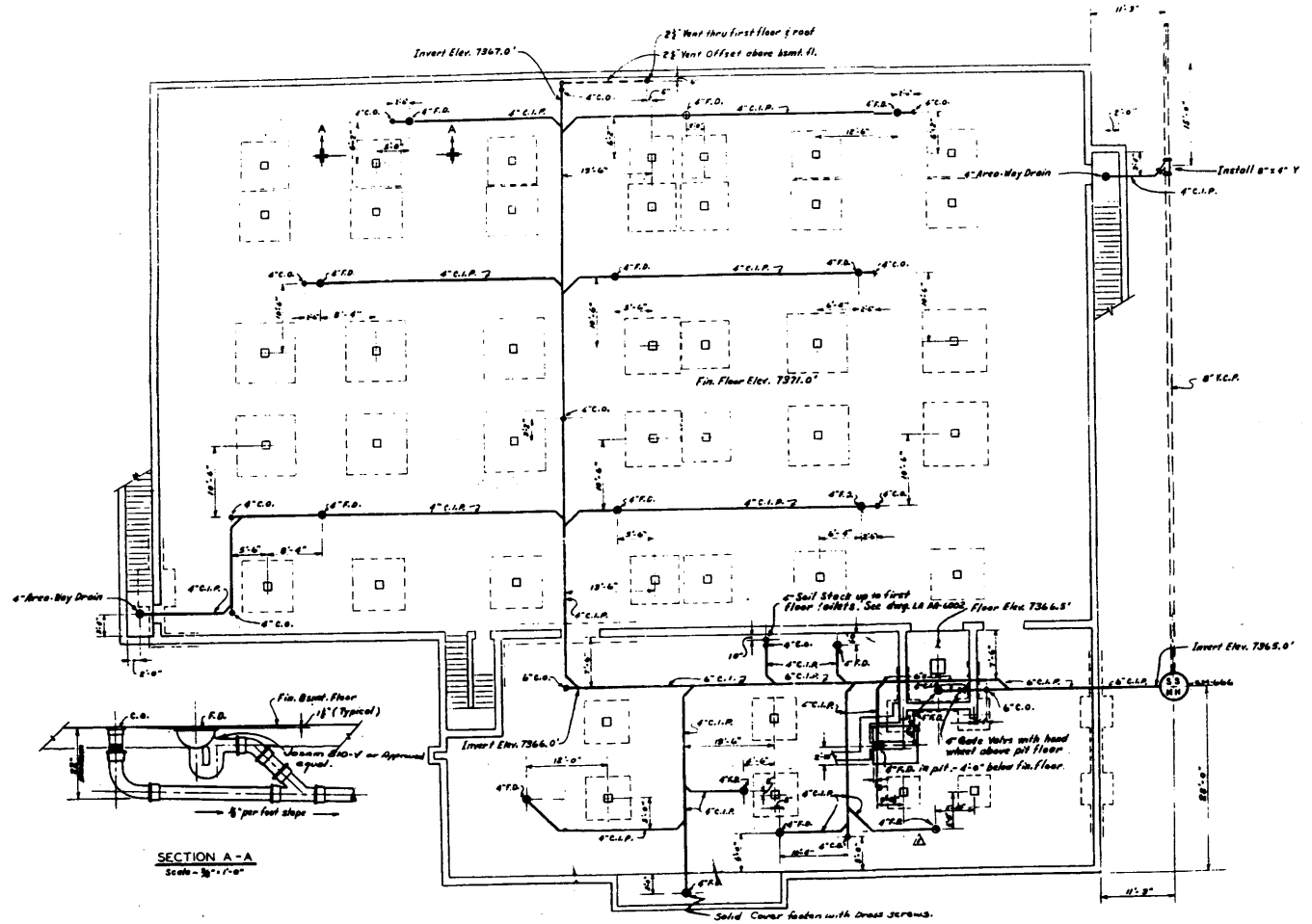
During construction activities in 1989, Pan Am personnel observed contamination of the soil in the canyon bottom near the outfall [3-045(a)] from the steam plant. The contamination became visible at a depth of 12 to 18 inches below the soil surface, and analyses of the soil indicated the presence of petroleum hydrocarbons. The extent of contamination is unknown. During a site visit, the area around the outfall from the effluent storage tank TA-3-336 was noticed to be scoured out, indicating past discharge from the pipe. If overflow has occurred, the liquid discharged would have been non-chlorinated effluent from the sewage treatment plant. The concrete and soil at the discharge point from the outfall associated with tanks TA-3-26 and -27 and the pump house were noted during a site survey to be stained with what appeared to be oil. In addition, it is thought that in the past, a significantly large quantity of kerosene was used to wash down the trucks at the asphalt plant. Through the years, this operation has led to a substantial quantity of kerosene and asphalt being released through the associated outfall [3-034(g)] to the canyon.

(continued)

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-045(a)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 3	TA-3-22
3-045(b)	TA3-6-CA/O-A/I-HW/RW	3.089	Tsk 19 : 4	TA-3-25, -58
3-045(c)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 5	TA-3-285
3-045(d)	TA3-6-CA/O-A/I-HW/RW		Tsk 19 : 6	TA-3-336
3-045(e)	TA3-CA/UST/SST-A/I-PP		Tsk 19 : 7	TA-3-26, -27, -57
3-045(f)	**	3.093	Tsk 19 : 8	TA-3-223
3-045(g)	**	3.082 3.083	Tsk 19 : 9 44 51 52	TA-3-73
3-045(h)	**		Tsk 20 : 4	TA-3-187
3-045(i)	**		Tsk 20 : 5	TA-3-34

** No corresponding E. R. Program unit.



SECTION A-A
Scale - ⅜" = 1'-0"

BASEMENT PLAN
Scale - ⅛" = 1'-0"

NOTES:
1. All cast iron soil pipe & fittings below grade or slabs shall be extra heavy.

AS CONSTRUCTED DRAWING
CONSTRUCTION CONTRACT NO. AT(29-1)-1405
SUBMITTED
RECOMMENDED
APPROVED

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS FIELD OFFICE
LOS ALAMOS, NEW MEXICO

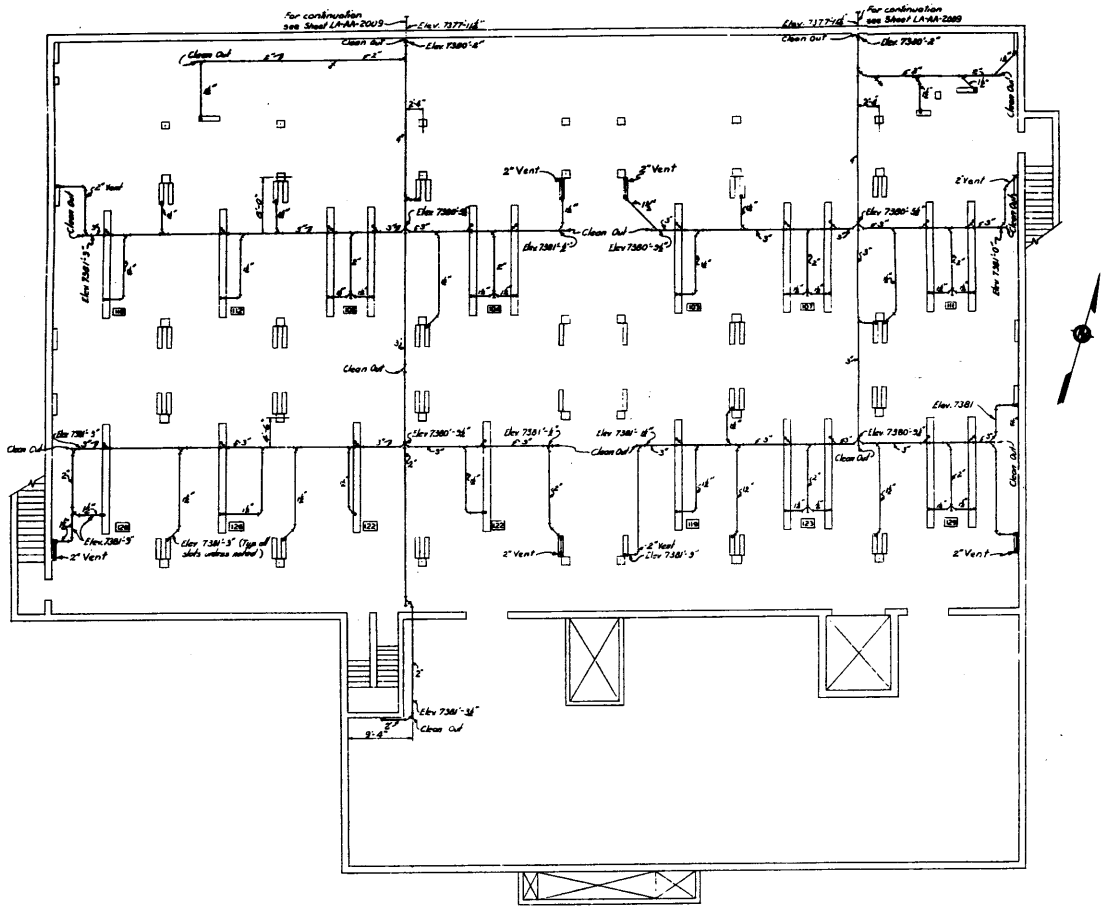
CRYOGENICS LABORATORY SM-34
PLUMBING FLOOR DRAINS
BASEMENT AREA
TA-3 PHASE B PROJECT I

BLACK & VEATCH
CONSULTING ENGINEERS
LA-AA-6001 68

[redacted]

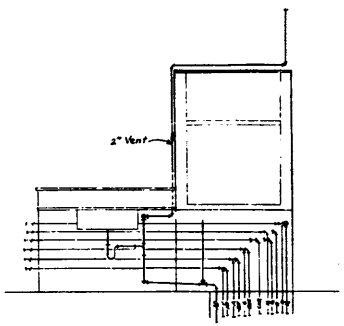
LAB JOB 1270 L.A.S.L. DWG. NO. ENG-C17676

Attachment B



ACID DRAINS BASEMENT PLAN

Scale: ⅛" = 1'-0"



TYPICAL ACID DRAIN VENT PIPING

For venting from piping above first floor. Piping in Room 105 as shown. Rooms 108, 122, & 104 should be piped in similar manner. For exceptions in Rooms 111, 114, 119, 129 refer to Dwgs No. LA-AA-3025, 3026.

Attachment C

AS CONSTRUCTED DRAWING

GENERAL CONTRACTOR: M (3-1)-1405

SUBMITTED

RECOMMENDED

APPROVED

GENERAL NOTES

Unless specified otherwise on the drawing:

1. Piping shown in plan is below first floor. Slabs indicated are through first floor slab.
2. Location of piping is approximate & should conform to actual field conditions.
3. All drain lines to slope one inch (1") every eight feet (8').
4. Elevations shown are invert elevations.
5. Pipes Material: to conform to A.S.A. or A.S.T.M. specifications.
   Acid Drain Pipe in Basement & Above Grade: Piping & fittings to be extra heavy bell & spigot cast mending cast iron, "Durham" or equal.
   Acid Drain Pipe in Laboratory Areas: Piping to be sch. 40 stainless steel. Fittings, stainless steel drainage pattern.
   Acid Drain Vent Piping: below slab level, pipe to be sch 40 stainless steel. Fittings, stainless steel drainage pattern. Above slab level through roof, pipe to be sch 40 galv steel, fittings, galv malleable iron screwed.
6. For position of lines through floor slabs, see Typical Floor Slot Detail sheet LA-AA-3011.

REFERENCE DRAWINGS

Process Piping Basement Area "A"	LA-AA-6006
Process Piping Basement Area "B"	LA-AA-6007
Vacuum Piping & Equipment Basement Area	LA-AA-6008

1	3-67	Revised Elev. AA	AMV		
No.	Date		By	Ck'd	Appd

U. S. ATOMIC ENERGY COMMISSION
LOS ALAMOS FIELD OFFICE
LOS ALAMOS, NEW MEXICO

CRYOGENICS LABORATORY SM-34
ACID DRAIN SYSTEM
BASEMENT AREA

TA-3 PHASE-B PROJECT 1

Scale: As noted
Date: 10/9/63

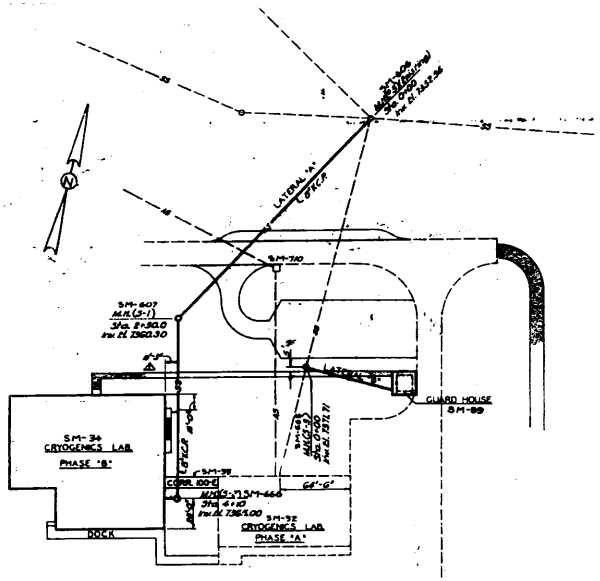
Drawn: T.D. Stone
Traced: T. Maxwell
Checked: R. Thorsen

BLACK & VEATCH
CONSULTING ENGINEERS
Kansas City, Missouri

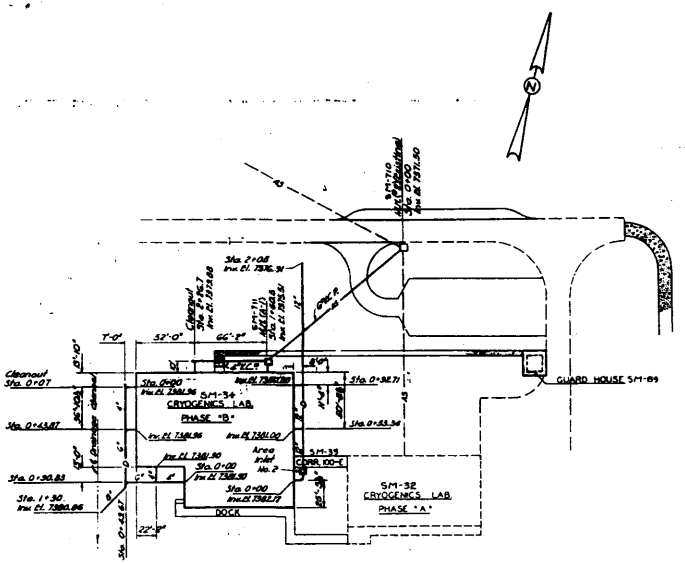
LA-AA-6004 | 71 | 123

[redacted]

LAB JOB 1270 [redacted]



SANITARY SEWERS - PLAN
Scale: 1" = 50'

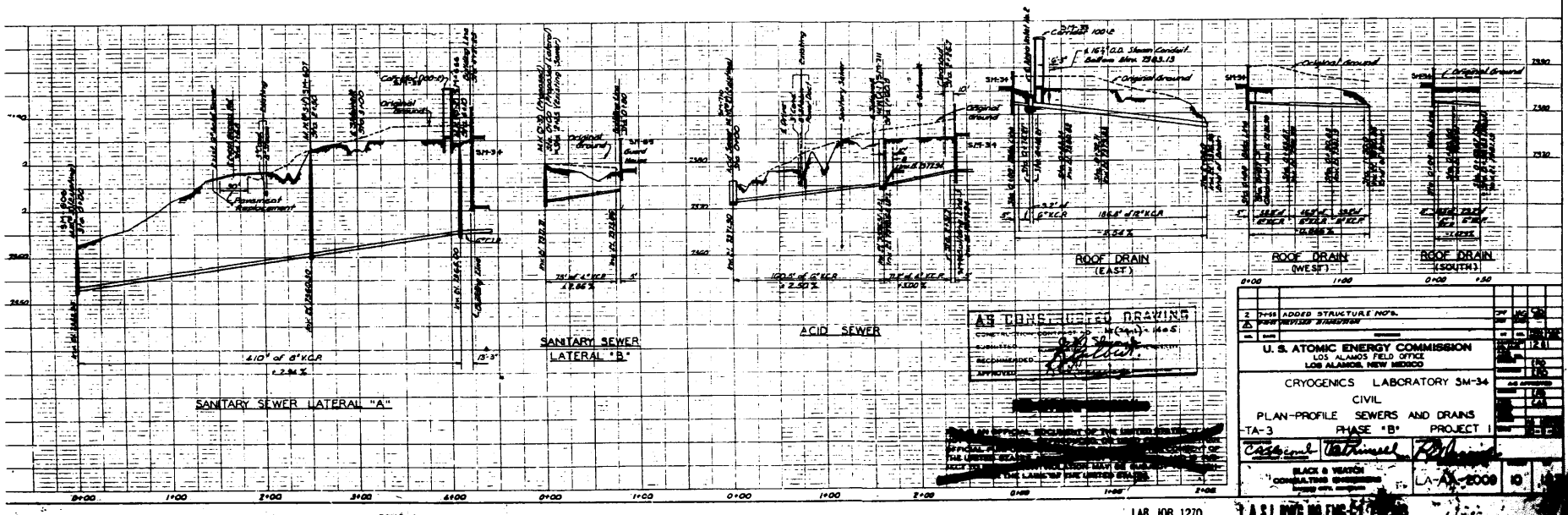


ACID SEWER AND ROOF DRAINS - PLAN
Scale: 1" = 50'

LEGEND

	PROPOSED	EXISTING
SANITARY SEWER		—SS—
MANHOLE		○
ACID SEWER		—AS—
MANHOLE		□
DRAIN LINE		
BITUMINOUS PAVEMENT		
PATROL ROAD		
CONCRETE SIDEWALK		
BUILDINGS		

Attachment D



Attachment E

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Valerie Rhodes VR

Date: 30 July 1993

Regarding: SWMU ~~3-054(C)~~ 3-045(i) **INFORMATION**

On 13 July 1993, Paula Bertino and I met with Caleb Evans at TA-3-34 (Cryogenics Building) to discuss SWMU 3-045(i). This SWMU is an outfall associated with the basement floor drains and the radiochemical room sink (room B-10) and is reported to discharge into Sandia Canyon. Mr. Evans reported that the floor drains in the basement are all routed to the sanitary sewer (confirmed by drawings ENG-C17618, C17676, and C17679). When the radiochemical room sink (room B-10) was dye-tested in December 1989 and found to also discharge to the sanitary sewer, the sink was removed from service. Upon visual inspection of room B-10, the sink remains disconnected. Lastly, field investigation outside of TA-3-34 and the surrounding area identified no outfalls discharging from the Cryogenics Building and into Sandia Canyon. The culverts and drainages located in this area transport and route storm water runoff from the parking lots and the TA-3-34 roof drains only.

cc: Project File

SWMU 3-049(c) — Outfall (Active)

1.0 Introduction

1.1 Description

SWMU 3-049(c) is a duplicate of SWMU 3-049(d), two flash tanks (steam condensate tanks) located on the northeast and southeast sides of TA-3-66, the Sigma Building. The SWMU Report identifies SWUM 3-049(c) as discharge from a condensate system and 3-049(d) as discharge of condensate from flash tanks (LANL 1990, 0145) (Attachment A). Upon further investigation, SWMU 3-049(d) was found to consist of the two flash tanks and associated outfalls. This was confirmed by a site visit and interview with Sigma Building personnel.

