



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

Barbara

~~*prints*~~

*file LANL
 rec'd 1/27/94*

TA-54

FEB 04 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Kathleen M. Sisneros, Director
 Water and Waste Management Division
 New Mexico Environment Department
 1190 St. Francis Drive
 P. O. Box 26110
 Santa Fe, NM 87502-6110

Dear Ms. Sisneros:

In response to your letter of January 3, 1994, the Department of Energy (DOE) and the University of California (UC) have developed and provided the enclosed information.

1. Provided as Attachment I is an amended Closure Plan. It is identified in the Los Alamos National Laboratory's (LANL) Hazardous Waste Permit as E.8. It addresses the two remaining treatment tanks at the Technical Area (TA) 54 Area L location, after partial closure of two treatment tanks takes place. This amended closure plan covers the closure requirements for the remaining sub-units at this location.
2. An amended closure plan for the treatment tanks, E.8-a, which includes figure 7 of the modification package provided to the New Mexico Environment Department (NMED) on April 1, 1993, proposing changes to DOE and UC's Hazardous Waste Permit, has been changed to reflect the partial closure of two treatment tanks. It is provided to illustrate which of the four treatment tanks will be taken out of service (see Attachment II). The two treatment tanks to be taken out of service are the ones located on the southeast and southwest side of the pad. A formal request to modify the permit to substitute E.8-a for the existing E.8 closure plan will be made once NMED accepts the partial closure of this sub-unit.
3. This submittal also contains the proposed modifications that will be required once the closure of the Batch Waste Treatment Unit (BWTU) is completed. These modifications include the deletion of Closure Plan E.2 for the BWTU and changes throughout the permit removing references to the BWTU (see Attachment III).

Once closure of the BWTU and partial closure of the treatment tanks is completed, a certification for these activities will be submitted to NMED. At that time, DOE and UC will submit a request to make the modifications described in number three (3) above.



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Kathleen M. Sisneros

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It is understood that the fee for the above activities will be charged at the time the closure certification is accepted by NMED. It is further understood that NMED may choose to inspect the closed units prior to accepting the closure certification. It would expedite a visit and tour of these locations if NMED would call several days in advance of such activities. This would allow time to insure that the appropriate staff members are present to answer any questions that might be raised at that time.

If you should have any questions concerning this response or other concerns over these closure activities, please feel free to call either Jon Mack of my staff at 665-5026, or Jack Ellvinger, ESH-8, LANL, at 667-0633.

Sincerely,



Joseph C. Vozella, Chief
Environment, Safety, and Health
Branch

LESH:7JM-118

Enclosures

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ATTACHMENT I

**ATTACHMENT E.8
PARTIAL CLOSURE
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS**

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix 1 to §270.42, A.1 and D.1.c

Summary of Changes -

The proposed partial closure at TA-54 Area L Hazardous Waste Treatment/Storage Tanks will result in the removal of two of the existing four tanks, with the remaining two tanks remaining in service. The change in date of closure of the two tanks from the year 2100 to 1994 reflects a decision by the Laboratory to partially close this unit. Other proposed modifications include simple clarifications in language, corrections of typographical errors, and changes in organizational titles or affiliations.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively.

**CLOSURE PLAN
E.8
PARTIAL CLOSURE
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS**

CLOSURE PLAN
PARTIAL CLOSURE
PERMIT ATTACHMENT E.8
NM 0890010515-1

2/94 E.8. Partial Closure for TA-54 Area L Hazardous Waste Treatment/Storage Tanks

E.8.1. Unit description

2/94 ~~Two~~ Four 1,660-gallon, 10-gauge steel treatment/storage tanks are located at Area L will be closed. They are lined with plastic (except when treating reactive wastes) and used to neutralize, oxidize, and evaporate waste. The tanks are located on a bermed concrete pad. (Figure E.8.1) This closure plan
2/94 addresses only ~~these~~ the two tanks indicated (Figure E.8.2).

2/94 The remainder of TA-54, Area L storage units consist of a single-story metal transfer/storage building, a roofed concrete storage pad, ~~two~~ six transportable storage buildings and specified areas within the fenced portions of Area L for storage of solid containerized waste. These areas are used for the accumulation, packing, and storage of waste containers, which are generated throughout the laboratory and delivered to the facility routinely. Liquid wastes are segregated into compatible types and placed inside the transfer/storage building or within one of the storage cells of the roofed concrete pad. Wastes in small containers are put into one of the transportable storage buildings or the transfer/storage building for placing into lab packs. Wastes suitable for recycling are consolidated into drums, and any damaged or leaking drums are repacked into larger drums in this area. Solid containerized wastes are stored on pallets, or otherwise elevated four inches, in cleared areas within the fenced portions of Area L.

E.8.2. Estimate of Maximum Waste in Storage and Treatment

2/94 The maximum amount of waste that could be stored in the tanks is ~~6,640~~ 3,320 gallons if the tanks
2/94 were filled with no freeboard. The expected maximum volume of waste is ~~5,720~~ 2,860 gallons.

E.8.3. Description of Waste Handled

The wastes treated or stored normally at the tanks are ammonium bifluoride and lithium hydride. Occasionally plating bath treatment residues from treating F003, F004, F005 and F006 wastes are also treated here. Potentially, any wastes or clean up wastes amenable to evaporation may be treated in the tanks. Therefore, any waste generated at the laboratory potentially has, or could be, treated or stored in the tanks.

E.8.4. Partial Closure

2/94 ~~Partial closure of two of the existing four tanks will take place. Should a single tank be closed, all~~
2/94 portions of this plan addressing tank decontamination shall apply to the closing of two tanks.

E.8.5. Closure Procedure

Cleanup and closure will be done in sequential order, culminating in the disposal of any residues or contaminated material by shipment off site to a permitted facility. Before decontamination, all wastes in storage will either be treated on site or disposed of off site. Given the diversity of wastes handled, it is not possible to estimate the exact wastes on hand at the initiation of closure and, therefore, the final disposition of the wastes. In general, recyclable wastes will be reused internally or recycled to users off site. Permitted wastes will be burned at the permitted incinerator at TA-50-37. Any wastes compatible with permitted treatment at the TA-50-I Batch Waste Treatment Unit will be so treated.

The remaining wastes will be transported off site to a permitted disposal facility. If on site treatment is not possible due to prior closure of the permitted units, off site disposal will occur.

E.8.5.1. Waste Removal

The waste of concern at the start of closure consist of liquids and residues in the treatment tanks. Following removal of the tank liners and residual wastes, the tanks will be decontaminated. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. All wastes shipped off site will be manifested in accordance with the facility permit. All waste transporters will have an EPA identification number in accordance with HWMR-5, Part IV, Section 263.11.

E.8.5.2. Storage/Treatment Decontamination

- 2/94 Following removal of the two tank liners and residual wastes, the two tanks will be decontaminated by scraping and washing with Liquinox(®) or Alconox(®) in water. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. The tanks will be then be scraped and brushed to remove residue and the residue will be collected and placed in drums. The tanks will be removed and the concrete pad on which the two treatment tanks are placed will be washed with a Liquinox(®) or Alconox(®) solution in water. The wash water will be contained with the curbed concrete pad, collected, sampled, and analyzed. If the wash water is not hazardous or requires only neutralization, it will be removed with a vacuum truck and transported to an industrial sewer which drains to the facility industrial wastewater treatment plant at TA-50-1. If the water contains hazardous constituents, it will be removed, placed in drums and transported off site to a permitted facility for treatment or disposal. Wash-down of the two tanks and pad will be repeated until decontamination is demonstrated.
- 2/94

E.8.5.3. Soil Decontamination

- 2/94 Partial closure of this unit will result in the removal of two of the existing four tanks, with the remaining two tanks continuing in service. Therefore, soil sampling, as described in section E.8.9, will be conducted to determine if hazardous wastes have been tracked outside of contaminated areas at the time of final closure of this unit. When final closure is initiated eight soil samples will be collected around the edge of the bermed concrete pad beneath the treatment tanks as shown in Figure E.8.2. Each sample will be made up of six inch deep cores taken six inches off the edge and equally spaced to cover each edge. Soil and sediment samples will be analyzed for Table E.8.2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.
- 2/94

If the sample survey indicates that there are no contaminated soil areas, no further soil decontamination action will be taken at the site. If contamination is found in any of these samples, the limits of the sampling area will be expanded by establishing a three foot sampling grid around a single contamination point, or centered on the area defined by the locus of multiple contamination points, to determine the outside perimeter of the contamination. Sampling will be continued until the extent of contamination is determined. Background samples will be taken in the same manner as the initial closure soil survey.

Once the limits of the contaminated area are determined, the contaminated soil will then be removed to a depth of 6 inches and handled as a regulated waste. Contaminated soil will be placed in drums or sealed in dump trucks for off site disposal at a permitted facility. The adequacy of decontamination is determined by additional sampling. Sampling, analysis, and documentation procedures are detailed in section E.8.9. In order to demonstrate final decontamination, soil samples will be analyzed for all Table E.8.2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.

E.8.5.4. Personnel Protection

2/94 Personnel who are washing equipment will wear rubber gloves, neoprene acid/solvent resistant coveralls, rubber boots, and a face shield. The Laboratory's Industrial Hygiene Group (HRSE-5) will review the site survey analytical data and recommend additional protective clothing if necessary.

E.8.5.5. Equipment Decontamination

2/94 Shovels, drum trucks and other equipment used for decontamination will be scraped and brushed to remove residue, and the residue collected will be placed in drums for disposal off site at a permitted facility. The equipment will be placed on a 30 mil plastic sheet that is bermed to contain liquids and pressure washed with water and detergent. Large equipment such as backhoes and forklifts will also be washed. Testing will be performed on this water to determine if decontamination is adequate. Washing is considered adequate to decontaminate the equipment. The wash water will be allowed to evaporate and the plastic and residue will be packed in drums for off site disposal at a permitted facility.

E.8.6. Decontamination Verification

E.8.6.1. Wash water Decontamination Verification

A minimum of two samples of the clean Liquinox(®) or Alconox(®) solution will be sampled as background for wash water and, along with the wash water samples, analyzed for the constituents listed in Table E.8.2. Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or
2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused washwater or background sample. Hazardous constituents detected in the background sample will invalidate that sample as true background unless adequate explanation of their source is provided.

2/94 An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Director/Secretary will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.8.6.2. Soil Decontamination

The Criteria for determining contaminated soil are the same as discussed in Section E.8.6.1. Regulated constituent concentrations will be compared to background concentrations. Soils containing levels of contamination above the background will be considered contaminated and removed as hazardous waste.

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

E.8.7. Closure Schedule

2/94 The year of closure is 21001994. Soil survey, contracting and closure activities will observe the schedule given in Table E.8.1. Some soil sampling and the decontamination contractor selection will

2/94 be completed before closure begins. Because several of the closure steps will occur simultaneously, closure is estimated to take ~~360~~ 210 days.

Contracts for analytical work and, if necessary, soil removal are expected to exceed \$100,000. The Laboratory is required by policy to put the work out for bid, and ninety days are required to solicit and process the bids. The location of the site is prone to snow cover in the winter months. The closure may be delayed until the site is free of snow and the ground is thawed adequately to allow the soil sampling and other closure operations. The schedule includes a weather factor to allow for this delay.

E.8.8. Closure Certification

2/94 An independent, registered professional engineer and the Permittee shall witness the closure of the two tanks and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility two tanks have been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the original copy submitted by the DOE to the Director Secretary of the NMEIDNMED. One copy shall be maintained at the DOE office and one copy maintained by the ESHSE-8 Regulatory Compliance Section.

E.8.9. Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and method are specific, any applicable procedure or method given in SW-846 or other EPA approved procedure may be used if conditions or experience shows the alternate method to be more appropriate. Disposable samplers may be used.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in *Samplers and Sampling Procedures for Hazardous Waste Streams*, EPA 600/2-80-018 and/or SW-846. Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. 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.

E.8.9.1. Soil and Solid Residues Sampling

The sampling procedures outlined below are used to determine the amount of hazardous material deposited on a particular area of land, or to determine the leaching rate of the material, or determine the residue level on the soil. Adequate preparation ensures that proper sampling is accomplished.

Surface soil samples will be collected with a trowel or scoop. To sample below 3 in. (8 cm), samples will be collected with a Veihmeyer soil sampler. Drums of solid residues will be sampled with a core sampler or Veihmeyer soil sampler. Drums not capable of being sampled will be assumed to be reactive hazardous waste.

E.8.9.1.1. Cleaning of Sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. 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. Prevention of cross contamination is of particular importance in these samples.

E.8.9.1.2. Sampling Procedures Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
- Combine the samples in a glass container.
- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.
- Rotate the sampler at least two revolutions to shear off the sample at the bottom.
- Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees.
- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.
- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.
- Store the core sample in a 1,000 or 2,000 ml (1 qt or 1/2 gal) sample container.
- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.8.9.2. Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.8.3., the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

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E.8.9.2.1. Cleaning of Sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must be washed with a warm detergent solution (Liquinox(®) or Alconox(®)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using this ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean and protected area.

E.8.9.2.2. Sampling Procedures

- Assemble the Coliwasa sampler.
- Make sure that the Coliwasa sampler is clean.
- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.
- Wear necessary protective clothing and gear and observe required sampling precautions.
- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample.
- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.
- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.
- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.
- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.
- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in plastic bags for subsequent disposal.

E.8.9.3. Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container must be sealed with a gummed paper seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. An example of a sample seal is shown in Figure E.8.4.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the grid number referenced to positions staked on the site perimeter. The "field information" in the case of soil sampling, shall 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. An example of a sample label is shown in Figure E.8.5.

The chain-of-custody form is necessary to trace sample possession from the time of collection and must accompany every sample. This record becomes especially important when the sample is to be introduced as evidence in litigation. This is a two page record with the original accompanying shipment and the "copy" retained by the Laboratory. An example of this form is shown in Figure E.8.6.

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

- a. Purpose of sample (routine sampling, special sampling),
- b. Location of sampling (coordinates referenced to staked field points, if soil sample),
- c. Name and business address of person making log entry,
- d. Type of process producing waste,
- e. Number and volume of sample,
- f. Description of each sampling location, sampling methodology, equipment used, etc.,
- g. Date and time of sample collection,
- h. Sample destination and transporter's name (name of laboratory, UPS, etc.),
- i. Map or photograph of the sampling site, if any,
- j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc.),
- k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc.),
- l. Collector's sample identification number(s), and
- m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

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 field portion of this form must be completely by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be completed by the laboratory personnel when the sample is received.

E.8.10. Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to senior management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, assure that sample blanks are used and analyzed and review the analysis reports for accuracy and adequacy. A written QA/QC plan prepared in accordance with SW-846 guidance shall be prepared and followed, with variations from the plan documented and explained. The designated individual shall prepare a written statement for the final report commenting on the adequacy of the analysis showing decontamination.

E.8.11. Final Closure Report

2/94

Upon completion of the closure activities, the Permittee shall submit a Final Closure Report to the ~~Director~~ Secretary. The report shall document the final closure and contain, at a minimum, the following:

- A. The certification described in paragraph E.8.8.
- B. Any variance from the approved activities and the reason for the variance.
- C. A tabular summary of all sampling results, showing:
 1. Sample identification
 2. Sampling location
 3. The datum reported,
 4. Detection limit for each datum,
 5. A measure of analytical precision (e.g. uncertainty, range, variance),
 6. Identification of analytical procedure, and
 7. Identification of analytical laboratory.
- D. A QA/QC statement on the adequacy of the analyses and the decontamination demonstration.
- E. The location of the file of supporting documentation:
 1. Field log books,
 2. Laboratory sample analysis reports,
 3. The QA/QC documentation, and
 4. Chain of custody records.
- F. Disposal location of all regulated and non-regulated residues.
- G. A certification of accuracy of the report.

