45-F

CLOSURE PLAN FOR

TA-40 SCRAP DETONATION SITE

FOR

HIGH EXPLOSIVE WASTES

Facility ID No:	NM0890010515
Facility Name:	Los Alamos National Laboratory
Legal Owner:	United States Department of Energy
Address:	Los Alamos Area Office
City, State:	Los Alamos, New Mexico 87545
Phone:	(505)667-5061

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TABLE OF CONTENTS

		PAGE
1.0	Introduction	1-1
2.0	TA-40-SDS Description	2-1
3.0	Waste Description	3-1
4.0	Closure Plan	4-1
	4.1 Analytical Survey	4-1
	4.2 Sampling and Analytical Procedures	4-3
	4.2.1 Sampling	4-3
	4.2.2 Sampling Documentation	4-5
	4.2.3 Analysis	4-7
	4.2.4 Contamination Criteria	4-8
	4.3 Decontamination	4-11
	4.4 Decontamination Verification	4-13
	4.5 Closure Schedule	4-14
	4.6 Closure Certification	4-15
5.0	General Considerations	5-1
	5.1 Contact Person	5-1
	5.2 Quality Assurance	5-1
	5.3 Split Samples	5-2
	5.4 Facility Access	5-2
	5.5 Cooperation	5-3

LIST OF FIGURES

2-1 Site and Vicinity

2-2 Topography and Grid Scheme

4-1 Velhmeyer Soil Sampler

4-2 Examples of Sample Labels

4-3 Example of Sample Seal

4-4 Hazardous Materials Sample Analysis Request

4-5 Chain of Custody Record

4-6 Analytical Survey, Contracting and Closure Time Line Schedule

LIST OF TABLES

4-1 TA-40-SDS Soil Sample Analysis Constituents

4-2 Ambient Soil Total Metals Concentrations

4-3 Time Requirements for analytical Survey, Contracting, and Closure for TA-40-SDS

1.0 INTRODUCTION

The Los Alamos National Laboratory's (LANL) Technical Area 40 scrap detonation site, (TA-40-SDS), also referred to as a destruct pit, is used to detonate high explosive (HE) wastes and to burn HE-contaminated wastes. HE wastes are hazardous and regulated under New Mexico Environmental Improvement Division's (NMEID) Hazardous Waste Management Regulations (HWMR) because they are reactive (D003) or ignitable (D001). Residues resulting from the detonation of some HE contain heavy metals and may be EP toxic. TA-40-SDS is a thermal treatment facility operated under a Resource Conservation and Recovery Act (RCRA) Part A Permit. A Part B Permit is not being sought for this facility. TA-40-SDS will be put back into service after closure as a detonation site for HE tests. The operation of TA-40-SDS as an HE test detonation site does not require a Part B Permit.

This document is the closure plan required by HWMR 206.C.2. Activities needed to close consist of ceasing the detonation and burning of waste, conducting a site analytical survey to determine the nature and extent of hazardous constituent contamination, and removing and disposing of contaminated soil and equipment.

TA-40-SDS will be closed all at one time. Partial closure of the detonation site has not occurred, nor will it occur.

2.0 TA-40-SDS DESCRIPTION

TA-40-SDS is located on a south mesa rim shelf (NMSP coordinates E 481, 920, N 1, 767,000) overlooking Pajarito Canyon (Figure 2-1). The shelf elevation is 2,222 m (7290 ft). The detonation site is a circular area 20 m (60 ft) in diameter. Repeated detonations have formed an amphitheater in the mesa wall, which opens to the south. The north side of the site is a cliff that rises 10 m (30 ft) from the site floor. The top of the amphitheater area rim drops in elevation to the south, where it opens onto the mesa shelf. The shelf is approximately 60 m (200 ft) wide and slopes gently down from the detonation site to the canyon rim. The canyon floor at the detonation site is at an elevation of 2,165 m (7100 ft).

Following past detonations, the rubble formed was pushed out from the amphitheater and spread toward the canyon rim, stopping approximately 6 m (20 ft) short of the rim. The maximum thickness of the spread rubble is 1 m (3 ft) at the rim end, thinning back toward the detonation site. The topography of the site is shown on Figure 2-2.

Approximately 30 m (100 ft) east of the detonation site is a burn pit 3 m (10 ft) by 3 m (10 ft) where HE-contaminated wastes are burned. The pit is enclosed by a wire cage to prevent wastes from being wind-blown before and during burning.

Detonations are remotely controlled from the firing point TA-40-15, located on the mesa shelf 396 m (1300 ft) west of the detonation site. An access road runs from TA-40-15 along the shelf, ending at the burn pit. Surface drainage from the detonation site and the burn pit flows across the spread rubble to the southeast and into Pajarito Canyon.

TA-40 is a weapons research facility and is not open to the public. Access to the area offices is limited to personnel with security clearances. Access to detonation sites is limited to personnel working in the area, and all other visitors must be escorted by TA-40 personnel.

The detonation site is not continually manned. Personnel are at the site only for the time needed to set up a detonation.

3.0 WASTE DESCRIPTION

HE wastes and HE-contaminated wastes are the only hazardous materials thermally treated at TA-40-SDS. Wastes that are detonated are scrap HE pieces, chips, and powder. Rags, paper, tape, cotton swabs, and other trash items that have contacted HE and are suspected of being HE-contaminated are burned at the burn pit. HE wastes handled include HMX (cyclotetramethylenetetramine), RDX (cyclonite), TNT (2,4,6 trinitrotoluene), PETN (pentaerythritol tetranitrate), ammonium nitrate, barium nitrate, TATB (triaminotrinitrobezene), nitrocellulose, tetryl, nitroguanidine, and various plastic binders. In addition, lead compounds have been used in detonation. Barium and lead residues may remain after detonation, both of which are EP toxic (D005 and D008, respectively).