1.2 No Further Action Basis

SWMU 3-049(c) is recommended for NFA because the site is a duplicate of SWMU 3-049(d).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-049(c) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Discharge of steam condensate and collected rainwater (stormwater runoff).

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-049.

Attachment B: LANL Memorandum, "Meeting at SWMUs 3-049(c & d) Near Building TA-3-066," Van den Plas, 1993.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, 3-049(c) is recommended for NFA under Criterion 1.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

LANL (Los Alamos National Laboratory), July 23, 1993. "Meeting at SWMUs 3-049(c and d) Near Building TA-3-66," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (LANL 1993, 17-897)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, p 6-10. (LANL 1995, 1291)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, page 3-049. (LANL 1990, 0145)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

Section not applicable.

6.3 Other Survey/Investigation Data

Section not applicable.

3-049(c)

ATTACHMENTS

3-049 SOIL CONTAMINATION FROM MORTANDAD CANYON OUTFALLS 10/31/90

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : OUTFALL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : ACTIVE/INACTIVE
PERIOD OF USE : ? - PRESENT
HAZARDOUS RELEASE : SUSPECTED
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : SOLID WASTE
HAZARDOUS WASTE

UNIT INFORMATION

Several outfalls serve as points of release for liquids into or near Mortandad Canyon.

SWMU NO.	STRUCTURES	ASSOCIATED PROCESS	STATUS
3-049(a)	TA-3-66	rinse water from 8 electroplating tanks in Room P-100 and effluent from the industrial chill water pit	active
	TA-3-127	effluent from cooling tower; surface discharge	active
3-049(b)	TA-3-35	discharge from a vacuum oil pump to south side of TA-3-35	active
3-049(c)	TA-3-66	discharge from condensate system	inactive since 1987
3-049(d)	TA-3-66	discharge of condensate from flash tanks	active
3-049(e)	TA-3-66 (?)	outfall pipe located south of TA-3-66; origin unknown	unknown

The outfall that is associated with TA-3-127 is permitted and has NPDES serial number 022.

WASTE INFORMATION

Gold citrate and HCN are produced in the gold electroplating process. In addition, numerous metals, acids, and cyanide were used in the process of chromium plating. The cooling tower water was treated with organo-chelates. Oil and grease may have been discharged from the vacuum pump.

RELEASE INFORMATION

Oil stains are present below the outfall from the vacuum pump. Originally, the discharge went directly to the soil. In 1988, the outfall area was asphalted over. During an E.R. Program site survey, standing water was observed in the outfall area near both flash tank outfalls. No noticeable stains were present in the soil near the other outfalls.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-049(a)	**		Tsk 20 : 1	TA-3-66, -127
3-049(b)	**		Tsk 20 : 6	TA-3-35
3-049(c)	**		Tsk 20 : 7	TA-3-66
3-049(d)	**		Tsk 20 : 8 9	TA-3-66
3-049(e)	**		Tsk 20 : 10	SOUTH OF TA-3-66

** No corresponding E. R. Program unit.

Attachment B

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Bart J. Vanden Plas BJV

Date: July 23, 1993

Regarding: **MEETING AT SWMUs 3-049(c & d) NEAR BUILDING TA-3-066**

On 3 June 1993, Valarie Rhodes, Paula Bertino, and I met with Joe Mitchell and Billy Hogan to discuss SWMUs 3-049(c and d). We met outside building TA-3-066 (the Sigma Building) since this SWMU is related to the steam lines that enter the Sigma Building. Mr. Mitchell showed us the two condensate tanks for the steam lines entering the Sigma Building. Both condensate systems are still active however the southern condensate system was not in operation during the SWMU visit.

The outfalls are on the east side of the Sigma Building about 200 feet apart. The areas around the outfalls are grassy with no noticeable staining. There was some evidence of stressed vegetation at the operating condensate system since there was hot water being discharged to the outfall (the hot water was the steam condensate). The amount of condensate flowing to the outfall was estimated to be much less than a liter a minute. The flow from the condensate system consists of only distilled water and does not contain any contaminants.

Joe Mitchell indicated that he had been associated with the Sigma Building since before it was built. Neither Joe or Billy knew of any other system within or without the Sigma Building that fit the descriptions for SWMUs 3-049(c and d). They both agreed that SWMUs 3-049(c and d) referred to the condensate tanks we observed. Therefore these SWMUs are considered to be duplicates of each other.

cc: Project File

SWMU 3-049(d) — Outfall (Active)

1.0 Introduction

SWMU 3-049(d) is located in former Operable Unit (OU) 1114 (Figure 1-1) within Technical Area (TA)-3 (Figure 1-2 and Index Map) at Los Alamos National Laboratory, Los Alamos, New Mexico.

1.1 Description

SWMU 3-049(d) [Map 3-049(d)] is an active outfall located on the east side of the Sigma Building (TA-3-66). The outfall receives discharge from the south steam condensate pit (south tank) of the Sigma Building. The condensate pit collects the water that condensates from steam pipes located within the pit. Because the condensate pit is open, it also collects rainwater. These steam lines have been active since 1959 and, at present, continue to discharge into the condensate pit (LANL 1993, 17-897) (Attachment A). The steam results from plain water and is completely contained within the pipes, which have no history of leaking.

1.2 No Further Action Basis

SWMU 3-049(d) is recommended for NFA because the site has never been used for the management (i.e., generation, treatment, storage, or disposal) of RCRA solid or hazardous wastes or constituents, or other CERCLA hazardous substances. The outfall discharges steam condensate and rainwater (stormwater runoff) only. No RCRA hazardous wastes or constituents are associated with the SWMU 3-049(d).

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-049(d) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Discharge of steam condensate and collected rainwater (stormwater runoff).

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Memorandum, "Meeting at SWMUs 3-049(c & d) Near Building TA-3-066," Van den Plas, 1993.

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, 3-049(d) is recommended for NFA under Criterion 2.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

LANL (Los Alamos National Laboratory), July 23, 1993. "Meeting at SWMUs 3-049(c and d) Near Building TA-3-66," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (LANL 1993, 17-897)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, p 6-10. (LANL 1995, 1291)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

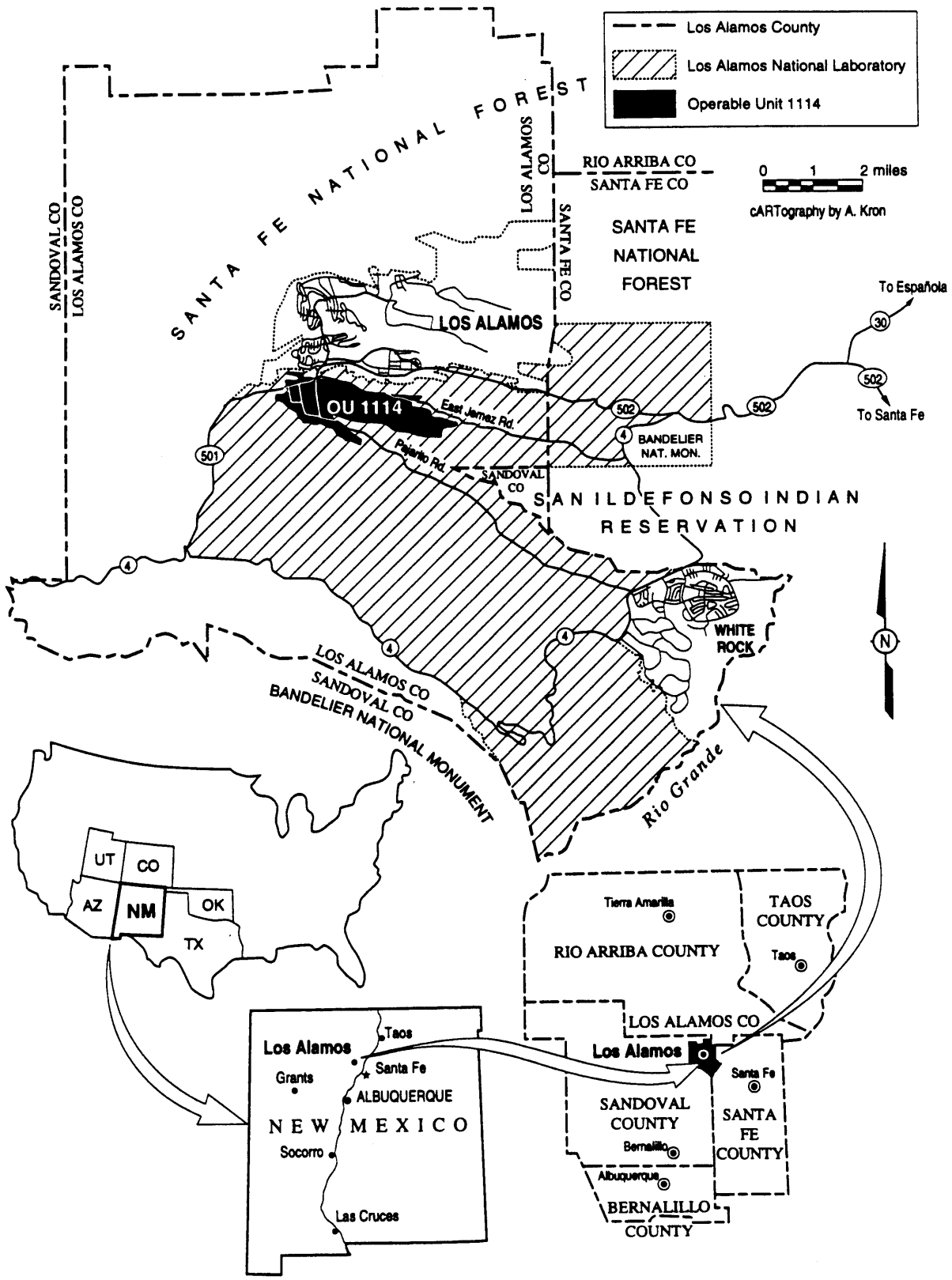


Fig. 1-1. Location of Operable Unit 1114.

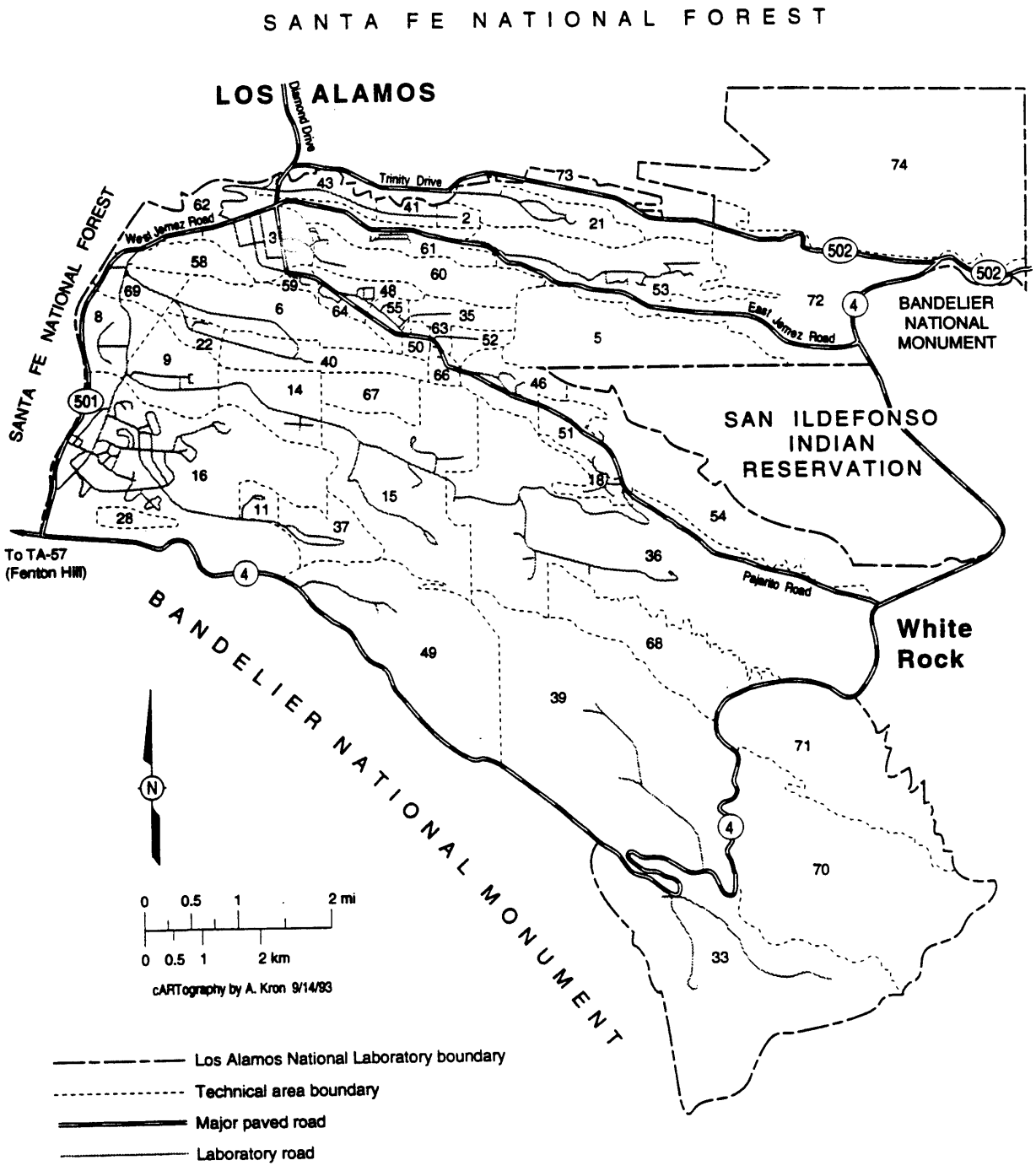
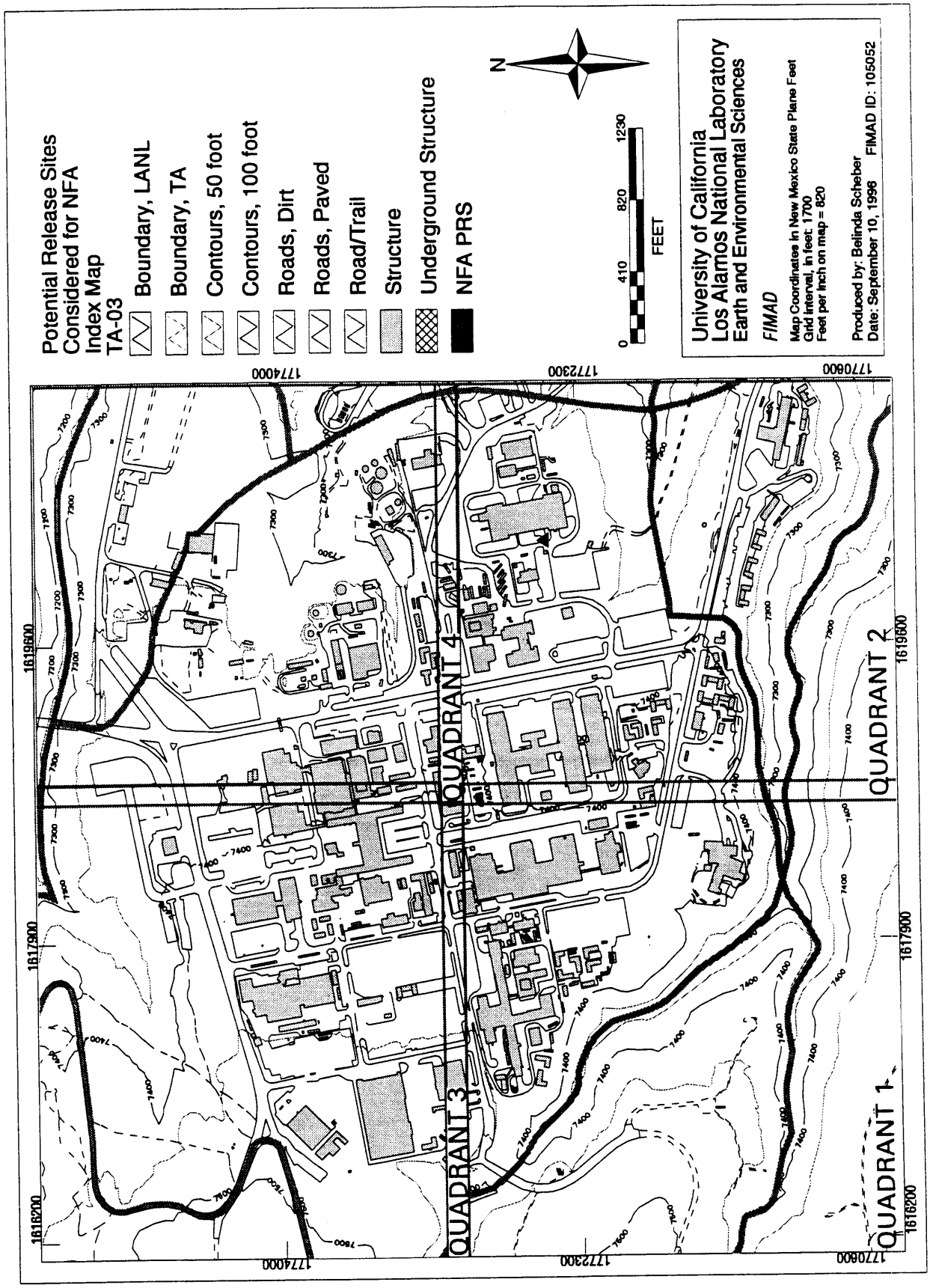
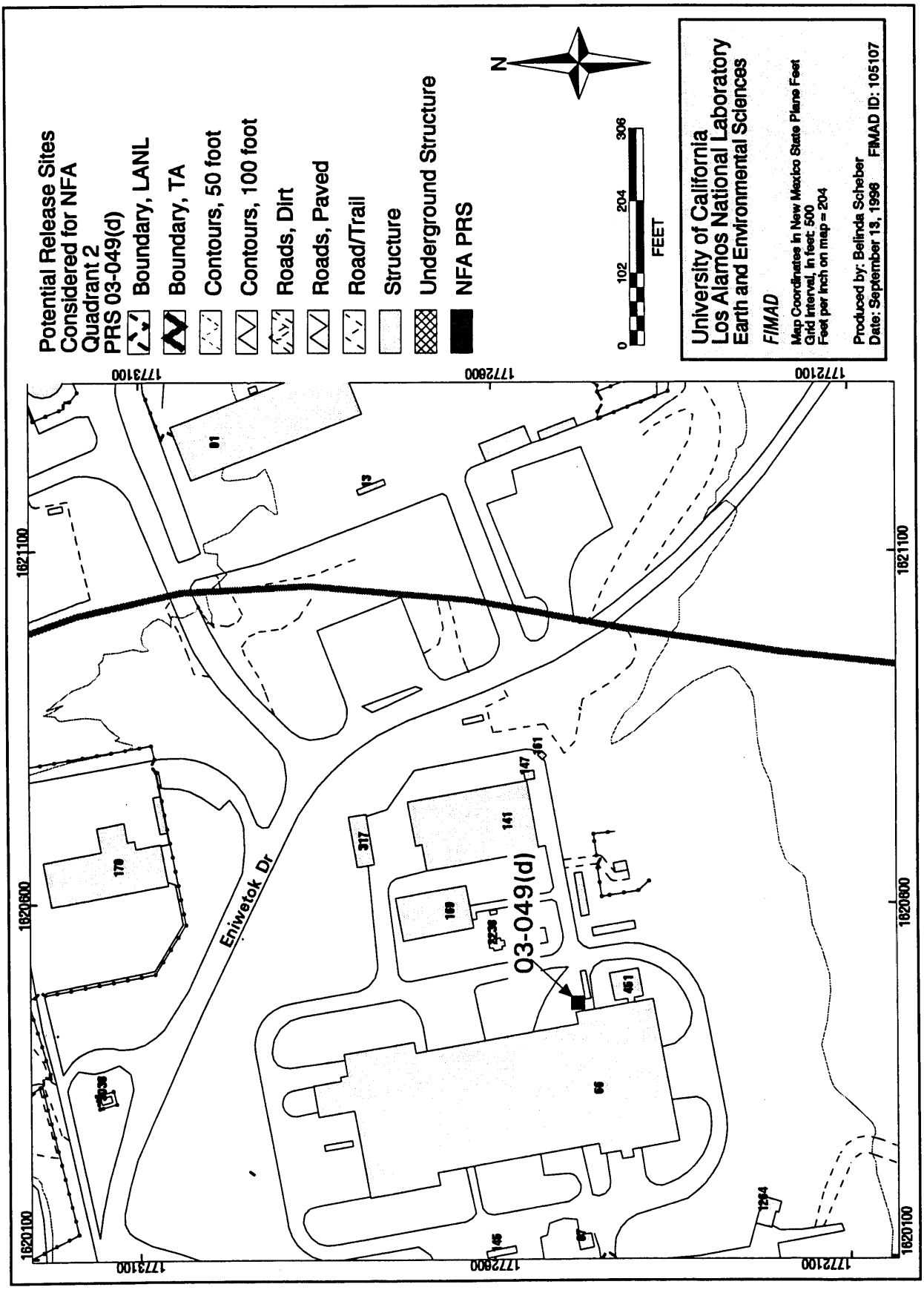


Figure 1-2. Technical areas at Los Alamos National Laboratory.



