Los Alamos
NATIONAL LABORATORY
Environmental Restoration Project
Los Alamos, New Mexico 87545

Date: October 13, 1994
MS: M992
Phone: 505-665-4558
Refer to: EM/ER:94-J413

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

Dear Mr. Vozella:

SUBJECT: RESPONSE TO NOTICE OF DEFICIENCY (NOD) CONCERNING OPERABLE UNIT (OU) 1082 RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION (RFI) WORK PLAN WORK BREAKDOWN STRUCTURE NUMBER 1.4.2.6.1.7.1.2

Enclosed is the Los Alamos National Laboratory's response to comments 71 and 77 of the Environmental Protection Agency's (EPA's) NOD concerning the OU 1082 RFI Work Plan and a certification form signed by the appropriate Laboratory official. The NOD was received at the Los Alamos Area Office on July 18, 1994. Comments requested sampling plans for Solid Waste Management Units 16-005(g) and 16-005 (n) by October 16, 1994. A response to the NOD was returned to the regulatory agency and they agreed to this 90-day period to provide these sampling plans.

The enclosed response shows the proposed sampling plans as Section 5.30 of the OU 1082 RFI Work Plan. A documented quality review of the enclosed response has been performed in accordance with procedure LANL-ER-AP-01.3.

Please let me know if there are questions about this response to the NOD, or contact Brad Martin of my staff at 667-6080. I would appreciate having the response and the signed certification form sent to the EPA, Region 6, by October 16 to meet the required deadline.

Sincerely,

Jorg Jansen, Project Manager
Environmental Restoration

JJ/rfr

Enclosure: Responses to NOD
Certification Form

TV

CERTIFICATION

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

Document Title:

Response to comments 70 and 71 of the NOD for OU 1082 RFI Work Plan

Name: _____ Date: Oct 13, 94

Dennis Erickson
Division Director
Los Alamos National Laboratory

Name: _____ Date: 10/14/94

Joseph Vozella, Chief
Environment, Safety, and Health Branch
DOE-Los Alamos Area Office

5.30 PRSs Deleted from Chapter 6 of the 1993 Work Plan based on EPA Review

5.30.1 Background

This aggregate contains sampling plans requested by EPA for all PRSs originally proposed for no further action. PRSs in this aggregate are listed in Table 5-30-1.

TABLE 5-30-1

PRSs NOT APPROVED FOR NFA

SWMU	STRUCTURE NUMBER	SIZE	DATES OF USE	DESCRIPTION
16-005(g)	TA-16-393	9 x 9 x 1.5 ft	1951-1965	Filter bed
16-005(n)	TA-16-173	660 gal.	1949 -1971	Septic tank

5.30.1.1 Description and History

SWMU 16-005(g) represents potentially contaminated soil associated with the former location of a filter bed, structure TA-16-393, that was decommissioned and removed when TA-16-406 was constructed on the same location. It was located in the southern portion of the TA-16 burning ground (Fig. 5-30-1). The filter bed was constructed of firebrick and contained an internal wire mesh used to dry explosives that were deposited on the surface of the unit. A steel pipe drained filtered wash water to the south. It is likely that wash water was allowed to flow over the surface to the drainage south of TA-16-393. A similar operating procedure is reported for TA-16-392 and TA-16-394 (see Subsection 5.8). The region immediately adjacent to the former location of TA-16-393 is relatively flat, with drainage to the south.

A detailed description of activities at the burning ground is provided in Subsection 5.8. The filter bed, TA-16-393, was used to burn HE that was washed out of sump filter baskets in TA-16-390 and was rinsed down trough, TA-16-1135. These HE included both cast explosives, consisting primarily of TNT, RDX, and barium nitrate, and plastic-bonded explosives consisting primarily of HMX and RDX.