TABLE E.8.1
 CLOSURE SCHEDULE

PRECLOSURE ACTIVITIES		Maximum Time Required
Notify the EID-NMED of the closure	-240 days	-45 days
Contract for sampling and/or analytical services	-240 days	
Conduct first soil sampling survey	-210 days	-45 days
Analyze first soil samples	-180 days	-30 days
Conduct second soil survey if needed	-150 days	-20 days
Analyze second soil set of soil samples	-120 days	-10 days
Advertise contract request for proposals	-90 days	
Award contract	-30 days	
CLOSURE ACTIVITIES		
Begin Closure	Day 0	Day 0
Analyze first soil samples	day 60	Day 30
Conduct second soil samples survey, if needed	day 90	Day 45
Treat or remove final wastes	day 90	Day 50
Analyze second soil samples, if needed	day 120	Day 65
Evaporate waste water from treatment tanks	day 180	Day 90
Contract for s Soil decontamination, if necessary	day 210	Day 105
Remove soil	day 240	Day 130
Dispose of tanks and residue	day 270	Day 140
Remove soil	day 270	
Weather delay contingency	day 300	Day 175
Conduct verification samples	day 320	Day 200
Analyze samples	day 350	Day 200
Submit final report to EID-NMED	day 360	Day 210

NOTES:

~~Many of the above steps may be taken concurrently, and the total closure period will not exceed 360 calendar days.~~

~~The calendar days given above are completion dates for each activity. In some cases more than one activity may occur simultaneously.~~

This schedule applies to both partial and final closure.

TABLE E.8.2.
ANALYTICAL PARAMETERS

METALS

Arsenic
Barium
Cadmium
~~organics~~
Chromium
~~organics~~
Lead
Mercury
Selenium
Silver
Nickel
Beryllium

ORGANICS

Halogenated volatile organics
Nonhalogenated volatile organics
Acid-extractable semivolatile organics
Base-neutral extractable semivolatile
~~Organochlorine pesticides~~
~~Chlorinated herbicides~~
Phenols

OTHER

Cyanides
pH

NOTES:

Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for ~~Extraction Procedure Toxicity~~ Toxic Characteristic Leaching Procedure (TCLP) shall be analyzed by ~~Extraction Procedure Toxicity~~ using TCLP procedures. Both data shall be reported in the final report.

TABLE E.8.3
SAMPLING SUMMARY

MATERIAL SAMPLED	METALS	ORGANICS	OTHER
Washdown solutions before use	X	X	X
Washdown solutions after use	X	X	X
Soils background	X	X	X
Soil samples	X	X	X
Final decontamination samples	X	X	X

NOTES:

Analytical parameters are given in Table E.8.2.

2. Type. Containers must be of a type specified in the DOT hazardous materials regulations, 49 CFR 171 to 179, if those regulations specify a particular container for the waste. As applicable, the containers shall be either: (1) previously unused or certified reconditioned DOT shipping containers; (2) the original shipping containers in which the material was first marketed; or (3) any other suitable container which satisfies the requirements of permit paragraph III.C. If the hazardous wastes are to be received and stored in their original shipping containers, the Permittee must insure that the requirements of permit paragraph III.C. are satisfied. Polyethylene bulk containers shall meet or exceed DOT specification number E9052. Compressed gas cylinders not meeting DOT requirements shall be segregated in a safe area.
3. Quantity. The following quantities include all stored liquid materials, whether regulated or not. Solid materials which do not displace containment capacity may be collocated without affecting these volumes. Solid materials which displace containment volume shall be included in calculating the stored volume as if they were liquids. The Permittee shall keep current accurate records of the quantity of waste in storage at each location below to ensure that these capacities are not exceeded.
 - a. ~~No more than 220 gallons of liquid shall be stored at Technical Area 50, Building 50-1, BWTU curbed bay.~~
 - b. No more than 440 gallons of liquid shall be stored at Technical Area 54, Area L, Building Number 54-31.
 - c. No more than [~~seventeen-2,220~~ 17,220] gallons of liquid shall be stored at each concrete containment structure: Facility Numbers 54-32, 50-139 or 50-140.
 - d. No more than 3600 containers of 55-gallon capacity or less, or the equivalent volume of 26,470 cubic feet, 980 cubic yards or 749 cubic meters, shall be used to store solidified wastes at Technical Area 54, Area L.
 - e. No more than 3,630 gallons of liquid shall be stored in Building 50-37, Room 117.
 - f. No more than 1,650 [~~fifty~~] gallons of waste shall be stored in each modular storage unit.
4. Condition.
 - a. If a container holding hazardous waste is not in good condition (e.g. severe rusting, structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.
 - b. The Permittee may use overpack containers of more than 55-gallon capacity to manage defective waste storage containers. Each overpacked container shall be recorded in the facility record.

2/94

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation	Date Submitted	Action
IV	31	Title	2	Change title from "MODULE IV TREATMENT IN TANKS" to "MODULE IV TREATMENT IN CONTAINERS AND TANKS".	1	A.1	3/93	
IV	31	A	4	Add "containers and" to first sentence.	1	A.1	3/93	
IV	31	A.1	5	Section A.1 deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	
IV	31	A.2	3	Change "four" to "two" open-top steel tanks.	1	A.1	3/93	
IV	31	A.2	4	Add "or in the Barium Sands Truck-Mounted-Container Treatment System located during operation on the treatment pad at Building 54-35."	1	A.1	3/93	
IV	31	B.5.b	2	Replace section with "Each container or tank must be clearly marked as to its contents, the quantity of hazardous waste received, and the date each period of accumulation begins." This text is based on 40 CFR § 268.50 (a)(2)(ii).	1	F.1.c	3/93	
IV	32	B.5.c	2	Change "tothe storage prohibition" to "to the storage prohibition".	1	A.2	3/93	
IV	32	C	2	Add "TREATMENT CONTAINERS OR" to the title.	1	A.1	3/93	
IV	32	C.1	5	Section C.1 deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	
IV	32	C.3	5	A Barium Sands Truck-Mounted-Container Treatment System will replace two existing treatment tanks used for treating barium-contaminated sands (Closure of the two treatment tanks is planned for 1993). Operation of this unit will enhance worker health and safety. The Barium Sands Truck-Mounted-Container Treatment System will be constructed and operated in accordance with all applicable conditions of this Permit.	1	F.1.c	3/93	
IV	32	D.1.a-e	5	Section D.1.a-e deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	

LANL RCRA Permit Modification Sheet
(Continued)

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation	Date Submitted	Action
IV	33	D.3	5	The Barium Sands Truck-Mounted-Container Treatment System will be operated in accordance with operating procedures described in Attachment L.	1	F.1.c	3/93	
IV	33	E.1.a-e	5	Section E.1.a-e deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	
IV	34	E.3	5	Procedures to prevent hazards and requisite proposed inspection and reporting requirements for the Barium Sands Truck-Mounted-Container Treatment System will be operated in accordance with operating procedures described in Attachment L.	1	F.1.c	3/93	
IV	35	H.3	5	Closure requirements for the Barium Sands Truck-Mounted-Container Treatment System are identified.	1	F.1.c	3/93	
IV	34(a)	H.1.a-b	5	Section H.1.a-b deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	

3/93

MODULE IV TREATMENT IN CONTAINERS AND TANKS

IV.A. DESIGNATED TREATMENT UNITS

3/93

The Permittee may treat hazardous wastes only in the containers and tanks described in this module. No other treatment of hazardous wastes, EPA code T01, is permitted anywhere on the facility. Treatment of wastes subject to the exclusions of HWMR-5, as amended 1989, Part V, 40 CFR section 264.1(g) shall be documented in accordance with Permit Attachment I. A record or listing of all facility treatment units shall be kept by the Permittee. Their regulatory status and the reasons for claiming an exclusion under HWMR-5, as amended 1989, Part V, 40 CFR section 264.1(g) shall be recorded. Laboratory staff neutralizing characteristic wastes in quantities of less than one liter need not be recorded if the resultant discharge is to a wastewater system subject to other regulation.

2/94

1. ~~Batch Waste Treatment Unit. Wastes may be treated in the Batch Waste Treatment Unit (BWTU) located in the basement of Building 50-1 in Technical Area 50.~~

3/93

2. Technical Area 54 Area L. Wastes may be treated in the four two open-top steel tanks located in Area L, or in the Barium Sand Truck-Mounted Container Treatment System located during operation on the treatment pad at TA 54-35.

3/93

IV.B. AUTHORIZED WASTES

1. Identification. Only wastes identified in Permit Attachment G, with the process code "T01," in Column D.1. "Processes" shall be treated, subject to the limitations in permit paragraph IV.B.4. below.

2. Quantities. The quantity of waste awaiting treatment shall not exceed the quantity indicated in Permit Attachment G, Column B. "Estimated Annual Quantity of Waste".

3. Additions to the List of Treated Wastes. The Permittee shall apply for a permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR sections 270.41 or 270.42 before treating wastes not identified in this permit module.

4. Special Limitation. The limitations in Permit Attachment G, Column D.2. shall apply to choice of treatment unit.

5. Land Ban. The Permittee must also comply with the following regarding storage of its wastes in tanks which are prohibited from land disposal. These restrictions are imposed on any waste as it becomes prohibited from land disposal. (HWMR-5, as amended 1989, Part VIII, 40 CFR section 268.50)

a. A storage period of one year is permitted. A storage period beyond one year is permitted provided there is proof that such storage is solely for the purpose of accumulation of such quantities as are necessary to facilitate proper recovery, treatment or disposal.

3/93

b. Each container or tank must be clearly marked as to its contents, the quantity of hazardous waste received, and the date each period of accumulation begins.

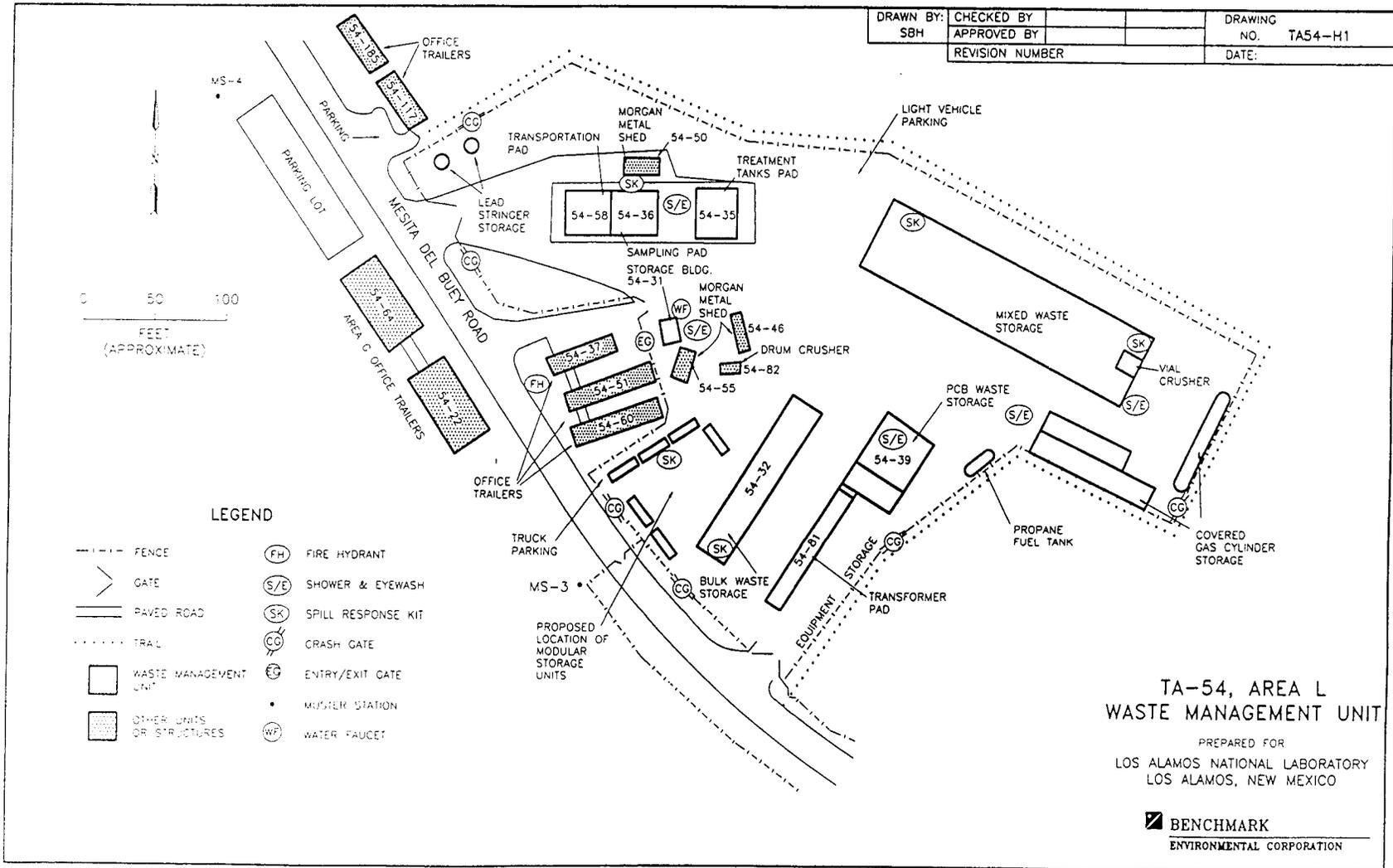
- 3/93
3/93
- c. Hazardous wastes meeting the treatment standards in HWMR-5, as amended 1989, Part VIII, 40 CFR sections 268.41 268.42, 268.43 are not subject to the storage prohibition. Hazardous wastes meeting the treatment standards specified under the variance in HWMR-5, Part VIII, 40 CFR section 268.44 are not subject to the storage prohibition.

3/93 IV.C. DESIGN OF TREATMENT CONTAINERS OR TANKS

- 2/94
1. ~~Batch Waste Treatment Unit.~~ The tank shall be a totally enclosed vented 500 gallon Kynar (e) lined pressure vessel. The tank shall be over a curbed containment slab with eight inch curbs and constructed crack free of concrete with epoxy coating.
2. Technical Area 54, Area L Treatment Tanks. The tanks shall be nine feet in diameter and three feet six inches high. They shall be constructed of ten gauge carbon steel and shall be coated inside and out with Carboline Phenoline (@) film or equivalent. The tanks shall be on a containment slab constructed with six inch retaining curbs as in Figure 7.
- 3/93
3. ~~Barium Sand Truck-Mounted-Container Treatment System.~~ The Barium Sand Truck-Mounted-Container Treatment System shall be constructed as shown in Figure 11. When in operation, the truck mounted system shall be placed on the treatment pad providing secondary containment in TA 54-35, in place of two of the present treatment tanks shown in Figure 7.