Potential release sites considered for NFA, TA-03
INDEX MAP



Potential release sites considered for NFA, TA-03, PRS 03-049(d)

6.3 Other Survey/Investigation Data

Section not applicable.

3-049(d)

ATTACHMENTS

Attachment A

MEMORANDUM

ERM/GOLDER Los Alamos Project Team

To: Operable Unit 1114 File

From: Bart J. Vanden Plas

Date: July 23, 1993

Regarding: MEETING AT SWMUs 3-049(c & d) NEAR BUILDING TA-3-066

On 3 June 1993, Valarie Rhodes, Paula Bertino, and I met with Joe Mitchell and Billy Hogan to discuss SWMUs 3-049(c and d). We met outside building TA-3-066 (the Sigma Building) since this SWMU is related to the steam lines that enter the Sigma Building. Mr. Mitchell showed us the two condensate tanks for the steam lines entering the Sigma Building. Both condensate systems are still active however the southern condensate system was not in operation during the SWMU visit.

The outfalls are on the east side of the Sigma Building about 200 feet apart. The areas around the outfalls are grassy with no noticeable staining. There was some evidence of stressed vegetation at the operating condensate system since there was hot water being discharged to the outfall (the hot water was the steam condensate). The amount of condensate flowing to the outfall was estimated to be much less than a liter a minute. The flow from the condensate system consists of only distilled water and does not contain any contaminants.

Joe Mitchell indicated that he had been associated with the Sigma Building since before it was built. Neither Joe or Billy knew of any other system within or without the Sigma Building that fit the descriptions for SWMUs 3-049(c and d). They both agreed that SWMUs 3-049(c and d) referred to the condensate tanks we observed. Therefore these SWMUs are considered to be duplicates of each other.

cc: Project File

SWMU 3-049(e) — Outfall (Inactive)

1.0 Introduction

1.1 Description

SWMU 3-049(e) is identified in the SWMU Report as possible soil contamination from an outfall pipe of unknown origin located south of TA-3-66, the Sigma Building, and discharging to Mortandad Canyon (LANL 1990, 0145, page 3-049) (Attachment A).

The SWMU Report incorrectly identifies SWMU 3-012(a) as an area contaminated in 1972 by a leak in the chilled water system at TA-3-66 during a scheduled scale removal using ammonium bifluoride solution. The chilled water system discharged soluble fluoride into Mortandad Canyon (LANL 1990, 0145, page 3-012) (Attachment B).

Because only one outfall could be found during several site visits to the area south of the Sigma Building and the location descriptions of both of the SWMUs in question are very similar in the SWMU Report, it was concluded that SWMUs 3-049(e) and 3-012(a) are the same outfall. Field Unit 1 opted to investigate this outfall as SWMU 3-012(a), which is addressed on page 6-25 of the RFI Work Plan for OU 1114 (LANL 1993, 1090) (text included as Attachment C).

1.2 No Further Action Basis

SWMU 3-049(e) is recommended for NFA because the site is a duplicate SWMU and has been investigated as SWMU 3-012(a) in the RFI Work Plan for OU 1114.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-049(e) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Section not applicable.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL, November 1990. "Solid Waste Management Units Report," page 3-049.

Attachment B: LANL, November 1990. "Solid Waste Management Units Report," page 3-012.

Attachment C: Writeup on SWMU 3-012(a) from page 6-25 of RFI Work Plan for Operable Unit 1114 (LANL 1993, 1090).

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Section not applicable.

3.2 Results of Sampling/Surveys

Section not applicable.

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0 and 2.0, 3-049(e) is recommended for NFA under Criterion 1.

5.0 References

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, p 6-40. (LANL 1995, 1291)

Los Alamos National Laboratory, July 1993. "RFI Work Plan for Operable Unit 1114," Los Alamos National Laboratory Report LA-UR-93-1000, Los Alamos, New Mexico; p 6-25. (LANL 1993, 1090)

Los Alamos National Laboratory, November 1990. "Solid Waste Management Units Report," Volumes I through IV, Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico, pages 3-012 and 3-049. (LANL 1990, 0145)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

Section not applicable.

6.3 Other Survey/Investigation Data

Section not applicable.

3-049(e)

ATTACHMENTS

Attachment A

3-049 SOIL CONTAMINATION FROM MORTANDAD CANYON OUTFALLS 10/31/90

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : OUTFALL
UNIT USE : DISPOSAL
OPERATIONAL STATUS : ACTIVE/INACTIVE
PERIOD OF USE : ? - PRESENT
HAZARDOUS RELEASE : SUSPECTED
RADIOACTIVE RELEASE : UNKNOWN

MATERIALS MANAGED : SOLID WASTE
HAZARDOUS WASTE

UNIT INFORMATION

Several outfalls serve as points of release for liquids into or near Mortandad Canyon.

SWMU NO.	STRUCTURES	ASSOCIATED PROCESS	STATUS
3-049(a)	TA-3-66	rinse water from 8 electroplating tanks in Room P-100 and effluent from the industrial chill water pit	active
	TA-3-127	effluent from cooling tower; surface discharge	active
3-049(b)	TA-3-35	discharge from a vacuum oil pump to south side of TA-3-35	active
3-049(c)	TA-3-66	discharge from condensate system	inactive since 1987
3-049(d)	TA-3-66	discharge of condensate from flash tanks	active
→ 3-049(e)	TA-3-66 (?)	outfall pipe located south of TA-3-66; origin unknown	unknown

The outfall that is associated with TA-3-127 is permitted and has NPDES serial number 022.

WASTE INFORMATION

Gold citrate and HCN are produced in the gold electroplating process. In addition, numerous metals, acids, and cyanide were used in the process of chromium plating. The cooling tower water was treated with organo-chelates. Oil and grease may have been discharged from the vacuum pump.

RELEASE INFORMATION

Oil stains are present below the outfall from the vacuum pump. Originally, the discharge went directly to the soil. In 1988, the outfall area was asphalted over. During an E.R. Program site survey, standing water was observed in the outfall area near both flash tank outfalls. No noticeable stains were present in the soil near the other outfalls.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-049(a)	**		Tsk 20 : 1	TA-3-66, -127
3-049(b)	**		Tsk 20 : 6	TA-3-35
3-049(c)	**		Tsk 20 : 7	TA-3-66
3-049(d)	**		Tsk 20 : 8 9	TA-3-66
3-049(e)	**		Tsk 20 : 10	SOUTH OF TA-3-66

** No corresponding E. R. Program unit.

SUMMARY

LOCATION : TA-3
TYPE OF UNIT(s) : OPERATIONAL RELEASE
UNIT USE : DISPOSAL
OPERATIONAL STATUS : INACTIVE
PERIOD OF USE : SEE BELOW
HAZARDOUS RELEASE : KNOWN
RADIOACTIVE RELEASE : NONE

MATERIALS MANAGED : HAZARDOUS WASTE

UNIT INFORMATION

In 1972, the chilled water system at TA-3-66 was scheduled for scale removal using an ammonium bifluoride solution. Leaks in the system resulted in discharge to the sewer which ultimately led to release of 600-700 pounds of soluble fluoride [3-012(a)] into Mortandad Canyon. Between 1950 and the 1970s, chromates were used to treat cooling water from the steam/electric generating plant, TA-3-22. Drift loss and the cooling water discharge to Sandia Canyon [3-012(b)] contributed to elevated hexavalent chromium in the surrounding area.

WASTE INFORMATION

The chilled water system discharged fluorine and, possibly, ammonium bifluoride to the sewer. The cooling water contained chromates.

RELEASE INFORMATION

The highest measured fluorine concentration in the Mortandad Canyon stream was 48 ppm. Drift loss from the cooling tower and discharges to an outfall resulted in a release of hexavalent chromium. Up to 34 ppm has been reported in the outfall. This liquid sank into the alluvium in Sandia Canyon within four miles of the outfall.

SWMU CROSS-REFERENCE LIST

SWMU NUMBER	CEARP IDENTIFICATION NUMBER(S)	RFA UNIT	E.R. RELEASE SITE INFO.	ASSOCIATED STRUCTURES
3-012(a)	**			TA-3-66
3-012(b)	TA3-1-CA-A/I-HW/RW	3.089	Tsk 19 : 42	TA-3-22

** No corresponding E. R. Program unit.

SWMU 3-049(e)

the subsurface. There are no records that tritium-contaminated waste was spilled from tar-lined drums.

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.

SWMU 3-013(c) was a cable cleaning site, now removed. From the 1960s until 1991, new steel cable received by the Laboratory was soaked in a kerosene bath to remove factory-applied preservatives (petroleum-based paraffins and greases). This cleaning operation was performed on a paved asphalt area located approximately 200 ft west of TA-3-38 in the Johnson Controls storage yard. Runoff flows south to a storm drain about 200 ft south of the pad [see SWMU 3-013(a) for a description of the drain].

SWMU 3-050(a) — Potential Soil Contamination From Active Exhaust Stack Emissions

1.0 Introduction

1.1 Description

SWMU 3-050(a) is potential soil contamination attributed to the exhaust emissions of 24 active exhaust stacks located at TA-3-29, a multi-story building consisting of six interconnected wings housing laboratories that conduct various research and development and analytical chemistry operations. The operations involve the handling of radioactive materials containing uranium, plutonium, iodine, mixed fission products, and tritium. High efficiency particulate air (HEPA), Aerosolve 95™ fabric, and charcoal filters have been used to remove radioactive particulates from the stack effluent (Balo 1982, 17-435) (Attachment A).The original building was constructed in 1952. In 1961, wing 9 was added to house an irradiated-fuel examination facility. TA-3-29 is currently undergoing a complete upgrade of ventilation systems in all wings.

1.2 No Further Action Basis

SWMU 3-050(a) is recommended for NFA because the site has been characterized in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk. Radioactive air emissions from the 24 stacks at TA-3-29 are monitored and documented (Stafford 1980, 17-969; LANL 1994, 17-1008) (Attachments B, Appendix A Attachment 2). Available radioactive air emissions data show that approximately 0.081 Ci of plutonium-238 and -239, 0.0032 Ci of uranium-235 and -238, 0.0032 Ci of mixed fission products, 0.008 Ci of iodine-131, and 11,000 Ci of tritium were released from TA-3-29 between 1953 and 1992 (LANL 1994, 17-1028) (Appendix A Attachment 3). CAP88-PC calculation for the emissions indicates that the emissions were not sufficient to cause radioactive deposition in excess of SALs.

The information stated above and in Section 3.0 clearly indicates that there is no potential soil contamination exceeding an acceptable level of risk from the 24 active exhaust stacks located at TA-3-29. In addition, LANL does not identify locations suspected of radiological only contamination as SWMUs, but as AOCs. This distinction is made because DOE is the regulatory authority for radiological concerns. This area of suspected soil contamination was not the site of hazardous waste management, but rather incorrectly designated as a SWMU based solely on erroneous supposition of the potential for the presence of radioactivity.

After reviewing the RFI Work Plan for OU 1114, the US Environmental Protection Agency concurred that SWMU 3-050(a) be proposed for removal from the HSWA Module of the Laboratory's Hazardous Waste Facility Permit (Appendix A Attachment 1, page 3, note preceding Specific Comment 12) via a Class 3 permit modification request.

2.0 History

2.1 Historical Operations

Research and development and analytical chemistry laboratories that conduct various operations that involve the handling of radioactive materials containing uranium, plutonium, iodine, mixed fission products, and tritium.

2.2 Previous Audits, Inspections, and Findings

Attachment A: LANL Report, "Waste Management Site Plan," (Balo 1982, 17-435)

Attachment B: LANL Memorandum, "CMR Building, FE-19 Filter Plenum and Stack," (Stafford 1980, 17-969)

Appendix A Attachment 1: US EPA, Letter from D. W. Neleigh to T. J. Taylor listing deficiencies for OU 1114, Work Plan Addendum 1.

Appendix A Attachment 2: LANL Memorandum, "Available Radioactive Air Emissions Reports Concerning SWMUs 3-050 (a through g)," (LANL 1994, 17-1008)

Appendix A Attachment 3: LANL Memorandum, "Radioactive Air Emissions from TA-3 SM-16, 29, 34, 35, 40, and 102," (LANL 1994, 17-1028)

3.0 Evaluation of Relevant Evidence

3.1 Unit Characteristics and Operating Practices

Research and development and analytical chemistry laboratories that conduct various operations that involve the handling of radioactive materials containing uranium, plutonium, iodine, mixed fission products, and tritium.

3.2 Results of Sampling/Surveys

A Technetium-99 stack release in 1991 contaminated two laboratory rooms and the associated ductwork of the exhaust system in wing 1 (LANL 1994, 17-1135) (Attachment C). Soil samples collected from underneath and outside the first floor air vent of wing 1 were surveyed immediately after this release, and the results showed no detectable activity (LANL 1994, 17-1137). (Attachment D).

The EPA requires use of CAP-88 (Clean Air Act Assessment Package-1988) or AIRDOS-PC computer models for determining compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for emissions of radionuclides at DOE facilities (EPA 1995) (Appendix A Attachment 4).

Comparisons made between the CAP-88 predictions of annual average ground-level concentration and actual environmental measurements taken by the Office of Radiation Programs indicate agreement between these two approaches. CAP-88 has been used by the LANL Radionuclide Air Emission Management (RAEM) group to determine the effective dose equivalents for NESHAPS compliance for airborne radionuclide emissions. Meteorological data and most of the radioactive air emission data are obtained from the LANL RAEM group, and those parameters are input to the CAP-88 PC model to calculate the radionuclide ground deposition from TA-3 stack releases. CAP-88 tends to overestimate radiation doses in the complex terrain around Los Alamos because it does not take into account dilution of airborne radionuclides by terrain-induced turbulence.

CAP88-PC uses Pasquill's modified Gaussian plume equation to estimate the average dispersion of stack-released radionuclides. In the CAP88-PC calculation, all the stacks from SWMU 3-050 (a) are considered as one point source of radioactive air emissions due to their geographic locations. Additionally, all radioactive air emissions are assumed in the form of particulates. Heavier annual precipitation, slower stack gas exit velocity, lower mixing height, and lower stack height of one meter were used instead of the actual parameters in the CAP88-PC calculation to ensure conservative results. The release height of the stack is the sum of the stack height and the plume rise. The plume rise is calculated based on momentum of the exit gas at ambient temperature. Meteorological data collected at TA-6 (the nearest meteorological station) and Los Alamos population data were used for the CAP88-PC calculation.

Air concentration, dry deposition rate, wet deposition rate, and ground deposition rate of radionuclides in 16 directions at various distances around the stack were computed. The ground deposition rate is the highest deposition rate, and therefore represents the most conservative radionuclide deposition scenario. For this reason, it is used to calculate the emission necessary to cause the radioactivity concentration in soil to exceed screening action level (SAL). Soil density of 1.8 g/cm^3, and 0.1 cm of soil mixing depth were employed to estimate the total emission necessary to cause the radioactivity concentrations in soil to exceed current SALs.

Available annual data on the total known radioactive releases from the associated stacks range from 2 to 40 years. To ensure conservative results, the actual data were normalized in the calculation to show the potential radioactive air emission within 40 years of operation. These values are shown in the table, Radioactive Air Emission Summary, below.

RADIOACTIVE AIR EMISSION SUMMARY

RADIONUCLIDES	RADIOACTIVE AIR EMISSION WITHIN 40 YEARS OF OPERATION (Ci)	ESTIMATED VALUE TO TRIGGER SOIL SALS[a] (Ci)
Tritium	360,000	4.8×10^9
Plutonium-238 and -239	0.081	7.6×10^3
Uranium-235 and -238	0.0081	5.7×10^3
Mixed fission products	0.0067	2.8×10^3
Iodine-129/-131	0.025	8.7×10^2
Beryllium	---[b]	---[b]

* Based on 0.1 cm of soil mixing depth.

** No report on TA-3-40 is available; no beryllium data were found; however, in 1955 2 air samples and 14 swipe tests showed negligible amounts of beryllium.

These radioactive releases are at least four orders of magnitude lower than the minimum radioactivity necessary to cause soil contamination exceeding SALs (Radian 1993, 17-1192) (Appendix A Attachment 5).

In addition, actual data from preliminary soil screening results in locations surrounding TA-3 from 1991 through 1993 show alpha, beta, and gamma activities at background levels (Fresquez 1991, 17-259; Fresquez 1992, 17-1026) (Appendix A Attachments 6 and 7).

3.3 Gaps in Information

Section not applicable.

3.4 Risk Evaluation

Section not applicable.

4.0 Rationale for No Further Action Decision

Based on evidence outlined in Sections 1.0, 2.0, and 3.0, SWMU 3-050(a) is recommended for NFA under Criterion 5.

5.0 References

Balo, K. A., J. L. Warren, December 1982. "Waste Management Site Plan," Los Alamos National Laboratory Report LA-UR-82-3666, Los Alamos, New Mexico. (Balo 1982, 17-435)

Environmental Protection Agency, July 1995. "National Emission Standards for Hazardous Air Pollutants," Code of Federal Regulations, Title 40, Part 61, Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities," Washington, DC. (EPA 1995)

Environmental Protection Agency Region 6, November 1995. "Notice of Deficiency, Addendum 1 to Work Plan for Operable Unit (OU) 1114, Los Alamos National Laboratory," letter to T. J. Taylor, Program Manager, Department of Energy, Los Alamos National Laboratory, from D. W. Neleigh, Chief, New Mexico, Federal Facilities Section, Dallas, Texas.