TA-16-393 was decommissioned and removed to TA-54 in 1965. It was replaced in the same location by the existing 9 ft diameter x 5 ft deep covered filter tank, TA-16-406. TA-16-406 and the 2-ft walkway that surrounds

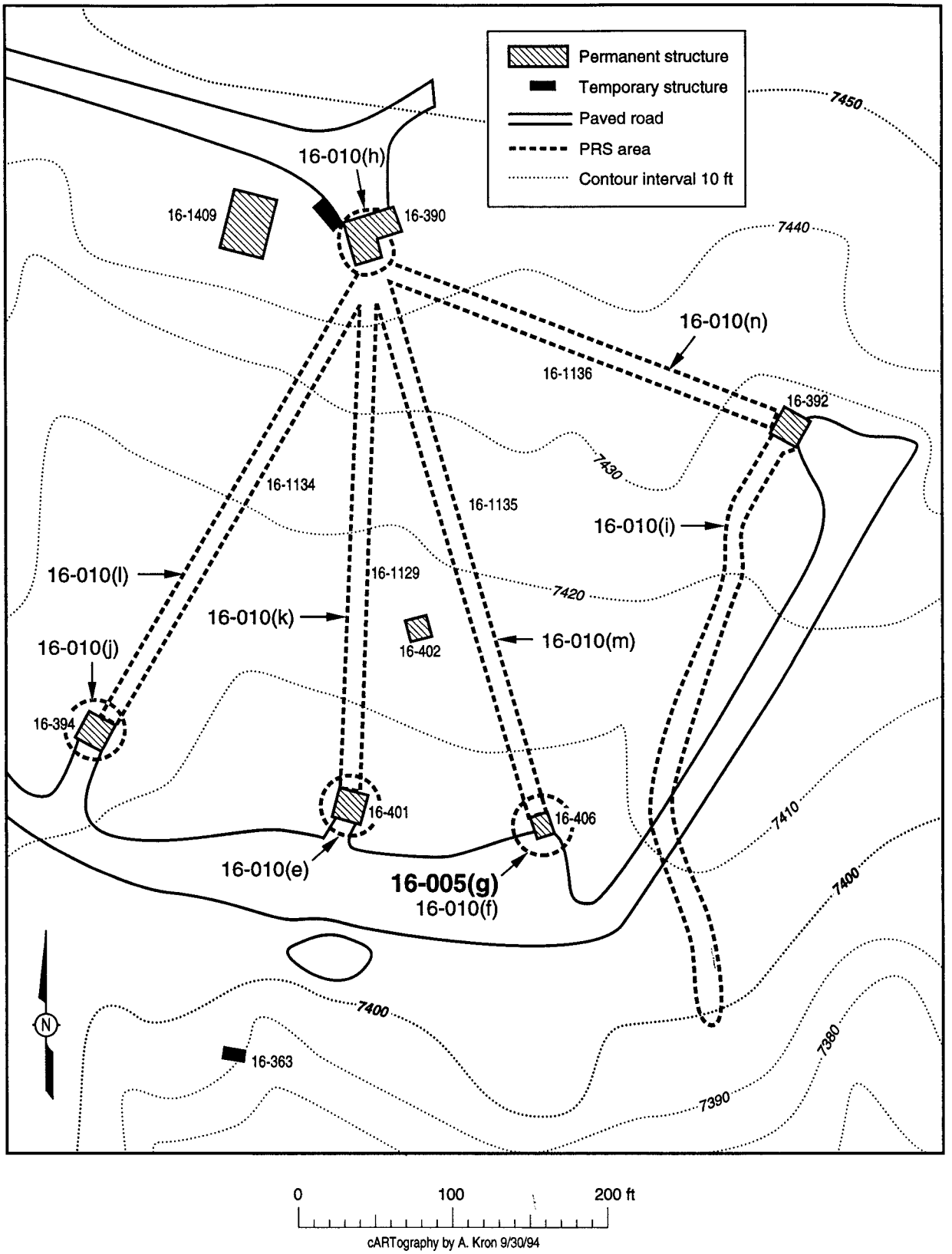

Fig. 5-30-1. Basket wash facilities and filter bed, SWMUs 16-010(e, f, and j) and 16-005 (g).

it cover the entire former location of TA-16-393. TA-16-393 is listed as probably HE contaminated in Blackwell's survey of potential contamination at decommissioned TA-16 structures (Blackwell 1983, 15-16-76).