IV.D. OPERATING REQUIREMENTS

- 2/94
1. ~~Batch Waste Treatment Unit.~~ The Batch Waste Treatment Unit shall be operated in accordance with Permit Attachment H and the requirements of this module.
- a. ~~The process monitoring instrumentation will be checked for proper operation before treatment begins. No treatment will be started if monitoring instruments are not functioning properly.~~
- b. ~~Wastes will be sampled before and after treatment and analyzed in accordance with Permit Attachment A.~~
- c. ~~No more than 400 gallons of waste plus reagents shall be treated at one time. The wastes shall be limited to the appropriate quantity based on the results of the analyses and the estimated quantity of reagent required to treat the waste.~~
- d. ~~Residues from treatment of wastes listed in HWMR 5, as amended 1989, Part II, 40 CFR section 261, Subpart D, shall be properly disposed of as a hazardous waste in accordance with applicable regulations. Waste treatment residues determined in accordance with Permit Attachment A to qualify for exclusion may be discharged to the industrial wastewater system.~~
- e. ~~The process tank and associated plumbing will be cleaned before and after treatment operations. Operations consisting of several treatment batches of compatible wastes do not require cleaning between batches. The tank and plumbing will be cleaned at the end of the operation, or if the treatment unit is to~~



Class 1 Modification
Partial Closure Plan
Revision 1.1
February 7, 1994

FIGURE E-8.1 - TA-54 AREA L WASTE MANAGEMENT UNITS

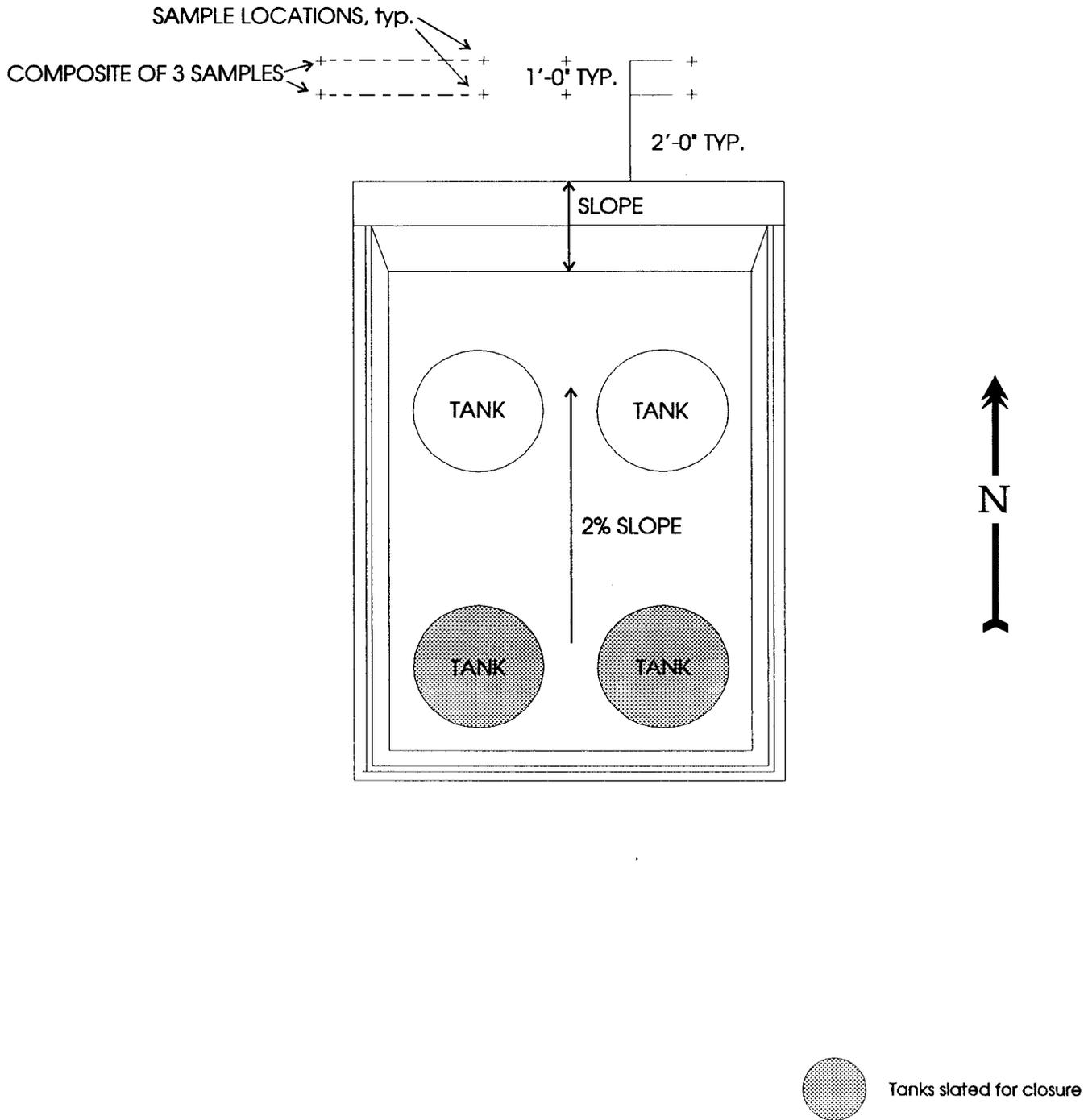


FIGURE E.8.2 TA-54 AREA L TREATMENT TANKS SAMPLE LOCATIONS

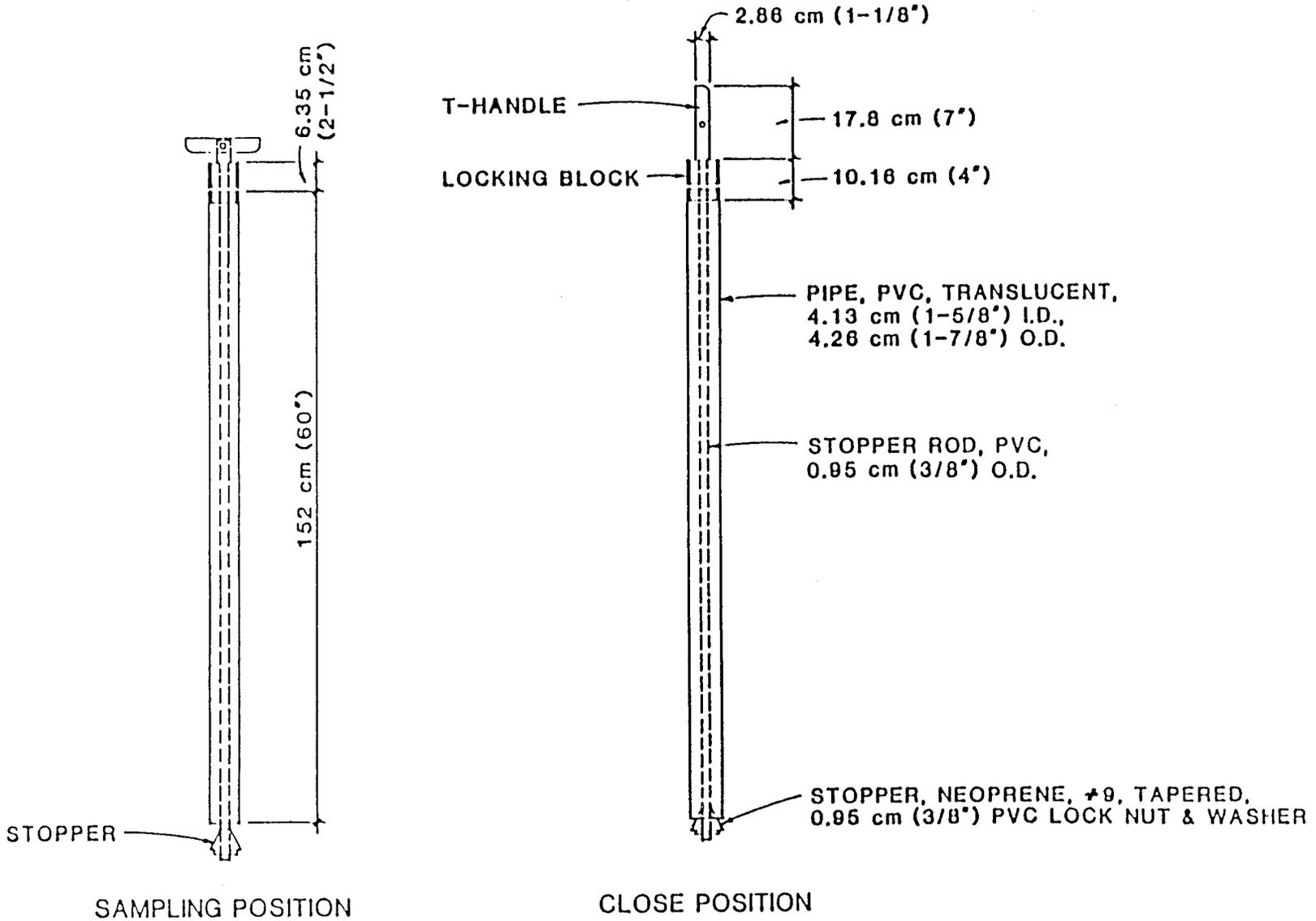


FIGURE E.8.3 COMPOSITE LIQUID WASTE SAMPLER (COLIWASA)

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FIGURE E-8.4
EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE SEAL

Collected by _____ Collector's sample No. _____
(Signature)

Date Collected _____ Time Collected _____

Place Collected _____

FIGURE E-8.5
EXAMPLE OF SAMPLE LABEL

OFFICIAL SAMPLE LABEL

Collector _____ Collector's Sample No. _____

Place of Collection _____

Date Sampled _____ Time Sampled _____

Field Information _____

ATTACHMENT II

**ATTACHMENT E.8a
REVISED CLOSURE PLAN
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS**

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix 1 to §270.42, A.1 and D.1.c

Summary of Changes -

The revised closure plan for TA-54 Area L Hazardous Waste Treatment/Storage Tanks has been updated to reflect closure requirements for the tanks remaining active after two tanks are closed out. This revised closure plan also includes a change from a 240 day closure notification to NMED to a 45 day notification period.

Redline/strikeout conventions used to highlight proposed modifications to other sections of the permit have not been used in this section because the Revised Closure Plan for the treatment tanks is a new section and reflects requirements of the remaining two active treatment tanks.

REVISED CLOSURE PLAN
E.8a
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS

CLOSURE PLAN
PERMIT ATTACHMENT E.8a
NM 0890010515-1

E.8a TA-54 Area L Hazardous Waste Treatment/Storage Tanks

E.8a.1 Unit description

Two 1,660-gallon, 10-gauge steel treatment/storage tanks are located at Area L. They are lined with plastic (except when treating reactive wastes) and used to neutralize, oxidize, and evaporate waste. The tanks are located on a bermed, sealed concrete pad (Figure E.8a-1). This closure plan addresses only these two tanks (Figure E.8a-1).

E.8a.2 Estimate of Maximum Waste in Storage and Treatment

The maximum amount of waste that could be stored in the tanks is 3,320 gallons if the tanks were filled with no freeboard. The expected maximum volume of waste is 2,860 gallons.

E.8a.3 Description of Waste Handled

The wastes treated or stored normally at the tanks are ammonium bifluoride and lithium hydride. Occasionally plating bath treatment residues from treating F003, F004, F005 and F006 wastes are also treated here. Potentially, any wastes or clean up wastes amenable to evaporation may be treated in the tanks. Therefore, any waste generated at the laboratory potentially has, or could be, treated or stored in the tanks.

E.8a.4 Partial Closure

Should a single tank be closed, all portions of this plan addressing tank decontamination shall apply to the closing tank.

E.8a.5 Closure Procedure

Cleanup and closure will be done in sequential order, culminating in the disposal of any residues or contaminated material by shipment off site to a permitted facility. Before decontamination, all wastes in storage will either be treated on site or disposed of off site. Given the diversity of wastes handled, it is not possible to estimate the exact wastes on hand at the initiation of closure and, therefore, the final disposition of the wastes. In general, recyclable wastes will be reused internally or recycled to users off site. Permitted wastes will be burned at the permitted incinerator at TA-50-37. The remaining wastes will be transported off site to a permitted disposal facility. If on site treatment is not possible due to prior closure of the permitted units, off site disposal will occur.

E.8a.5.1 Waste Removal

The waste of concern at the start of closure consist of liquids and residues in the treatment tanks. Following removal of the tank liners and residual wastes, the tanks will be decontaminated. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. All wastes shipped off site will be manifested in accordance with the facility permit. All waste transporters will have an EPA identification number in accordance with HWMR-5, Part IV, Section 263.11.

E.8a.5.2 Storage/Treatment Decontamination

Following removal of the tank liners and residual wastes, the tanks will be decontaminated by scraping and washing with Liquinox(®) or Alconox(®) in water. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. The tank will be then be scraped and brushed to remove residue and the residue will be collected and placed in drums. The tanks will be removed and the concrete pad on which the treatment tanks are placed will be washed with a Liquinox(®) or Alconox(®) solution in water. The wash water will be contained with the curbed concrete pad, collected, sampled, and analyzed. If the wash water is not hazardous or requires only neutralization, it will be removed with a vacuum truck and transported to an industrial sewer which drains to the facility industrial wastewater treatment plant at TA-50-1. If the water contains hazardous constituents, it will be removed, placed in drums and transported off site to a permitted facility for treatment or disposal. Wash-down of the tanks and pad will be repeated until decontamination is demonstrated.

E.8a.5.3 Soil Decontamination

Soil sampling, as described in Section E.8a.9, will be conducted to determine if hazardous wastes have been tracked outside of contaminated areas. Eight soil samples will be collected around the edge of the bermed concrete pad beneath the treatment tanks as shown in Figure E.8a-2. Each sample will be made up of six inch deep cores taken six inches off the edge and equally spaced to cover each edge. Soil and sediment samples will be analyzed for Table E.8a-2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.

If the sample survey indicates that there are no contaminated soil areas, no further soil decontamination action will be taken at the site. If contamination is found in any of these samples, the limits of the sampling area will be expanded by establishing a three foot sampling grid around a single contamination point, or centered on the area defined by the locus of multiple contamination points, to determine the outside perimeter of the contamination. Sampling will be continued until the extent of contamination is determined. Background samples will be taken in the same manner as the initial closure soil survey.

Once the limits of the contaminated area are determined, the contaminated soil will then be removed to a depth of 6 inches and handled as a regulated waste. Contaminated soil will be placed in drums or sealed in dump trucks for off site disposal at a permitted facility. The adequacy of decontamination is determined by additional sampling. Sampling, analysis, and documentation procedures are detailed in Section E.8a.9. In order to demonstrate final decontamination, soil samples will be analyzed for all Table E.8a-2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.

E.8a.5.4 Personnel Protection

Personnel who are washing equipment will wear rubber gloves, neoprene acid/solvent resistant coveralls, rubber boots, and a face shield. The Laboratory's Industrial Hygiene Group (HR-5) will review the site survey analytical data and recommend additional protective clothing if necessary.

E.8a.5.5 Equipment Decontamination

Shovels, drum trucks and other equipment used for decontamination will be scraped and brushed to remove residue, and the residue collected will be placed in drums for disposal off site at a permitted facility. The equipment will be placed on a 30 mil plastic sheet that is bermed to contain liquids and pressure washed with water and detergent. Large equipment such as backhoes and forklifts will also

be washed. Testing will be performed on this water to determine if decontamination is adequate. Washing is considered adequate to decontaminate the equipment. The wash water will be allowed to evaporate and the plastic and residue will be packed in drums for off site disposal at a permitted facility.

