Nevada
Environmental
Restoration
Project

Closure Plan
for CAU No. 93:
Area 6 Steam Cleaning
Effluent Ponds
Nevada Test Site

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Environmental Restoration
Division

U.S. Department of Energy
Nevada Operations Office

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**CLOSURE PLAN FOR CAU 93:
AREA 6 STEAM CLEANING EFFLUENT PONDS
NEVADA TEST SITE**

Prepared for U. S. Department of Energy
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Prepared By:
Bechtel Nevada
Remediation Projects

April 1997

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MASTER

**SITE CLOSURE PLAN FOR CAU 93
AREA 6 STEAM CLEANING EFFLUENT PONDS
NEVADA TEST SITE**

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LIST OF ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BN	Bechtel Nevada
CAU	Corrective Action Unit
CFR	Code of Federal Regulations
CGA	Combustible Gas Analyzer
cm	centimeter
COC	Constituents of Concern
DOE	United States Department of Energy
DQO	Data Quality Objectives
ECO	Environmental Compliance Office
DSWA	Defense Special Weapons Agency
ERD	Environmental Restoration Division
eV	electron volts
FFACO	Federal Facility Agreement and Consent Order
FOAV	Finding of Alleged Violation
ft	foot
gal	gallon
IDW	Investigation Derived Wastes
in	inch

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

kg	kilogram
L	liter
LEL	Lower Explosive Limit
LQG	Large Quantity Generator
m	meter
mg	milligram
M&O	Management & Operations Contractor
NAC	Nevada Administrative Code
NDEM	Nevada Division of Emergency Management
NDEP	Nevada Division of Environmental Protection
NTS	Nevada Test Site
NV	Nevada
O ₂	Oxygen
PE	Professional Engineer
PID	Photo-ionization Detector
PPE	Personal Protective Equipment
ppm	parts per million
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

REEC	Reynolds Electric & Engineering Company
RP	Remediation Projects
SCEP	Steam Cleaning Effluent Pond(s)
sec	second
SVOC	Semi-Volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TSDF	Treatment, Storage and Disposal Facility
VOC	Volatile Organic Compounds
WMP	Waste Management Project
yd	yard

1.0 INTRODUCTION

The Steam Cleaning Effluent Ponds (SCEP) waste unit is located in Area 6 at the Nevada Test Site (NTS) (Figure 1). The United States Department of Energy (DOE), Nevada Operations Office operates the NTS and has entered into a trilateral agreement with the State of Nevada and the Defense Special Weapons Agency (DSWA). The trilateral agreement, which is entitled the Federal Facilities Agreement and Consent Order (FFACO), provides a framework for identifying, characterizing, remediating, and closing environmental sites on the NTS and associated bombing ranges. Area 6 is in the southern part of Yucca Flat, and the locations of the various portions of the unit is found in Figure 2. The SCEP waste unit is identified in the FFACO as Corrective Action Unit (CAU) 93. The unit consists of :

- Two steam cleaning effluent ponds.
- Layout Pad and associated grease trap.
- Building 6-623 steam cleaning pad.
- Test Pad.
- Building 6-623 grease trap.
- Building 6-800 Steam Cleaning Pad.
- Building 6-800 separator.
- Building 6-621 sump.
- The concrete asbestos piping connecting these components to both SCEPs.

The SCEPs are evaporation basins formerly used for the disposal of untreated liquid effluent discharged from steam cleaning activities associated with Buildings 6-623 and 6-800. The North SCEP was constructed in 1975 and became operational during the same year. It is rectangular (19.8 m [65 ft] wide, 27.5 m [90 ft] long, and 2.4 m [8.0 ft] deep) and surrounded by a wire fence. Rinsate water from the steam cleaning pad next to Building 6-623 (the Area 6 Machine and Welding Shop), Test Pad, and Layout Pad were piped to the North SCEP (Figure 2).

FIGURE 1
SITE LOCATION

The South SCEP was constructed in 1969 and became operational in 1970. It is irregular in shape (approximately 27.5 meters [m] [90 feet (ft)] long, 26 m [85 ft] wide, and four meters [12 ft] deep) and is surrounded by a gravel berm. The rinsate water from the steam cleaning pad adjacent to Building 6-800 (the Heavy Duty Machine Shop) and the Building 6-621 (Welding Shop) Sump was piped to the South SCEP (DOE, 1996).

The piping, steam cleaning pads, separator, sump, and grease traps associated with the CAU were added to the SCEP system to meet the changing operational mission of the Fleet Operations Yard (DOE, 1996). Discharges to both SCEPs were discontinued in November 1992 when closed-loop, recirculating steam cleaning systems were installed. The piping from the steam cleaning pads to the separator or grease traps were subsequently plugged with cement.

Suspected Resource Conservation and Recovery Act (RCRA) regulated hazardous waste or hazardous waste constituents released into the SCEPs were degreasing solvents associated with equipment decontamination activities (methylene chloride and 1,1,1-trichloroethane) and petroleum hydrocarbon constituents (toluene, xylenes, and lead). No releases of RCRA-regulated hazardous waste or hazardous waste constituents have been discharged to either SCEP since 1988 (DOE, 1996). Prior to 1988, the volume of water discharged into the SCEPs was dependent on the amount of nuclear testing conducted each year. A detailed discussion of the unit activities can be found in the Resource Conservation and Recovery Act, Industrial Site Environmental Restoration Site Characterization Plan, Area 6 Steam Cleaning Effluent Ponds (DOE, 1996).