The method used to detonate waste HE varies with the type of HE. Sensitive HE is placed in a plastic trash can, which is set on the detonation site. A second plastic pail filled with nitromethane is mounted above the trash can, with a plastic drain tube running from the pail to the trash can. A drain valve in the tube is opened and all personnel leave the site. After the nitromethane drains from the pail into the trash can, the trash can is detonated. Nitromethane is used to ensure complete detonation of the waste HE.

Less sensitive HE is simply stacked with other HE and detonated. The trash suspected of HE contamination is stacked and burned in the wire cage. Kerosene is poured over the waste to ensure ignition. The detonation of waste HE and the burning of the contaminated waste is remotely controlled from TA-40-15.

Waste HE and contaminated wastes are delivered from other storage facilities just before detonation or burning. No wastes are on hand at the start of closure, nor does the facility have any storage capacity. Nothing is stored at TA-40-SDS. The maximum HE waste in treatment at any time is 45.4 kg (100 pounds).

Observations from across Pajarito Canyon during several of the detonations and test shots revealed that debris from the detonation was thrown one to two hundred yards from the area.

4.0 CLOSURE PLAN

Because no waste will be on-site, closure will consist of decontamination of the site and equipment, followed by analysis to demonstrate adequate decontamination. Closure will be preceded by an analytical survey to determine the nature and extent of possible site contamination.

Closure activities include:

- o removal and proper disposal of contaminated soil,
- o an analytical survey to determine if decontamination is complete, and
- o decontamination of equipment.

4.1 Analytical Survey

An analytical survey will be conducted to determine the nature and extent of site contamination. The survey addresses possible contaminant transport methods, including dispersion by detonation, leaching, and surface drainage, and by soil movement caused by activities associated with removal of rubble from the detonation amphitheater.

The area is divided into an imaginary grid on 23 m (75 ft) centers near the detonation site, expanded to 46 m (150 ft) centers at a distance of 46 m (150 ft) or greater from the center (Figure 2-2). The grid extends over the area affected based on observations of past detonations.

Composite soil samples will be taken representative of the intersection of grid lines. For this site, the grid has been extended farther to the south than to the north because the amphitheater wall limits the detonation dispersion to the north. One additional composite soil sample will be taken at the burn pit center. Two composite samples of sediment will be taken in the drainage channel of Pajarito Canyon, the first upstream of the detonation site, and the second downstream of the site just below the point where the site drainage joins the Canyon channel. One additional composite sediment sample will be taken in the shelf drainage channel. The approximate location of the composite sediment sample is shown on Figure 2-2.

Composite soil cores will be taken at a total of 54 locations and sediment soil samples will be taken at a total of three locations. Depending on the depth to bed rock, each soil core can yield up to four samples for analysis.

Four background composite samples will be taken: one to the north, east, south, and west of the site at a distance greater than 500 yards from the detonation site. Exact sites for background samples will be field selected based on similar geologic features to the detonation site and the lack of possible interference from other operating Laboratory sites.

The initial grid serves as a first exploration for contamination. If threshold contamination, as determined in Section 4.2.4 of this document, is found at the outside grid samples, the limits of the grid will be expanded on 46 m (150 ft) centers to determine the outside perimeter of the contamination. If threshold contamination is found within the grid, additional samples will be taken by reducing grid distances within the contaminated area by one half, and by locating sampling points based on initial survey results and terrain characteristics until the surface and depth of contamination is defined.

Field relocation of grid points may be required by topographic features. In such a case, the sample will be taken as closely as possible to the grid point and the new location will be documented.

If channel sediment samples show threshold contamination of regulated constituents as determined in Section 4.2.4, additional samples will be taken along the channel at 10-yard intervals.

4.2 Sampling and Analytical Procedures

4.2.1 Sampling

Sampling methods, composite preparation, container preparation, and sample preservation will follow methods defined in Test Methods for Evaluating Hazardous Solid Wastes, USEPA SW 846, most current edition (SW 846). Although a specific sampling method

is recommended in the following text, alternate methods defined in SW 846 may be used if warranted by field conditions or sampling experience.

Each soil sample point will represent a composite sample made up of four core samples taken 3 m (10 ft) along each grid line from the grid intersection. Background soil samples will be a composite of four cores with the same orientation as grid samples. Sediment samples will be a composite of four samples taken from the channel and evenly spaced over a 3 m (10 ft) line following the channel. The burn pit center composite sample will be made up of four core samples taken from the center of each quarter of the pit.

Vertical soil sampling will be done at the topsoil, then at 1-foot intervals to bedrock, or to a maximum depth of 3 feet for the initial survey. Core samples shall include soil depth segments from 0.5 foot to 1 foot, 1.5 feet to 2 feet, and 2.5 feet to 3 feet. If the initial grid sample analysis indicates contamination at the maximum sample depth as defined in this section, additional sampling at 1-foot intervals will be performed to determine the depth of contamination.

Surface soil samples will be collected with a trowel or scoop. To sample below 8 cm (3 in), samples will be collected with a Velhmeyer soil sampler (Figure 4-1). After each site is sampled, the samplers will be washed with a warm Liquinox or Alconox solution,

rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. One-quart glass containers will be used for the samples, because they are compatible with the sample material. Sampling will be conducted according to procedures given in Samplers and Sampling Procedures for Hazardous Waste Streams, EPA 600/2-80-018 and SW 846.

Samples will be taken, placed in bottles, tagged, and immediately packed with ice in an insulated container. One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but analytical results can be compared to its twin.