SWMU 16-005(n) represents potentially contaminated soil associated with decommissioned septic tank, TA-16-173 (Fig. 5-30-2). This unit served a latrine, TA-16-162, that was removed in 1971 (Blackwell 1983, 15-16-076). The current Laboratory Technical Area Structure Location Plan lists the tank as abandoned in 1971 (see also Engineering drawing ENG-R 5111). The 1990 SWMU Report states that the septic tank was removed; however, a 1983 memo indicates that the tank was in place at that time (LANL 1990, 0145; Stephens 1983, 15-16-074). Two standpipes and a gravel- and concrete-filled manhole are currently visible at the site of the tank. 'As built' engineering drawings of TA-16-173 have not been located, so it is not known if the tank discharged effluent to a drain field or outfall. No outfall is currently visible in the area surrounding the tank. This area is relatively flat with a slight slope to the northeast (Fig. 5-30-2).

TA-16-162 was a 23 x 10 x 9 ft high latrine that consisted of two rooms, a 9 x 15 ft room containing a toilet and a 9 x 6 ft equipment room. TA-16-162 served the 90s machining line (Subsection 5.23). The equipment room was likely used to store cleaning equipment.The process buildings in the 90s machining line were located along a road at a distance of more than 300 ft from TA-16-162 which was shielded from potential explosions by an earthen berm.

A series of 1971 memoranda leads to the conclusion that this septic tank does not pose a significant threat to humans or the environment: "... the history of its use (TA-16-173) indicates the possibility of chemical or toxic contamination is insignificant" (DeField 1971, 15-16-028); and, "...TA-16-173 can be considered free of explosive contamination" (Courtwright 1971, 15-16-029). A November 17, 1983, memorandum indicates "none" under a column headed "Structure Use and/or Hazardous Material Use" in reference to TA-16-162, the building served by this septic tank (Blackwell 1983, 15-16-076).