E.8a.6 Decontamination Verification

E.8a.6.1 Wash water Decontamination Verification

A minimum of two samples of the clean Liquinox(®) or Alconox(®) solution will be sampled as background for wash water and, along with the wash water samples, analyzed for the constituents listed in Table E.8a-2. Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or
2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused washwater or background sample. Hazardous constituents detected in the background sample will invalidate that sample as true background unless adequate explanation of their source is provided.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Secretary will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.8a.6.2 Soil Decontamination

The Criteria for determining contaminated soil are the same as discussed in Section E.8a.6.1. Regulated constituent concentrations will be compared to background concentrations. Soils containing levels of contamination above the background will be considered contaminated and removed as hazardous waste.

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

E.8a.7 Closure Schedule

The year of closure for TA-54 Area L hazardous waste treatment/storage tanks is 2100. Soil survey, contracting and closure activities will observe the schedule given in Table E.8a-1. Some soil sampling and the decontamination contractor selection will be completed before closure begins. Because several of the closure steps will occur simultaneously, closure is estimated to take 210 days.

Contracts for analytical work and, if necessary, soil removal are expected to exceed \$100,000. The Laboratory is required by policy to put the work out for bid, and ninety days are required to solicit and process the bids. The location of the site is prone to snow cover in the winter months. The closure may be delayed until the site is free of snow and the ground is thawed adequately to allow the soil sampling and other closure operations. The schedule includes a weather factor to allow for this delay.

E.8a.8 Closure Certification

An independent, registered professional engineer and the Permittee 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 unit has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the original copy submitted by the DOE to the Secretary of the NMED. One copy shall be maintained at the DOE office and one copy maintained by the ESH-8 Regulatory Compliance Section.

E.8a.9 Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and method are specific, any applicable procedure or method given in SW-846 or other EPA approved procedure may be used if conditions or experience shows the alternate method to be more appropriate. Disposable samplers may be used.

Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. 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.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in *Samplers and Sampling Procedures for Hazardous Waste Streams*, EPA 600/2-80-018 and/or SW-846.

E.8a.9.1 Soil and Solid Residues Sampling

The sampling procedures outlined below are used to determine the amount of hazardous material deposited on a particular area of land, or to determine the leaching rate of the material, or determine the residue level on the soil. Adequate preparation ensures that proper sampling is accomplished.

Surface soil samples will be collected with a trowel or scoop. To sample below 3 in. (8 cm), samples will be collected with a Veihmeyer soil sampler. Drums of solid residues will be sampled with a core sampler or Veihmeyer soil sampler. Drums not capable of being sampled will be assumed to be reactive hazardous waste.

E.8a.9.1.1 Cleaning of Sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. 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. Prevention of cross contamination is of particular importance in these samples.

E.8a.9.1.2 Sampling Procedures Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
- Combine the samples in a glass container.

- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.
- Rotate the sampler at least two revolutions to shear off the sample at the bottom.
- Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees.
- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.
- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.
- Store the core sample in a 1,000 or 2,000 ml (1 qt or 1/2 gal) sample container.
- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.8a.9.2 Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.8a-3., the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

E.8a.9.2.1 Cleaning of Sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must

be washed with a warm detergent solution (Liquinox(®) or Alconox(®)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using this ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean and protected area.

E.8a.9.2.2 Sampling Procedures

- Assemble the Coliwasa sampler.
- Make sure that the Coliwasa sampler is clean.
- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.
- Wear necessary protective clothing and gear and observe required sampling precautions.
- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample.
- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.
- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.
- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.
- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.
- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in plastic bags for subsequent disposal.

E.8a.9.3 Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container must be sealed with a gummed paper seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. An example of a sample seal is shown in Figure E.8a-4.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the grid number referenced to positions staked on the site perimeter. The "field information" in the case of soil sampling, shall 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. An example of a sample label is shown in Figure E.8a-5.

The chain-of-custody form is necessary to trace sample possession from the time of collection and must accompany every sample. This record becomes especially important when the sample is to be introduced as evidence in litigation. This is a two page record with the original accompanying shipment and the "copy" retained by the Laboratory. An example of this form is shown in Figure E.8a-6.

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

- a. Purpose of sample (routine sampling, special sampling);
- b. Location of sampling (coordinates referenced to staked field points, if soil sample);
- c. Name and business address of person making log entry;
- d. Type of process producing waste;
- e. Number and volume of sample;
- f. Description of each sampling location, sampling methodology, equipment used, etc.;
- g. Date and time of sample collection;
- h. Sample destination and transporter's name (name of laboratory, UPS, etc.);
- i. Map or photograph of the sampling site, if any;
- j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc.);
- k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc.);
- l. Collector's sample identification number(s); and
- m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

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 field portion of this form must be completed

by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be completed by the laboratory personnel when the sample is received.

E.8a.10 Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to senior management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, assure that sample blanks are used and analyzed and review the analysis reports for accuracy and adequacy. A written QA/QC plan prepared in accordance with SW-846 guidance shall be prepared and followed, with variations from the plan documented and explained. The designated individual shall prepare a written statement for the final report commenting on the adequacy of the analysis showing decontamination.

E.8a.11 Final Closure Report

Upon completion of the closure activities, the Permittee shall submit a Final Closure Report to the Director. The report shall document the final closure and contain, at a minimum, the following:

- A. The certification described in Section E.8a.8.
- B. Any variance from the approved activities and the reason for the variance.
- C. A tabular summary of all sampling results, showing:
 1. Sample identification
 2. Sampling location
 3. The datum reported,
 4. Detection limit for each datum,
 5. A measure of analytical precision (e.g. uncertainty, range, variance),
 6. Identification of analytical procedure, and
 7. Identification of analytical laboratory.
- D. A QA/QC statement on the adequacy of the analyses and the decontamination demonstration.
- E. The location of the file of supporting documentation:
 1. Field log books,
 2. Laboratory sample analysis reports,
 3. The QA/QC documentation, and
 4. Chain of custody records.
- F. Disposal location of all regulated and non-regulated residues.
- G. A certification of accuracy of the report.

TABLE E.8a-1

Closure Schedule

ACTIVITIES	Maximum Time Required
Notify NMED of closure	-45 days
Conduct first soil sampling survey	-45 days
Analyze first soil samples	-30 days
Conduct second soil survey if needed	-20 days
Analyze second soil set of soil samples	-10 days
Begin Closure	Day 0
Analyze first soil samples	Day 30
Conduct second soil samples survey, if needed	Day 45
Treat or remove final wastes	Day 50
Analyze second soil samples, if needed	Day 65
Evaporate waste water from treatment tanks	Day 90
Soil decontamination, if necessary	Day 105
Remove soil	Day 130
Dispose of tanks and residue	Day 140
Weather delay contingency	Day 175
Conduct verification samples	Day 200
Decontamination verification	Day 200
Submit final report to NMED	Day 210

NOTE:

The calendar days given above are completion dates for each activity. In some cases more than one activity may occur simultaneously.

This schedule applies to both partial and final closure.

TABLE E.8a-2

Analytical Parameters

METALS

Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
Nickel
Beryllium

ORGANICS

Halogenated volatile organics
Nonhalogenated volatile organics
Acid-extractable semivolatile organics
Base-neutral extractable semivolatile organics

OTHER

Cyanides
pH

NOTES:

Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for Toxic Characteristic Leading Procedure (TCLP) shall be analyzed by using TCLP procedures. Both data shall be reported in the final report.

TABLE E.8a-3
Sampling Summary

MATERIAL SAMPLED	METALS	ORGANICS	OTHER
Washdown solutions before use	X	X	X
Washdown solutions after use	X	X	X
Soils background	X	X	X
Soil samples	X	X	X
Final decontamination samples	X	X	X

NOTES:

Analytical parameters are given in Table E.8a-2.