4.2.2 Sample Documentation

Samples will be analyzed either internally or at a commercial laboratory. In either case, each sample will be tagged, sealed, and accompanied by a chain of custody and a sample analysis request form as described in SW 846. Typical forms are shown in Figures 4-2 through 4-5. The sample container must be sealed with a gummed paper seal attached to the container and lid so that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen.

The sample tag "place of collection" shall include the grid number referenced to positions staked on the site perimeter. The "field information" will include observations such as the soil

texture and surface appearance, ambient temperature and cloud cover at time of sampling, and precipitation conditions 24 hours before sampling. The chain of custody form includes: sample number, signature of collector, date and time of collection, place and address of collection, sample type, signature of persons involved in chain of possession, and dates of possession. This is a two-page record: the original accompanies the shipment and the "copy" is retained by the Laboratory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request sheet. The request sheet has two parts: field and laboratory. The second part is used by the analytical laboratory when the samples are received.

For closure sampling, a separate field log book will be kept and will contain all information pertinent to field surveys and sampling. The log book will have bound and consecutively numbered pages in an 8-1/2 by 11-inch format. Minimum entries include:

a. Purpose of entry (routine sampling, special sampling)
b. Location of sampling (coordinates referenced to staked field points)
c. Name and address of person making log entry
d. Number and volume of sample taken
e. Description of each sampling location, sampling methodology, equipment used, etc.
f. Date and time of sample collection or waste application

g. Sample destination and transporter's name (name of laboratory, UPS, etc.)

h. Map or photographic reference, if any

i. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc.)

j. Field measurements, if any (pH, etc.)

k. Signature of person responsible for the log entry.

4.2.3 Analysis

Soil and sediment samples will be analyzed for toxic metals, organics, cyanide, and nitrates as defined in Table 4-1. Barium and lead are possible contaminants because they are in several HE mixtures. The other toxic metals are included to ensure that these materials have not been involved in past detonations. A scan for volatile and semi-volatile organics is conducted to ensure that residuals from solvents used in HE preparation or other regulated organic constituents are not present. With the exception of barium nitrate, none of the major HE constituents are among the hazardous constituents listed in Appendix III of HWMR 201. The organic scans will analyze for the presence of 199 of the 227 listed hazardous organic constituents for which there are analytical methods in SW 846. Of the remaining 28 listed organic constituents, eight are included in the metals and cyanide analysis. None of the remaining 20 listed organic constituents are used in HE manufacture.

Both cyanides and nitrates are included in the analysis survey. Nitrates occur in HE as ammonia nitrate and barium nitrate. Cyanides and nitrates could conceivably be products of detonation because the HE materials include organic nitrogen compounds. Sulfides are not included in the analysis because sulfur and sulfur compounds are not components of the HE treated at the site.

Analysis will use the ICAP scan or atomic adsorption for metals and the Gas Chromatograph/Mass Spectrometer scans for organics, along with quality assurance methods defined in SW 846. A complete analysis will be conducted for the initial background, grid, or sediment samples. Additional samples will be taken in areas found to be contaminated and tested for the specific contaminant only.

4.2.4 Contamination Criteria

The closure regulation HWMR 206.C.2.e requires that all facility equipment and structures must have been properly disposed of, or decontaminated, by removing all hazardous waste and residues. The closure regulation specific to thermal treatment (HWMR 206.C.11.e) states that the owner or operator must remove all hazardous waste and hazardous waste residues from the thermal treatment process or equipment. The above regulations both relate decontamination to equipment, but do not define the term residue. The regulation HWMR 201 A.2.c.(2) states that any solid waste generated from the treatment of hazardous waste is a haz-

ardous waste, except as provided in HWMR 201.A.2.c.(3), which states that solid waste described in HWMR 201 A.2.c.(2) is not a hazardous waste if it does not exhibit any of the characteristics of a hazardous waste identified in HWMR 201B. Those characteristics include ignitability, corrosivity, reactivity, and EP toxicity. The intent of these closure regulations is to guarantee that a closed area poses no risk to human health or the environment.

The definition as to what constitutes contamination of the detonation site, based on the above regulations, is not clear. Barium is the most probable regulated constituent expected to be found at a detonation site. According to HWMR 201.A.2.c.(3), the residue would not be a regulated waste for barium or other metals unless the concentration exceeded the EP toxicity limit. There are no limiting concentrations for hazardous constituents other than those listed as EP toxic.

If a significant increase of hazardous constituents over background is used to determine the residue that must be removed, then it is conceivable that large quantities of soil around the detonation site would have to be removed, even though the concentration of hazardous constituents would not pose a risk to human health or the environment. The comparison against background samples is further complicated by validity of the background samples. The detonation site is located on a mesa rim and the area survey includes both the mesa's surface and the canyon

floor. Developing background constituent concentration levels that account for rapid changes in geology, as well as the effects of erosion and deposition, is not practical.

Should contamination removal be based solely on a significant increase of a hazardous constituent, the soil may not be a regulated waste, according to HWMR 201.A.2.c.(3), and may be handled and disposed of as an unregulated waste. The cost of removing the soil may not afford any additional protection to human health or the environment.

Basing the determination of contamination of total metals on EP toxicity limits is not valid. As shown in Table 4-2, Western U.S. soils have the potential to exceed EP toxicity limits for several metals. It is possible that background concentrations of EP toxic metals may exceed the EP toxicity limit.

As a result of these considerations, the following contamination criteria is selected. On completion of the analytical survey, the Laboratory will prepare a risk assessment for each constituent that shows a significant increase over background concentrations. A significant increase will be determined using statistical methods described in SW 846. The risk assessment will determine the threshold concentration for each constituent that represents a significant risk to human health and the environ-

ment, and will take into account all possible pathways. Soils containing regulated constituent levels above the threshold concentration will be considered contaminated.