1.1 PURPOSE

The Area 6 SCEP was identified as an historic RCRA site in a permit issued by the Nevada Division of Environmental Protection (NDEP) Hazardous Waste Management Permit Number NEV HW009 (NDEP, 1995). This permit specifies that the unit will be closed under Title 40 Code of Federal Regulations (CFR) 265.228 (Closure and Post-Closure Care). This regulation allows the unit to be closed two ways:

- Remove or decontaminate all waste residues, contaminated containment (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste (i.e., clean closure). or
- Close the impoundments and provide post-closure care for a landfill under Subpart G and Title 40 CFR 265.310. In addition to the regulatory requirements of Title 40 CFR 265.228, the Nevada Administration Code (NAC) 459.9973 requirements regarding the closure of hydrocarbon sites also applies and have been included in this plan.

To determine which closure method was appropriate, the DOE characterized the unit during the spring of 1996. Sufficient information is available to support clean closure of this unit based upon data collected during this field sampling event and other pre-characterization sampling events.

1.2 SCOPE

Clean closure is the recommended closure strategy for the majority of the components within this CAU. Four components of the unit (Building 6-621 Sump, Test Pad Grease Trap, Building 6-623 Steam Cleaning Pad, and North SCEP pipeline) are recommended to be closed in place. This closure plan provides the strategy and backup information necessary to support the clean closure of each of the individual components within CAU 93. Analytical data generated during the characterization field work and earlier sampling events indicates the majority of CAU 93 soil and infrastructure is non-hazardous (i.e., impacted primarily with petroleum hydrocarbons).

The following activities will be conducted during the closure of this unit:

- Surface soil samples will be collected from soil to the north, south, and east of the North SCEP. The analytical results from these samples will be used to develop a plan to close out the Nevada Division of Emergency Management (NDEM) spill release number H910911D (Figure 2).
- The top one meter (3.3 ft) of soil from the North SCEP will be excavated and disposed of within the Area 6 Hydrocarbon Landfill. Samples will be collected to verify that the soil remaining within the North SCEP has a TPH concentration below the NAC Action Level of 100 mg/kg.
- The North SCEP will be backfilled with clean fill material following standard construction practices.
- A soil sample will be collected 0.6 m (2.0 ft) under each end of the Layout Pad Grease Trap. If the analytical results from these samples indicate that the grease trap has leaked, the grease trap and all associated impacted soil will be excavated and properly disposed.
- The piping from the Test Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument impacted soil. If no obviously impacted soil is detected, the samples will be collected from around piping joints or seals.
- The piping from the Building 6-623 Steam Cleaning Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument

impacted soil. If no obviously impacted soil is detected, the samples will be collected from around piping joints or seals.

- The in-line grease trap located west of Building 6-623 will be excavated and the grease trap removed. Four soil samples will be collected from under the grease trap to evaluate if the grease trap has leaked RCRA-constituents or petroleum hydrocarbons into the surrounding soil. Final disposal options for the grease trap and associated soil will be determined after review of the analytical results.
- Surface and near-surface soil samples will be collected from the South SCEP berm to further identify the extent of RCRA listed impacted soil and thereby minimize the volume of RCRA waste.
- All of the RCRA and petroleum hydrocarbon impacted soil (Zone 2) will be removed from the South SCEP and placed into roll-off containers. This material will be managed as hazardous waste.
- Confirmatory samples will be collected to verify whether all of the RCRA hazardous constituents have been excavated from the South SCEP.
- Any remaining petroleum hydrocarbon soil will be excavated from the South SCEP and disposed of within the Area 6 Hydrocarbon Landfill. Samples will be collected to verify that the soil remaining within the South SCEP has a Total Petroleum Hydrocarbon (TPH) concentration below the NAC Action Level of 100 milligrams per kilogram (mg/kg).
- The South SCEP will be backfilled with clean fill material following standard construction practices.
- The piping from the Building 6-800 Steam Cleaning Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument impacted soil. If obviously impacted soil is not detected, the samples will be collected from around piping joints or seals.
- The separator associated with the Building 6-800 Steam Cleaning Pad will be excavated and the separator removed. A soil sample will be collected under each end of the separator to verify that the separator did not leak and impact the surrounding soil. Disposal of the separator will depend on the analytical results from these samples.
- Additional soil (if analytical results indicates TPH concentrations exceed the NAC Action Level of 100 mg/kg) will be removed from the site of NDEM spill release number H920625B (Figure 2). Approximately 19 m³ (25 cubic yards [yd³]) of hydrocarbon impacted soils were initially removed in 1992. Samples indicated that the TPH

concentrations exceeded the NAC Action Level of 100 mg/kg (maximum 3,490 mg/kg). The soils excavated during the remedial activities will be disposed of in the Area 6 Hydrocarbon Landfill.

- The Building 6-621 Sump will be closed in place by filling it with cement.
- The asbestos concrete piping that connects the Building 6-800 steam cleaning pad and the South SCEP will be excavated and disposed of as hazardous waste in an off-site Treatment, Storage and Disposal Facility (TSDF). Any associated impacted soil will be excavated and disposed of along with the piping.
- Excavations will be backfilled with clean fill and compacted following accepted construction practices.
- Wastes generated during the closure of CAU 93 will be properly managed and disposed of following applicable federal and state regulations as specified in the Waste Management Plan in Appendix B.
- A Closure Report will be prepared to document all closure activities and to certify that the closure was completed according to this plan.