Fresquez, P., October 22, 1992. "Collection of Soil Samples at SWMU 3-010(a)," Los Alamos National Laboratory Memorandum EM-8:92-3234 to E. Griggs (CLS-DO) from P. Fresquez (EM-8), Los Alamos, New Mexico. (Fresquez 1992, 17-1026)

Fresquez, P., August 12, 1991. "Results of an Environmental Restoration Interim Action (ERIA) Waste Survey at the Van De Graff Underground Storage Tank Removal Project at TA-3," Los Alamos National Laboratory Memorandum EM-8:91-52 to R. Gonzales (EM-13) from P. Fresquez (EM-8), Los Alamos, New Mexico. (Fresquez 1991, 17-259)

Los Alamos National Laboratory, January 25, 1994. "Available Radioactive Air Emissions Reports Concerning SWMUs 3-050(a through g)," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (LANL 1994, 17-1008)

Los Alamos National Laboratory, August 15, 1994. "Interview with Mr. Al Cucchiara on Technetium-99 Release at CMR Building Wing 1," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (Los Alamos National Laboratory. (LANL 1994, 17-1137)

Los Alamos National Laboratory, August 11, 1994. "Occurrence Report on Technetium-99 Release at CMR Building Wing 1," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (LANL 1994, 17-1135)

Los Alamos National Laboratory,February 9, 1994. "Radioactive Air Emissions from TA-3 SM-16, 29, 34, 35, 40, and 102," Memorandum Prepared by ERM (Environmental Resource Management) Under Contract 9-X52-F2078-1, Los Alamos, New Mexico. (LANL 1994, 17-1028)

Los Alamos National Laboratory, July 1995. "RFI Work Plan for Operable Unit 1114, Addendum 1," Los Alamos National Laboratory Report LA-UR-95-731, Los Alamos, New Mexico, pp 6-31 through 6-34. (LANL 1995, 1291)

Radian Corp., December 22, 1993. "Air Emission SWMUs," Radian Corp. Memorandum prepared by R. Hueske to OU 1114 Technical Team, Los Alamos National Laboratory, New Mexico. (Radian 1993, 17-1192)

Stafford, R. G., March 7, 1980. "CMR Building, FE-19 Filter Plenum and Stack," Los Alamos National Laboratory Memorandum H-1-PF-80-35 to J. E. Dummer (H-1) from R. G. Stafford (H-1), Los Alamos, New Mexico. (Stafford 1980, 17-969)

6.0 Annexes

6.1 RFI Analytical Results

Section not applicable.

6.2 Site Map

Section not applicable.

6.3 Other Survey/Investigation Data

Section not applicable.

3-050(a)

ATTACHMENTS

LA-UR - 82 - 3666

Attachment A

ER Record I.D.# 0007205

Los Alamos National Laboratory is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36

TITLE: WASTE MANAGEMENT SITE PLAN
LOS ALAMOS NATIONAL LABORATORY
DECEMBER 1982

AUTHOR(S): KAREN A. BALO
JOHN L. WARREN

SUBMITTED TO: US DEPARTMENT OF ENERGY

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Los Alamos
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Los Alamos, New Mexico 87545

FY 1982, this level was 10 nanocuries of alpha activity per gram (nCi/g) of waste. In accordance with the original AEC/ERDA Manual, Chapter 0511, Los Alamos obtained approval to store its ^{238}Pu wastes over 100 nCi/g, and bury wastes below this level as low-level. DOE Order 5820, effective 9/30/82, defines TRU wastes as solid materials contaminated with TRU radionuclides in excess of 100 nCi/g. The following description of Los Alamos Waste Management operations is based on the earlier DOE definitions of TRU wastes.

II.1.1 TA-2, Omega Site

Primary facilities located at the Omega Site and operated by the Reasearch Reactor Group (INC-5) are the Omega West Reactor (OWR) and an equipment building. The OWR is a water-cooled uranium-fueled reactor facility used for research and irradiation studies. The equipment building houses the ion-exchange columns used for cleanup of primary circulating cooling water and make-up water. These operations generate small quantities of solid, liquid, and gaseous wastes contaminated with mixed fission and activation products. Gaseous effluents are monitored for radioactivity and vented to the atmosphere after an approximate 1-h delay.

II.1.2 TA-3-29, Chemistry Metallurgy Research (CMR) Building

The CMR Building, located in TA-3, is an R&D facility composed of six interconnected wings. Wing 9 houses an irradiated-fuel examination facility; the other five (wings 2, 3, 4, 5, and 7) house numerous and varied R&D and analytical chemistry operations. Significant volumes of solid, liquid, and gaseous wastes with significant levels of radioactivity are generated by these operations.

Solid radioactive wastes from all wings are packaged and transported to TA-54 for disposal or retrievable storage. Liquid wastes are discharged to holding tanks that drain to an underground pipe-line system terminating at TA-50. Gaseous wastes from wings 2, 5, 7, and 9 pass through high-efficiency particulate air (HEPA) filters before release to the atmosphere. In wings 3 and 4, Aersel 95 filters are used.

II.1.2.1 TA-3-29 (Wings 2 and 4)

The Physical Metallurgy Group (MST-5) conducts a variety of operations within these two wings. Basic physical metallurgical research includes the determination of thermochemical, physical, and mechanical properties, often at very high pressures, and crystal structures. Applied physical metallurgical research encompasses safety analyses, compatibility investigations, structural and mechanical property determinations, and production of new metastable alloy phases by splat cooling techniques. Group MST-5 also operates a facility for heat treating and testing SNAP $^{238}PuO_2$ fuel spheres and samples. Substantial amounts of depleted uranium alloys and compounds are prepared in these wings and occasionally small amounts of enriched uranium are used for preparations or experiments. All recoverable amounts of ^{238}Pu, ^{239}Pu, and enriched uranium, whether liquid or solid, are sent to the Plutonium Process Technology Group (MST-12) for recovery.

The Physical Chemistry Group (CHM-2) also has activities in these wings but is not a major waste generator.

II.1.2.2 TA-3-29 (Wings 3, 5, and 7)

The Analytical Chemistry Group (CHM-1) is responsible for furnishing analytical chemical services and the analysis of radioactive materials from research, production, and recycle operations for the entire Laboratory. Again, all recoverable amounts of plutonium and uranium are sent to MST-12 for recovery.

II.1.2.3 TA-3-29 (Wing 9)

The Irradiated Materials Examination Group (MST-14) conducts examinations of irradiated reactor-fuel rods which include physical measurements, specimen cutting and preparation, and examination of fuel rod specimens by photomicrography. During these operations, varying quantities of gamma-active wastes that require special handling procedures are generated. Gamma-active solid waste exceeding 5 R/hr at the package surface and gamma-active TRU solid waste exceeding approximately 25 R/hr at the package surface require special handling and are transported in a cask to TA-54 for shaft burial/storage. Lower level gamma-active

TRU solid wastes are packaged in 210-L (55-gal) drums with internal shielding to allow contact handling. Filled drums are transported to TA-54 for storage.

Some small volumes of solutions generated in the hot cells--plutonium etchant, uranium/fission product solutions, and reacted Na and NaK solutions--require special handling, packaging, and disposal. These solutions are poured into dry vermiculite and packaged in a 3.8-L (1-gal) can containing dru vermiculite. Handling and disposal by shaft burial or storage of these cans is according to the same procedures for the higher level solid wastes described above.

Other beta-gamma-contaminated liquid wastes from the hot-cell operations are collected in stainless steel storage tanks at the site. Tank contents can be treated by cation exchange and transferred to concrete storage tanks for low-level ($<10^{-3}$ Ci/m^3 alpha and/or $<10^{-2}$ Ci/m^3 beta) wastes or they can be pumped to a portable steel tank for delivery to TA-50 for treatment. Wastes in the concrete tanks, from laboratory sinks, decontamination operations, etc., are sampled and then discharged to the industrial waste sewer system for treatment at TA-50.

II.1.3 **TA-3-35, -66, and -141, Sigma Complex**

The location consisting of buildings SM-35, -66, and -141 of TA-3 is commonly called the Sigma Complex and is operated by the Materials Techology Group (MST-6), develops and fabricates materials for the many Laboratory programs. A brief summary of the scope and type of radioactive material processing within this group is included on a section-by-section basis.

The Ceramics-Powder Metallurgy Section processes ^{238}U, ^{235}U, and ^{232}Th in the forms of carbides, oxides, nitrides, or hydrides. The Metal Processing Section performs a variety of metal processing steps on ^{235}U, ^{238}U, ^{232}Th and, on occasion, metal containers for ^{3}H. The uranium can be hot-rolled, warm- and cold-rolled, swaged, forged, drawn, or extruded. The Plastics Section has never been required to process radioactive material. The Electrochemistry Section performs electropolishing and acid etching on ^{238}U, ^{235}U, and ^{232}Th. The ^{238}U and ^{232}Th

Attachment B

LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO 87545

OFFICE MEMORANDUM

TO : Jerome E. Dummer, H-1 Group Leader

DATE March 7, 1980

FROM : Ronald G. Stafford, H-1, Alan K. Stoker, H-8

SUBJECT : CMR BUILDING, FE-19 FILTER PLENUM AND STACK

SYMBOL : H-1-PF-80-35

MAIL STOP 503

In early 1971 plans were initiated to upgrade the ventilation systems for Wings 2, 5 and 7 in the CMR Building. These wings were those handling substantial quantities of plutonium and the project, upon completion, would produce the largest incremental reduction of plutonium effluents from any facility at Los Alamos. The south side of Wing 3 was identified as principally a low level plutonium operations wing. The upgrading involved installation of two (2) banks of HEPA filters in series with an upstream prefilter. Table 1 shows the yearly effluent from Wings 2, 5 and 7 from 1953 through 1979. Note that the filter upgrading was completed in late 1973 for Wing 2 and early 1974 for Wings 5 and 7. The HEPA filter upgrade did, in fact, have a significant impact on the total plutonium released to the environment from LASL facilities.

Exhaust from the glovebox processes and rooms on the south side of Wing 3 are filtered through plenum FE-19 which contains a demister, one stage of M-80 prefilters, and one stage of Americian Air Filter Continental 2000 filters. Each work day there is a sequental water spray initiated at several locations throughout the primary duct leading from the laboratories to the filter plenum. This spray serves two purposes; first, it removes any particulate build-up on the walls of the duct and secondly, it eliminates the build-up of acids used in dissolution processes through the wing. The majority of the water mist is then removed by the demister upstream of the prefilters. Water collected by the demister drains into a tank under the plenum which, in turn, drains to the acid waste sewer line. This system is absent of an automatic fire protection or suppression system. The Continental 2000 filters are "bag filters" and have a published efficiency of 85% with a 0.3 μm dioctyl phthalate (DOP) aerosol. A similar filter, Aerosolve 95, was used in this plenum prior to July, 1976. Since the beginning of calendar year 1974 stack FE-19 has been the major release point for plutonium at LASL as indicated in Table 2.

Releases from FE-19 began to increase during the month of February, 1979, as shown in Figure 1. Two of the filters had actually torn, and consequently, the entire bank of filters was changed in early March. During the filter change, air flow was reversed from FE-19 to the FE-20 plenum which contains

a low grade filter media. This flow diversion would also automatically take place if the ventilation system associated with FE-19 failed. FE-20 normally serves uranium operations from the north side of Wing 3, however, during this flow reversal 143 μCi of plutonium was released from the FE-20 stack. After the filter change the DOP tests performed by H-5 revealed an approximate 80% efficiency for the entire FE-19 filtering system. Although the filter change resulted in a decrease in Pu emissions for three (3) months, there appeared to be a gradual increase for the following six (6) months (June to November, see Figure 1). CMB-1 management assured H-1 that there were no changes in their operations during this period which would result in an increased release of activity. From December 1979 to the second week in January, 1980 weekly stack discharges from FE-19 were relatively low, however, increased concentrations were measured after that date. Table 3 which gives the FE-19 1980 discharge results to date, indicated a gradual increase in discharge. As a result of the noted increase the FE-19 filters were DOP tested by H-5 in early February and results indicated the bank efficiency was only 29.3%. Duct samplers are being installed at various locations of the glovebox process exhaust of Wing 3 to attempt to identify the origin of the high releases. In addition, all the FE-19 filters will be changed on March 8, 1980. During the Feburary 1980 filter efficiency test, representatives from H-1 and H-5 entered the filter plenum to observe the integrity of the system. A memorandum from John Ortiz, H-5, listed the condition of the filter system as follows:

1. Some of the filters are completely plugged.
2. The filters are not properly secured to frame.
3. Filter clamping devices are missing for all filters.
4. Accumulation of rusty debris throughout the filter plenums.
5. Noticeable deterioration of filter holding frame.
6. Noticeable deterioration of the filter plenum due to heavy rust accumulation.

In June, 1971 H-1 requested that a study be done by ENG-2 to estimate the cost of replacement or upgrading of the existing two filter plenums in Wing 3 to accommodate two banks of HEPA filters. An additional "Alternate A" plan was also suggested by H-1 which would allow for separate HEPA filtration for the offices of Wing 3 as was done in Wings 2, 5 and 7 in 1974. The initial estimates, were $2,156,000 and $2,332,220, respectively.

This section provides a context of environmental information in which to judge the significance of the airborne plutonium releases from LASL; specifically the increase in emissions observed from CMR in 1979. DOE regulations require adherence to the "As Low As Practicable" (ALAP) principle in relation to emissions of radioactivity. Operationally this means emissions are to be controlled to levels producing effects no more than Radiation Protection

Standards permit and as much below those levels as achievable within technologic and economic bounds. Environmental monitoring over the years has demonstrated that LASL airborne plutonium emissions have resulted in virtually unmeasureable effects, 4 to 5 orders of magnitude below standards in recent years. A 100-fold reduction in airborne plutonium emissions between 1972 and 1977 was achieved by a several million dollar cost and was considered an outstanding effort consistent with the ALAP principle. Thus, a 10-fold plutonium emissions increase in 1979 over 1978, with CMR Wing 3 accounting for 98% of the total, appears unacceptable.

However, the full context of the ALAP principle should be considered. The ALAP principle embraces an implied philosophy of overall cost-effectiveness and a concommitant desirability to maximize marginal benefits, i.e. to achieve the greatest reduction in adverse effects for a given expenditure. Thus it is necessary to understand the known effects of all LASL emissions, including plutonium and other radioactive materials.

From a perspective of environmental consequences there are two important facts: First, environmental measurements indicate the LASL airborne plutonium emissions, even with the increase during 1979, have caused no statistically significant increase in off-site ambient air concentrations over those due to worldwide fallout. Second, other LASL airborne emissions, though well within standards, cause measureable increases in ambient radioactivity concentrations as well as measured and calculated doses to occupied, off-site locations as much as several hundred times greater than the maximum theoretically attributable to plutonium.

We believe that management must consider these two conclusions regarding environmental consequences of LASL airborne emissions along with potential improvements to occupational radiation conditions, engineering feasibility, and economic aspects in order to reach a sound conclusion regarding the ordering of priorities and determineing levels of effort appropriate to future reductions of plutonium and other radioactive emissions from LASL.

The strength of our conviction in the two major environmental conclusions was based on a review and analysis of a large amount of data. The basic interferences leading to the conclusions are summarized below and followed by a discussion of the data.

From a national perspective there are two main conclusions:

1. There has been no measureable difference in annual average airborne plutonium concentrations outside the LASL boundry compared with measurements made in other parts of the country based on data from 1971 - 1979.

2. Emissions of airborne plutonium from LASL during 1977 and 1979 were 1/10 to 1/100 as much as the releases from three other DOE facilities, and 10 to 25 times as much as those of two other facilities. In 1979, when LASL emissions increased over 1977-1978 releases by about a factor of 10, the comparison is expected

to show LASL emissions ranging from about 0.15 to 1.0 times the higher emissions and 100 to 200 times the lower emissions.

From a local perspective there are six main points:

1. No measureable difference between regional, perimeter, and on-site annual average airborne ^{239}Pu concentrations occurred during the period 1971 - 1979, i.e. no apparent correlation between average airborne ^{239}Pu concentration and emissions even though emissions decreased by two orders of magnitude between 1971 and 1978, and then increased by one order of magnitude between 1978 and 1979.

2. Increased Pu emissions during 1979 probably contributed to some individual air sampling station maximum airborne Pu concentrations during individual sampling periods, but there is no overall correlation spatially to temporally with released activity from any outside identifiable source.

3. One on-site air sampling location (TA-54) has shown consistently elevated airborne ^{239}Pu concentrations during its four-year period of operation (1976-1979), which is probably a result of localized resuspension rather than stack emissions.

4. The maximum calculated off-site plutonium lung doses in 1979 were about 0.008 mrem, or 0.0005% of the Radiation Protection Standard. This dose is about 0.008% of the 100 mrem/yr lung dose due to natural airborne radioactivity as estimated by the NCRP.

5. Airborne emissions (^{11}C, ^{13}N, ^{15}O) and direct radiation from one facility resulted in maximum individual whole body doses based on direct measurements during 1978 and 1979 that were between 100 and 1000 times greater than possible lung doses from airborne Pu. (Radiation Protection Standards permit lung doses 3 times as much as whole body doses.)

6. Other airborne emissions from LASL facilities cause consistently measureable increases above regional background airborne concentrations (HTO), or theoretically calculable increases in concentrations (^{41}Ar), which translate into probable maximum individual whole body doses between 10 and 100 times greater than possible lung doses from airborne Pu.

Discussions of Data:

Table 4. Data from three stations which officially report to the DOE EML in other parts of the country with long periods of record are presented for comparison with the LASL monitoring network group averages. Measurements from other parts of the country show the same pattern. The only annual average from a LASL network group which is at all different from the nation-wide stations is the On-Site Group average for 1976, and this is attributable

to individual measurements at the TA-54 location. The years 1976 and 1979 are of particular significance because there was essentially no spring downmixing of worldwide fallout from the stratosphere to the troposphere resulting in low annual averages and optimizing the possibility of seeing locally deviations from the worldwide pattern.

Data on plutonium emissions are presented in the bottom portion of the table. The data on LASL emissions from 1971 through 1979 show the decline in emissions by about two orders of magnitude between 1971 and 1977. With the exception of the 1976 On-Site Group average, discussed above, there is no apparent correlation with the airborne concentrations of ^{239}Pu. (Data on ^{239}Pu, not presented in the table, are much less extensive on a nationwide basis and more uncertain. The ^{239}Pu concentrations measured by LASL were somewhat higher than, but statistically not different from, data measured elsewhere in 1971 - 1973. The ^{238}Pu concentrations measured during those years were the same both on and off site further supporting the inference of no local influence even during the years when emissions were at a maximum.)

The 1979 data are a special interest because of both the increased CMR releases and the low fallout background. The annual averages for the station groups show no statistical difference. Even the apparent difference of the perimeter and regional averages, about 3 aCi/m^3, would result in a calculated lung dose of about 0.001 mrem/yr which is about 7×10^{-5} percent of the Radiation Protection Standard.

Emissions from several other DOE facilities during 1977 and 1978 are presented for comparison at the bottom of the table. The data were taken from site monitoring reports, site impact statements, and the EPA report on radioactivity as a potential carcinogen.

Figure 2 shows a graphic comparison of the time sequence of the emissions from CMR and the airborne concentrations of ^{239}Pu as measured during the 5 sampling periods of 1979. While there is a large amount of detailed information presented there are only a few important patterns to note. The most significant aspect is the comparison of second and fourth quarter data. During the second quarter the group averages were higher than during the fourth quarter by factors of about 7, yet during the second quarter the total emissions were lower than during the fourth quarter by a factor of about 23. Both perimeter and on-site individual station maxima were higher during the second quarter than during the fourth quarter further indicating that the overall patterns are dominated by worldwide fallout.

Patterns during other sampling periods are less clear largely because there is more variability between stations. It is possible to infer that some of the variability and individual station maxima are attributable to the increased emissions from CMR given the vagaries of complex terrain meterological transport and the fact that single, sub-micron particles could account for the total amount of ^{239}Pu found on sampling filters. However, this must be tempered by the fact that there is no consistency between the periods.