A copy of the completed risk assessment, along with pertinent backup data, will be provided to the NMEID for review and approval of the threshold values. Should NMEID find the threshold contamination levels inadequate, the Laboratory will negotiate threshold values agreeable to both parties. Closure will not start unless the threshold contamination levels have been approved by the NMEID.

4.3 Decontamination

The approach to decontamination depends on the extent of contamination, as determined by the sampling survey. If the sampling survey indicates that there are no contaminated areas, no further action will be taken at the site except that the burn cage will be hauled to Area L for storage, pending landfill disposal at a permitted site.

Should a small soil area be affected, the contaminated soil will be removed with hand shovels or a backhoe, loaded into drums, and transferred in a truck to Area L for storage, pending disposal at a permitted landfill.

Large volumes of contaminated soil will dictate the use of sealed and covered dump trucks. In this event, the Laboratory will contract with a permitted disposal site contractor who will provide sealed gondola trucks and decontaminate those trucks at the disposal site. All wastes shipped off-site will be manifested in accordance with HWMR 203 and the transporter will have an identification number in accordance with HWMR 205.B.

Personnel involved in sampling and decontamination will wear rubber gloves, rubber boots, safety glasses, and coveralls. Personnel involved in dust-generating activities, such as digging and filling drums, will wear dust masks to prevent inhalation of contaminated dust. The Laboratory's Industrial Hygiene Group, HSE-5, will review the site survey analytical data and recommend additional protective clothing.

Small equipment used to pick up soil will be scraped and brushed clean and the accumulated dust will be placed in drums for transport to Area L. The equipment will be wrapped in sheet plastic and sealed with tape, then transported to the HE decontamination slab at TA-16-400. The backhoe will be scraped and brush-cleaned, and the shovel wrapped in plastic and sealed with tape before being transported to TA-16-400.

The decontamination pad at TA-16-400 is used to wash down equipment used to handle HE. The cleaning water is collected in a sump and then hauled to the TA-16 burn pad area with a vacuum

truck. At the burn pads, the water is filtered in two sand filters, the filter residual is burned, and the filtered water discharged under a NPDES permit. The equipment will be decontaminated by washing with detergent and water at TA-16-400. No testing for decontamination of equipment will be conducted because the regulated substances expected to be present are not acutely toxic and washing with detergent is adequate to allow the equipment to be safely handled.

The Laboratory recognizes that if extensive contamination has occurred, the closure plan presented here may be impractical. If the site analytical survey proves this to be true, the Laboratory will provide the survey data to the Director of NMEID within 30 days of the completion of the analytical work. Within 60 days of submission of the survey data, the Laboratory will provide an amended closure plan. The plan may also be amended under other circumstances as per HWMR 206.C.2.C.(2).

4.4 Decontamination Verification

Decontamination of the site will be demonstrated by additional sampling. Because removal of contaminated soil will leave an exposed surface, the disturbed surface will be resampled on the same grid used to define the contaminated area. Analysis and the determination of contamination is as previously discussed, and an analysis will be conducted only for those constituents that caused the area to be contaminated.

4.5 Closure Schedule

The year of closure is 1986. Partial closure has not and will not occur. The time requirements for the analytical survey, contracting, and closure steps are given in Table 4-3. The analytical survey and the decontamination contractor selection will be completed before closure. Several of the survey and contracting steps occur concurrently and the total time to complete these activities is estimated at 620 days. Closure, including decontamination and decontamination verification, is estimated at 177 days. The time line schedule for the analysis survey, contracting, and closure activities is shown in Figure 4-6. Upon receipt of written approval of the plan all wastes will be re-routed to the burn pad at TA-16, or to waste detonation sites at TA-14, -15, -36 or -39. At this time, acceptance of waste at TA-40-SDS will be discontinued.

The analytical survey represents a major cost and manpower investment. To ensure that the effort is complimentary to the closure plan approved by the NMEID, sampling will not start until written closure plan approval has been received from the NMEID.

Contracts for analytical work and soil removal are expected to exceed $100,000. Because the Laboratory policy requires the work to be put out to bid, ninety days are required to solicit and process the bids.

The location of the site is prone to snow cover in the winter months. Depending on the date NMEID approves the closure plan, the analytical survey may be delayed until the site is free of snow and the ground is thawed adequately to allow the core sampling. The schedule includes a weather contingency to allow for weather delays.

A copy of this closure plan is to be kept at the DOE office until closure is complete and certified.

4.6 Closure Certification

An independent registered professional engineer and the owner/operator of the facility shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the site area has been closed in accordance with this plan. The letter shall be dated and signed by each party and stamped by the registered engineer, and the original copy submitted by the DOE to the Director of the NMEID. One copy shall be maintained at the DOE office and one copy maintained by the HSE-8 Regulatory Compliance Group.

5.0 GENERAL CONSIDERATIONS

5.1 Contact Person

Upon approval of this closure plan, the NMEID and LANL will notify, in writing, the respective contact person(s) to organize activities and communications between the two parties. The parties will provide timely written notification of any changes in the designation of contact persons during the term of this plan. LANL will provide a minimum of ten days' advance notice to the NMEID, through the NMEID contact person(s), of any construction, sampling, or activities conducted under this closure plan.

5.2 Quality Assurance

Effectiveness of the programs contained in this plan is specifically dependent on the proper sampling and analytical methods. LANL will use sampling, quality assurance, quality control, and chain of custody procedures that are consistent with USEPA regulations throughout all activities contemplated under this plan. All analytical testing will be performed in a laboratory using appropriate USEPA procedures with QA/QC in conformance with USEPA requirements.