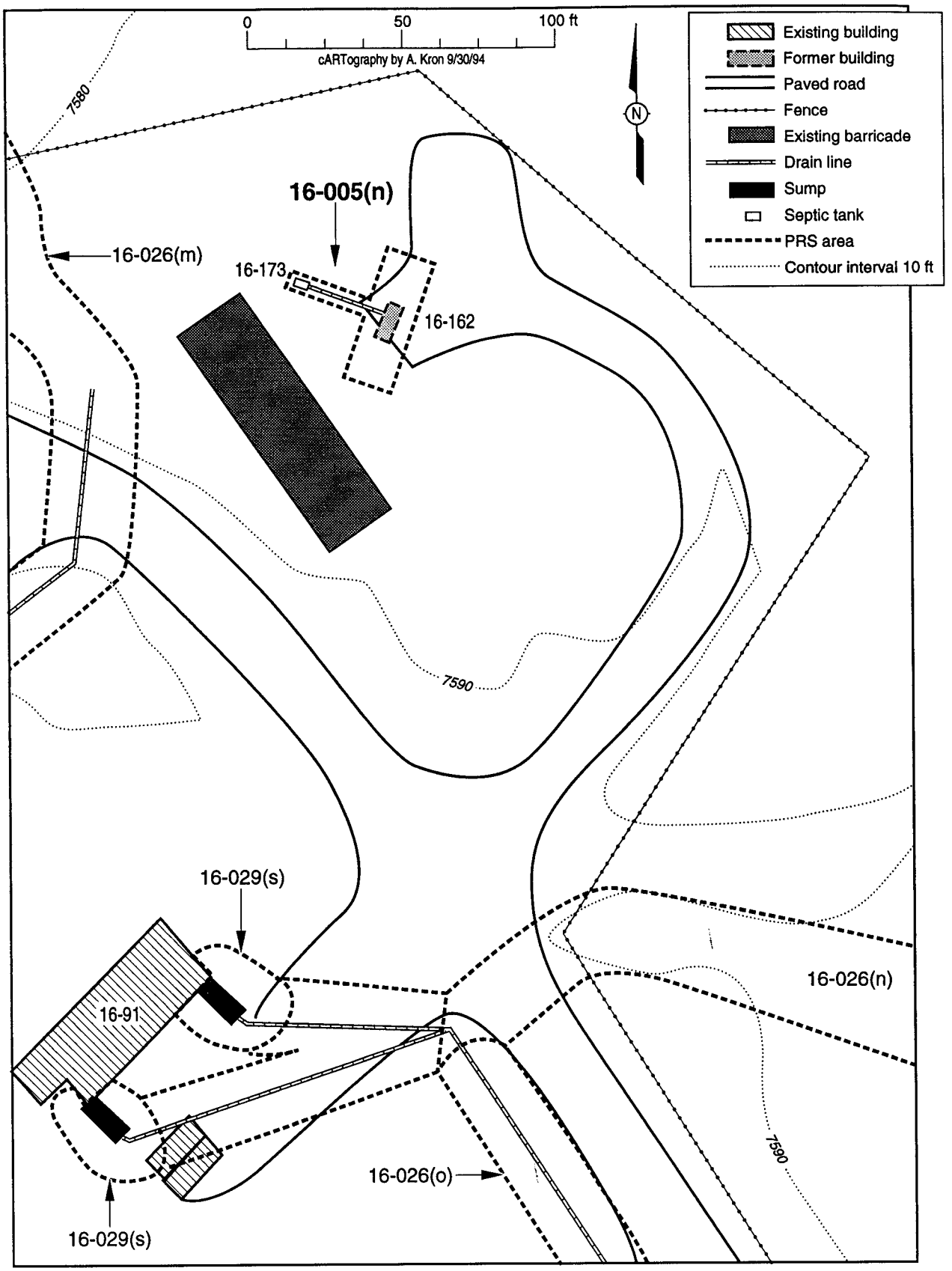

Fig. 5-30-2. Septic tank TA-16-173 and associated latrine TA-16-162.

5.30.1.2 Conceptual Exposure Model

The conceptual exposure model is similar to that presented in Fig. 4-8. PCOCs are listed in Table 5-30-2. Quantitative data does not exist for either PRS. A March 1971 contamination survey found that gross alpha and gross beta activity in water from the septic tank (TA-16-173) was below the limits of detection (0 +/- 20 pCi/L) (Purtymun 1971, 15-16-030).

5.30.2 Remediation Decisions and Investigation Objectives

The Problem Statement and Decision Process for these PRSs are identical to those outlined in Subsection 5.0. of Addendum I to the OU 1082 RFI Work Plan, with the following exception: the PCOCs at the units include both modern and World War II era HE.

5.30.3 Data Needs and Data Quality Objectives

The Decision Inputs and Decision Logic for these PRSs are identical to those outlined in Subsection 5.0. of Addendum I to the OU 1082 RFI Work Plan, with the following exceptions: 1) the locations of both units are well defined, and 2) no surface sampling is planned. The investigation boundary and design criteria are included in the sampling plan for each PRS.

5.30.4 Sampling and Analysis Plan

SOPs that control field activities in this sampling plan are listed in Table 5-30-3. Appropriate health and safety precautions will be undertaken according to the site-specific health and safety plan. Sampling numbers and required analyses are shown in Table 5-30-4.

5.30.4.1 Engineering Surveys

The two PRSs in this aggregate will be field surveyed before sample collection. Both field screening and laboratory sampling locations will be registered on a base map.

TABLE 5-30-2

POTENTIAL RELEASE SITES AND POTENTIAL CONTAMINANTS OF CONCERN CONTAINED IN OU 1082, PRSs DELETED FROM CHAPTER 6 OF THE 1993 WORK PLAN BASED ON EPA REVIEW

PRS	DESCRIPTION	PRIMARY ACTIVITY LEADING TO A POTENTIAL PROBLEM	ACTIVE	HE			RAD	METALS		VOLATILES	SEMIVOLATILES
				UNDETONATED HE	HE DEGRADATION PRODUCTS	HE BURN PRODUCTS	URANIUM	METALS SUITE	BARIUM		
16-005(g)	Decommissioned filter bed	Burning of HE-contaminated sump waste	N	Y	Y	Y		Y	Y	Y	Y
16-005(n)	Septic tank	Possible washing HE off workers' hands into tank	N	Y	Y			Y	Y	Y	Y

TABLE 5-30-3

STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES

LANL-ER-SOP[a]	TITLE	NOTES
01.02, R0	Sample Containers and Preservation	Applied to all laboratory samples
01.03, R1	Handling, Packaging, and Shipping of Samples	Applied to all laboratory samples
01.04, R1	Sample Control and Field Documentation	Applied to all laboratory samples
03.01, R0	Land Surveying Procedures	Applied to all engineering surveys
4.01, R0	Drilling Methods and Drill Site Management	Applied to all angled core holes
06.10, R0	Hand Auger and Thin-Wall Tube Sampler	Applied to all augered subsurface samples

[a] A later revision of any SOP will be used if the cited version is superceded.