This is evident by tracing the measured values at several of the stations which exhibited group maxima during one period but were quite low during other periods. Good examples are the 48th Street and Royal Crest stations. Both showed higher than group average values during the second and fourth sampling periods but below group average values during the other three periods and do not apparently correlate with the changing pattern of CMR releases. These two stations are the closest off-site stations to CMR.

Table 5. The annual averages for the sampling network groups measurements of tritiated water vapor (HTO) during the years 1977-1979 are presented for comparison. While there is considerable variability in the data, it is evident that there is a very consistent pattern of the On-Site Station Group being about 4 times higher than the regional group, with the perimeter station average falling in between. The inference is that LASL facility emissions of tritium and/or tritiated water vapor are having a distinct and readily measureable effect on the levels of tritiated water vapor in the vicinity of the site. The levels are still low, about 0.002% of the Radioactivity Concentration Guide in the case of the 1979 perimeter station average, for example. See discussions of Table 6 regarding doses attributable to these levels.

Table 6. This table presents a summary of the Maximum Individual Doses as given in the annual surveillance reports to provide a context of inferred effects due to the various LASL emissions. The footnotes to the table are important especially in that they indicate the degree of conservatism (pessimism) in the estimates. The basic conclusion is that even given conservative assumptions, the maximum off-site lung dose potentially attributable to plutonium emissions is consistently smaller than whole body doses attributable to or measured from other emissions. In particular, even with increased emissions during 1979, the lung dose attributable to plutonium emissions is about the same as for 1978 and is about 0.3% of the whole body dose based on direct TLD measurements attributable to activated air isotope emissions.

Summary

This study was prompted by recent increased plutonium emissions from FE-19, an exhaust air stack and air filtration system that serves the south side of Wing 3 of the SM-29 CMR Building. The study involved 1) inspection and testing of existing filters and plenum; 2) an indepth review and assessment of the impact these releases have on environmental airborne plutonium levels; 3) preparation of an engineering study for installation of a new HEPA filtered exhaust air system; and, 4) a review of plutonium operations conducted in Wing 3.

Findings and conclusions of the study include:

1. The present filters have a lower than spec. filtration efficiency and are scheduled for replacement on March 8 and 9, 1980.

2. Plutonium releases from FE-19 do not cause detectable increases in airborne plutonium levels at environmental air sample locations.

3. Airborne emissions of argon-41 and activated air isotopes cause whole body doses between 10 and 100 times greater than possible lung doses from airborne plutonium in the vicinity.

4. Estimated costs for installing a new HEPA filtered system ranged from $2.16M to $2.33M.

5. Plutonium analytical analysis and sample preparation operations are conducted in Wing 3. No correlation between operational activity and release levels has been determined.

Installation of a new HEPA filtered system in Wing 3 is not justified at this time. However, a decision to never install a new system will require implementation of more stringent and perhaps unacceptable controls on plutonium operations that can be performed in Wing 3 and/or installation of several local HEPA filtered systems. Improved filter maintenance and replacement procedures must also be implemented for the existing system.

RGS/mr

cc: E. E. Campbell, H-5 MS-486
A. L. Cucchiara, H-1 MS-503
J. C. Gallimore, H-1 MS-749
R. D. Geoffrion, H-1 MS-749
W. R. Hansen, H-8 MS-490
W. J. Maraman, CMB-DO MS-756
A. K. Stoker, H-8 MS-490
A. M. Valentine, H-1 MS-401
G. R. Waterbury, CMB-1 MS-740
H-1 PF Files

Attachment B

TABLE 1

OMR Building Gross Alpha Effluent in Microcuries

Year	Wing 2	Wing 5	Wing 7
1953	24	-	-
1954	352	337	426
1955	984	374	397
1956	361	1151	374
1957	297	183	315
1958	435	316	2062
1959	139	151	323
1960	207	953	499
1961	241	400	574
1962	37	139	544
1963	156	42	347
1964	258	-	305
1965	244	139	1053
1966	136	42	627
1967	578	109	2992
1968	1597	722	3201
1969	1259	3960	5251
1970	5200	3900	4100
1971	6650	2000	5300
1972	3030	1400	3290
1973	3101	1371	3698
1974	5*	184**	206***
1975	0.57	0.45	0.96
1976	0.543	1.394	0.314
1977	2.687	8.101	1.016
1978	0.084	0.013	0.258
1979	0.263	0.646	0.149

* Upgrade completed 2/73
** Upgrade completed 2/74
*** Upgrade completed 11/74

Attachment B

TABLE 2

FE-19 STACK RELEASES

Year	Pu Effluent uCi	% of Total Pu Effluent
1974	333.0	42.0%
1975	206.0	47.0%
1976	28.0	41.0%
1977	13.6	11.0%
1978	51.3	45.8%
1979	917.2	84.5%

Attachment B

TABLE 3

FE-19 1980 Stack Effluent

Sampling Period	Effluent µCi
12/18/79-1/4/80	2.04
1/4/80-1/11/80	3.62
1/11/80-1/18/80	24.11
1/18/80-1/25/80	91.21
1/25/80-2/1/80	2.16
2/1/80-2/8/80	245.79
2/8/80-2/15/80	231.82
2/15/80-2/22/80	51.97

TABLE 4

Attachment B

SUMMARY OF ENVIRONMENTAL MONITORING AND EMISSION DATA

Annual Average Atmospheric ^{239}Pu Concentrations (aCi/m^3)

	1971	1972	1973	1974	1975	1976	1977	1978	1979
EML, New York	60 ± 46	27 ± 14	13 ± 6	39 ±29	20 ± 14	6	21	32 (Qtr. 1)	
Miami	65 ± 45	31 ± 18	17 ± 13	46 ± 41	21 ± 20	7.4 ± 3.6	23 ± 12	53 (Qtr. 1)	
Salt Lake City	110 ± 95	61 ± 36	24 ± 15	62 ± 48	50 (Qtr.1)				
LASL									
Regional/ Offsite	61 ± 32	44 ± 12	21 ± 16	27 ± 5	19 ± 4	4.1 ± 0.3	16 ± 24	20 ± 39	5.0 ± 14
Perimeter			26 ± 15	27 ± 4	24 ± 10	5.2 ± 1.6	26 ± 94[a]	27 ± 43	8.1 ± 30
Onsite	60 ± 63	46 ± 21	15 ± 5	26 ± 3	20 ± 2	22 ± 53[b]	21 ± 33	32 ± 67[b]	8.3 ± 33[b]

a 1977 Perimeter average and deviation strongly influenced by one measurement at Bayo STP.

b 1976 - 79 On-Site averages and deviations influenced by TA-54 station as consistent maximum

Annual Total Plutonium (238 + 239) Airborne Emissions (uCi)

	1971	1972	1973	1974	1975	1976	1977	1978	1979
LASL	10508	10855	8727	793	246	66	127	112	1086

Other Sites:

From annual surveillance reports or EISs

S	5100	7100
M	9	14
R	4	
H	2800	2500
I	1350	
L	0	0

Attachment B

TABLE 5

Airborne Tritiated Water Vapor Concentrations
(pCi/m^3)

Year	1977	1978	1979
Regional	13 ± 33	4 ± 9	3 ± 9
Perimeter	23 ± 55	13 ± 33	5 ± 15
On-Site	52 ± 184	18 ± 48	12 ± 42

Attachment B

TABLE 6

Maximum Individual Annual Radiation Doses[2]
Attributable to LASL Airborne Effluents
(mrem/yr)

Emission	Critical Organ	1977	1978	1979
^{239}Pu[b]	lung	<0.06	0.008	0.008
HTO[b]	whole body	0.09	0.03	0.008
^{41}Ar[c]	whole body	0.9	0.7	1.0
^{11}C, ^{13}N, ^{15}O	whole body	~2[d]	3.8[e]	3.1[e] + 3.0[f]

a) Doses estimated for actual, occupied off-site locations.

b) ^{239}Pu and HTO doses claculated from actual or apparent increment in measured airborne concentration above regional average at the maximum off-site station.

c) Doses based on airborne concentration estimated by theoretical dispersion.

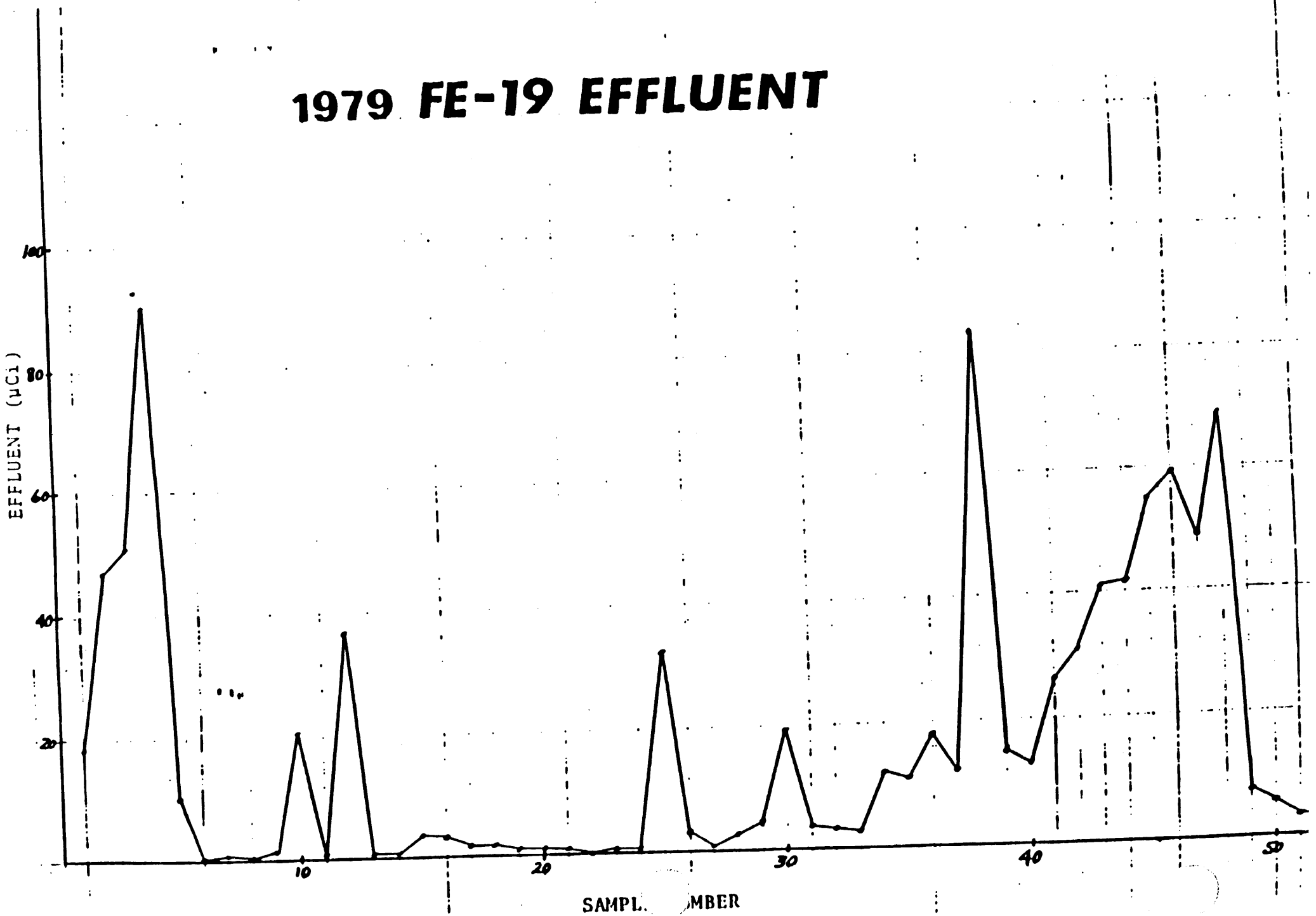
d) Estimated from theoretical dispersion modified by knowledge from subsequent TLD measurements.

e) Based on actual TLD measurement.

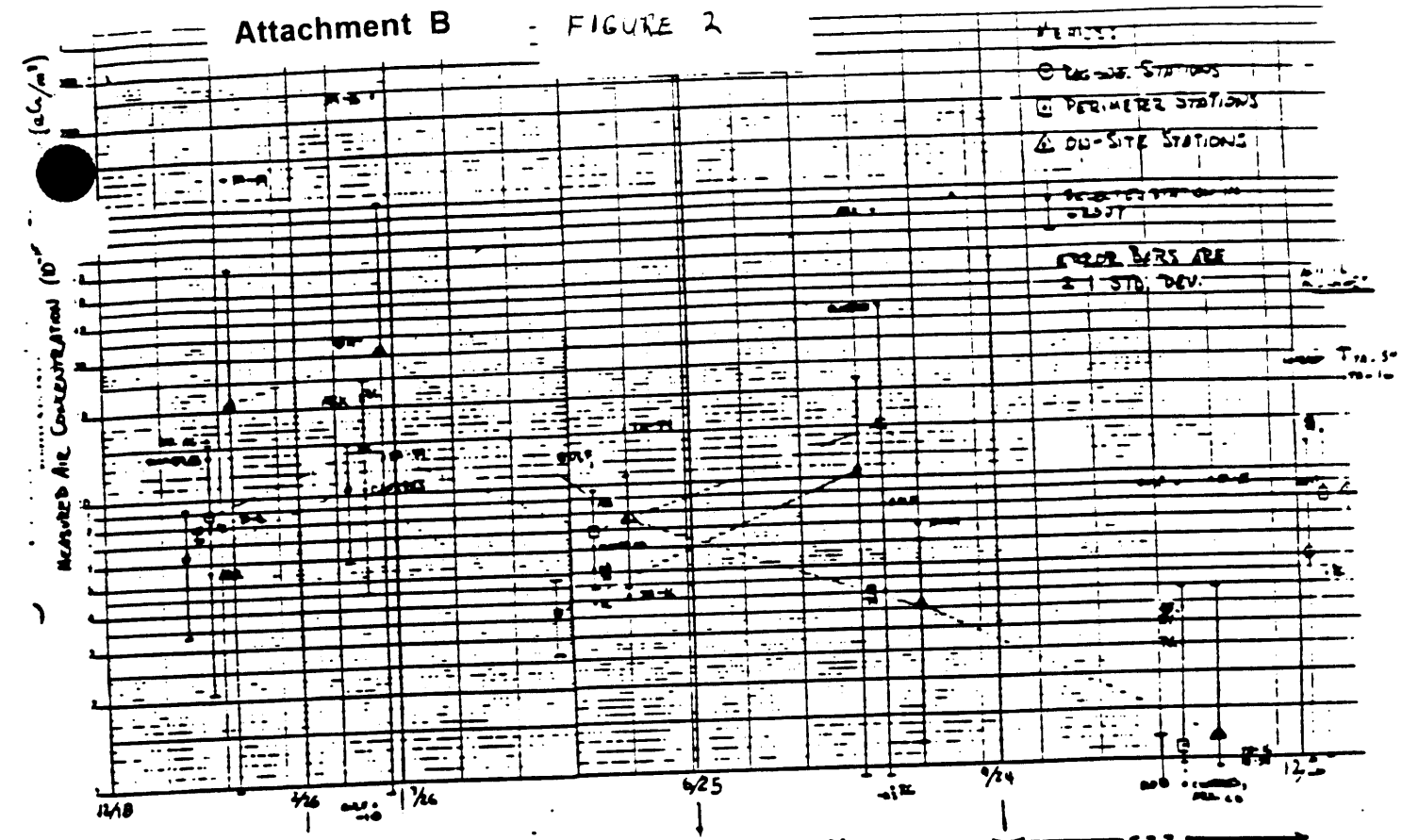
f) Based on TLD measurements of direct radiation from LAMPF during periods when no emissions were occurring.

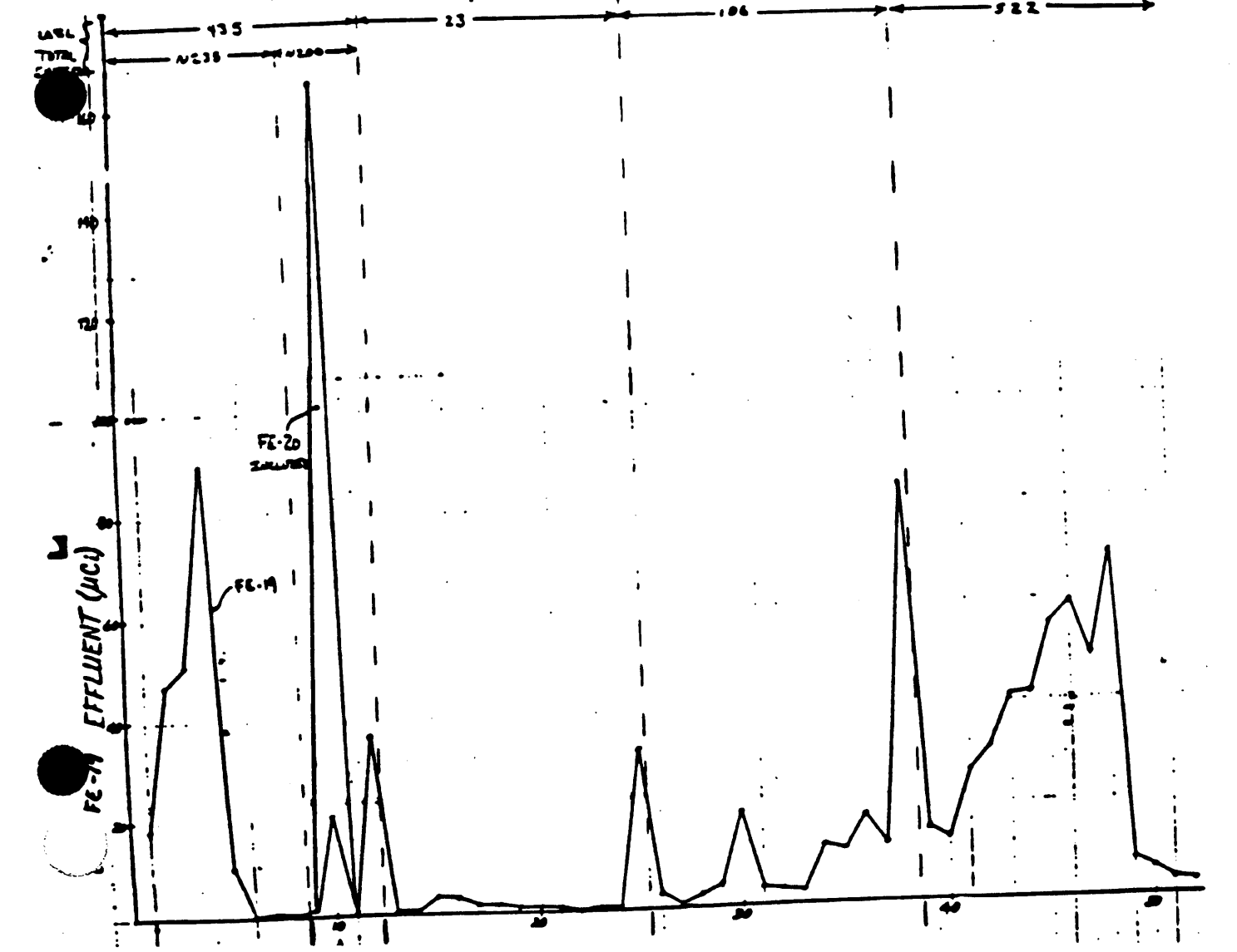
FIGURE 1

Attachment B



Attachment B - FIGURE 2





3-001135

MEMORANDUM

To: OU 1114 Project File 17020

From: Michelle Y. Morgenstern

Date: August 11, 1994

Regarding: **Occurrence Report on Technetium-99 Release at CMR Building Wing 1**

I spoke with Ms. Theresa Cull on August 10, 1994 about the technetium-99 release at CMR building Wing 1. Ms. Cull is the Facility Manager at CMR building. Mr. Keith Olson suggested ERM/Golder personnel to contact Ms. Cull to obtain a copy of a one-page memo written by Mr. Al Cucchiara to DOE on the CMR wing 1 technetium-99 incident.