LANL will submit the following information for NMEID approval before any soil sampling in the closure plan:

- The name and the quality assurance and control procedures of the laboratory doing the analysis of the samples. This will include appropriate USEPA procedures for analytical methodology, sample preservation, and detection limits of constituents.

- Detailed chain of custody and sampling methods indicating a step-by-step procedure for taking samples.

5.3 Split Samples

Upon request by authorized representatives of the NMEID, LANL will provide split samples of any samples collected under this plan. If any analysis is made of such samples, a copy of the results of such analysis shall be furnished promptly to LANL. This includes all relevant technical data generated by the NMEID representatives, their agents, or contractors.

5.4 Facility Access

Upon request, LANL will provide reasonable access to its facility to authorized representatives of the NMEID for the purpose of monitoring, sampling, and observing activities carried out under this plan. NMEID representatives shall comply with established LANL safety and security practices.

5.5 Cooperation

LANL and the NMEID's representatives will cooperate to the fullest extent possible in the reporting and exchange of data developed under this plan. Copies within LANL's possession of results of all sampling and analyses, and other relevant technical data generated by the parties, or their agents or contractors under this plan, including raw data, field notes, and laboratory bench sheets and reports, will be exchanged as soon as practicable. In the event LANL contracts with a laboratory to perform work, and the NMEID requests from the laboratory copies of raw data, field notes, or laboratory bench sheets generated for LANL, LANL shall indicate to the laboratory that it has no objection to such documents being provided to the State of New Mexico.

TABLE 4-1
TA 40-SDS SOIL SAMPLE ANALYSIS
CONSTITUENTS

EPA Hazardous Waste Number	Metals	EP Toxic Regulated Concentrations	EPA* Analytical Method
D004	Arsenic	5.0 mg/l	6010
D005	Barium	100.00	6010
D006	Cadmium	1.0	6010
D007	Chromium	5.0	6010
D008	Lead	5.0	6010
D009	Mercury	0.2	7470 or 7471
D010	Selenium	1.0	6010
D011	Silver	5.0	6010
-	Nickel	-	6010
-	Beryllium	-	6010

<u>Organics</u>

GC/MS for volatiles	8240
GC/MS for semivolatiles	8250

<u>Other</u>

Cyanide	9010
Nitrate	9200

*Analytical methods may include any applicable methods found in USEPA SW 846.

TABLE 4-2
AMBIENT SOIL TOTAL METALS CONCENTRATIONS

PARAMETER	Mean Ambient Background[1] Western U.S. ppm_w	Eastern U.S. ppm_w	EP Toxic[2] Regulated Levels mg/l
Matrix Type	Soil	Soil	
Aluminum	5.4	3.3	
Chromium	38	36	
Barium	560	500	100.0
Beryllium	0.6	0.6	
Cobalt	8	7	
Copper	21	14	
Iron	20,000	15,000	
Nickel	16	13	
Manganese	390	290	
Zinc	51	36	
Boron	22	32	
Vanadium	66	46	
Silver	-	-	5.0
Arsenic	6.1	5.4	5.0
Antimony	150	-	
Selenium	150	-	1.0
Thallium	-	-	
Mercury	0.055	0.096	0.5
Tin	10	10	
Cadmium	1	1	1.0
Lead	18	14	5.0
Ammonia	-	-	
Cyanide	-	-	
Sulfide	-	-	

1. Ambient background concentrations apply only to soil matrix samples. Values obtained from "Geochemistry of Some Rocks, Soils, Plant and Vegetables in the Conterminous United States" United States Geological Survey Professional Paper 574 F, 1975.

2. Total metals and EP toxic metals are not directly comparable. The purpose of the Table is to demostrate that natural soils have the potential to exceed EP toxic regulated levels.

TABLE 4-3
TIME REQUIREMENTS FOR ANALYTICAL SURVEY, CONTRACTING, AND CLOSURE FOR TA-40-SDS

Analytical Survey and Contracting	
Contract for sampling and/or analytical services	90 days
Survey sampling grid establishment	15 days
Conduct the first sample survey	30 days
Analyze the first samples	60 days
Prepare risk assessment	60 days
NMEID reviews risk assessment	60 days
Conduct the second sampling survey (if needed)	30 days
Analyze second samples	60 days
Determine contaminated areas	20 days
Contract for decontamination	90 days
Weather contingency	60 days
Closure	
Remove soil	90 days
Decontaminate equipment	7 days
Weather delay contingency	30 days
Conduct verification sampling	20 days
Analyze samples	30 days