1.3 CLOSURE PLAN OUTLINE

The closure plan has been developed in a manner to support the proposed clean closure of the Area 6 SCEPs unit. The format of the closure plan is as follows:

- Site description and history.
- Summary of previous activities.
- Closure strategy for each component of the unit.
- Waste Management and Disposal.
- Description of the methodologies proposed to verify that regulated wastes have been removed from each component of the CAU.
- Documentation of closure activities and the role of the Independent Professional Engineer (PE) in certifying that the unit has been closed according to this plan.

The closure plan was developed using information and guidance provided from the following documents:

- Resource Conservation and Recovery Act, Industrial Sites, Environmental Restoration Site Characterization Plan, Area 6 Steam Cleaning Effluent Ponds, DOE, 1996.
- Resource Conservation and Recovery Act, Industrial Sites, Environmental Restoration Site Characterization Report, Area 6 Steam Cleaning Effluent Ponds, DOE, 1996.
- Nevada Environmental Restoration Project, Project Management Plan, Revision 0, DOE, 1994.
- Nevada Environmental Restoration Project, Health and Safety Plan, Revision 2, DOE, 1996.
- Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site, Nevada, Revision 1, DOE, 1996.

2.0 CLOSURE STATEMENT OF WORK

2.1 PREVIOUS INVESTIGATIONS

Various components within the Area 6 SCEP CAU have been investigated since the unit was officially inactivated in November 1992. These investigations have been done to address potential environmental concerns/violations within the unit or to help environmental personnel develop Data Quality Objectives (DQOs) for the SCEPs Characterization Plan (DOE, 1996). A summary of each investigation and its findings can be found in Appendix A.

2.1.1 Past Regulatory Issues

There have been three regulatory issues associated with the unit since it was inactivated in November 1992. Two of the incidences have involved spills from components of the unit. Each spill (H910911D and H920625B) has been reported to the NDEM and NDEP and investigated by the DOE. Each spill is discussed in Appendix A. The third issue involved a Finding of Alleged Violation (FOAV) against the DOE and the Management & Operations (M&O) contractor regarding the management of the South SCEP. As a result of the FOAV, the Building 6-621 exit pipe was sealed with cement between the sump and the South SCEP (Appendix A).

2.1.2 Steam Cleaning Effluent Ponds Models

A model was developed based upon the information collected during three pre-characterization sampling events conducted between August 1994 and September 1995 (Appendix A). A separate model was developed for each steam cleaning effluent pond during the characterization DQO process (DOE, 1996). During the characterization DQO meeting, it was decided not to characterize the influent pipelines and associated separator, sump, or grease traps. Rather, these areas would be characterized during the closure portion of the program.

2.1.2.1 North Steam Cleaning Effluent Pond Model

The North SCEP model, developed during the characterization DQO process, states that the only Constituent of Concern (COC) would be petroleum hydrocarbons. The model further predicted that the vertical extent of the waste would not exceed 1.5 m (5.0 ft) below the base of the pond and the horizontal extent of the waste would be confined within the boundary of the North SCEP. The model was based upon the core samples collected during the September 1995 sampling event (DOE, 1996).

2.1.2.2 South Steam Cleaning Effluent Pond Model

The South SCEP model was developed during the characterization DQO process. The model was verified during the field characterization and the model was modified to reflect field and analytical data as required. The model segregates the pond into four zones (DOE, 1996). The location of each zone is indicated on Figure 3. A cross section of the South SCEP is provided on Figure 4. Appendix A provides additional information regarding the four zones that delineate the South SCEP.

2.1.3 Characterization Investigation Summary

The characterization plan was developed to confirm the models for the South and North SCEPs. Sufficient flexibility was built into the Characterization Plan so that enough data would be collected to develop a Closure Plan even if the models were proven to be inaccurate. The basic characterization approach was to use a backhoe to create four trenches across each SCEP and collect samples every 1.5 m (5.0 ft) (in the horizontal and vertical direction) (DOE, 1996). These samples were analyzed using a on-site mobile laboratory. The on-site analysis was used to direct the horizontal and vertical extent of excavation at each SCEP. A percentage of the samples were also sent off-site for analysis. These samples were used to confirm the mobile laboratory data and document the extent of impacted soil.

2.1.3.1 North Steam Cleaning Effluent Pond Characterization Summary

The model for the North SCEP only identified petroleum hydrocarbons as a COC. The characterization field work collected numerous samples from the North SCEP and found that the distribution of petroleum hydrocarbons across the pond floor was inconsistent. The petroleum hydrocarbons appear to be concentrated near the outfall pipe. Preliminary data indicated that the petroleum hydrocarbon-impacted soil does not extend past a depth of 1.5 m (5.0 ft) (DOE, 1996a).

2.1.3.2 South Steam Cleaning Effluent Pond Characterization Summary

The zone locations and associated depths for the South SCEP have been estimated and presented in the Characterization Report (DOE, 1996a) and reproduced in this plan as Figure 4. The Zone 3 and Zone 4 subsurface expressions were developed in the Characterization Report (DOE, 1996a) based upon the analytical results from samples collected during the field characterization. The field sampling protocol required that two non-impacted samples be collected from each sampling location, prior to relocating to the next sampling station.

SOURCE: DOE, 1996a

FIGURE 3
SOUTH SCEP MODEL

EXPLANATION

- ① Contaminant zones
- Lower boundary of contaminant zones

Note: All of the Zone 1 material and part of the Zone 2 and 3 material have already been removed and disposed.