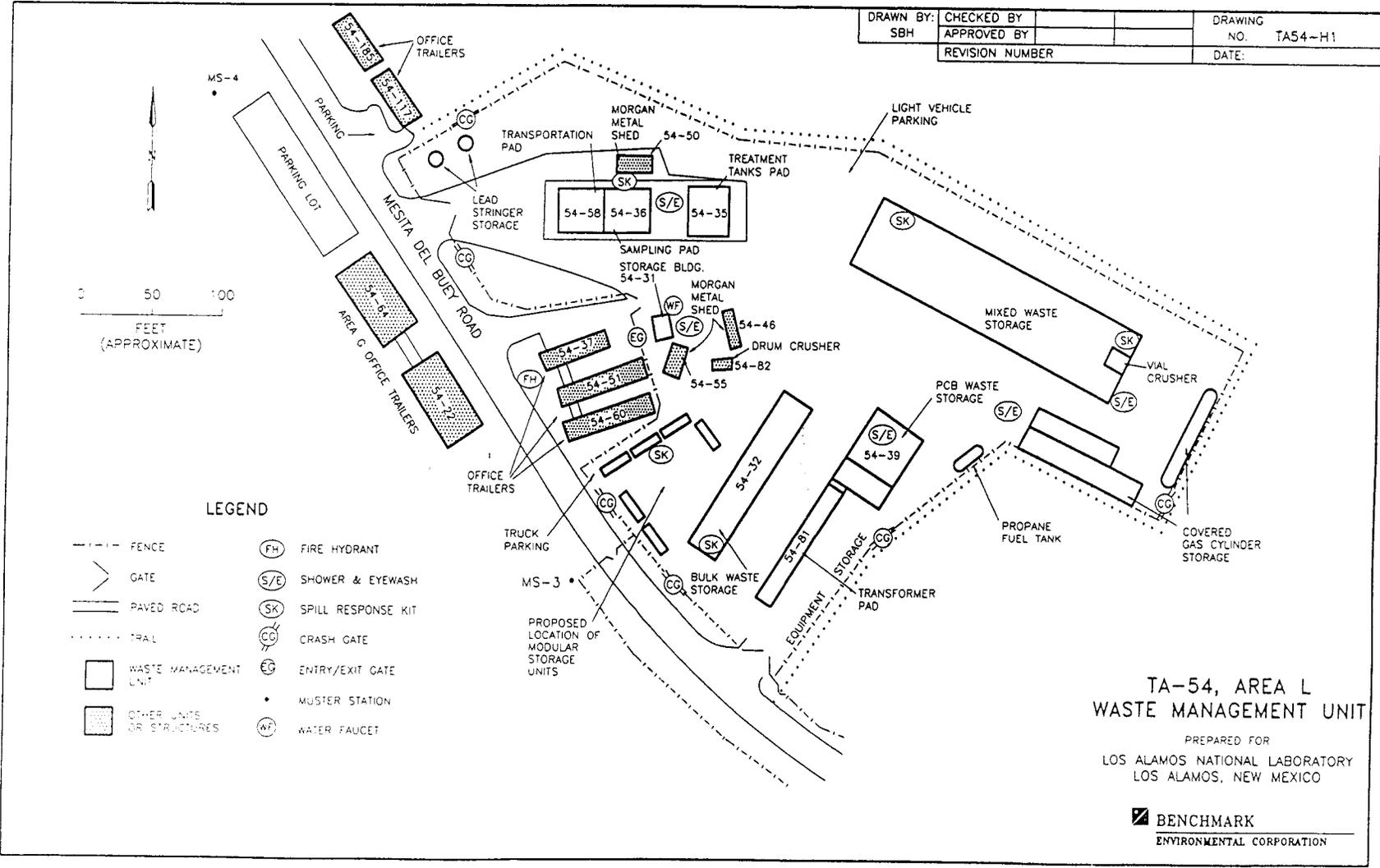


FIGURE E.8a-1

TA-54 Area L Waste Management Units

Class 1 Modification
 Revised Closure Plan
 Revision 1.1
 February 7, 1994

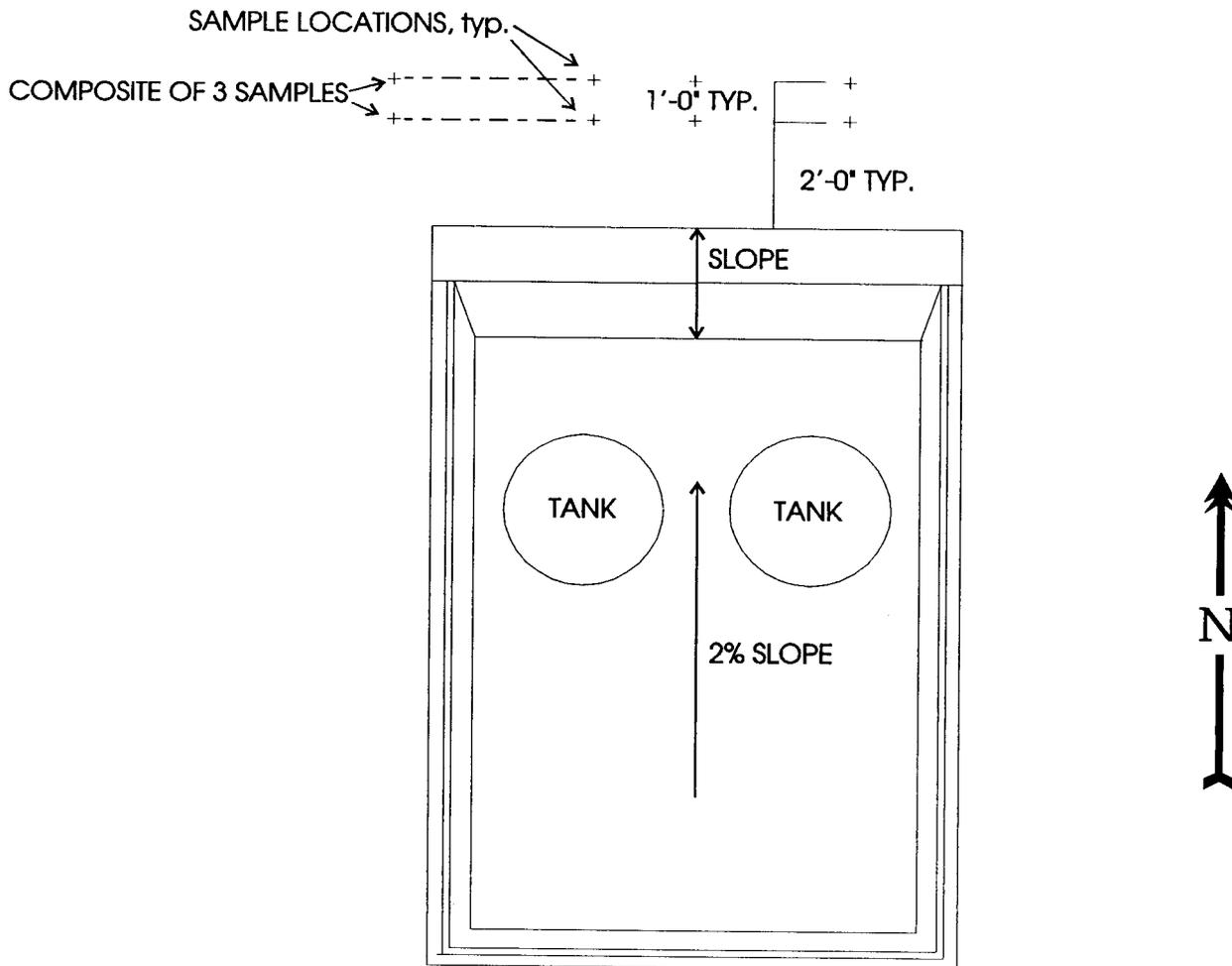


FIGURE E.8a-2

TA-54 Area L Treatment Tanks Sample Locations

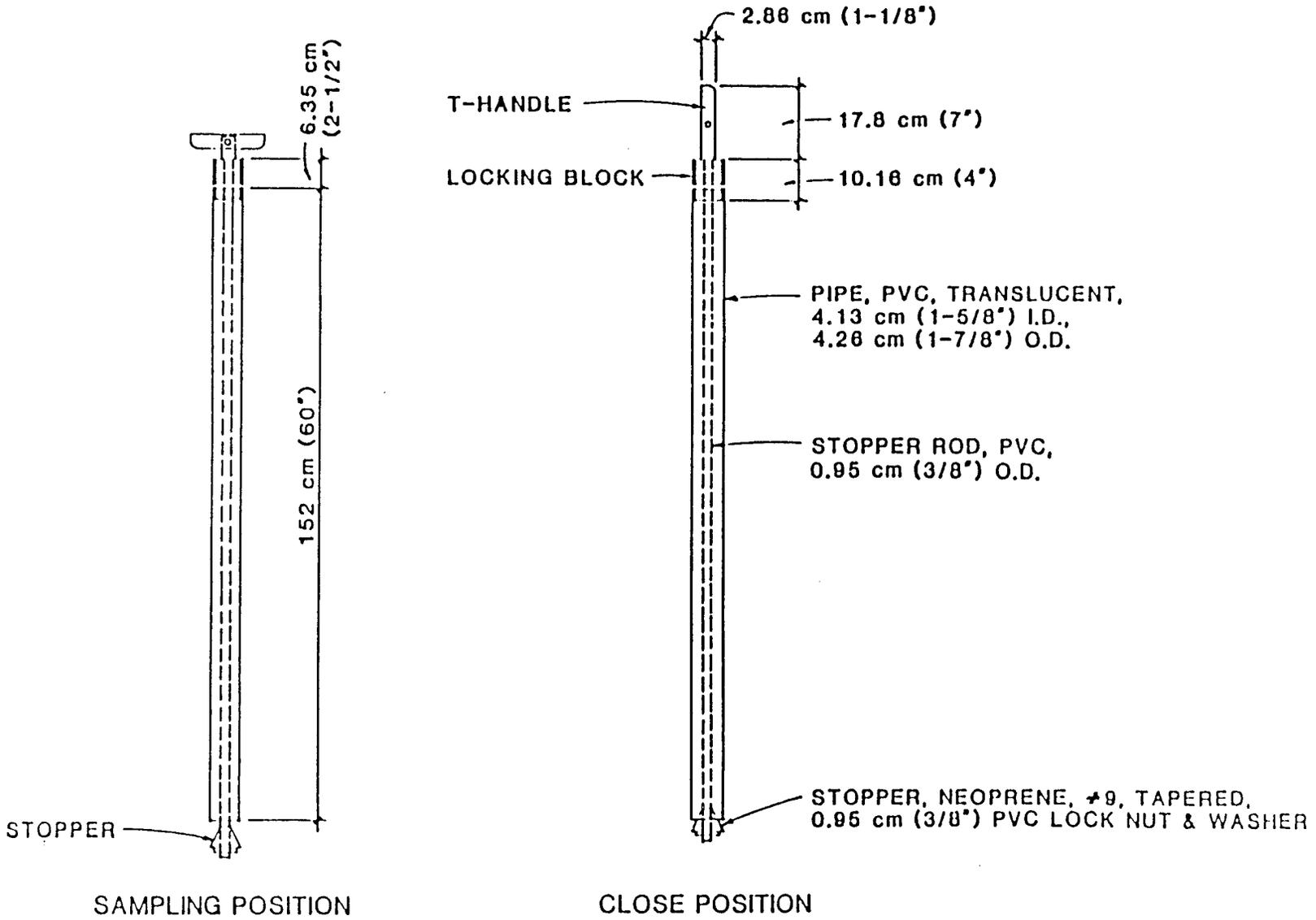


FIGURE E.8a-3

Composite Liquid Waste Sampler (Coliwas)

OFFICIAL SAMPLE SEAL

Collected by _____ Collector's sample No. _____
(Signature)

Date Collected _____ Time Collected _____

Place Collected _____

FIGURE E.8a-4

Example of Sample Seal

OFFICIAL SAMPLE LABEL

Collector _____ Collector's Sample No. _____

Place of Collection _____

Date Sampled _____ Time Sampled _____

Field Information _____

FIGURE E.8a-5

Example of Sample Label

ATTACHMENT III

Module IV Treatment in Containers and Tanks

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FIGURES

1. Vicinity Map
2. Technical Areas Map
3. Technical Area 50-1
4. Technical Area 50-37
5. Technical Area 16 Incinerator
6. Technical Area 54, Area L
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- I-1 Technical Area Zero Generation sites
- II-1 Environmental Monitoring Locations
- II-2 Sampling Parameters and Methods

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- A. Waste Analysis Plan & Waste Segregation Procedures
- B. Inspection Plan
- C. Personnel Training
- D. Contingency Plan
- E. Closure Plans
- F. Container Management
- G. Authorized Wastes
- 2/94 ~~H. Batch Waste Treatment Unit Operation~~
- I. Additional Data Submittal Schedule
- J. Incinerator Operational Safety
- K. Hazardous Waste Management Regulations

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation	Date Submitted	Action
III		Figure 3	5	Update Figure 3 caption to reflect closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	
III		Figure 6	1	Update Figure 6 to include new location of Modular units (plus new Modular units to be addressed at a latter time).	1	A.1	3/93	
III		Figure 7	5	Update Figure 7 to indicate closure of two of the existing four treatment tanks.	1	A.1	2/94	
III	26	A.1.d	5	Add, after "Gas cylinders will be stored in Cylinder racks", the following: ", or on specially constructed pallets that provide support and restraint under a self-supporting canopy located...".	1	A.1	3/93	
III	26	A.1.d	5	Delete "or fastened to the perimeter fence, "and ", so that the fence acts as the cylinder support and restraint".	1	A.2	3/93	
III	26	A.1.f	2	Add "or equivalent" to sentence.	1	A.3	3/93	
III	26	A.2.a	5	Section A.2.a deleted due to closure of Batch Waste Treatment Unit	1	D.1.c	2/94	
III	27	A.2.d	2	Add "or equivalent" to sentence.	1	A.3	3/93	
III	27	B.3.b	2	Change "accumulation" to "accumulation".	1	A.3	3/93	
III	27	B.3.c	2	Correct spelling of "prohibition" to "prohibition" in 1st and 2nd sentences of this paragraph.	1	A.3	3/93	
III	28	C.3.a	5	Section C.3.a deleted due to closure of Batch Waste Treatment Unit.	1	D.1.c	2/94	

MODULE III STORAGE IN CONTAINERS

III.A. DESIGNATED STORAGE UNITS

1. Technical Area 54, Area L. The Permittee may store for more than ninety days hazardous wastes in containers only in the following designated storage areas:

- a. Containers containing free liquids may be stored on the concrete containment structure, Facility Number 54-32.
- b. Containers containing free liquids may be stored in the packaging building, Facility Number 54-31.
- c. Containers not containing free liquids may be stored, on pallets or otherwise elevated four inches, in a single layer in cleared areas within the fenced portion of Area L, subject to the limitations of HWMR-5, as amended 1989, Part V, 40 CFR sections 264.175(c) and 264.175(d). Such containers shall not be stored within five feet of the perimeter fence, nor five feet of any structure, nor five feet of the paved or unpaved roadway. Disposal unit covers designed to serve as storage areas are not subject to this exclusion. See Figure 6.

3/93

- d. Gas cylinders will be stored in cylinder racks, or on specially constructed pallets that provide support and restraint, under a self-supporting canopy located in cleared areas within the fenced portion of Area L or fastened to the perimeter fence, within the restrictions of permit paragraph II.G. above, so that the fence acts as the cylinder support and restraint.
- e. The fenceline around Area L as shown in permit Figure 6 shall not be altered without prior notice to the Director and permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.41 or 270.42 as appropriate.

3/93

- f. Containers containing free liquids may be stored in the modular storage buildings, Model 22 or equivalent, Facility Numbers 54-68, and 54-69, located as shown in Figure 6.

2. Technical Area 50. The Permittee may store for more than ninety days hazardous wastes in containers only in the following designated storage areas:

2/94

- a. ~~Containers may be stored within the curbed bay of the Batch Waste Treatment Unit Building 50-1.~~
- b. Containers containing free liquids may be stored on the concrete containment structures, Facility Numbers 50-139 and 50-140, located as shown in Figure 4.
- c. Building 50-37. Containers may be stored within storage room 117 of the Controlled Air incinerator as shown in Figure 4.

- c) Donning and taking off equipment
- d) Safety features
- 2. Care and cleaning
- 3. Inspection
- 4. Fitting
- B. Self-Contained Breathing Apparatus (IC) introductory, annual
 - 1. Use
 - a) Operation of device
 - b) Changing compressed air bottles
 - c) Donning and taking off equipment
 - d) Safety features
 - 2. Care and cleaning
 - 3. Inspection
 - 4. Fitting

IV. HAZARDOUS WASTE HANDLING AND OPERATIONS

2/94

- ~~A. Batch Waste Treatment (OJT) introductory with annual update~~
 - ~~1. Familiarization of SOP~~
 - ~~2. Familiarization of Operating Manual~~
 - ~~3. Supervised Operation of Facility~~
 - ~~4. Emergency Shutdown Procedures~~
 - ~~5. Evacuation Procedures~~
 - ~~6. Accidental Release Procedures~~
 - ~~7. Familiarization with Emergency Equipment Use, Inspection, Repair, etc.~~
 - ~~8. Use of Communication/Alarm System~~
- B. Controlled Air Incineration (OJT) introductory with annual update
 - 1. Familiarization of SOP
 - 2. Familiarization of Operating Manual
 - 3. Supervised Operation of Facility
 - 4. Emergency Shutdown Procedures
 - 5. Evacuation Procedures
 - 6. Accidental Release Procedures

2.7.94

**ATTACHMENT E.8
PARTIAL CLOSURE
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS**

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix 1 to §270.42, A.1 and D.1.c

Summary of Changes -

The proposed partial closure at TA-54 Area L Hazardous Waste Treatment/Storage Tanks will result in the removal of two of the existing four tanks, with the remaining two tanks remaining in service. The change in date of closure of the two tanks from the year 2100 to 1994 reflects a decision by the Laboratory to partially close this unit. Other proposed modifications include simple clarifications in language, corrections of typographical errors, and changes in organizational titles or affiliations.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively.

**CLOSURE PLAN
E.8
PARTIAL CLOSURE
TA-54 AREA L HAZARDOUS WASTE TREATMENT/STORAGE TANKS**

CLOSURE PLAN
PARTIAL CLOSURE
PERMIT ATTACHMENT E.8
NM 0890010515-1

2/94 E.8. Partial Closure for TA-54 Area L Hazardous Waste Treatment/Storage Tanks

E.8.1. Unit description

2/94 ~~Two~~ Four 1,660-gallon, 10-gauge steel treatment/storage tanks are located at Area L ~~will be closed.~~
They are lined with plastic (except when treating reactive wastes) and used to neutralize, oxidize, and
2/94 evaporate waste. The tanks are located on a bermed concrete pad. (Figure E.8.1) This closure plan
addresses only ~~these the two~~ tanks indicated (Figure E.8.2).

2/94 The remainder of TA-54, Area L storage units consist of a single-story metal transfer/storage building,
a roofed concrete storage pad, ~~two six~~ transportable storage buildings and specified areas within the
fenced portions of Area L for storage of solid containerized waste. These areas are used for the
accumulation, packing, and storage of waste containers, which are generated throughout the
laboratory and delivered to the facility routinely. Liquid wastes are segregated into compatible types
and placed inside the transfer/storage building or within one of the storage cells of the roofed concrete
pad. Wastes in small containers are put into one of the transportable storage buildings or the
transfer/storage building for placing into lab packs. Wastes suitable for recycling are consolidated into
drums, and any damaged or leaking drums are repacked into larger drums in this area. Solid
containerized wastes are stored on pallets, or otherwise elevated four inches, in cleared areas within
the fenced portions of Area L.

E.8.2. Estimate of Maximum Waste in Storage and Treatment

2/94 The maximum amount of waste that could be stored in the tanks is ~~6,640 3,320~~ gallons if the tanks
2/94 were filled with no freeboard. The expected maximum volume of waste is ~~6,720 2,860~~ gallons.

E.8.3. Description of Waste Handled

The wastes treated or stored normally at the tanks are ammonium bifluoride and lithium hydride.
Occasionally plating bath treatment residues from treating F003, F004, F005 and F006 wastes are also
treated here. Potentially, any wastes or clean up wastes amenable to evaporation may be treated in
the tanks. Therefore, any waste generated at the laboratory potentially has, or could be, treated or
stored in the tanks.

E.8.4. Partial Closure

2/94 ~~Partial closure of two of the existing four tanks will take place. Should a single tank be closed, all~~
2/94 portions of this plan addressing tank decontamination shall apply to the closing of two tanks.

E.8.5. Closure Procedure

Cleanup and closure will be done in sequential order, culminating in the disposal of any residues or
contaminated material by shipment off site to a permitted facility. Before decontamination, all wastes
in storage will either be treated on site or disposed of off site. Given the diversity of wastes handled,
it is not possible to estimate the exact wastes on hand at the initiation of closure and, therefore, the
final disposition of the wastes. In general, recyclable wastes will be reused internally or recycled to
users off site. Permitted wastes will be burned at the permitted incinerator at TA-50-37. Any wastes
compatible with permitted treatment at the TA-50-I Batch Waste Treatment Unit will be so treated.

The remaining wastes will be transported off site to a permitted disposal facility. If on site treatment is not possible due to prior closure of the permitted units, off site disposal will occur.

E.8.5.1. Waste Removal

The waste of concern at the start of closure consist of liquids and residues in the treatment tanks. Following removal of the tank liners and residual wastes, the tanks will be decontaminated. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. All wastes shipped off site will be manifested in accordance with the facility permit. All waste transporters will have an EPA identification number in accordance with HWMR-5, Part IV, Section 263.11.

E.8.5.2. Storage/Treatment Decontamination

2/94 Following removal of the two tank liners and residual wastes, the two tanks will be decontaminated by scraping and washing with Liquinox(®) or Alconox(®) in water. The wash water will be removed, placed in drums, sampled, analyzed and transported off site to a permitted facility for treatment or disposal. The tanks will be then be scraped and brushed to remove residue and the residue will be collected and placed in drums. The tanks will be removed and the concrete pad on which the two treatment tanks are placed will be washed with a Liquinox(®) or Alconox(®) solution in water. The wash water will be contained with the curbed concrete pad, collected, sampled, and analyzed. If the wash water is not hazardous or requires only neutralization, it will be removed with a vacuum truck and transported to an industrial sewer which drains to the facility industrial wastewater treatment plant at TA-50-1. If the water contains hazardous constituents, it will be removed, placed in drums and transported off site to a permitted facility for treatment or disposal. Wash-down of the two tanks and pad will be repeated until decontamination is demonstrated.

E.8.5.3. Soil Decontamination

2/94 Partial closure of this unit will result in the removal of two of the existing four tanks, with the remaining two tanks continuing in service. Therefore, soil sampling, as described in section E.8.9, will be conducted to determine if hazardous wastes have been tracked outside of contaminated areas at the time of final closure of this unit. When final closure is initiated eight soil samples will be collected around the edge of the bermed concrete pad beneath the treatment tanks as shown in Figure E.8.2. Each sample will be made up of six inch deep cores taken six inches off the edge and equally spaced to cover each edge. Soil and sediment samples will be analyzed for Table E.8.2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.