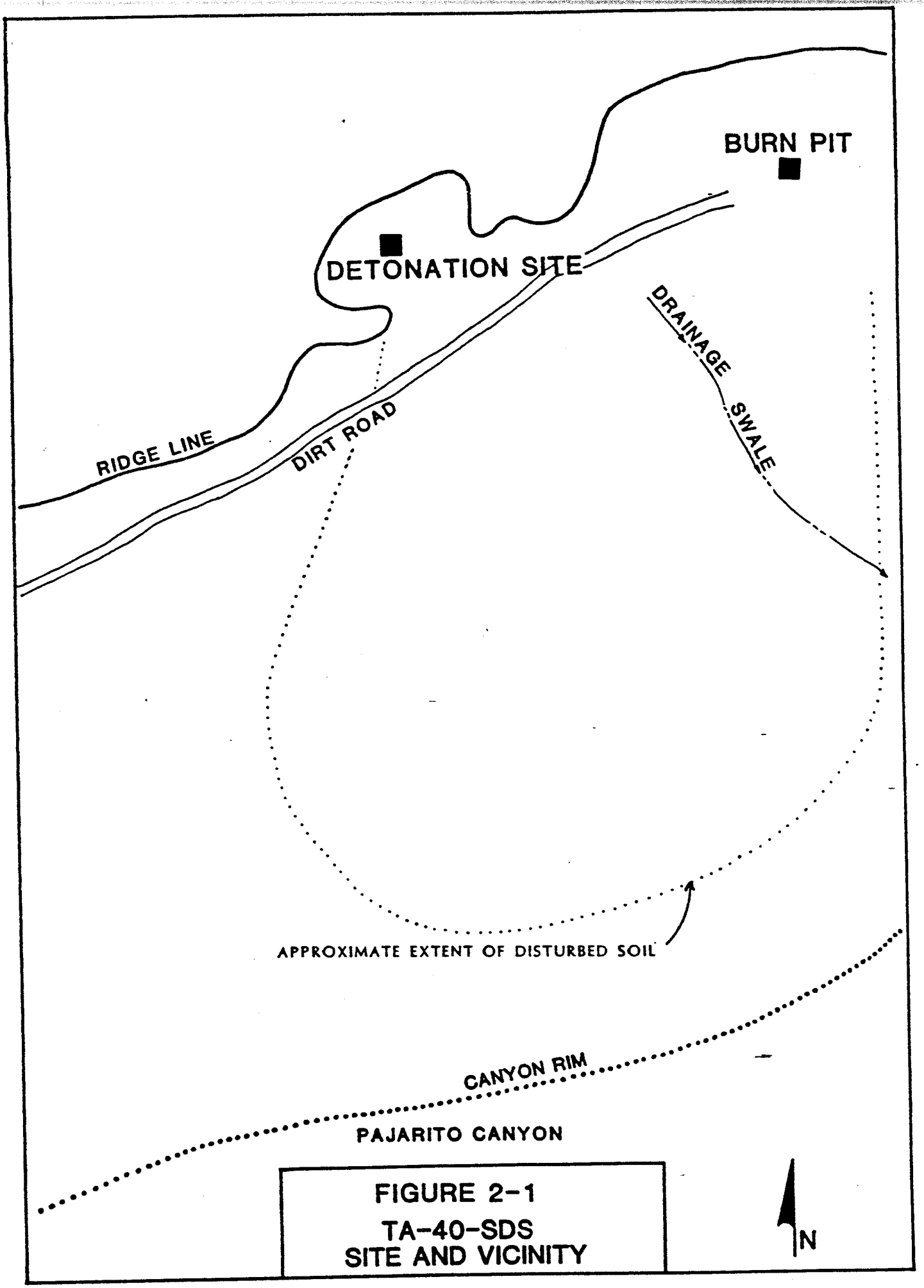


FIGURE 2-1
TA-40-SDS
SITE AND VICINITY

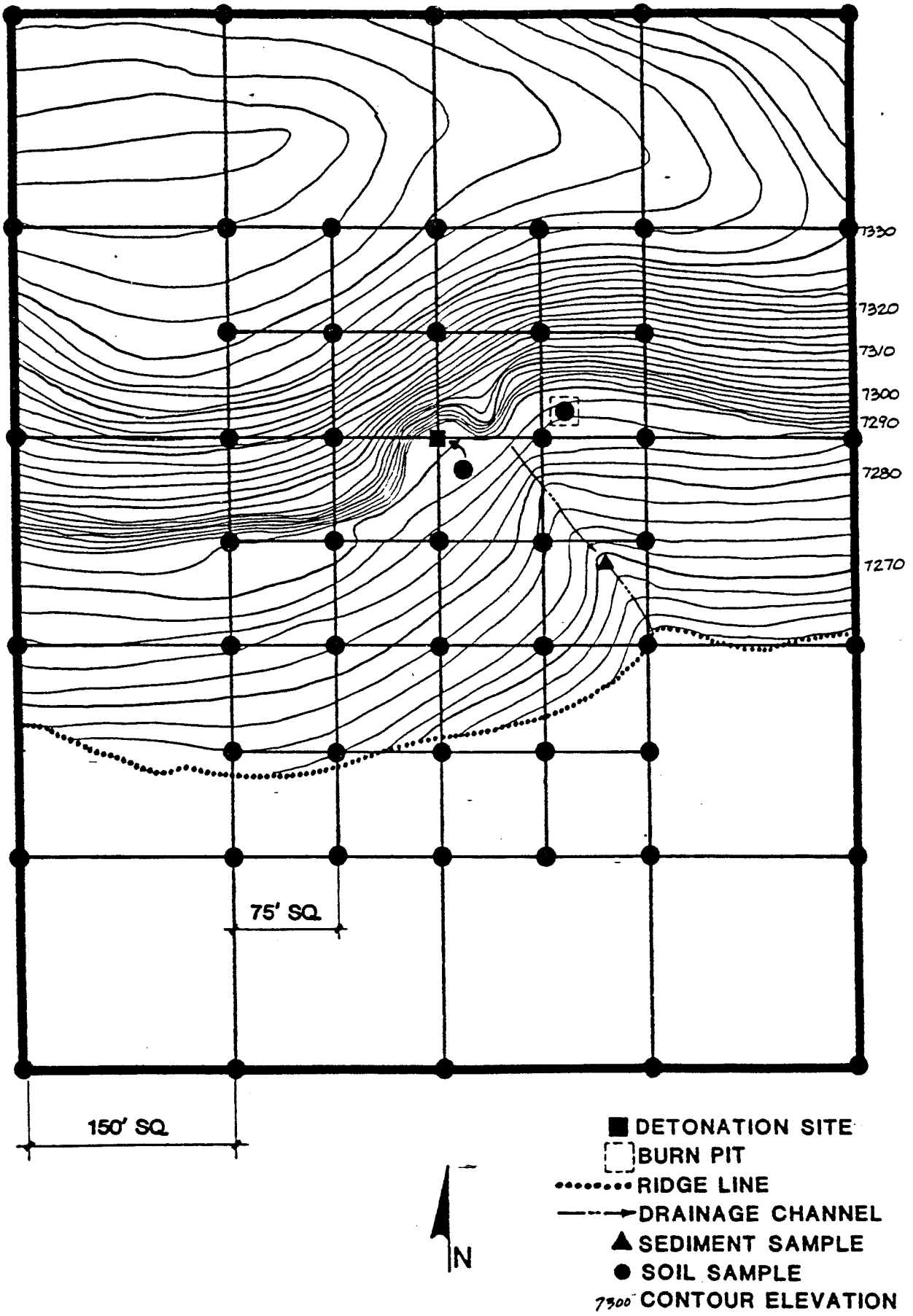


FIGURE 2-2

TA-40-SDS TOPOGRAPHY & GRID SCHEME

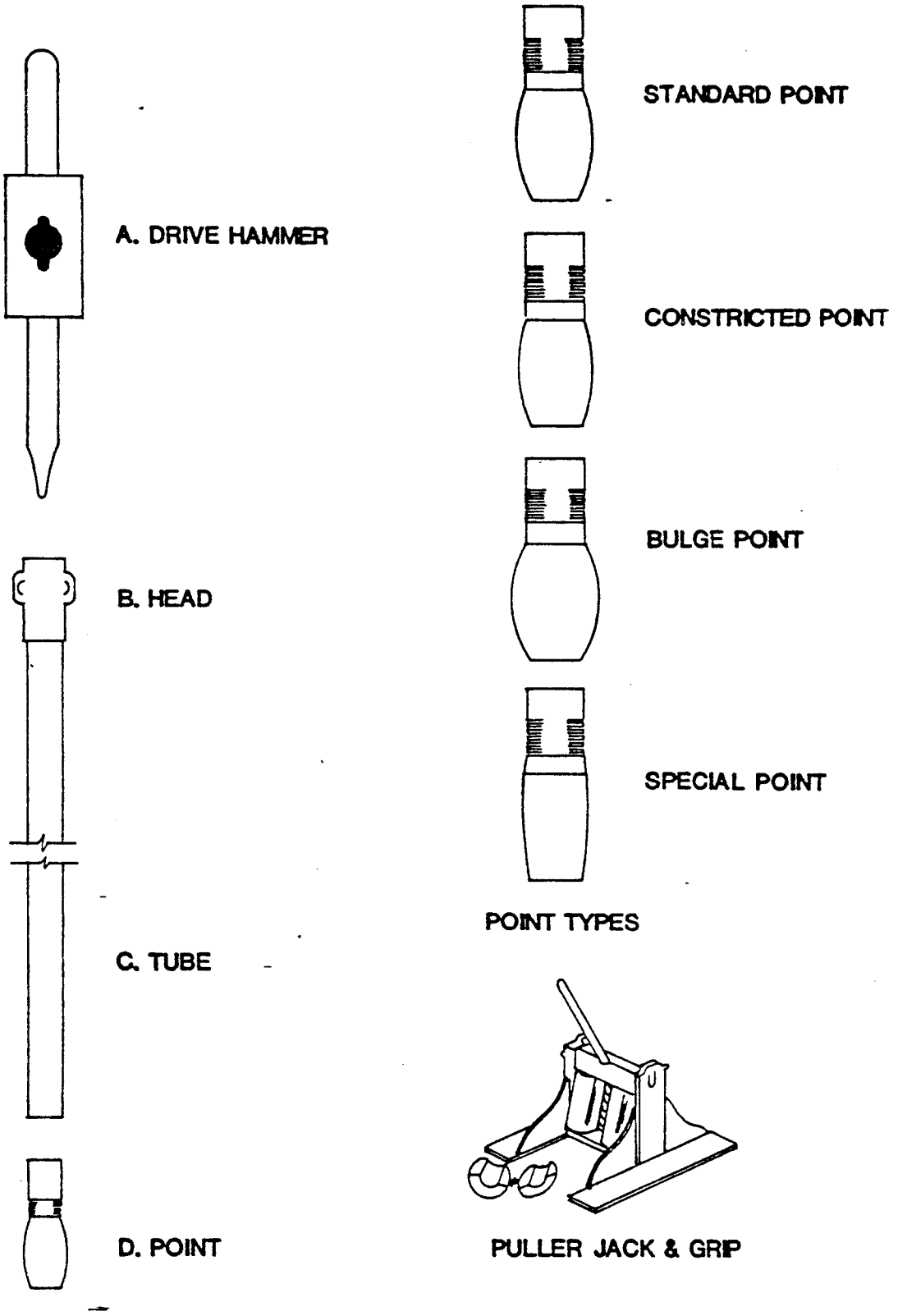


FIGURE 4-1

VEIHMEYER SOIL SAMPLER

FIGURE 4-2
EXAMPLES OF SAMPLE LABELS

OFFICIAL SAMPLE LABEL

Collector_____ Collector's Sample No._____

Place of Collection_____

_____

Date Sampled_____ Time Sampled_____

Field Information_____

_____

_____

ALTERNATE SAMPLE LABEL

DATE TIME SAMPLE NO. ORIGIN

LOCATION SAMPLED

_____

DESCRIPTION

_____

REMARKS

_____

REQUESTED ANALYSIS

_____

SAMPLED BY: (PRINT AND SIGN) LOG REFERENCE

TAG NO.____OF____

_____

FIGURE 4-3
EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE SEAL

Collected by_____ Collector's Sample No._____
(Signature)

Date Collected_____ Time Collected_____

Place Collected_____

_____

_____

FIGURE 4-4
HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION

Collector_____ Date Sampled_____ Time_____hours

Location of Sampling_____
name of company, disposal site, etc.