SOURCE: DOE. 1996a

FIGURE 4
SOUTH SCEP CROSS SECTION

A more detailed summary of the South SCEP characterization is found in Appendix A. To support the characterization results and the South SCEP Model (Figure 4) a one dimensional flow model was simulated for the South SCEP. The flow model provides a conservative simulation of infiltration from the base and sides of the South SCEP. Input parameters to the one dimensional flow model were obtained from NTS studies (BN, 1997a) and standard references. The base case model predicted that the maximum extent of saturated soil underlying the South SCEP is 4.2 m (13.6 ft) and that the wetting front extends to a depth of approximately 4.8 m (15.7 ft) (DOE, 1997). Based upon analytical results and physical observations, the soil on the base of the pond was not saturated. The one dimensional flow model conservatively predicted the expected depth of infiltration if a sludge layer (which was present) did not impede contaminant migration. A summary of the model has been included in Appendix A. The analytical data and physical observation confirm that the vertical and horizontal extent of impacted soil is less than that predicted by the model. DOE/NV has determined based upon the analytical data and the theoretical analyses, that clean closure of the of the North and South SCEPs is an achievable remediation alternative.

2.1.4 North Steam Cleaning Effluent Pond Pipe Line Summary

In conjunction with the SCEPs characterization field activities, a limited interim action was conducted on the North SCEP influent pipeline. The pipeline was removed from the North SCEP to a manhole located approximately 30 m (100 ft) east of the North SCEP. Based upon visual inspection and two soil samples collected during the interim action, the pipeline is intact and has not leaked (DOE, 1996a).

2.2 CLOSURE STRATEGY & IMPLEMENTATION

The Area 6 SCEPs were identified in the Hazardous Waste Management Permit NEV HW009 (NDEP, 1995) to be closed under 40 CFR 265.228 (Closure and Post-Closure Care). Since the majority of the impacted material in this unit is not RCRA hazardous, NAC 459.9973, (closure of hydrocarbon sites) has been incorporated into this plan. The exact remediation standards that apply to each component of the unit are discussed in Section 3.0.

The results of the characterization of the North and South SCEPs indicate that the most practical closure for these portions of the unit is to remove the impacted soil and replace it with clean fill. This is particularly important as this portion of the unit lies within Yucca Lake which frequently floods and has been designated as a waterway of the State of Nevada.

2.2.1 Layout Pad Grease Trap Closure Strategy

The Layout Pad grease trap was sealed with concrete after the steam cleaning pad was closed in November 1992. Preliminary data from the Building 6-623 Grease Trap (Appendix A) as well as the characterization Report for the North SCEP analytical data (DOE, 1996a), indicate that the COC is petroleum hydrocarbons, not RCRA listed wastes. Therefore, the strategy for this unit is to confirm that the grease trap did not leak or spill petroleum hydrocarbons on to the surrounding soil during its operational history.

Prior to excavating the grease trap, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the grease trap, hand excavation may be required prior to using the backhoe. A backhoe will be used to collect a soil sample from under each end of the grease trap. The soil samples will be analyzed for TPH to determine if the surrounding soil has been impacted by past operational activities.

A photo-ionization detector (PID), or equivalent with a lamp voltage of 11.7 eV will be used to monitor VOCs in the breathing zone during excavation activities. Excavation will cease or engineering controls will be established if the PID registers a 5 parts per million (ppm) sustained increase over background concentrations for VOCs. Additional health and safety precautions are discussed in the Site-Specific Health and Safety Plan (BN, 1997).

During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of soil surrounding the grease trap and associated piping. If the soil surrounding the grease trap is grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria.

In addition, each excavation will be inspected and compared to site as-built drawings. Significant discrepancies between the as-built drawings and the excavation will be documented and investigated under the direction of the site supervisor.

2.2.2 Test Pad Closure Strategy

The Test Pad Drain Line was sealed with concrete after the Test Pad was closed in November 1992. Preliminary data from the Building 6-623 Grease Trap (Appendix A) as well as Characterization Report North SCEP analytical data (DOE, 1996a), indicate that the COC is petroleum hydrocarbons, not RCRA listed wastes. Therefore, the strategy for this unit is to

confirm that the Test Pad Drain Line did not leak or spill petroleum hydrocarbons on to the surrounding soil during its operational history.

Prior to excavating the drainage line, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing engineering drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the drainage line, hand excavation may be required prior to using the backhoe. The piping from the Test Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument impacted soil. If no obviously impacted soil is detected, the samples will be collected from around piping joints or seals. The soil samples will be analyzed for TPH.

A PID, or equivalent with a lamp voltage of 11.7 eV will be used to monitor VOCs in the breathing zone during excavation activities. Excavation will cease or engineering controls will be established if the PID registers a 5 parts per million (ppm) sustained increase over background concentrations for VOCs. Additional health and safety precautions are discussed in the Site-Specific Health and Safety Plan (BN, 1997).

During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of soil surrounding the piping. If the soil surrounding the drainage line is grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria.

In addition, each excavation will be inspected and compared to site as-built drawings. Significant discrepancies between the as-built drawings and the excavation will be documented and investigated under the direction of the site supervisor.