Ms. Cull was not able to locate a copy of the memo written by Mr. Cucchiara. Ms Cull indicated that some radioactivity was detected in the laboratoy and some duct work, but she does not know if technetium-99 was ever released to the atmosphere. Ms. Cull recalled that the survey results on the first floor vent and the soil around it outside Wing 1 at CMR building showed no detectable activity.

A copy of the occurrence report for the release of technetium-99 at CMR building Wing 1 provided by Ms. Cull is attached.

istry & Metallurgy Research

(Name of Facility)

Plutonium Processing & Handling

(Facility Function Involved)

LOS ALAMOS NATIONAL LABORATORY

(Name of Laboratory, Site or Organization)

Name: Elliott, Alverton A.
Title: Occurrence Report Section Leader
Telephone No.: (505)665-0033 (FTS)855-0033

(Facility Manager/Designee)

Name: KEITH OLSON
Title: RPM CONTRACTOR/HS-1
Telephone No.: (505)667-4093 (FTS)843-4093

(Originator)

1. OCCURRENCE REPORT NUMBER: ALO-LA-LANL-CMR-1991-1010

2. REPORT TYPE AND DATE:

	Date	Time
[ ] Notification Report	08/22/91	1426 (MTZ)
[ ] 10 Day Report	10/18/91	
[ ] 10 Day Update (latest)		
[X] Final Report		

3. OCCURRENCE CATEGORY :

[ ] Emergency
[ ] Unusual
[X] Off-Normal

4. DIVISION OR PROJECT :

MST-5

5. DOE PROGRAM OFFICE :

DP - Defense Programs

SYSTEM, BLDG., TA-3-29,RM 1119&1117
OR EQUIPMENT:

7. UCNI? : No

8. PLANT AREA : TA-3

9. DATE AND TIME DISCOVERED :

08/21/91 1100

10. DATE AND TIME CATEGORIZED :

08/21/91 1430

11. DOE NOTIFICATION :

--/--/-- ----

12. OTHER NOTIFICATIONS :

08/22/91	1458	Mike Peck	LAAO
08/22/91	1456	Sig Hecker	LAB DIR

13. SUBJECT OR TITLE OF OCCURRENCE :

Loss of Control of Radioactive Material Within a Controlled Area in Excess of Established Guidelines.

NATURE OF OCCURRENCE :

1) Facility Condition
D. Loss of Control of Radioactive Material

15. DESCRIPTION OF OCCURRENCE :

A survey performed as part of a continuing decontamination and cleanup effort detected surface Beta contamination on the walls and floors in excess of Los Alamos National Laboratory's Administrative Limit (2.5 millirem per hour) in two abandoned laboratory modules in Wing 1 of Building 29 in Technical Area 3. Contaminated laboratory equipment had been found in these laboratory modules over one year ago and had recently been removed and properly discarded. Additional decontamination and cleanup efforts have been ongoing since that time.

THE NAME APPEARING AS FACILITY MANAGER IN THIS REPORT IS AUTHORIZED TO ACT AS FACILITY MANAGER DESIGNEE FOR THE PURPOSE OF DATA TRANSMITTAL ONLY. THE ACCOUNTABLE FACILITY MANAGER FOR RESOLUTION IS THERESA CULL, (505) 667-7586.

16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE :

Normal

---

17. ACTIVITY CATEGORY :

Facility Decontamination/Decommissioning

---

18. IMMEDIATE ACTIONS TAKEN AND RESULTS :

The extent of the area and the activity levels of the contamination are being surveyed. A Special Work Permit is being prepared for the decontamination of the area where the contamination in excess of limits was detected. Laboratory posting has been reviewed and updated. Preliminary surveys of the air plenum have been performed. No contamination was detected. Fixed head air monitoring is being continued. Health Physics Operations (HS-1) is coordinating the radiological surveys of the area.

This report has been reviewed by an Authorized Derivative Classifier (Alverton A. Elliott) on February 11, 1992, and determined to be unclassified.

19. DIRECT CAUSE :

1) Equipment/Material Problem
F. Contamination

20. CONTRIBUTING CAUSE(S) :

2) Procedure Problem
A. Defective or Inadequate Procedure

21. ROOT CAUSE :

6) Management Problem
A. Inadequate Administrative Control

---

22. DESCRIPTION OF CAUSE :

Contamination of the walls and floors in these laboratory modules resulted from inadequate procedures in the past for

handling radioactive materials. Poor administrative control over the use of radioactive materials resulted in the contamination going undetected until cleanup of the laboratory was initiated. The employee who is believed to have caused the contamination is no longer working at the Laboratory.

---

23. EVALUATION : (By Facility Manager/Designee)

The control measures and practices specified in DOE Order 5480.11, "Radiation Protection for Occupational Workers," have been implemented in the CMR Building during the past two years. Current practices, including administrative control over the use of radioactive materials, should prevent similar incidents from recurring. Project and program costs should include cleanup and decommissioning after the project or program is discontinued.

---

24. IS FURTHER EVALUATION REQUIRED? : Yes [ ] No [X]

IF YES - BEFORE FURTHER OPERATION? : Yes [ ] No [X]

BY WHOM? :

BY WHEN? : --/--/--

---

25. CORRECTIVE ACTIONS :
(* = Date added/revised since final report was signed off)

1) No. 1
Responsible Group/Division: MST-5/HS-1
Complete decontamination and decommissioning (D&D) of laboratory modules.

TARGET COMPLETION DATE: ~~05/31/92~~ 03/31/94 COMPLETION DATE: ~~03/31/94~~ --/--/--

2) No. 2
Responsible Group/Division: MST-DO
Memo to Central Policy Office to request Laboratory policy to include allocations for D&D in project and program costs.

TARGET COMPLETION DATE: 02/14/92 COMPLETION DATE: 10/23/92 --/--/--

IMPACT ON ENVIRONMENT, SAFETY AND HEALTH :

None.

27. PROGRAMMATIC IMPACT :

None.

28. IMPACT UPON CODES AND STANDARDS :

None.

29. FINAL EVALUATION AND LESSONS LEARNED :

Projects and programs need to have a specified line item cost dedicated to and usable only for cleanup and decommissioning after a program has been discontinued or completed. Past Laboratory management policies have been inadequate in addressing this need.

SIMILAR OCCURRENCE REPORT NUMBERS :

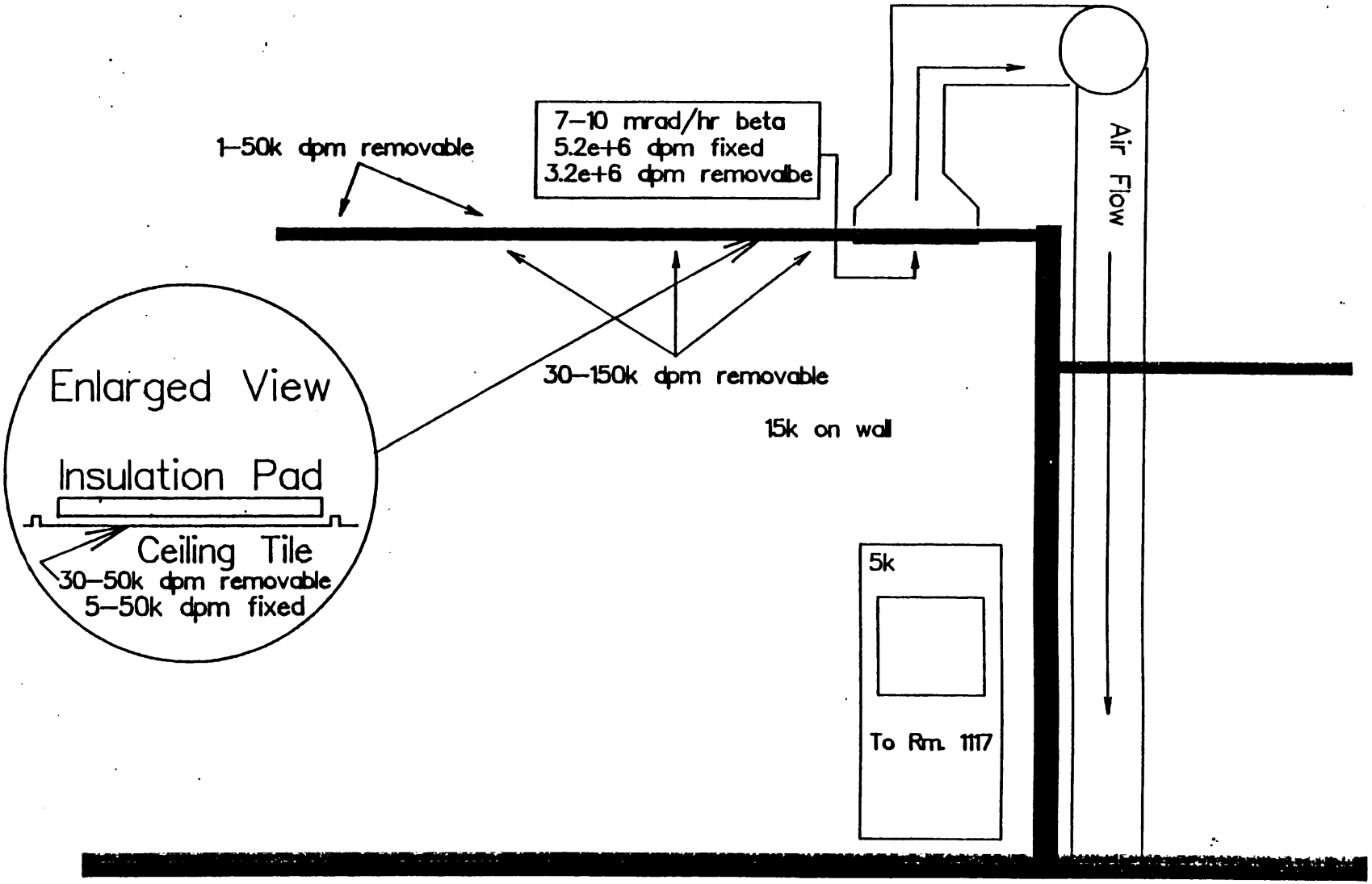
None.

31. DOE FACILITY REPRESENTATIVE INPUT :

Entered by: Date: --/--/--

Isotope Z A	Half-life	Type of decay ($\clubsuit$); % abundance; Mass excess (Δ^sM−A), MeV (C^{12}=0); Thermal neutron cross section (σ), barns	Class; Identification; Genetic relationships	Major radiations: approximate energies (MeV) and intensities	Principal means of production
$_{43}Tc^{96m}$	52m (MedH50, EasH53)	$\clubsuit$ IT (MedH50) β^+ =0.01% (EasH53) Δ −85.8 (LHP, MTW)	B chem, excit (MedH50) chem, excit, sep isotopes (MedH52)	γ Tc X-rays e^- 0.013, 0.032 daughter radiations from Tc^{96}	Nb^{93}(α,n) (EasH53)
Tc^{97}	2.6 x 10^6 y yield (KatcS58a) others (BoydG54)	$\clubsuit$ EC (BoydG54) Δ −87 (MTW)	A genet (BoydG51a) chem (KatcS58a) [daughter Tc^{97m}] (BoydG51a) daughter Ru^{97} (99+%) (KatcS58a)	γ Mo X-rays	Ru^{96}(n, γ)Ru^{97}(β^-) (KatcS58a) Mo^{97}(d, 2n) (BoydG54)
Tc^{97m}	91 d (BoydG54, HelmhA41a) 90 d (MotE48b, GugP47, CacB37) 87 d (UniJ59) 95 d (EdwJ47)	$\clubsuit$ IT (HelmhA41a, EdwJ47) Δ −87 (LHP, MTW)	A chem (PerrC37, CacB37) chem, genet (MotE47) excit, sep isotopes (MotE48b) daughter Ru^{97} (0.04%) (KatcS58a)	γ Tc X-rays e^- 0.075, 0.094	Mo^{96}(d, n) (CacB37, PerrC37, CacB39) Mo^{97}(p, n) (EdwJ47) Mo^{97}(d, 2n) (MotE48b) Ru^{96}(n, γ)Ru^{97}(β^-) (KatcS58a)
Tc^{98}	1.5 x 10^6 y sp act (OKelG56b) others (KatcS55)	$\clubsuit$ β^- (KatcS55) Δ −86.5 (MTW) σ_c 3 (to Tc^{99m}) (GoldmDT64)	A chem, mass spect (BoydG55)	β^- 0.30 max γ 0.66 (100%), 0.76 (100%)	Mo^{98}(p, n) (BoydG55) Ru^{96}(n, γ)Ru^{97}(β^-) Tc^{97}(n, γ) (KatcS55, KatcS58a)
Tc^{99}	2.12 x 10^5 y sp act (FrieS51) 2.15 x 10^5 y sp act (BoydG60)	$\clubsuit$ β^- (LincD51, SchumR51) Δ −87.33 (MTW) σ_c 22 (GoldmDT64)	A chem (LincD46, SchumR46) chem, mass spect (IngM47g) daughter Tc^{99m} (SeaG39, HahO41a) descendant Mo^{99} (MotE47a)	β^- 0.292 max γ no γ	fission (IngM47g, LincD51, SchumR51) Mo^{98}(n, γ)Mo^{99}(β^-) (MotE47a)
Tc^{99m}	6.049 h (GleG64) 6.00 h (ByeD58) others (GleL51d, BaiK53, PortR60, CreT65)	$\clubsuit$ IT (SeaG39) Δ −87.18 (LHP, MTW)	A chem, genet (SeaG39) daughter Mo^{99} (SeaG39, SagR40a, MedH49, GleL51d, MihJ51) parent Tc^{99} (SeaG39, HahO41a)	γ Tc X-rays, 0.140 (90%) e^- 0.001, 0.119	daughter Mo^{99} (SeaG39, SagR40a, MedH49, GleL51d, MihJ51)
Tc^{100}	15.8 s (BoydG52a) 17.5 s (HouR52) 17 s (CsiG63)	$\clubsuit$ β^- (HouR52) Δ −85.9 (MTW)	A sep isotopes (HouR52) sep isotopes, n-capt (BoydG52a)	β^- 3.38 max γ 0.540 (strong), 0.60 (strong), 0.71, 0.81, 0.89, 1.01, 1.31, 1.49, 1.8	Tc^{99}(n, γ) (BoydG52a, OKelG58) Mo^{100}(p, n) (HouR52) Rh^{103}(n, α) (CsiG63)
Tc^{101}	14.0 m (OKelG57, MauW41, HahO41b) 14.3 m (WileDR54) 14.5 m (PerlmM48) 16.5 m (MacD48)	$\clubsuit$ β^- (SagR40) Δ −86.32 (MTW)	A chem, genet (SagR40) daughter Mo^{101} (BotW41, HahO41a, HahO41b, MauW41, SagR40)	β^- 1.32 max γ 0.13 (3%, complex), 0.307 (γ 91%), 0.545 (γ 8%)	Mo^{100}(n, γ)Mo^{101}(β^-) (SagR40, SagR40b, MauW41)
Tc^{102}	4.5 m (FleJ54, FleJ57)	$\clubsuit$ β^- (FleJ56a) Δ −85 (MTW)	B chem, genet energy levels (FleJ56a, FleJ57)	β^- 2 max γ 0.47	Ru^{102}(n, p) (FleJ57) fission (FleJ56a)
Tc^{102}	5 s (FleJ54) others (HahO41a)	$\clubsuit$ β^- (HahO41a) Δ −85 (MTW)	C chem, genet (HahO41a, FleJ54) daughter Mo^{102} (HahO41a, HahO41b, FleJ54)	β^- 4.4 max	daughter Mo^{102} (HahO41a, HahO41b, FleJ54)
Tc^{103}	50 s (KieP63a, VBaeA65) 72 s (FleJ57)	$\clubsuit$ β^- (KieP63b) Δ −84.9 (MTW)	B excit (FleJ57) chem, genet (KieP63a) [parent Ru^{103}] (KieP63a) daughter Mo^{103} (KieP63a)	β^- 2.2 max γ 0.135 (↑ 17), 0.21 (↑ 10), 0.35	fission (KieP63a, KieP63b, VBaeA65) Ru^{104}(n, np) (FleJ57)
Tc^{104}	18 m (FleJ56a, KieP62)	$\clubsuit$ β^- (FleJ56a, KieP62) Δ −82.2 (MTW)	B chem (FleJ56a) chem, genet energy levels (KieP62) daughter Mo^{104} (KieP62)	β^- [3.8-max] (weak), 4.6 max γ 0.36, 0.53, 0.89, 1.15, 1.25, 1.37, 1.6 (complex), 1.9, 2.2 2.7, 3.2, 3.4, 3.7, 4.0, 4.4, 4.7	fission (FleJ56a, KieP62) Ru^{104}(n, p) (FleJ57)
Tc^{105}	7.7 m (KieP62a) 7.8 m (VBaeA65) 10 m genet (FleJ55a, FleJ56a)	$\clubsuit$ β^- (BornH43b) Δ −82.6 (MTW)	B chem, genet (BornH43b) parent Ru^{105}, daughter Mo^{105} (BornH43b, FleJ55a, KieP62a) ancestor Rh^{105} (KieP62a)	β^- 3.4 max γ 0.110 daughter radiations from Ru^{105}	fission (BornH43b, FleJ55a, FleJ56a, KieP62a, VBaeA65)

TA-3,SM-29,WING-1, RM-1119



HPT T Kerl, J. Atencio, K Olsa ESP-1/HP-260 7434 EFF (%) 10 Cal Due 2/13/92

DATE 8/20/91 RO-3C 2625 Cal Due 8/7/91

Attachment C

MEMORANDUM

ERM / GOLDER LOS ALAMOS PROJECT TEAM

To: OU 1114 Project File 17020

From: Michelle Y. Morgenstern

Date: August 15, 1994

Regarding: **Interview with Mr. Al Cucchiara on Technetium-99 Release at CMR Building Wing 1**

I spoke with Mr. Al Cucchiara of LANL ESH-1 on August 11, 1994 about the technetium-99 release at CMR building Wing 1. Mr. Cucchiara was Keith Olson's supervisor while the survey of technetium-99 contamination in CMR building was conducted. Mr. Keith Olson suggested Al Cucchiara to be contacted for a one-page memorandum written by Mr. Cucchiara to DOE on the technetium survey results.