5.30.4.2 Sampling

Many samples, as outlined below, will be field-screened for HE by spot test and barium by LIBS or XRF. SOPs for these procedures are in preparation.

SWMU 16-005 (g)

Sampling at the former location of this filter bed will determine if PCOCs are located beneath the existing filter tank (TA-16-406) due to HE-waste disposal activities associated with filter bed, TA-16-393. TA-16-406 is 9 ft in diameter and extends approximately 2 ft beneath the ground surface. A single, angled core hole will be drilled to pass at a depth of roughly 3 ft beneath the bottom of the filter tank (Fig. 5-30-3). A 30-degree angled core hole with a wellhead located approximately 6 ft south of the tank's edge will pass within 1 ft of the tank's south edge (Figs. 5-30-3 and 5-30-4). The discharge direction was south for any liquid effluent from the filter bed. (Note that the southern canyon is being sampled as part of the field activities described in Subsection 5.8).

The entire core will be screened at 6-in. intervals for HE by spot test and for barium by LIBS or XRF. If multiple positive screening indicators (positive HE test or barium two times background or more) are found on core intervals, then send the deepest and shallowest positive intervals for laboratory

TABLE 5-30-4

SUMMARY OF SITE SURVEYS, SAMPLING AND ANALYSIS FOR PRSs DELETED FROM CHAPTER 6 OF THE 1993 WORK PLAN BASED ON EPA REVIEW

PRS	PRS TYPE	SAMPLED MEDIA	LABORATORY SAMPLES						FIELD SCREENING							FIELD							LABORATORY ANALYSES										
			STRUCTURE		SURFACE		SUBSURFACE								A					B				C				D	E	F	G	H	
				FIELD DUP		FIELD DUP		FIELD DUP	GROSS ALPHA	GROSS GAMMA/BETA	ORGANIC VAPOR	HE SPOT TEST	GEOPHYSICS SURFACE	BARIUM - LIBS	GEOLOGICAL CHARACTERIZATION	GROSS ALPHA	GROSS GAMMA/BETA	TRITIUM	VOLATILE ORGANICS	XRF	SOIL MOISTURE	ALPHA SPECTROSCOPY	GAMMA SPECTROSCOPY	BETA SPECTROSCOPY	TOTAL URANIUM	ISOTOPIC PLUTONIUM	ISOTOPIC URANIUM	VOA (SW 8240)	SEMIVOLATILES (SW 8270)	METALS (SW 6010)	ASBESTOS	HIGH EXPLOSIVES (SW 8330)	CYANIDE
16-005(g)	Filter bed	soil					1#					22		22														1#	1#	1#		1#	1#
16-005(n)	Septic tank	sludge					1																					1	1	1		1	

= The actual number of samples will depend on the results of the field screening and the depth of the cores.
A, B, C, = not applicable; D, E = full suite; F = 1082 suite; H = full suite.