2.2.3 Building 6-623 Steam Cleaning Pad Closure Strategy

The Building 6-623 Steam Cleaning Pad Drain Line was sealed with concrete after the Steam Cleaning Pad was closed in November 1992. Preliminary data from the Building 6-623 Grease Trap (Appendix A) as well as the Characterization Report for the North SCEP analytical data (DOE, 1996a), indicate that the COC is petroleum hydrocarbons, not RCRA listed wastes. Therefore, the strategy for this unit is to confirm that the Steam Cleaning Pad Drain Line did not leak or spill petroleum hydrocarbons on to the surrounding soil during its operational history.

Prior to excavating the drainage line, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the drainage line, hand excavation may be required prior to using the backhoe. The piping from the Steam Cleaning Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument impacted soil. If no obviously impacted soil is detected, the samples will be collected from around piping joints or seals. The soil samples will be analyzed for TPH.

A PID, or equivalent with a lamp voltage of 11.7 eV will be used to monitor VOCs in the breathing zone during excavation activities. Excavation will cease or engineering controls will be established if the PID registers a 5 parts per million (ppm) sustained increase over background concentrations for VOCs. Additional health and safety precautions are discussed in the Site-Specific Health and Safety Plan (BN, 1997).

During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of soil surrounding the piping. If the soil surrounding the drainage line is grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria.

In addition, each excavation will be inspected and compared to site as-built drawings. Significant discrepancies between the as-built drawings and the excavation will be documented and investigated under the direction of the site supervisor.

2.2.4 Building 6-623 Grease Trap Closure Strategy

Based upon the information provided within the Characterization Report (DOE, 1996a) and the analytical data package from the December 1995 sampling event (BN, 1996), the closure strategy for this unit is to remove, clean out, and properly dispose of the grease trap in a construction landfill.

Prior to the start of excavation of the grease trap, all subsurface sewer, water, and electrical lines will be identified and marked. This will be accomplished by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the grease trap, hand excavation may need to be done prior to using the backhoe. The atmosphere inside the tank will be monitored with a Combustible Gas Analyzer (CGA) to confirm that it is inert. If the atmosphere of the grease trap is determined to be potentially explosive, nitrogen gas

will be used to achieve a Lower Explosive Level (LEL) of less than 20 percent and an oxygen (O_2) content of less than 12 percent.

A PID, or equivalent, with a lamp voltage of 11.7 eV, will be in operation during excavation activities. Excavation will cease or engineering controls will be established if the PID registers a 5 ppm sustained increase over background concentrations for VOCs.

The backhoe will be used to excavate a sufficient volume of soil around the tank to allow removal with a crane. All system pipes will be removed from the grease trap and the access ports closed with plumbing fittings or suitable plugging material. Precautions will be taken to minimize the potential of a release of product during the disconnection of pipes by the use of spill buckets and mats.

Four soil samples will be collected from the excavation to evaluate the conditions of the grease trap. A sample will be collected from a depth of 0.6 m (2.0 ft) below the base of each end of the grease trap. An addition two samples will be collected from any areas of visual or instrument-detected impacted soil. The soil sample analytical results will be evaluated and compared to pre-characterization sampling results. The pre-characterization analytical results detected the presence of 2-butanone, methylene chloride, and methyl isobutyl ketone. The pre-characterization data was evaluated by waste management personnel and determined not to be RCRA-regulated waste. The four analytical samples collected from the grease trap excavation will be analyzed for TPH and VOCs and be used to verify the initial waste classification.

During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of surrounding soil. If the area surrounding the grease trap is grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria.

In addition, each excavation will be inspected and compared to site as-built drawings. Significant discrepancies between the as-built drawings and the excavation will be documented and investigated under the direction of the site supervisor.

The excavated grease trap will be cleaned out and characterized as outlined in Section 2.3. The excavated soil will be stockpiled on plastic sheeting. If the verification samples indicate that the soil is below Remediation Levels, the soil will be returned to the excavation and additional soil brought in to fill the excavation. If the soil is not below Remediation Levels, the situation will be evaluated and, if appropriate, additional soil will be excavated.

2.2.5 North Steam Cleaning Effluent Pond Spill H910911D Closure Strategy

Prior to the start of closure field activities, additional surface soil samples will be collected from the 1991 spill area (Figure 2 and Table 1). Sufficient samples will be collected to delineate the extent of the spill or confirm the Characterization Report (DOE, 1996a) statement that the 1991 spill release is no longer a concern. The initial release report indicated that an area of 700 m² (7,500 ft²) north, south, and east of the North SCEP had been impacted. The release report noted that black stained soils and oily floating product were present in several areas. There is no longer any physical evidence (i.e., visual staining of surface soils) of the 1991 release. Prior to developing a plan to close out this spill release, additional surface soil samples will be collected. The spill release will be addressed in three phases.

2.2.5.1 Phase 1

The first phase will consist of creating a 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grid pattern across the entire 700 m² (7,500 ft²) release area. The grid will create 289 cells. Ten percent (29 cells) will be picked at random and sampled for TPH and VOCs. The analytical data will be evaluated to identify which areas, if any, exceed regulatory limits.

2.2.5.2 Phase 2

The second phase will be executed only if the first phase indicates that some areas of the spill still exceed regulatory limits. The identified areas will be excavated to a depth of 0.6 m (2.0 ft) below ground surface and the soil will be properly managed and disposed of according to federal and state regulations.

2.2.5.3 Phase 3

The last phase will be the collection of samples to verify that all of the impacted soil with concentrations of TPH greater than 100 mg/kg have been removed from the spill area. Upon receipt of the verification sample data that all impacted soil has been removed, the excavated areas will be backfilled and/or graded to existing surface elevations.