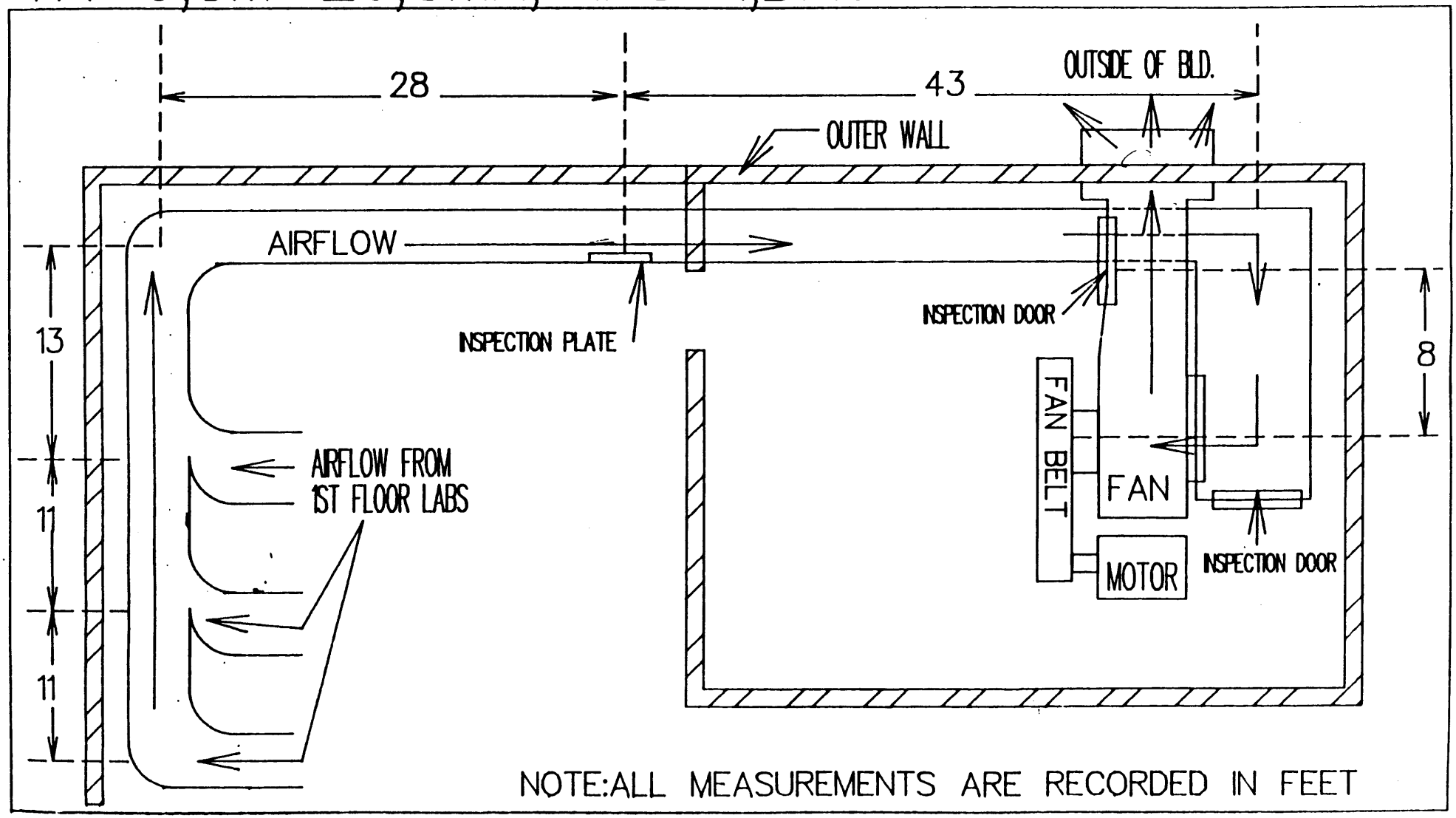
Mr. Cucchiara stated that he did not wirte any memorandum to DOE on the technetium survey results, however, he did edit a report originated from the DOE Los Alamos Area Office ESH group documenting the technetium-99 incidents to clarify a few details. Mr. Cucchiara indicated that the memorandum emphasized the details of the incident including relevant history of the research activities and the exposure of the individual who had been exposed to technetium-99. The report does not address the environmental survey results. However, Mr. Cucchiara stated that he remembered the soil outside the CMR building by the vent was surveyed, and the results showed no detectable activity.

Radiological survey results and the DOE report provided by Mr. Cucchiara are attached.

[redacted]

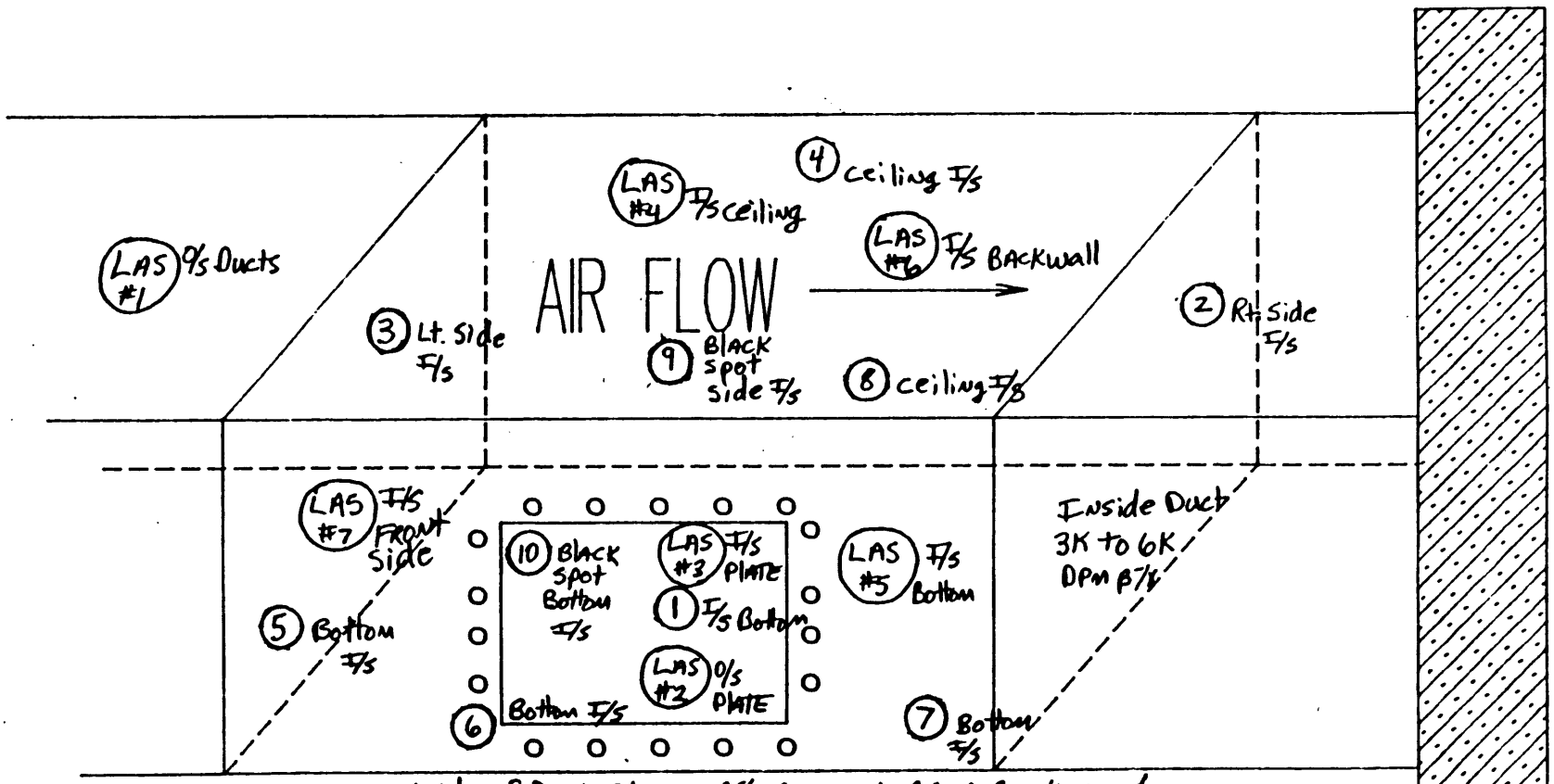
Attachment D

TA-3,SM-29,CMR,WING-1,BASEMENT DUCTWORK



Attachment D

TA-3,SM-29, CMR, EXHAUST DUCT AND INSPECTION PLATE



ESP-1/HP-260 P/N # 7434 BKG: 86 cpm % EFF: 10%

LUD-139 P/N # 3965 BKG: <50 cpm % EFF: 50%

HPT: Tom L. Karl, K. Olson

PRINTED NAME: Tom L. Karl, K. Olson DATE: 8-26-91

Attachment D

LARGE AREA SMEAR RESULTS

Instrument	P/N No.	Cal Due:	% Eff.	Bkg.
ESP-1 HP-260	7434	2-13-92	10%	86cpm
Lud.-139	3665	1-1-92	50%	<50cpm
N/A				→

[redacted]

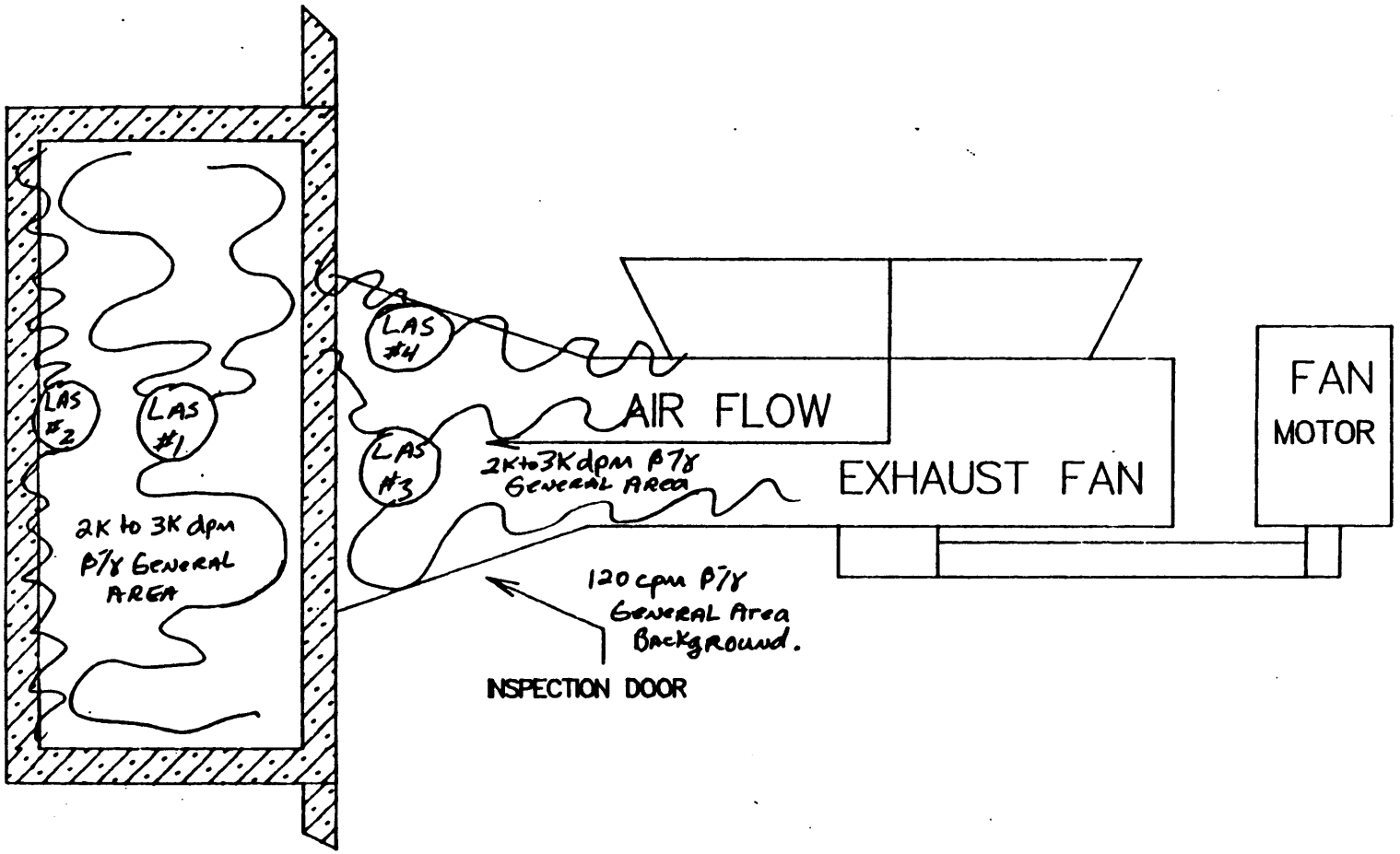
Location	Ta-3, Sm-29, Wing 1 Room(s) Basement Ducts

Exhaust Duct and Inspection Plate.

Location or Smear No.	Beta/Gamma		Alpha	
	Cpm	Dpm	Cpm	Dpm
#1 Outside of Duct's	<MDA	<MDA	<MDA	<MDA
#2 Outside of Inspection plate	↓	↓		
#3 Inside of Inspection plate	500	5K		
#4 Ceiling Inside	750	7.5K		
#5 Bottom INSide	450	4.5K		
#6 BACKINSide	350	3.5K		
#7 FrontInSide	350	3.5K	↓	↓

Hpt Signature: Tom L. Karl Date: 8-26-91

TA-3,SM-29,CMR,WING-1 EXHAUST FAN SYSTEM



ESP-1/HP-260 P/N #: 7434 BKG: 120 cpm % EFF: 10%

LUD-139 P/N #: 3665 BKG: <50 cpm % EFF: 50%

HPT: Tom R. Karl, KL

PRINTED NAME: T.C. Karl, K. Olson DATE: 8-27-91

Attachment D

LARGE AREA SMEAR RESULTS

Instrument	P/N No.	Cal Due:	% Eff.	Bkg.
ESP-1 HP-260	7434	2-13-92	10%	68 cpm
Lud.-139	3665	1-1-92	50%	<50 cpm
N/A				

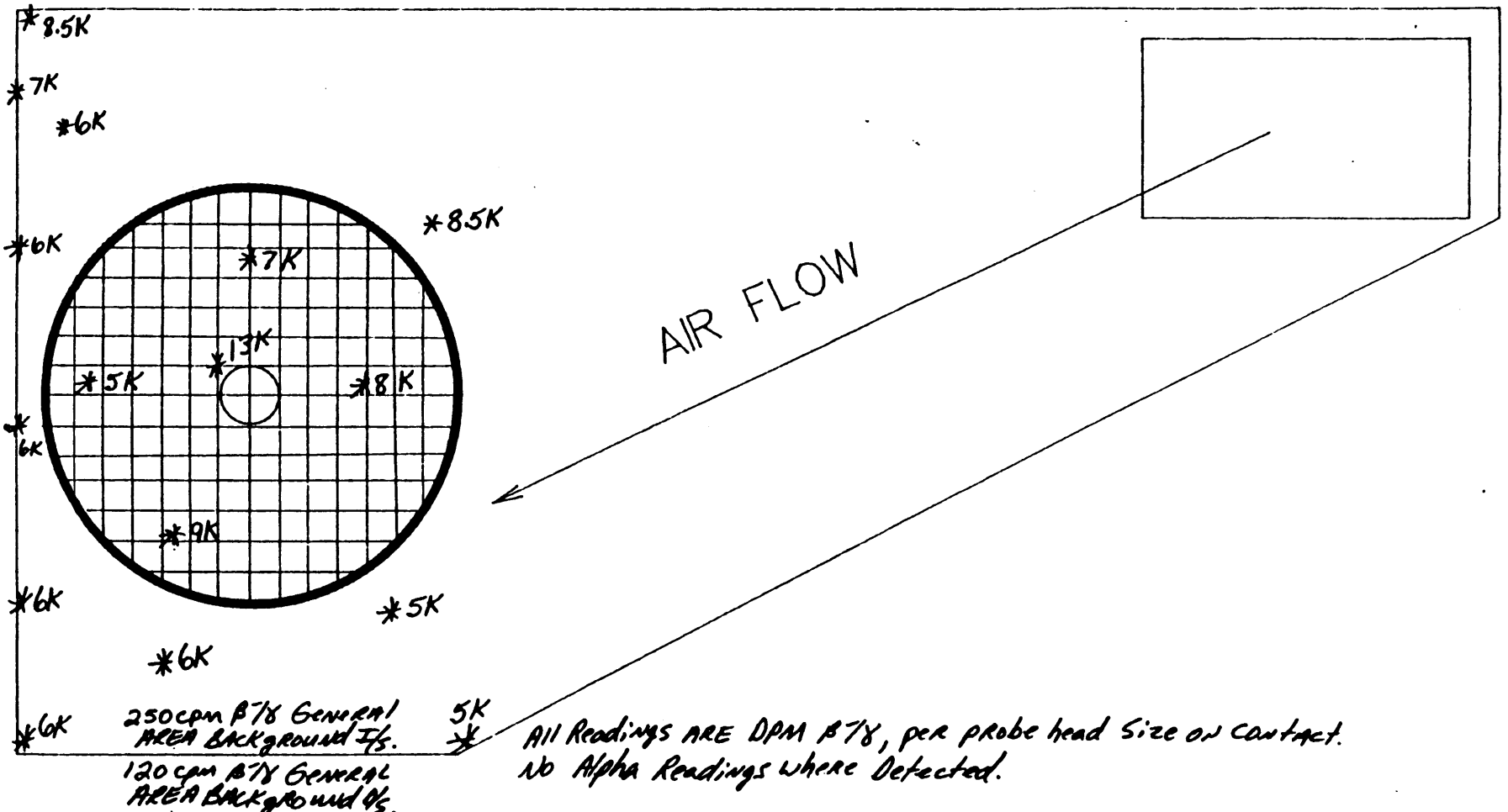
OFFICIAL USE ONLY

Location	Ta-3, Sm-29, Wing 1 Room(s) Basement Ducts

Location or Smear No.	Beta/Gamma		Alpha	
	Cpm	Dpm	Cpm	Dpm
#1 Bottom Floor	<MDA	<MDA	<MDA	<MDA
#2 BACK Wall	↓	↓	↓	↓
#3 FRONT Floor	↓	↓	↓	↓
#4 Side Wall	250	2.5k	↓	↓

Hpt Signature: Tom L. Karl Date: 8-27-91

TA-3,SM-29,WING-1, EXHAUST DUCT



ESP-1/HP-260 P/N #: 7434 BKG: 120cpm % EFF: 10%

LUD-139 P/N #: 3665 BKG: <50cpm % EFF: 50%

HPT: Tom L. Karl

PRINTED NAME: Tom L. KARL DATE: 8-27-91

Attachment D

LARGE AREA SMEAR RESULTS

Instrument	P/N No.	Cal Due:	% Eff.	Bkg.
ESP-1 HP-260	7434	2-13-92	10%	68cpm
Lud.-139	3665	1-1-92	50%	<50cpm
N/A				