If the sample survey indicates that there are no contaminated soil areas, no further soil decontamination action will be taken at the site. If contamination is found in any of these samples, the limits of the sampling area will be expanded by establishing a three foot sampling grid around a single contamination point, or centered on the area defined by the locus of multiple contamination points, to determine the outside perimeter of the contamination. Sampling will be continued until the extent of contamination is determined. Background samples will be taken in the same manner as the initial closure soil survey.

Once the limits of the contaminated area are determined, the contaminated soil will then be removed to a depth of 6 inches and handled as a regulated waste. Contaminated soil will be placed in drums or sealed in dump trucks for off site disposal at a permitted facility. The adequacy of decontamination is determined by additional sampling. Sampling, analysis, and documentation procedures are detailed in section E.8.9. In order to demonstrate final decontamination, soil samples will be analyzed for all Table E.8.2 parameters. Analysis and quality assurance/quality control will follow methods defined in SW-846.

E.8.5.4. Personnel Protection

2/94

Personnel who are washing equipment will wear rubber gloves, neoprene acid/solvent resistant coveralls, rubber boots, and a face shield. The Laboratory's Industrial Hygiene Group (HRSE-5) will review the site survey analytical data and recommend additional protective clothing if necessary.

E.8.5.5. Equipment Decontamination

2/94

Shovels, drum trucks and other equipment used for decontamination will be scraped and brushed to remove residue, and the residue collected will be placed in drums for disposal off site at a permitted facility. The equipment will be placed on a 30 mil plastic sheet that is bermed to contain liquids and pressure washed with water and detergent. Large equipment such as backhoes and forklifts will also be washed. Testing will be performed on this water to determine if decontamination is adequate. Washing ~~to is~~ considered adequate to decontaminate the equipment. The wash water will be allowed to evaporate and the plastic and residue will be packed in drums for off site disposal at a permitted facility.

E.8.6. Decontamination Verification

E.8.6.1. Wash water Decontamination Verification

A minimum of two samples of the clean Liquinox(@) or Alconox(@) solution will be sampled as background for wash water and, along with the wash water samples, analyzed for the constituents listed in Table E.8.2. Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or
2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused washwater or background sample. Hazardous constituents detected in the background sample will invalidate that sample as true background unless adequate explanation of their source is provided.

94

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The ~~Director Secretary~~ will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.8.6.2. Soil Decontamination

The Criteria for determining contaminated soil are the same as discussed in Section E.8.6.1. Regulated constituent concentrations will be compared to background concentrations. Soils containing levels of contamination above the background will be considered contaminated and removed as hazardous waste.

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

E.8.7. Closure Schedule

94

The year of closure is ~~2100~~1994. Soil survey, contracting and closure activities will observe the schedule given in Table E.8.1. Some soil sampling and the decontamination contractor selection will

be completed before closure begins. Because several of the closure steps will occur simultaneously, closure is estimated to take 360-210 days.

Contracts for analytical work and, if necessary, soil removal are expected to exceed \$100,000. The Laboratory is required by policy to put the work out for bid, and ninety days are required to solicit and process the bids. The location of the site is prone to snow cover in the winter months. The closure may be delayed until the site is free of snow and the ground is thawed adequately to allow the soil sampling and other closure operations. The schedule includes a weather factor to allow for this delay.

E.8.8. Closure Certification

An independent, registered professional engineer and the Permittee shall witness the closure of the two tanks and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility two tanks have been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the original copy submitted by the DOE to the Director Secretary of the NMEIDNMED. One copy shall be maintained at the DOE office and one copy maintained by the ESHSE-8 Regulatory Compliance Section.

E.8.9. Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and method are specific, any applicable procedure or method given in SW-846 or other EPA approved procedure may be used if conditions or experience shows the alternate method to be more appropriate. Disposable samplers may be used.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in *Samplers and Sampling Procedures for Hazardous Waste Streams*, EPA 600/2-80-018 and/or SW-846. Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. 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.

E.8.9.1. Soil and Solid Residues Sampling

The sampling procedures outlined below are used to determine the amount of hazardous material deposited on a particular area of land, or to determine the leaching rate of the material, or determine the residue level on the soil. Adequate preparation ensures that proper sampling is accomplished.

Surface soil samples will be collected with a trowel or scoop. To sample below 3 in. (8 cm), samples will be collected with a Veihmeyer soil sampler. Drums of solid residues will be sampled with a core sampler or Veihmeyer soil sampler. Drums not capable of being sampled will be assumed to be reactive hazardous waste.

E.8.9.1.1. Cleaning of Sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. 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. Prevention of cross contamination is of particular importance in these samples.

E.8.9.1.2. Sampling Procedures Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
- Combine the samples in a glass container.
- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.
- Rotate the sampler at least two revolutions to shear off the sample at the bottom.
- Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees.
- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.
- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.
- Store the core sample in a 1,000 or 2,000 ml (1 qt or 1/2 gal) sample container.
- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.8.9.2. Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.8.3., the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

E.8.9.2.1. Cleaning of Sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must be washed with a warm detergent solution (Liquinox(®) or Alconox(®)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using this ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean and protected area.

E.8.9.2.2. Sampling Procedures

- Assemble the Coliwasa sampler.
- Make sure that the Coliwasa sampler is clean.
- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.
- Wear necessary protective clothing and gear and observe required sampling precautions.
- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample.
- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.
- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.
- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.
- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.
- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in plastic bags for subsequent disposal.

E.8.9.3. Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container must be sealed with a gummed paper seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. An example of a sample seal is shown in Figure E.8.4.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the grid number referenced to positions staked on the site perimeter. The "field information" in the case of soil sampling, shall 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. An example of a sample label is shown in Figure E.8.5.

The chain-of-custody form is necessary to trace sample possession from the time of collection and must accompany every sample. This record becomes especially important when the sample is to be introduced as evidence in litigation. This is a two page record with the original accompanying shipment and the "copy" retained by the Laboratory. An example of this form is shown in Figure E.8.6.

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

- a. Purpose of sample (routine sampling, special sampling),
- b. Location of sampling (coordinates referenced to staked field points, if soil sample),
- c. Name and business address of person making log entry,
- d. Type of process producing waste,
- e. Number and volume of sample,
- f. Description of each sampling location, sampling methodology, equipment used, etc.,
- g. Date and time of sample collection,
- h. Sample destination and transporter's name (name of laboratory, UPS, etc.),
- i. Map or photograph of the sampling site, if any,
- j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc.),
- k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc.),
- l. Collector's sample identification number(s), and
- m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

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 field portion of this form must be completely by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be completed by the laboratory personnel when the sample is received.

E.8.10. Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to senior management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, assure that sample blanks are used and analyzed and review the analysis reports for accuracy and adequacy. A written QA/QC plan prepared in accordance with SW-846 guidance shall be prepared and followed, with variations from the plan documented and explained. The designated individual shall prepare a written statement for the final report commenting on the adequacy of the analysis showing decontamination.

E.8.11. Final Closure Report

2/94 Upon completion of the closure activities, the Permittee shall submit a Final Closure Report to the ~~Director~~ Secretary. The report shall document the final closure and contain, at a minimum, the following:

- A. The certification described in paragraph E.8.8.
- B. Any variance from the approved activities and the reason for the variance.
- C. A tabular summary of all sampling results, showing:
 1. Sample identification
 2. Sampling location
 3. The datum reported,
 4. Detection limit for each datum,
 5. A measure of analytical precision (e.g. uncertainty, range, variance),
 6. Identification of analytical procedure, and
 7. Identification of analytical laboratory.
- D. A QA/QC statement on the adequacy of the analyses and the decontamination demonstration.
- E. The location of the file of supporting documentation:
 1. Field log books,
 2. Laboratory sample analysis reports,
 3. The QA/QC documentation, and
 4. Chain of custody records.
- F. Disposal location of all regulated and non-regulated residues.
- G. A certification of accuracy of the report.

TABLE E.8.1
 CLOSURE SCHEDULE

PRECLOSURE ACTIVITIES		Maximum Time Required
Notify the EID-NMED of the closure	-240 days	45 days
Contract for sampling and/or analytical services	-240 days	
Conduct first soil sampling survey	-210 days	45 days
Analyze first soil samples	-180 days	30 days
Conduct second soil survey if needed	-150 days	20 days
Analyze second soil set of soil samples	-120 days	10 days
Advertise contract request for proposals	-90 days	
Award contract	-30 days	
CLOSURE ACTIVITIES		
Begin Closure	Day 0	Day 0
Analyze first soil samples	day 60	Day 30
Conduct second soil samples survey, if needed	day 90	Day 45
Treat or remove final wastes	day 90	Day 50
Analyze second soil samples, if needed	day 120	Day 65
Evaporate waste water from treatment tanks	day 180	Day 90
Contract for soil decontamination, if necessary	day 210	Day 105
Remove soil	day 240	Day 130
Dispose of tanks and residue	day 270	Day 140
Remove soil	day 270	
Weather delay contingency	day 300	Day 175
Conduct verification samples	day 320	Day 200
Analyze samples	day 360	Day 200
Submit final report to EID-NMED	day 360	Day 210

NOTES:

~~Many of the above steps may be taken concurrently, and the total closure period will not exceed 360 calendar days.~~

~~The calendar days given above are completion dates for each activity. In some cases more than one activity may occur simultaneously.~~

This schedule applies to both partial and final closure.

TABLE E.8.2.
ANALYTICAL PARAMETERS

METALS

Arsenic
Barium
Cadmium
~~organics~~
Chromium
~~organics~~
Lead
Mercury
Selenium
Silver
Nickel
Beryllium

ORGANICS

Halogenated volatile organics
Nonhalogenated volatile organics
Acid-extractable semivolatile organics
Base-neutral extractable semivolatile
~~Organochlorine pesticides~~
~~Chlorinated herbicides~~
Phenols

OTHER

Cyanides
pH

NOTES:

Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for ~~Extraction Procedure Toxicity Toxic Characteristic Leading Procedure (TCLP)~~ shall be analyzed by ~~Extraction Procedure Toxicity~~ using TCLP procedures. Both data shall be reported in the final report.

TABLE E.8.3
SAMPLING SUMMARY

MATERIAL SAMPLED	METALS	ORGANICS	OTHER
Washdown solutions before use	X	X	X
Washdown solutions after use	X	X	X
Soils background	X	X	X
Soil samples	X	X	X
Final decontamination samples	X	X	X

NOTES:

Analytical parameters are given in Table E.8.2.