Address_____
number street city state zip

Telephone (___)_____ Company Contact_____

HML NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION

Analysis Requested_____

_____

_____

Special Handling and/or Storage_____

_____

PART II: LABORATORY SECTION

Received by_____Title_____Date_____

Sample Allocation: __HML __LBL __LABL __SRL Date_____

Analysis Required_____

_____

_____

*Indicate whether sample is sludge, soil, etc.; **Use back of page for additional information.

FIGURE 4-5
CHAIN OF CUSTODY RECORD
Hazardous Materials
Collectors Sample No.____

Location of Sampling: __Producer __Hauler __Disposal Site

__Other:_____

Company's Name_____Telephone (___)_____

Address_____
number street city state zip

Collector's Name_____Telephone (___)_____
signature

Date Sampled_____ Time Sampled_____hours

Type of Process Producing Waste_____

Waste Type Code_____ Other_____

Field Information_____

_____

_____

Sample Allocation:

1. _____
name of organization

2. _____
name of organization

3. _____
name of organization

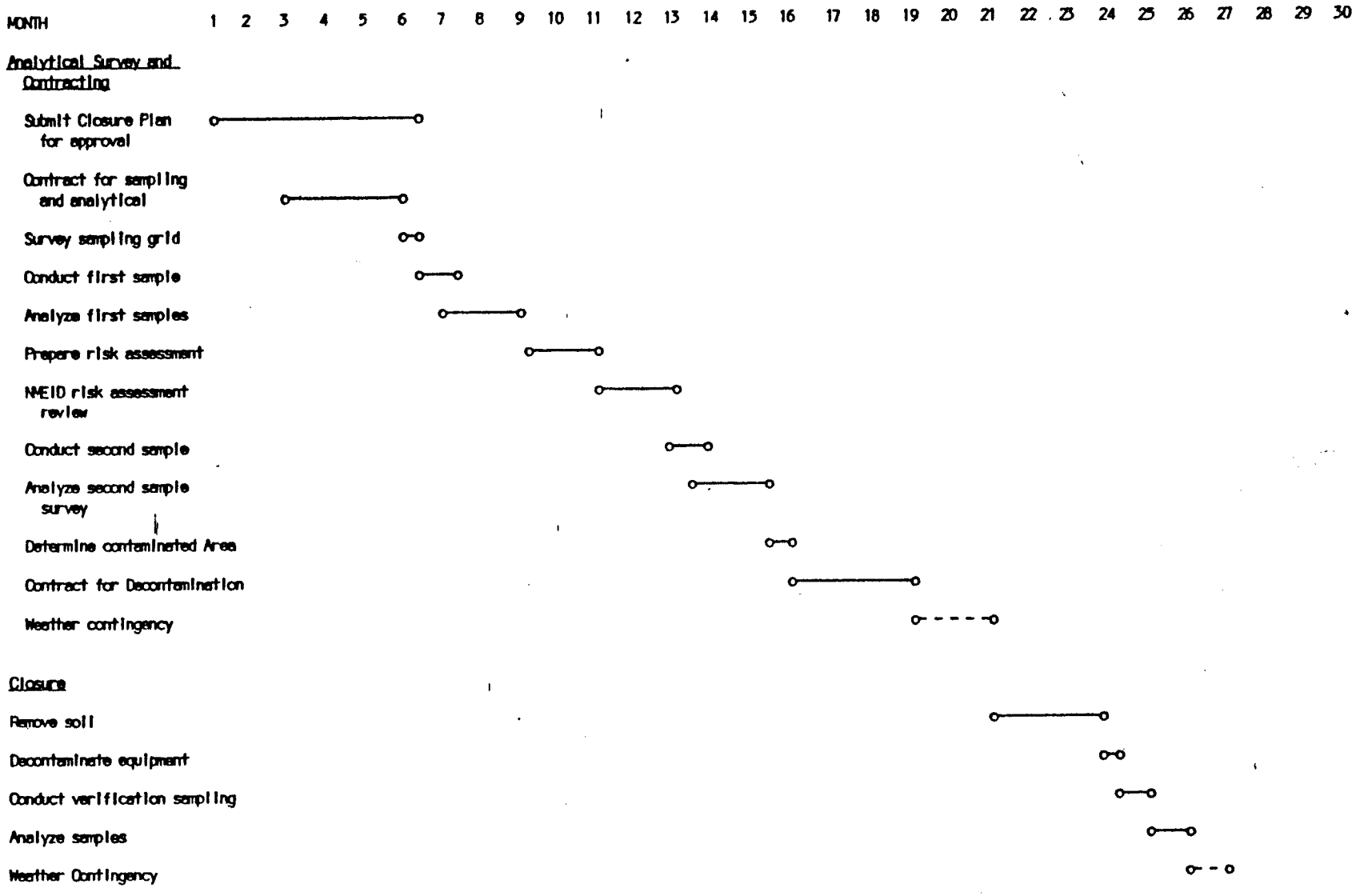
Chain of Possession

1. _____ _____ _____ _____
signature title inclusive dates

2. _____ _____ _____ _____
signature title inclusive dates

3. _____ _____ _____ _____
signature title inclusive dates

FIGURE 4-6
ANALYTICAL SURVEY, CONTRACTING AND CLOSURE
TIME LINE SCHEDULE



*Month = 30 days