2.2.6 North Steam Cleaning Effluent Pond Influent Pipe Closure Strategy

Based upon the December 1995 analytical data package results from the Building 6-623 Grease Trap (BN, 1996) and the North SCEP characterization data (DOE, 1996a), no RCRA-regulated substances flowed through this piping system. In addition, inspection of the piping during the

TABLE 1 - SOUTH SCEP AND NDEM SPILL RELEASE H910911D SAMPLING PARAMETERS

PARAMETER	NUMBER OF SAMPLES	NUMBER OF TRIP BLANKS	NUMBER OF DUPLICATES ^d	SAMPLE TOTAL	ANALYTICAL METHOD	SAMPLE CONTAINER
SOUTH STEAM CLEANING EFFLUENT POND ZONE 2 SAMPLING						
TCLP ^a Metals ^b	10		1	11	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs ^c	10	1	1	12	SW 846, EPA 8260	125 mL, glass jar
TPH ^d	10		1	11	SW 846, EPA 8015	250 mL, glass jar
NDEM SPILL RELEASE H910911D SAMPLING						
Total VOCs	29	5	2	36	SW 846, EPA 8260	125 mL, glass jar
TPH	29		2	31	SW 846, EPA 8015	250 mL, glass jar

^a TCLP - Toxicity Characteristic Leaching Procedure, EPA Method 1311

^b Metals - Eight RCRA Metals, EPA Methods 6010 & 7470

^c VOCs - Volatile Organic Compounds, EPA Method 8260

^d TPH - Total Petroleum Hydrocarbons, EPA Method 8015 Modified

^e Number of Duplicates - Five percent of total samples collected

limited removal action in May 1996 indicates it is in good condition and does not leak at the pipe joints. The piping will therefore be left in place and all three steam cleaning pads. A soil sample will be collected from along side of each steam cleaning pad excavation and analyzed for TPH.

Prior to excavating the drain lines and grease traps, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the drain lines or grease traps, hand excavation may be required prior to using the backhoe. During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of soil surrounding the piping.

If the area surrounding the grease traps or drainage lines are grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria. In addition, a recommendation for additional sampling or remedial field work along other portions of the pipeline, if necessary, will be submitted to the NDEP for approval.

In addition, each excavation will be inspected and compared to site as-built drawings. Significant discrepancies between the as-built drawings and the excavation will be documented and investigated under the direction of the site supervisor.

2.2.7 North Steam Cleaning Effluent Pond Closure Strategy

The closure of the North SCEP will be completed in three phases.

2.2.7.1 Phase 1

Phase 1 will consist of excavating the top one meter (3.0 ft) of soil from the North SCEP and disposing of this soil in the Area 6 Hydrocarbon Landfill. Soil will be excavated using various construction equipment, loaded into dump trucks, and transported to the hydrocarbon landfill (refer to Section 2.3 for waste management details).

2.2.7.2 Phase 2

Phase 2 will consist of collecting verification samples from excavated areas of the pond. The impacted areas of the North SCEP will be divided into a 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grid

pattern. Ten percent of the cells will be randomly selected and sampled to verify that petroleum-hydrocarbon impacted soil above the NAC Action Level of 100 mg/kg has been removed from the North SCEP. In addition, two biased soil samples will be collected in the vicinity of the outfall pipe. If a verification sample indicates that not all of the petroleum hydrocarbon impacted soil was removed, a backhoe will be remobilized to the site. Additional soil will be removed, and additional verification samples will be collected. Section 3.0 presents the proposed verification program for the unit.

2.2.7.3 Phase 3

Phase 3 will start after the Phase 2 verification samples confirm that the petroleum hydrocarbon impacted soil above the TPH Action Level of 100 mg/kg has been removed from the North SCEP. Clean fill will be brought to the site and placed into the open excavation. The excavation will be backfilled using a performance standard of 85 percent compaction. The performance standard will be developed using the fill material, front end loader, water truck, and a nuclear density gauge (ASTM method D 2922-91). The final two feet of the excavation will be filled with native playa soil and graded in a manner to promote runoff away from the former excavation.

2.2.8 Building 6-800 Steam Cleaning Pad Closure Strategy

The Building 6-800 Steam Cleaning Pad drain line was sealed with concrete after the Steam Cleaning Pad was closed in November 1992. Preliminary data from the August 1994 South SCEP pipeline sampling (Appendix A) as well as the Characterization Report South SCEP analytical data (DOE, 1996a), indicate that the COCs are petroleum hydrocarbons and RCRA-listed F wastes. Therefore, the strategy for this unit is to confirm that the Steam Cleaning Pad Drain Line did not leak or spill petroleum hydrocarbons or F-listed waste on to the surrounding soil during its operational history.

Prior to excavating the drain line, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the drain line, hand excavation may be required prior to using the backhoe. The piping from the Steam Cleaning Pad will be exposed and two analytical samples will be collected from areas that exhibit visually or instrument impacted soil. If no obviously impacted soil is detected, the samples will be collected from around piping joints or seals. The soil samples will be analyzed for TPH and VOCs.

A PID, or equivalent with a lamp voltage of 11.7 eV will be used to monitor VOCs in the breathing zone during excavation activities. Excavation will cease or engineering controls will

be established if the PID registers a 5 parts per million (ppm) sustained increase over background concentrations for VOCs. Additional health and safety precautions are discussed in the Site-Specific Health and Safety Plan (BN, 1997).