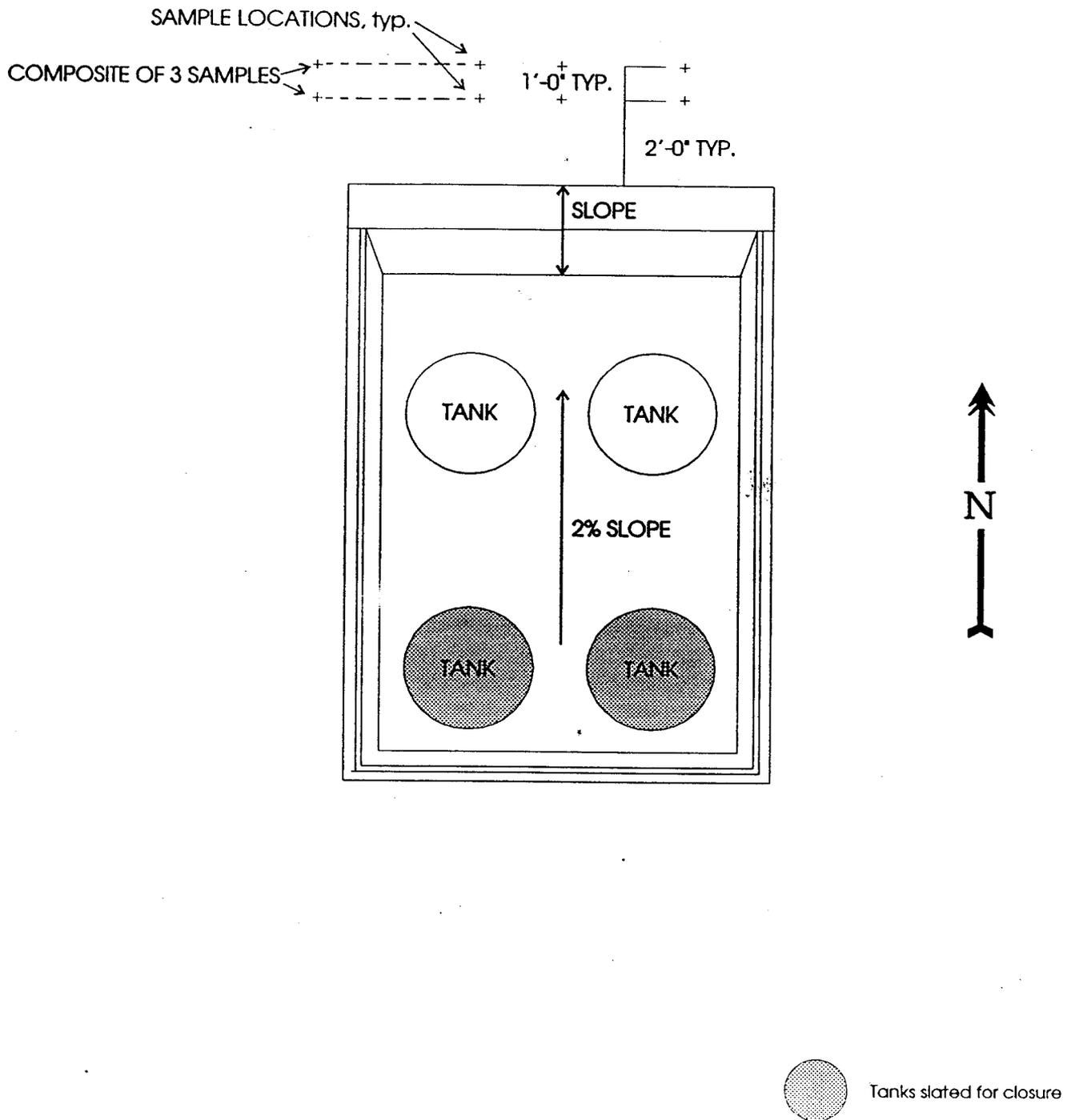


FIGURE E.8.2 TA-54 AREA L TREATMENT TANKS SAMPLE LOCATIONS

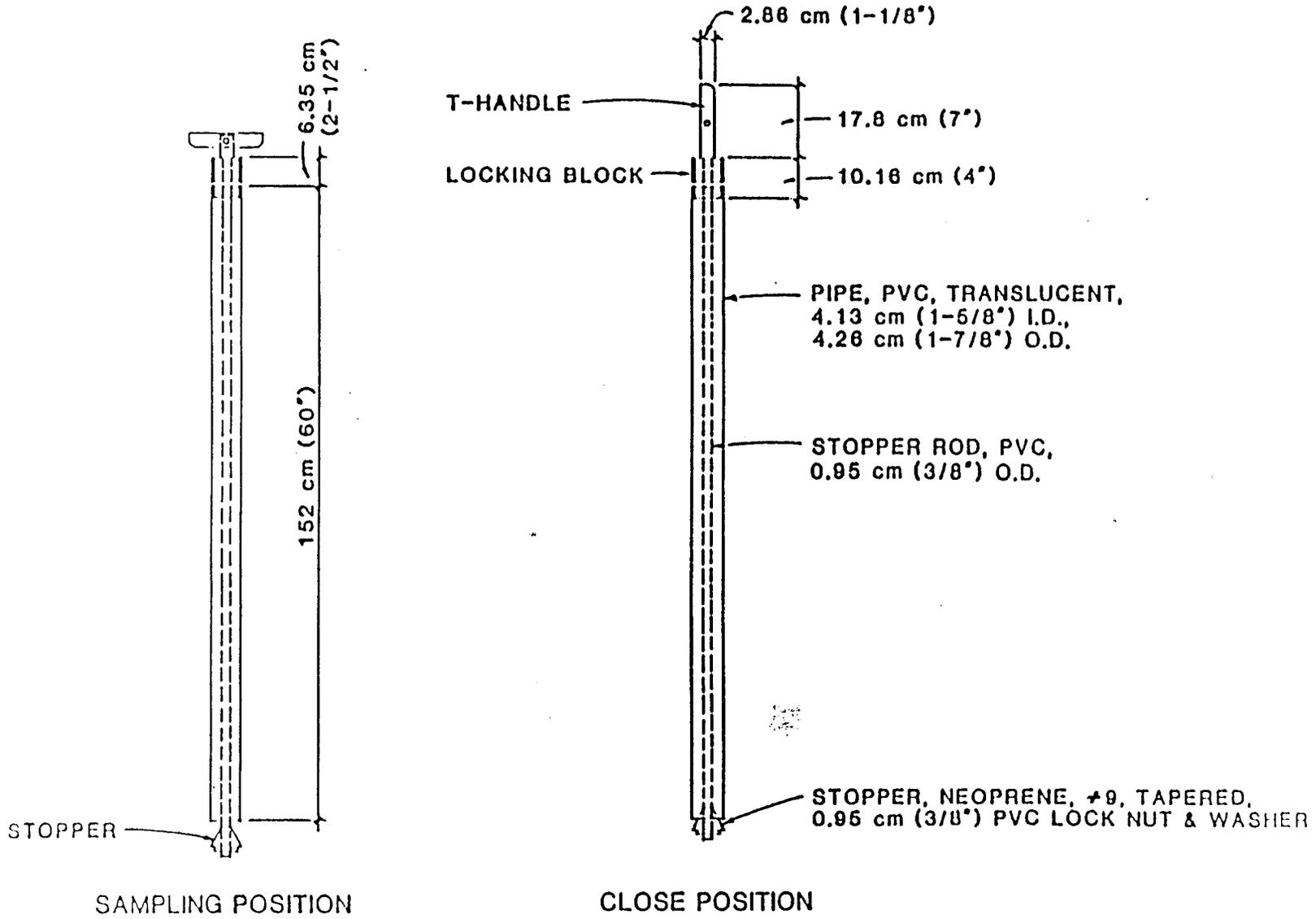


FIGURE E.8.3 COMPOSITE LIQUID WASTE SAMPLER (COLIWASA)

Class 1 Modification
Partial Closure Plan
Revision 1.1
February 7, 1994

FIGURE E-8.4
EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE SEAL

Collected by _____ Collector's sample No. _____
(Signature)

Date Collected _____ Time Collected _____

Place Collected _____

FIGURE E-8.5
EXAMPLE OF SAMPLE LABEL

OFFICIAL SAMPLE LABEL

Collector _____ Collector's Sample No. _____

Place of Collection _____

Date Sampled _____ Time Sampled _____

Field Information _____

FIGURE E-8.6
CHAIN OF CUSTODY RECORD

Hazardous Materials
Collector's Sample No. _____

Location of Sampling:

- Producer Hauler
 Disposal Site
 Other: _____

Company's Name _____ Telephone (____) _____

Address _____
Number Street City State Zip

Collector's Name _____ Telephone (____) _____

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:

- | | Signature | Title | Inclusive Dates |
|----|-----------|-------|-----------------|
| 1. | _____ | _____ | _____ |
| 2. | _____ | _____ | _____ |
| 3. | _____ | _____ | _____ |

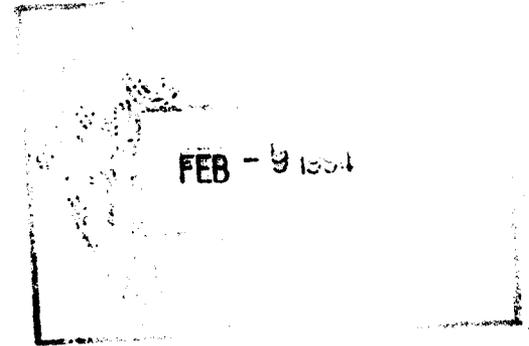


Department of Energy

Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

FEB 04 1994

Spede A



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Kathleen M. Sisneros, Director
Water and Waste Management Division
New Mexico Environment Department
1190 St. Francis Drive
P. O. Box 26110
Santa Fe, NM 87502-6110

Dear Ms. Sisneros:

In response to your letter of January 3, 1994, the Department of Energy (DOE) and the University of California (UC) have developed and provided the enclosed information.

1. Provided as Attachment I is an amended Closure Plan. It is identified in the Los Alamos National Laboratory's (LANL) Hazardous Waste Permit as E.8. It addresses the two remaining treatment tanks at the Technical Area (TA) 54 Area L location, after partial closure of two treatment tanks takes place. This amended closure plan covers the closure requirements for the remaining sub-units at this location.
2. An amended closure plan for the treatment tanks, E.8-a, which includes figure 7 of the modification package provided to the New Mexico Environment Department (NMED) on April 1, 1993, proposing changes to DOE and UC's Hazardous Waste Permit, has been changed to reflect the partial closure of two treatment tanks. It is provided to illustrate which of the four treatment tanks will be taken out of service (see Attachment II). The two treatment tanks to be taken out of service are the ~~two~~ located on the southeast and southwest side of the pad. A formal request to modify the permit to substitute E.8-a for the existing E.8 closure plan will be made once NMED accepts the partial closure of this sub-unit.
3. This submittal also contains the proposed modifications that will be required once the closure of the Batch Waste Treatment Unit (BWTU) is completed. These modifications include the deletion of Closure Plan E.2 for the BWTU and changes throughout the permit removing references to the BWTU (see Attachment III).

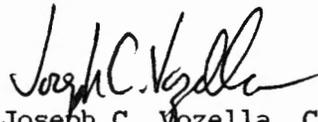
Once closure of the BWTU and partial closure of the treatment tanks is completed, a certification for these activities will be submitted to NMED. At that time, DOE and UC will submit a request to make the modifications described in number three (3) above.

FEB 04 1994

It is understood that the fee for the above activities will be charged at the time the closure certification is accepted by NMED. It is further understood that NMED may choose to inspect the closed units prior to accepting the closure certification. It would expedite a visit and tour of these locations if NMED would call several days in advance of such activities. This would allow time to insure that the appropriate staff members are present to answer any questions that might be raised at that time.

If you should have any questions concerning this response or other concerns over these closure activities, please feel free to call either Jon Mack of my staff at 665-5026, or Jack Ellvinger, ESH-8, LANL, at 667-0633.

Sincerely,



Joseph C. Vozella, Chief
Environment, Safety, and Health
Branch

LESH:7JM-118

Enclosures

cc w/enclosures:

B. Hoditschek
Permits Program Manager
Hazardous and Radioactive
Materials Bureau
NMED
525 Camino de los Marquez
Santa Fe, NM 87502
J. Vozella, ES&H, LAAO

cc w/o enclosures:

B. Garcia, Acting Chief
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J. Mack, ES&H, LAAO
K. Hargis, ESH-8, LANL, MS-K490
J. White, ESH-8, LANL, MS-K498
J. Ellvinger, ESH-8 (HSWS-94-0055),
LANL, MS-K498
T. Drypolcher, CST-7, LANL, MS-E517
S. Hanson, CST-7, LANL, MS-E518
J. Kelly, CST-7, LANL, MS-J593
P. Schumann, CST-7, LANL, MS-E539



BRUCE KING
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2850

JUDITH M. ESPINOSA
SECRETARY
RON CURRY
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 3, 1994

Theodore Taylor, Program Manager
Environmental Restoration Program
Department of Energy
Los Alamos Area Office
528 35th Street
Los Alamos, New Mexico 87544-5000

RE: Permit Modification Requests and Closure Notifications, TA-50 BWTU and Container Storage Area and TA-54 Area L HWTS tanks

Dear Mr. Taylor:

This letter is in regard to your two letters dated October 25, 1993, that the Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) received concerning notification of hazardous waste management unit closure and request for modification of Permit Attachments E.2 and E.8 (approved closure plans). I hope that the following information is useful for the actions that the Department of Energy/Los Alamos National Laboratory (DOE/LANL) is requesting.

The NMED acknowledges your closure notification of the Batch Waste Treatment Unit (BWTU) and Container Storage Area at Technical Area (TA) 50 and the notification of partial closure for two of the four TA-54, Area L Hazardous Waste Treatment/Storage (HWST) tanks. The NMED agrees that these closures constitute Class I permit modifications pursuant to the New Mexico Hazardous Waste Management Regulations (HWMR-7), Part IX, § 270.42 that can be made with prior approval of the Director of the NMED. The applicable Class I modification designation as listed in HWMR-7, Part IX, 40 CFR § 270.42, Appendix I, C.1.b. is to change the closure schedule of any unit.

The permit modification request that the DOE/LANL submitted to the NMED on April 1, 1993 contains a modified closure plan that includes the requested 1993 closure date for the BWTU and

TK

Theodore Taylor
January 3, 1994
Page 2

Container Storage Area at TA-50 along with several other minor modifications to Permit Attachment E.2. This information is adequate for the NMED to process the Class I permit modification for the TA-50 units.

However, before the NMED can continue to process the Class I permit modification for the two HWTS tanks at TA-54, Area L, an amended closure plan (or revised closure plan pages) for Permit Attachment E.8 must be submitted to the NMED to replace the currently approved Permit Attachment E.8. This amended closure plan is to address closure requirements of the units remaining active after the two tanks are closed out. This amended closure plan should also include the change from a 240 day closure notification to the NMED to a 45 day notification as requested in your letter of October 25, 1993.

In addition to the amended closure plan for the two HWTS tanks at TA-54, Area L, the NMED requests that DOE/LANL specify, via a cover letter, which sections of Permit Attachment E.8 will be implemented for partial closure of the two TA-54 Area L tanks, and which two tanks will be closed out. This information will help to clarify and expediate our processing of your Class I permit modification request.

Furthermore, DOE/LANL will be required to submit an additional permit modification request regarding these two closures to remove Attachment E.2, replace Attachment E.8, and modify any applicable Permit conditions which reference the closing/replacement units. Pursuant to HWMR-7 Part IX, 40 CFR § 270.42 (a)(i), DOE/LANL's permit modification request must specify the changes being made to permit conditions or supporting documents referenced by the permit and include the applicable information required by §§ 270.13 through 270.21.

The effective date that the NMED will make the necessary changes to the Permit for the modifications for the two HWTS tanks at TA-54, Area L will coincide with the date the NMED accepts closure certification of the units DOE/LANL has notified for closure. The associated permit modification fee, charged pursuant to the New Mexico Hazardous Waste Fee Regulations (HWFR-1), will be assessed upon acceptance of closure certification when the Permit is modified. The NMED may wish to inspect the closed units before accepting closure certification.

DOE/LANL must submit the requested information within thirty (30) days of your receipt of this letter. Failure to provide the information within 30 days may result in denial of permit modification request.

Theodore Taylor
January 3, 1994
Page 3

Please contact Marc Sides or Stephanie Stoddard of my staff at
(505) 827-4308 if you have any questions.

Sincerely,



Kathleen M. Sisneros
Director
Water and Waste Management Division
New Mexico Environment Department

xc: Benito Garcia, Chief HRMB
Barbara Hoditschek, HRMB
Stephanie Stoddard, HRMB
Marc Sides, HRMB
David Neleigh, EPA
File - Red

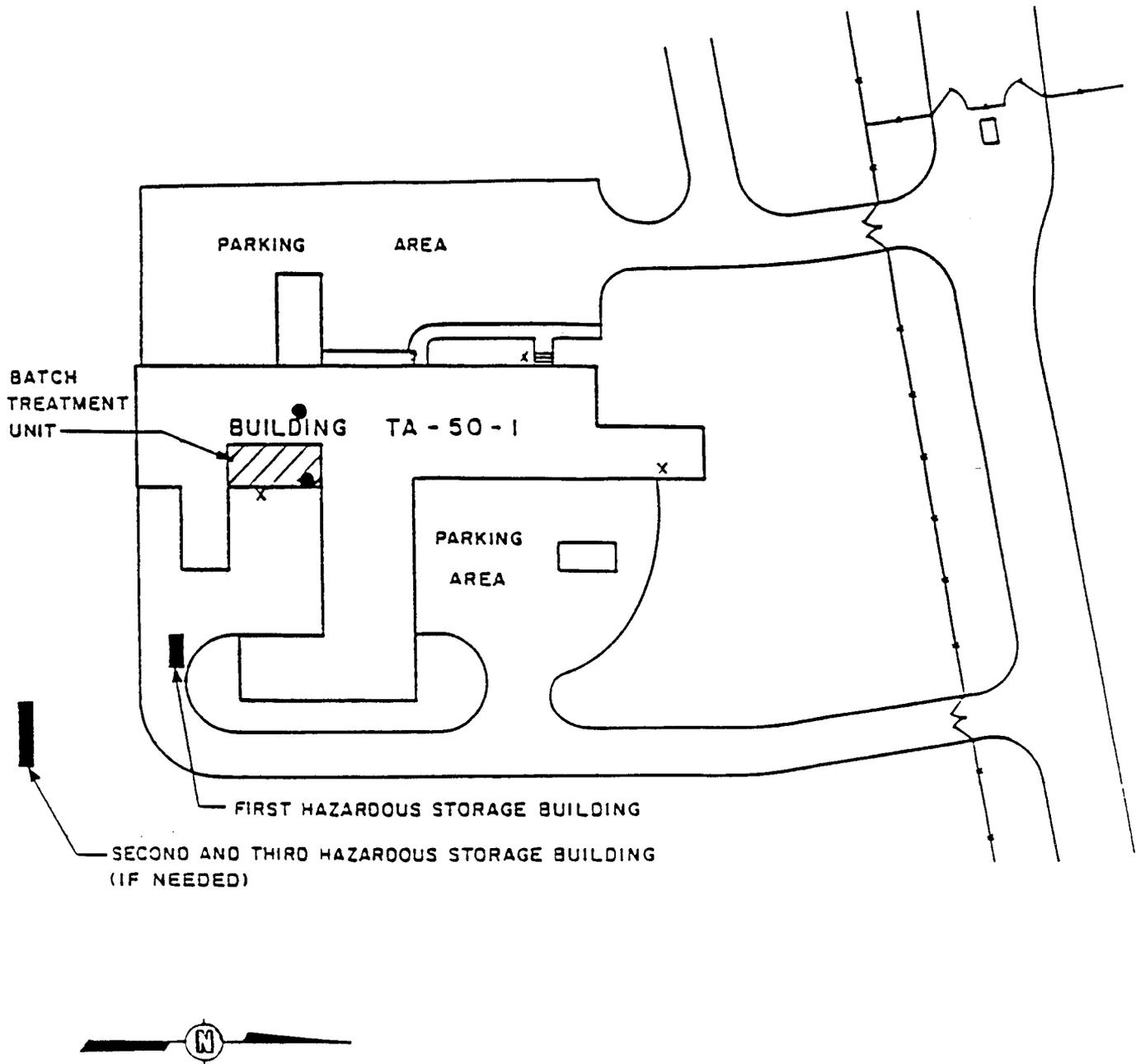


FIGURE 3

Batch Treatment Unit Building TA-50-1
(slated for closure - 1994)