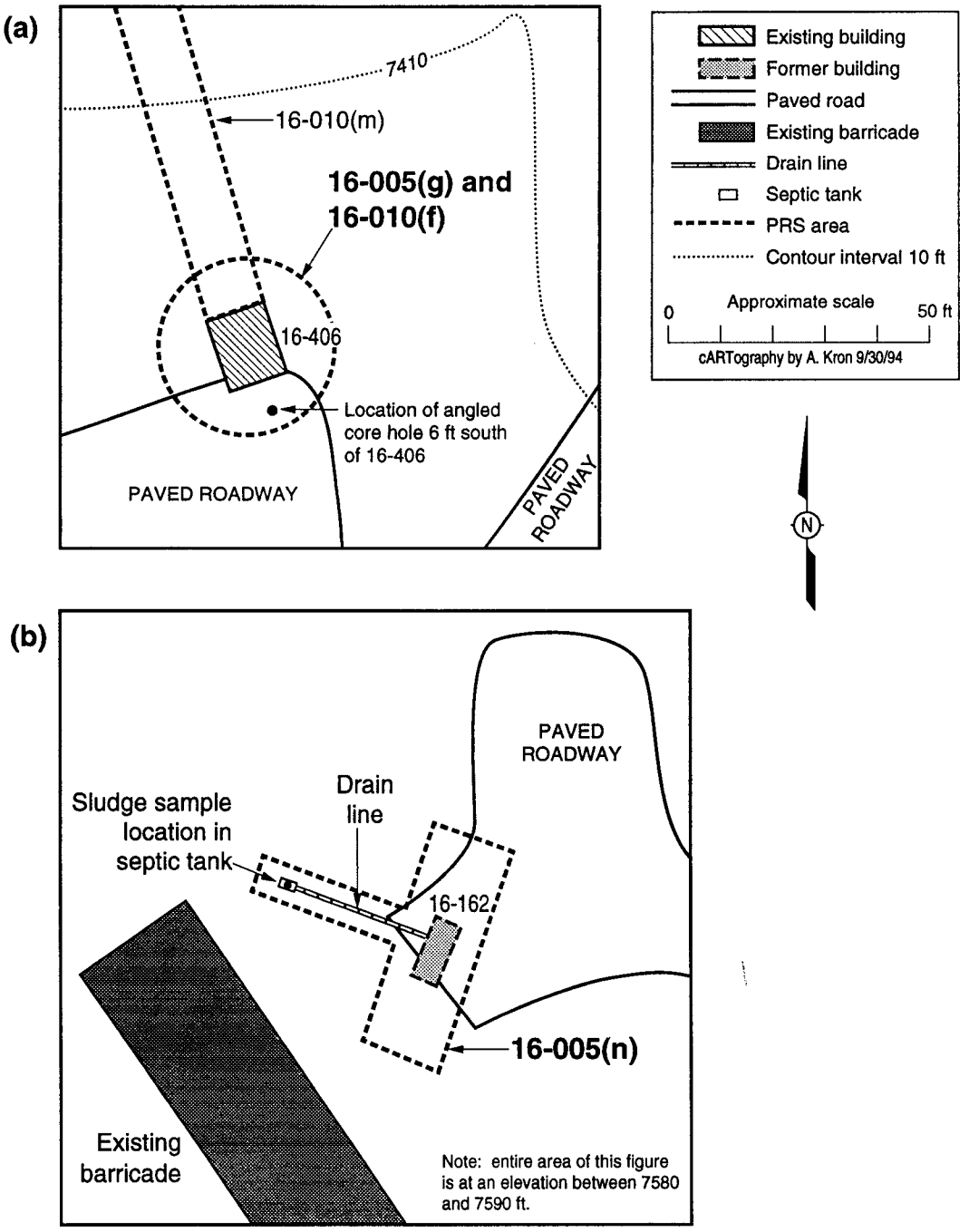

Fig. 5-30-3 (a & b). Sample locations for SWMUs 16-005(g), 16-005(n), and 16-010(f).