During the excavation process the condition of the removed soil will be evaluated physically and with instrumentation by collecting headspace VOC samples. Soil samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of surrounding soil. If the soil surrounding the drainage line is grossly impacted, sufficient soil will be excavated to reduce soil contamination below remediation levels. Verification samples will be collected to confirm that the remaining soil meets cleanup criteria.

In addition, each excavation will be inspected and compared to site "as built" drawings. Significant discrepancies between the "as built" drawings and the excavation will be documented and investigated under the direction of the site supervisor.

2.2.9 Building 6-800 Separator Closure Strategy

It is unknown if the separator has leaked, the condition of the piping (connecting the separator with the steam cleaning pad and the South SCEP) is in. Therefore, the separator will be removed and properly disposed and samples collected from the underlying soil.

Prior to excavating the separator, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of the separator, hand excavation may be required prior to using the backhoe. The atmosphere inside the tank will be monitored with a CGA to confirm that it is inert. If the atmosphere of the separator is potentially explosive, nitrogen gas will be used to achieve a LEL of less than 20 percent and an O₂ content of less than 12 percent. This should not be a problem, as quarterly inspection of the separator indicates that the LEL is well under 20 percent.

A PID, or equivalent with a lamp voltage of 11.7 eV will be used to monitor VOCs in the breathing zone during excavation activities. Excavation will cease or engineering controls will be established if the PID registers a 5 parts per million (ppm) sustained increase over background concentrations for VOCs. Additional health and safety precautions are discussed in the Site-Specific Health and Safety Plan (BN, 1997).

A backhoe will excavate a sufficient volume of soil around the tank to allow removal with a crane. All system pipes will be removed from the separator and the access ports closed with plumbing fittings or suitable plugging material. Precautions will be taken to minimize the potential of a release of product during the disconnection of pipes by the use of spill buckets and mats.

Two samples will be collected from the excavation to evaluate the conditions of the separator. A sample will be collected from a depth of 0.6 m (2.0 ft) below the base of each end of the separator. In addition, samples will be collected from any areas of visual, odor, or instrument-detected impacted soil. Each soil sample will be analyzed for TPH, VOCs, and TCLP metals.

The separator was steam cleaned and is considered to be "treated" and is no longer "hazardous debris" (DOE, 1994). However, the exterior of the tank may be impacted if the unit leaked. As a precautionary measure, the separator will be stored in the Hazardous Waste Storage Area pending analysis of soil samples collected from beneath the separator.

The excavated soil will be stockpiled on plastic sheeting. If the verification samples indicate that the soil is below Remediation Levels, the soil will be returned to the excavation and additional soil brought in to fill the excavation.

2.2.10 Building 6-800 Separator Spill H920625B Closure Strategy

During the Building 6-800 separator closure activity, additional soil will be removed from this spill area. Approximately 19 m³ (25 yd³) of soil was initially removed in 1992. For safety reasons the excavation was backfilled with imported clean fill. This fill will be excavated and screened using PID headspace readings. The fill will be segregated based on headspace PID readings, visual staining, and odor. The segregated fill will be placed near the excavation and covered with plastic sheeting. It is assumed that at a minimum, an additional 19 m³ (25 yd³) of impacted soil will require excavation. The vertical and lateral extent of soil excavated will be controlled by field observations and PID headspace readings.

Once headspace readings, as well as visual and odor inspections, indicate that all of the impacted soil has been excavated, two confirmatory samples will be collected from the bottom of the excavation. These samples will be analyzed for TPH, VOCs, and TCLP metals. The excavation will be backfilled at the same time as the Building 6-800 Separator excavation. All impacted soil will be managed in the Hazardous Waste Storage Area pending analysis of waste characterization samples collected during the excavation process. If the analytical results indicate that the soil is RCRA-regulated it will be packaged and sent off-site to a TSDF for disposal.

2.2.11 Building 6-621 Sump Closure Strategy

This sump was connected to floor drains and roof drains. Inspection of the metal sump indicates that it is in excellent condition and does not leak. All sump influent and effluent lines have been sealed with cement. Since the sump is physically located within Building 6-621, the sump will be closed in place with cement.

2.2.12 South Steam Cleaning Effluent Pond Influent Pipe Closure Strategy

The analysis of the sludge within the South SCEP influent pipe obtained during the 1994 FOAV investigation (Appendix A) indicates that the sludge is RCRA hazardous (DOE, 1994). Therefore, all of the South SCEP piping will be exposed, removed, and properly disposed of in an off-site TSDF.

Prior to excavating the South SCEP influent piping, all subsurface sewer, water, and electrical lines will be identified and marked. This will be done by reviewing Engineering Drawings and using "Goldak" equipment and/or metal detectors. If utilities are found in the vicinity of any section of the South SCEP influent piping, hand excavation may be required prior to using the backhoe in that vicinity. The 20 cm (8.0 in) concrete asbestos piping is constructed in three meter (10 ft) long sections. One end of the pipe section has a male coupling and the other a female coupling. Pipe removal activities conducted at the North SCEP pipe outfall indicate that the pipe can be separated by pulling the male coupling from the female coupling using a backhoe. Special care will be given to limit impacted sludge from spilling from the pipe onto the surrounding soil. This will be done by excavating under the coupling joints and placing plastic under the pipe to collect any spills.

After each pipe section has been removed, the pipe ends will be sealed with plastic. The pipe will then be transported to the Hazardous Waste Storage Area where the pipe will be held for disposal. The pipe will be managed as hazardous waste and will be transported to an off-site TSDF.