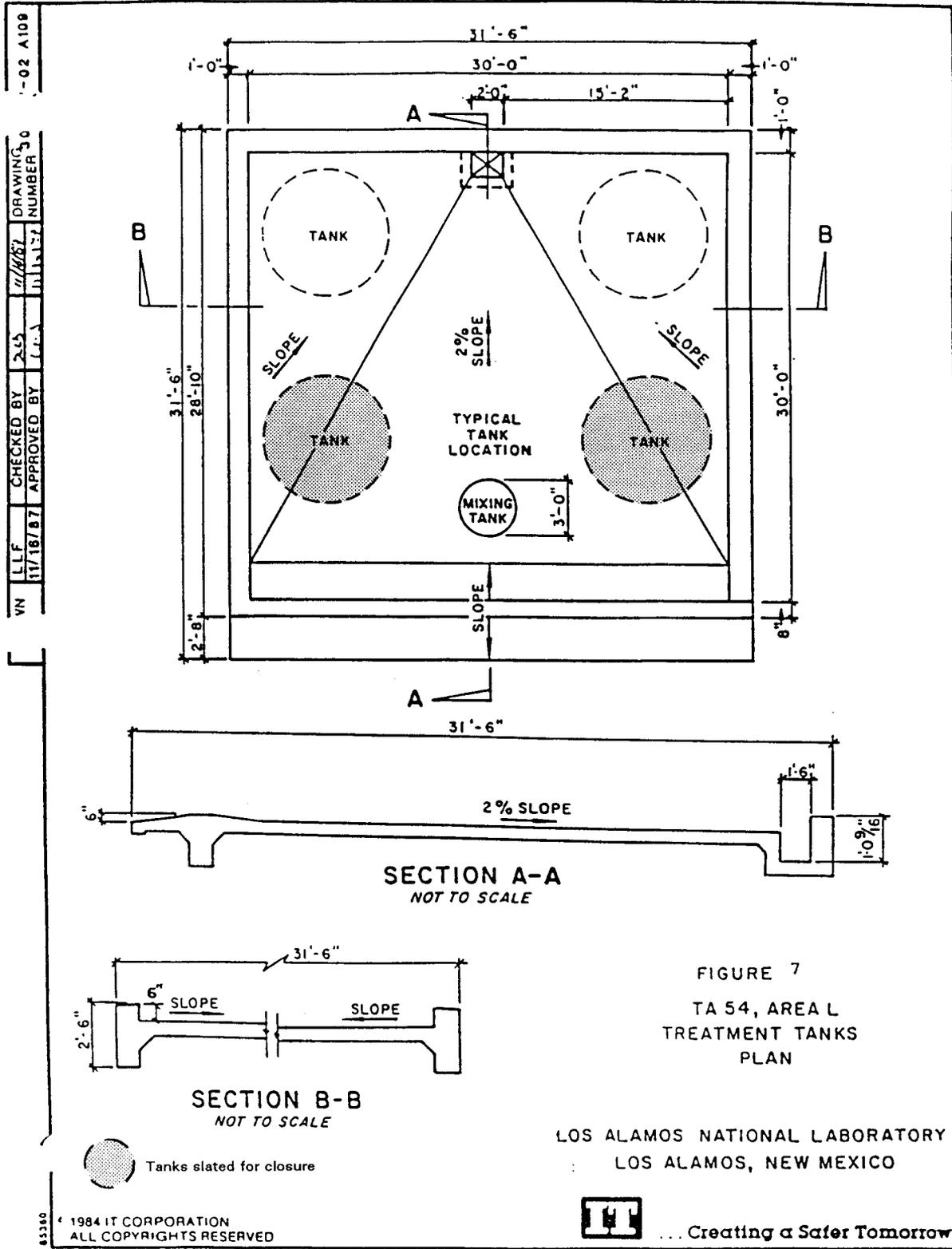


FIGURE 7

Technical Area 54 Area L Treatment Tanks Plan

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation	Date Submitted	Action
VI	44	B.2	5	Change "5720" to "2860".	1	A.1	2/94	

MODULE VI STORAGE IN TANKS

VI.A. DESIGNATED STORAGE UNITS

The Permittee may store for more than ninety days hazardous wastes in tanks only in Technical Area 54, Area L.

VI.B. AUTHORIZED WASTES

1. Identification. Only hazardous wastes identified in Permit Attachment G. with the process code "S02" in column D.1. "Processes" shall be stored.
2. Quantities. No more than ~~5,720~~ 2860 gallons of liquid waste shall be stored at any one time.

2/94

VI.C. TANK DESCRIPTION

1. Capacity. The tanks shall be nine feet in diameter and three feet six inches high, holding approximately 1660 gallons.
2. Type. They shall be constructed of ten-gauge carbon steel and shall be coated inside and out with Carboline Phenoline (@) film or equivalent.
3. Quantity. No more than four tanks shall be used for storage.
4. Condition. If a tank holding hazardous waste is not in good condition (e.g. severe rusting, structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such tank to a tank or container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.
5. Compatibility of Waste with Tanks. The Permittee shall assure, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.199, that the ability of the tank to contain the waste is not impaired.

VI.D. CONTAINMENT

The Permittee shall construct and maintain the secondary containment systems for the tank storage unit in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.193.

VI.E. IGNITABLE OR REACTIVE WASTE

The Permittee shall not locate tanks holding ignitable or reactive waste within 15 meters (50 feet) of the facility property line. The provisions of HWMR-5, as amended 1989, Part V, 40 CFR section 264.198 will be followed.

~~be left unmanned, such as the end of a shift with no following manned shift.~~

2. Technical Area 54, Area L.

- a. The tanks shall maintain a minimum of six inches of freeboard at all times. The tanks shall not be left unattended when filling or addition of any material is in process.
- b. Wastes in the tanks will be sampled before and after treatment and analyzed in accordance with Permit Attachment A.
- c. Tanks containing hazardous wastes will be covered whenever significant precipitation is imminent or falling. Significant precipitation is one-half inch water equivalent.
- d. Incompatible wastes shall not be treated in the tanks.

3/93

~~3. Barium Sand Truck-Mounted-Container Treatment System.~~

- ~~a. The Truck-Mounted-Container Treatment System shall be operated in accordance with the operating procedures described in Attachment L.~~
- ~~b. Only barium-contaminated sands (D005) shall be treated in this container-treatment system.~~
- ~~c. Each treatment operation will consist of no more than the equivalent of five 55 gallon drums (275 gallons) of barium-contaminated sands, not including water, sulfuric acid, gypsum, and cement added as part of the treatment operation.~~
- ~~d. Precautions outlined in Attachment L to capture and recycle fugitive dust must be in place during operation of the container-treatment system.~~

IV.E. INSPECTIONS

The Permittee shall inspect the treatment tanks in accordance with Permit Attachment B. and the requirements below.

2/94

~~1. Batch Waste Treatment Unit.~~

- ~~a. All gauges and instruments associated with the BWTU shall be inspected monthly for calibration dates. No instrument or gauge shall be used if it has not been calibrated in accordance with its manufacturer's recommendations.~~
- ~~b. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall also be verified.~~
- ~~c. Appropriate safety verifications shall be made prior to personnel entry into the tank for inspection.~~
- ~~d. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery.~~

~~e. Cracks and/or gaps in secondary containment structures discovered during an inspection will be repaired within seven calendar days of discovery. Cracks determined to be minor and not adversely affecting containment integrity shall be logged and delay of repairs justified. Repair of minor cracks may be deferred until regularly scheduled maintenance.~~

2. Technical Area 54, Area L.

- a. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall also be verified.
- b. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery. In the event inclement weather prevents such removal, the circumstances shall be documented in the facility record and the removal effected not later than the next duty day after the weather allows.

IV.H. CLOSURE

The Permittee shall close the tanks in accordance with Permit Attachment E, permit paragraph II.L. above and this permit module.

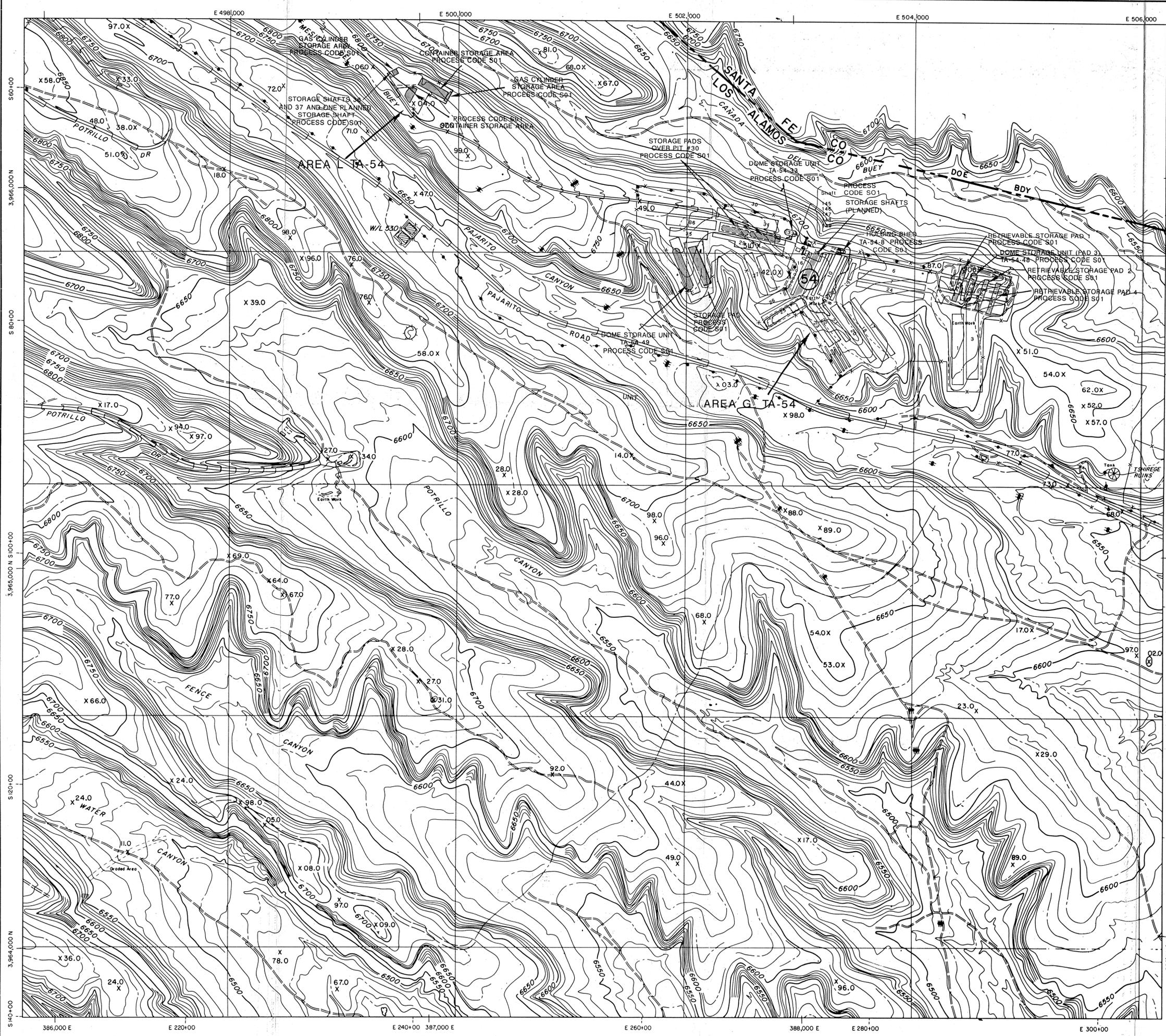
2/94

1. ~~Batch Waste Treatment Unit.~~

- a. ~~At closure, all hazardous waste residues shall be removed from the tank, associated plumbing and the containment structure in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(a).~~
- b. ~~Any component not decontaminated shall be disposed of as hazardous waste in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(b).~~

2. Technical Area 54 Area L.

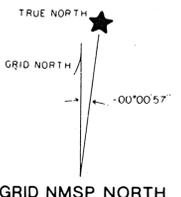
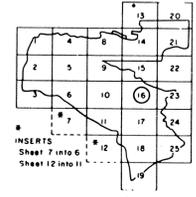
- a. At closure, all hazardous waste residues shall be removed from the tanks and the containment structure in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(a).



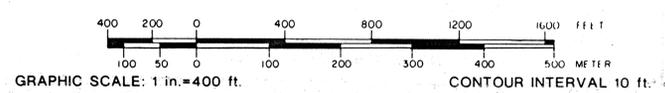
- ### LEGEND
- x 93.0 SPOT ELEVATION
 - 6900 INDEX CONTOUR
 - INTERMEDIATE CONTOUR 10ft.
 - SUPPLEMENTARY CONTOUR 5ft.
 - CONTOURS THROUGH HEAVY VEGETATION
 - COUNTY LINES - TRANSFERRED FROM USGS 1:24,000 QUADRANGLES.
 - DOE BOUNDARY - X & Y COORDINATE DATA PROVIDED BY LASL.
 - DOE BOUNDARY - SURVEY DESCRIPTIONS OR RECORD PLATS PROVIDED BY LASL.
 - DOE BOUNDARY - TRANSFERRED FROM USGS 1:24,000 QUADRANGLES BASED ON PROJECTED COUNTY LINES.

- (35) TECHNICAL AREA NO.
- BUILDING
- FENCE
- PAVED ROAD
- DIRT ROAD
- JEEP TRAIL
- CULVERT
- GUARD RAIL
- TUNNEL
- EARTHEN BUNKERS
- POWER POLE
- TOWER
- PIPE LINE
- CUT LINE OR POWER LINE CLEARANCE SCAR
- WATER TOWER
- TANK
- POND
- RETAINING WALL
- EARTH DIKES OR BLASTING SHIELDS
- EARTH WORK OR GRADED AREAS
- GATE

SHEET LAYOUT

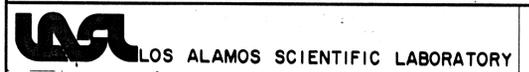


MAPPING COMPLETED BY PHOTOGRAMMETRIC METHODS, UTILIZING 1:30,000, 1:12,000 & 1:13,200 PHOTOGRAPHY, OBTAINED IN NOV. 1976 & JUNE 1980 WITH ZEISS RMK A 15/23 CAMERAS OF 153.42 & 152.43mm C.F.L. RESPECTIVELY, MAPPING BASED ON CONTROL SURVEYS TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE). MAPPING COMPLETED IN ACCORDANCE WITH NATIONAL MAP ACCURACY SPECIFICATIONS.



TECHNICAL AREAS

MD-SITE



11318

MAP 7
CONTOUR MAP SHOWING
MIXED WASTE UNITS AT
TA-54 AREA G AND L

LAB JOB NO. 5682
1"=400' SCALE
PLAN / TOPO
SHEET 16 OF 25

TA-54