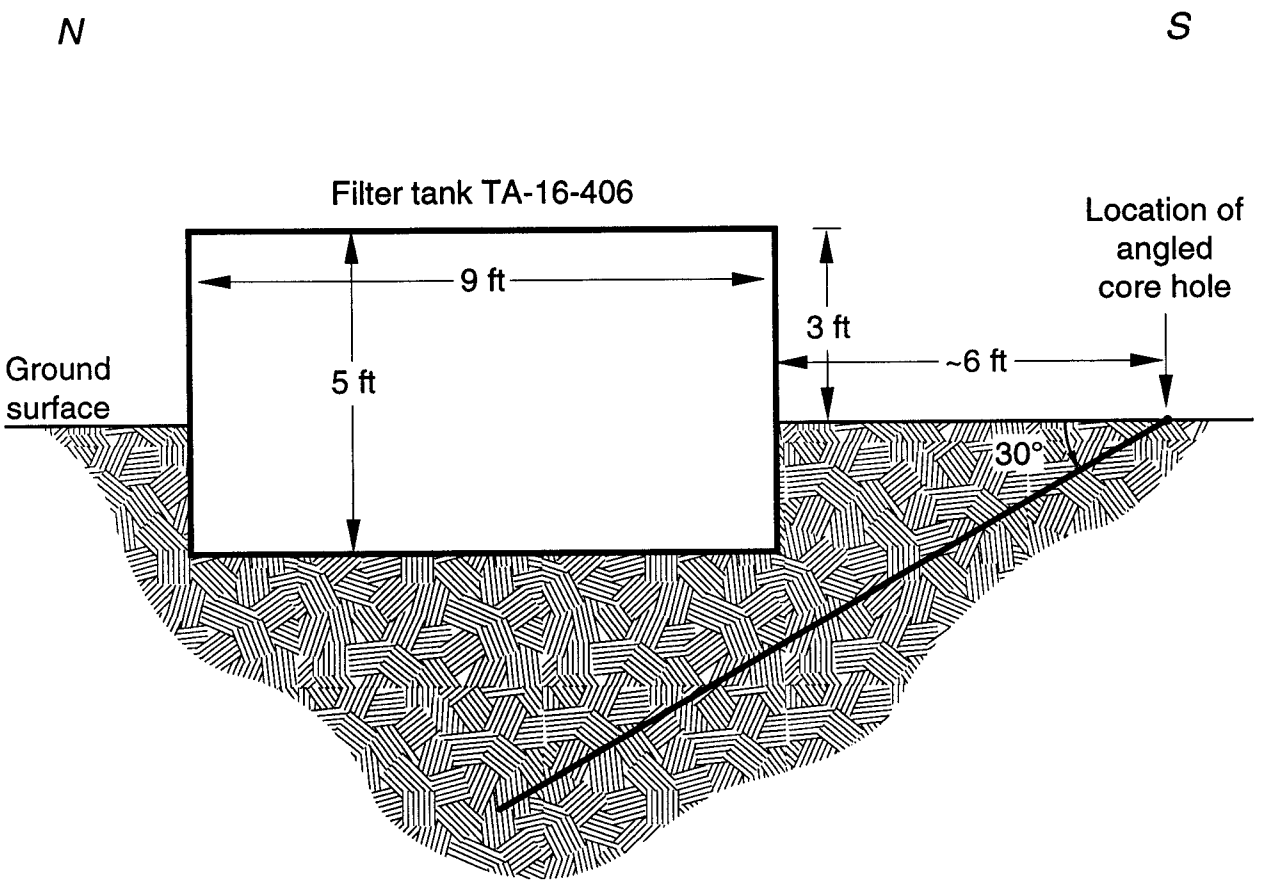

Fig. 5-30-4. Schematic cross section showing location of angled core hole under TA-16-406.

analysis. If these two intervals do not include the deepest positive-HE interval, send that interval for laboratory analysis along with the deepest and shallowest positive intervals. If no intervals exhibit a positive screening indicator, send the deepest interval for laboratory analysis (Table 5-30-4).

SWMU 16-005 (n)

Sampling of this septic tank is designed to detect the presence of PCOCs, particularly HE and its byproducts. It is estimated that the highest concentrations of PCOCs will be within the sludge in the tank. Thus, the boundary for Phase I sampling is the interior of the existing 660-gal. tank. It is estimated that the likelihood of contamination in the tank is negligible, and, using the classifications described in Subsection 5.0 of Addendum 1 to the OU 1082 RFI Work Plan, that any contamination is probably not very heterogeneous. This tank is probably not very heterogeneous because of its small size, and it is likely to have negligible contamination because it is associated with a latrine located several hundred feet from the nearest production facility. Referring to Table 5-0-3, Laboratory Sampling Numbers, one sample of sludge will be collected and submitted for laboratory analysis (Fig. 5-30-3). A hand-held magnetometer will be used to verify that the existing standpipes and manhole represent the actual location of the 660-gal. tank. Gravel in the manhole will be drilled through or removed. This decision will be made by the field team leader. The sludge in the tank will be sampled and analyzed for HE, radionuclides, metals, and volatile and semivolatile organics (Table 5-30-4)

5.30.4.3 Laboratory Analysis

Level III laboratory analyses of samples will be accomplished by the following methods: VOCs (SW-846 Method 8240), SVOCs such as HE burn products (SW-846 Method 8270), metals (SW-846 Method 6010), and HE (SW-846 Method 8330). Particular contaminants of concern for this aggregate are barium and HE, including RDX, HMX, TNT, and HE byproducts (e.g., DNT, DNB).

5.30.4.4 Sample Quality Assurance

Field quality assurance samples will be collected according to the guidance provided in the latest approved version of the IWP (LANL 1992, 0768).