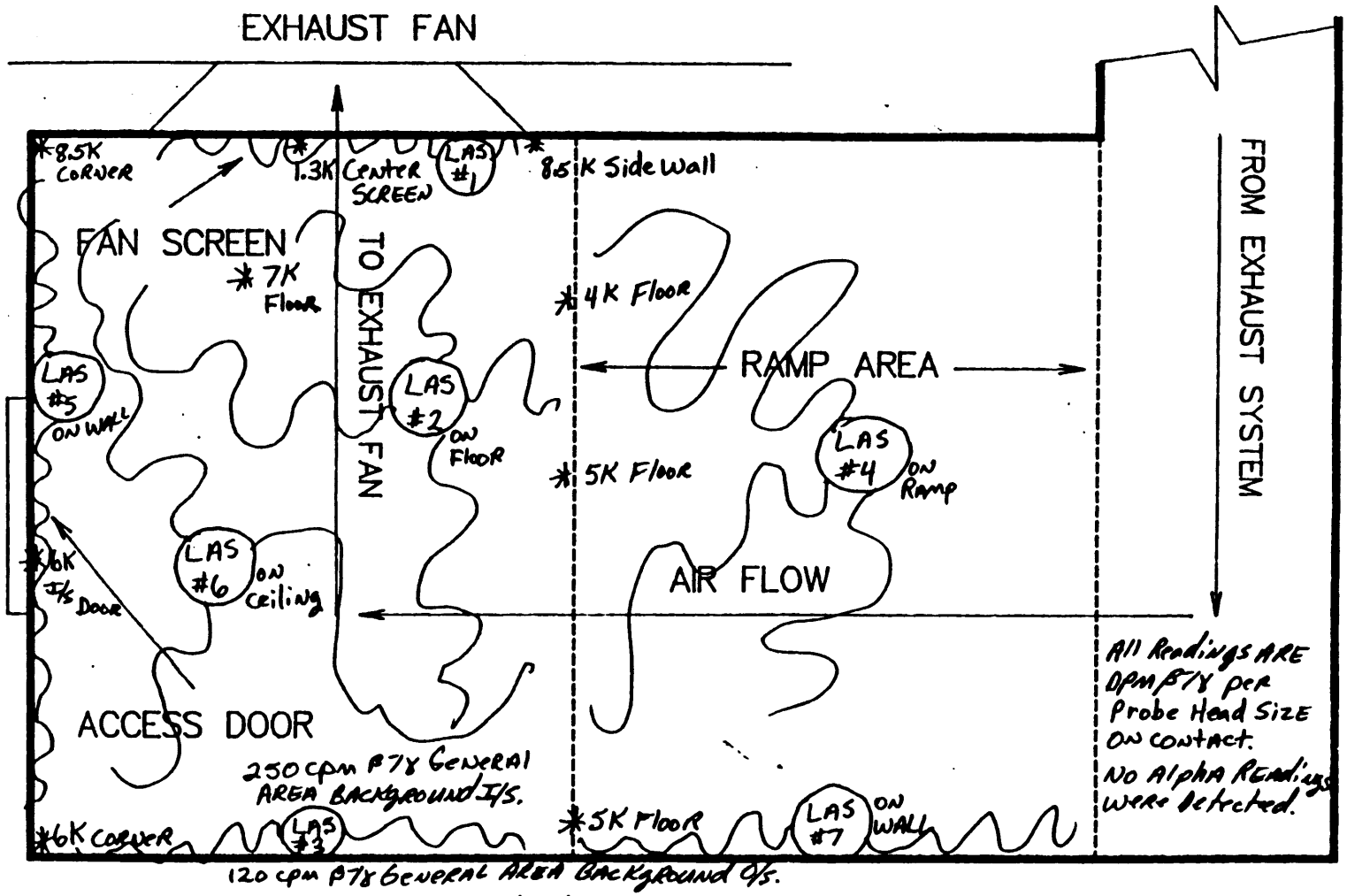
[redacted]

Location	Ta-3, Sm-29, Wing 1 Room(s) BASEMENT Ducts

Location or Smear No.	Beta/Gamma		Alpha	
	Cpm	Dpm	Cpm	Dpm
#1 Middle of Screen	350	3.5K	<MDA	<MDA
#2 Floor	200	2K		
#3 Rt. Wall (Side)	400	4K		
#4 Ramp	300	3K		
#5 Front Wall (Side)	375	3.75K		
#6 Ceiling	350	3.5K		
#7 Back Rt. Side.	250	2.5K	↓	↓

Hpt Signature: Tom L. Karl Date: 8-27-91

TA-3,SM-29,CMR, EXHAUST DUCT



ESP-1/HP-260 P/N #: 7434 BKG: 120cpm% EFF: 10%

LUD-139 P/N #: 3665 BKG: <50 cpm% EFF: 50%

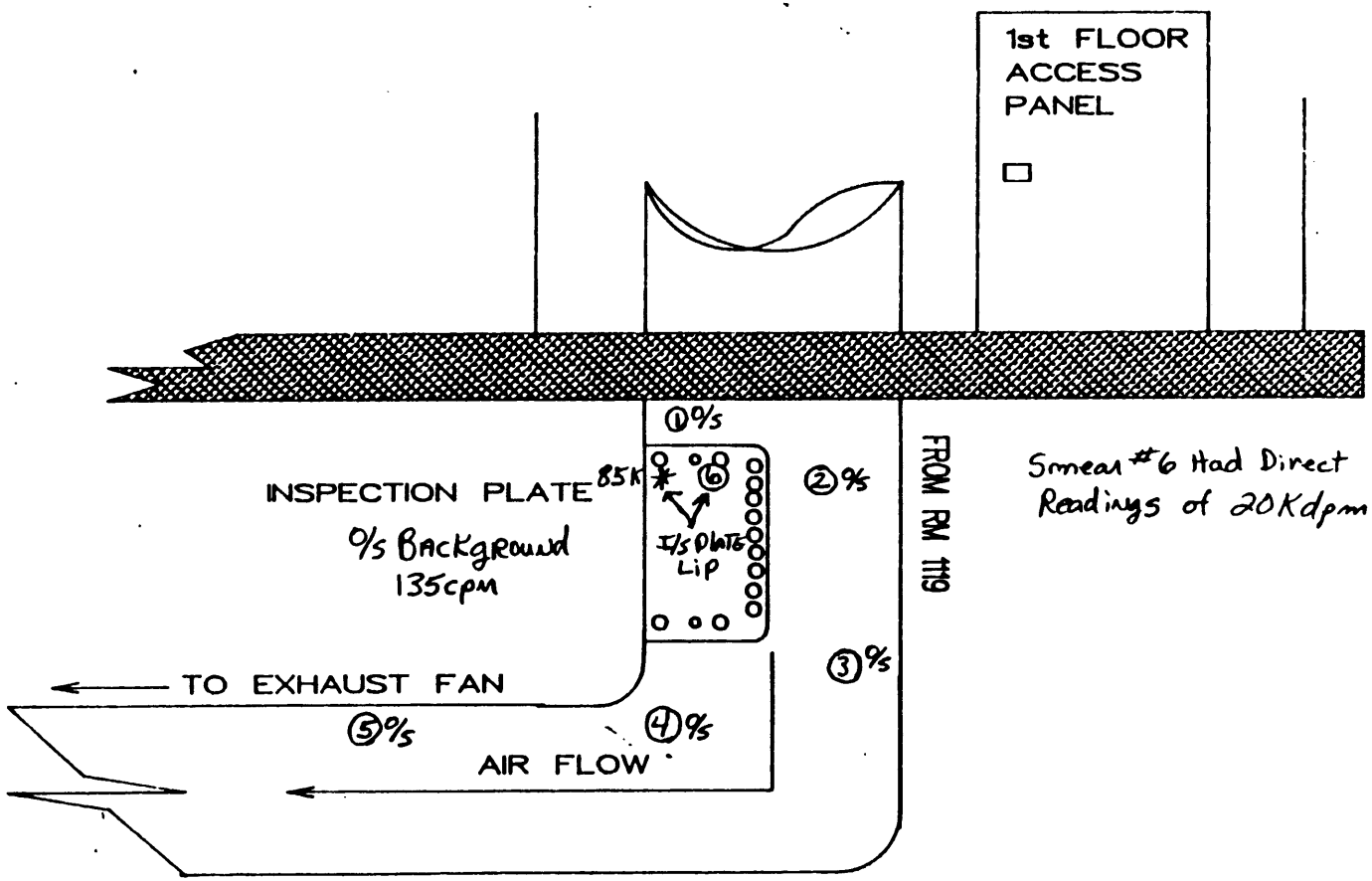
HPT: Tom L. Karl

PRINTED NAME: Tom L. KARL DATE: 8-27-91

[redacted]

Attachment D

TA-3,SM-29,CMR,WING-1, EXHAUST DUCT



ESP-1/HP-260 P/N #: 7434 BKG: 135cpm % EFF: 10%

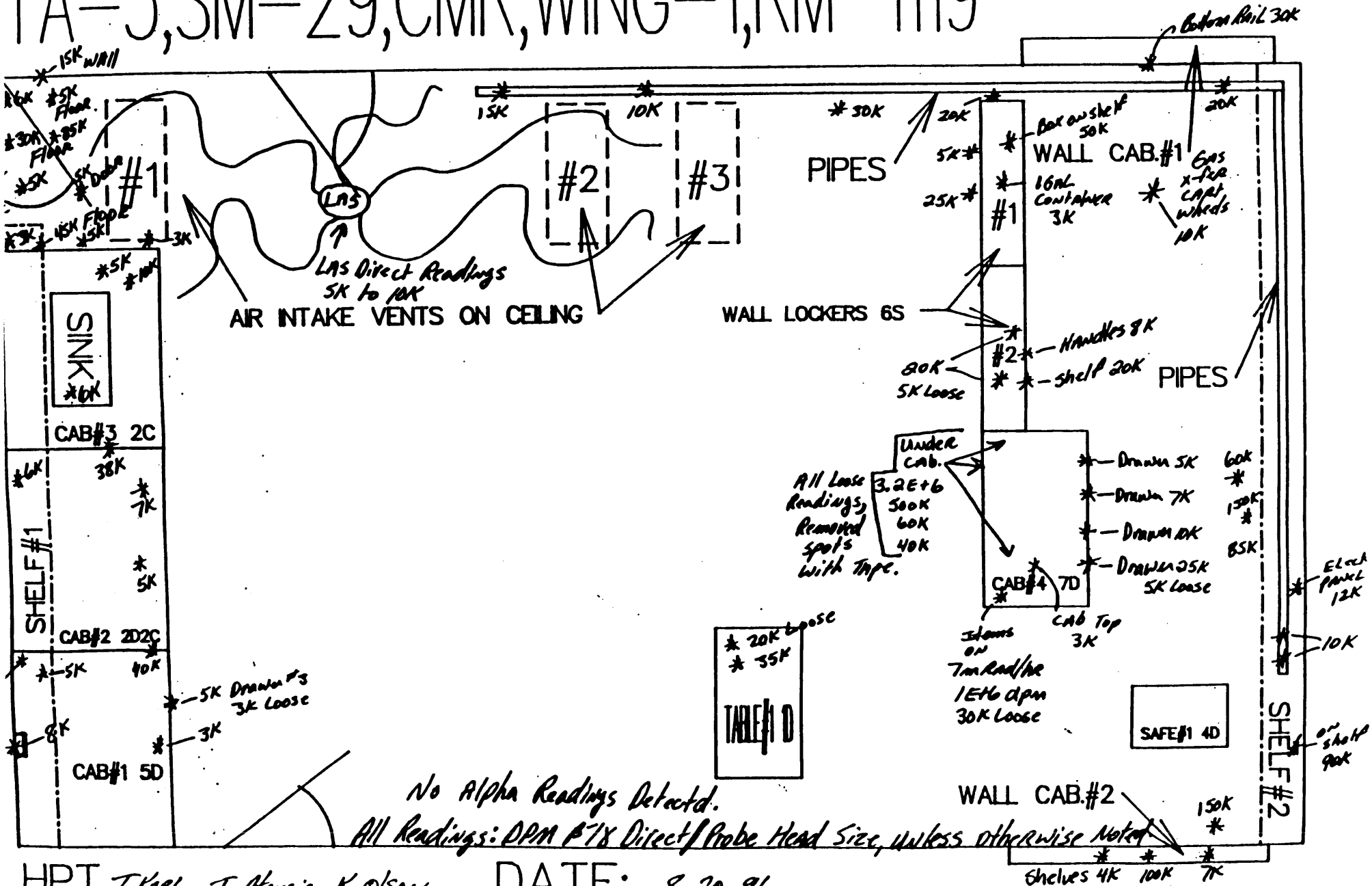
LUD-139 P/N #: 3665 BKG: <50 cpm % EFF: 50%

HPT: Tom L Karl

PRINTED NAME: Tom L. Karl DATE: 8-28-91

[redacted] Attachment D

TA-3,SM-29,CMR,WING-1,RM-1119



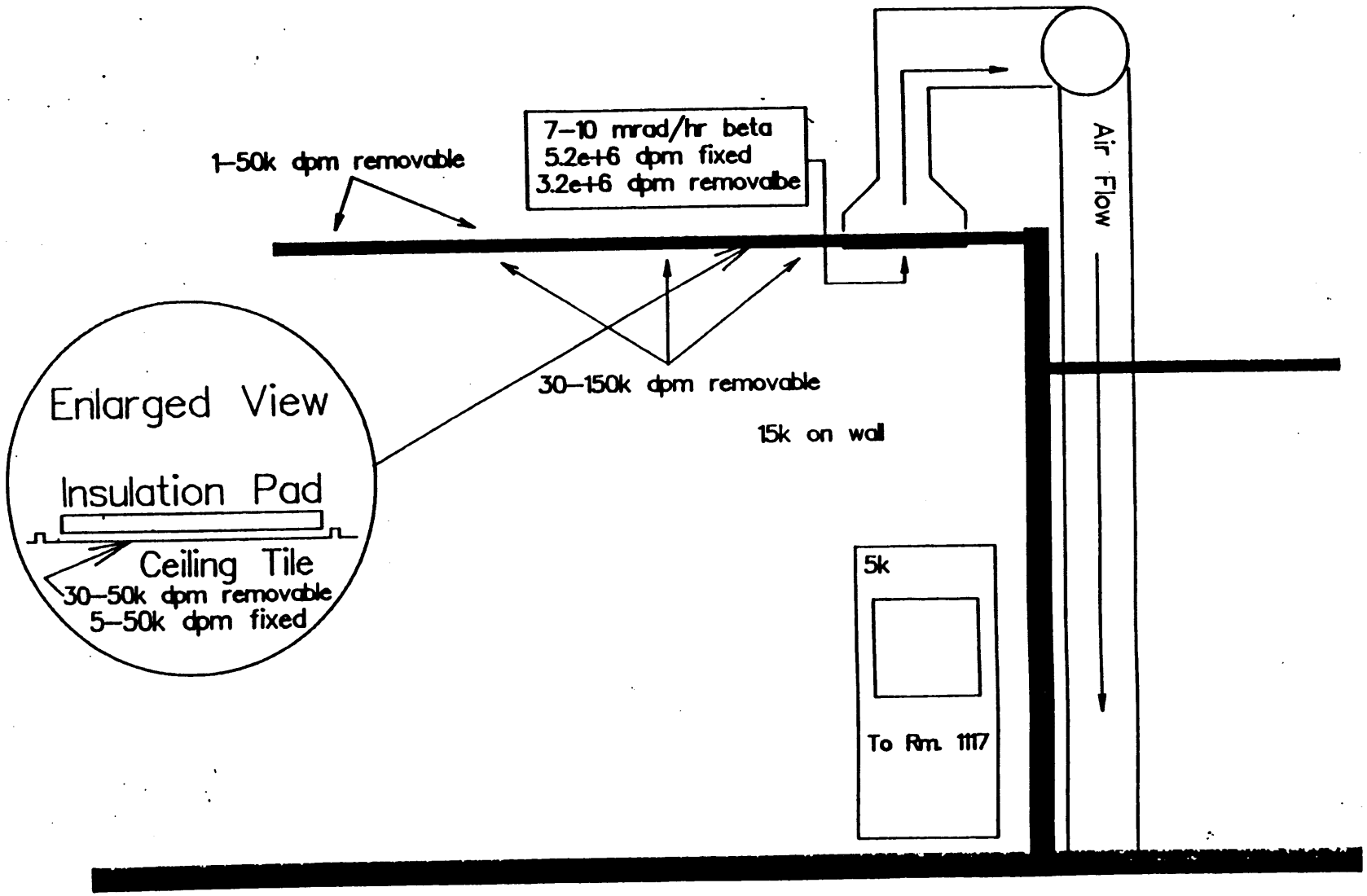
No Alpha Readings Detectd.

All Readings: DPM β-γ Direct/Probe Head Size, unless otherwise Noted

HPT T. Karl, J. Atencio, K. Olson DATE: 8-20-91

Attachment D

TA-3,SM-29,WING-1, RM-1119



HPT J Kurl, J. Atencio, K Olsen ESP-1/HP-260 7434 EFF (%) 10 Cal Due 2/13/92

DATE 8/20/91 RO-3C 2625 Cal Due 8/7/91

[redacted]

Names have been deleted.

DESCRIPTION OF ACTIVITIES CONDUCTED IN ~~ROOM~~ Laboratory 1119 OF CMR

The contamination incident occurred between 1983 and 1986. During this period, [redacted] worked within ~~room~~ Lab 1119, CMR building. His activities included producing metal to metal compounds with elements including Technetium, depleted Uranium and Thorium. [redacted] created samples from these metal to metal compounds. He prepared these samples several ways, such as grinding the surface, using the arc melter, heating them in the furnace. He processes approximately 50 samples. Each typical Tc-99 sample size was 100 milligrams. According to [redacted] reports made to investigating health physicist, [redacted], [redacted] ~~claimed~~ he worked only with depleted uranium. [redacted] did not inform health physics per that I worked Tc- and had two instruments which were provided by the HSE group. [redacted] is writing up the estimated maximum dose ~~and the instruments' capabilities (still unknown), but LANL is still investigating the issue to determine what instrument he had and whether or not it was capable of detecting Tc-99 contamination.~~ Both instruments where RO-2s, one had a shielded probe and the other RO-2 had no shield. The RO-2s can ~~(may have)~~ detect betas ~~and alphas~~. He always wore gloves which were peeled off at wing 2 for waste disposal, and he always washed his hands. The building HP people were uninformed that radioactive material was being used. [redacted], the HP ~~technician~~ Section Leader, was unaware of during the years that he with Tc-99 had been introduced into Wing 1,

DESCRIPTION OF HOW THE EVENT WAS DISCOVERED

When a box of trash exited through the guard portal at the back of wing 4, it triggered the SNM alarm. The waste ~~alarm~~ contained Thorium. ~~HPs were~~ The new HS-1 Section Leader, [redacted] was alerted, and ~~they uncovered the problem.~~ He contacted the CMR Building Manager They discovered that ~~cold~~ Wing 1 areas were ~~DU~~ Thorium/U contaminated, ~~[should this not be Tc-99 contamination?]~~ and suspected other medical waste

[redacted]

ENVIRONMENTAL CONTAMINATION CONCERNS

Although Technetium-99 was the primary activity source, the Thorium & Uranium were also present. When heated, Technetium became a volatile airborne. The Tc-99 particulates reached the exhaust ducts. Technetium-99 may have been rinsed off while [redacted] washed his hands. All showers and sinks in CMR building drain to a sanitary sewer. Evidence indicates that no significiant amount of Tc-99 was released to the environment nor public.

AL's WORKSTATION AND HIMSELF

His last Whole Body Count with was in 1983 just before he began working with Tc-99. The Whole Body Count proved negative. A survey showed contaminated items in his office. [redacted] recalled that someone had placed a sample on his desk. Later, a glass cover had been placed upon his desk. The HP technician found contamination under glass, and a small amount of Tc-99 seeped through the glass. All items surveyed were inventoried and recorded. LANL technicians monitored the exhaust ducts, but found no traceable residue at the outside vent.

[redacted] HOME AND VEHICLE

Upon retiring, [redacted] took home only textbooks which remained in boxes. [redacted] returned the boxed books, allowing technicians to survey the books. [redacted] no longer possesses the vehicle he once drove and does not know where the new owner might be. [redacted] did not wish to ~~alarm his wife, so they surveyed his home at 2.00pm~~ on monday August, 26, 1991. [redacted] recommended which areas he wish to survey in his 2000 sq. ft. home. House results were negative.

~~[Would a survey reveal some contamination in vehicle survey?]~~

[redacted] vehicles were also surveyed. No contamination