Soil excavated under the pipeline will be screened using a PID. Samples will be placed within ziplock bags and allowed to equilibrate for 30 minutes, and a headspace reading will be registered. This method will be used to select sampling locations along with observing and investigating odors and visual signs of staining or wetness of soil surrounding the piping. These samples, as well as verification samples specified in Section 3.0, will be used to characterize the soil surrounding the piping. Each soil sample will be analyzed for TPH, VOCs, and TCLP metals. Any areas where excess PID or visual impacted soil is noted will be over excavated, the soil placed on plastic sheeting, sampled, and properly managed and disposed.

After the piping and any impacted surrounding soil has been excavated, the excavation will be backfilled with unimpacted soil and imported fill. The excavation will be backfilled using a performance standard of 85 percent compaction. The performance standard will be developed using the fill material, front end loader, water truck, and a nuclear density gauge (ASTM method D 2922-91). Any asphalt removed during the outfall piping closure activities will be repaired.

2.2.13 South Steam Cleaning Effluent Pond Closure Strategy

Prior to the start of closure activities, approximately ten samples will be collected to facilitate the segregation and minimization of potential RCRA-regulated wastes (Table 1). The characterization sampling was confined to the four trenches which bisected the South SCEP. Additional sampling data will reduce the volume of soil requiring disposal. This data will reduce the need to over excavate and increases the likelihood that all of the Zone 2 soil will be removed. The closure of this pond will be done in five phases.

2.2.13.1 Phase 1

Phase 1 will be to reopen the ramp that was created for the characterization field work. The soil excavated while reopening the ramp will be disposed of within the Area 6 Hydrocarbon Landfill. A backhoe will be used to remove approximately 0.6 m (2.0 ft) of discolored soil from the pond walls. This soil will be placed into roll-off containers and managed as hazardous waste (refer to Section 2.3 for details).

2.2.13.2 Phase 2

Phase 2 consists of verification samples collected from excavated areas of the pond walls (Zone 2). The Zone 2 area will be divided into a 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grid pattern. Ten percent of the cells will be randomly selected and sampled to verify that RCRA-regulated constituents have been removed from the pond (refer to Section 3.0 for details). In addition, two biased soil samples will be collected in the vicinity of the outfall pipe. Cleanup of Zone 2 will be verified by soil samples containing concentrations below detection limits for VOC and concentrations below the TCLP regulated limit for metals. If a verification sample indicates that Zone 2 soil still remains, a backhoe will be remobilized to the site and additional soil will be removed and additional verification samples will be collected. Section 3.0 provides the proposed verification program for the SCEPs CAU.

2.2.13.3 Phase 3

Phase 3 will begin after the Phase 2 verification samples analytical results confirm that all of the Zone 2 soil has been removed from the South SCEP. The remaining soil within the South SCEP will be excavated and disposed of within the Area 6 Hydrocarbon Landfill. Soil will be excavated using various construction equipment, loaded into dump trucks, and transported to the hydrocarbon landfill (refer to Section 2.3 for details).

2.2.13.4 Phase 4

Phase 4 consists of the collection of verification samples from excavated areas of the pond walls. The Zone 3 area will be divided into a 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grid pattern. Ten percent of the cells will be randomly selected and sampled to verify that soil with TPH concentrations above the NAC Action Level has been removed from the pond. For the purpose of the verification sampling, TPH concentrations below the NAC Action Level of 100 mg/kg will be used as the criteria for removal of Zone 3 soil. If a verification sample indicates that impacted soil remains, a backhoe will be remobilized to the site and additional soil will be removed and additional verification samples will be collected. Section 3.0 provides the proposed verification program for the SCEPs CAU.

2.2.13.5 Phase 5

Phase 5 will begin after the Phase 4 verification samples confirm that Zone 3 soil above the TPH Action Level of 100 mg/kg has been removed from the South SCEPT. Clean fill will be brought to the site and placed into the open excavation. The excavation will be backfilled using a performance standard of 85 percent compaction. The performance standard will be developed using the fill material, a front end loader, a water truck, and a nuclear density gauge (ASTM method D 2922-91). The final two feet of the excavation will be filled with native playa soil and graded in a manner to promote runoff away from the former excavation.

2.3 WASTE MANAGEMENT

The Waste Management Plan for closure activities to be conducted at CAU 93 can be found in Appendix B. A brief summary of the waste management program is provided in this section. Topics from the Waste Management Plan that are briefly discussed include:

- Waste streams description.
- On-site waste stream will be management.
- Waste stream management regulatory framework.
- Waste characterization requirements.
- Recommendations for disposal.

All waste will be stored, sampled, analyzed, and disposed of in accordance with State and Federal regulations, the RCRA Part B Permit, applicable DOE Orders, and Bechtel Nevada (BN)

procedures. Where additional information is required for waste characterization, samples will be collected and submitted for analysis to determine the concentrations of COCs. Analytical results will be validated and submitted to BN Waste Management Program (WMP) for disposal recommendations and arrangements.

2.3.1 Waste Stream Descriptions

It is anticipated that four waste streams will be generated during closure activities. They include the following:

- Hydrocarbon-impacted, nonhazardous material (North SCEP soil, South SCEP Zone 3 soil, and Building 6-623 Grease Trap).
- RCRA-regulated hazardous material (South SCEP Zone 2 material, hazardous debris).
- Nonhazardous solid waste (soil, Personal Protective Equipment (PPE), plastic sheeting, and other miscellaneous material).
- Decontamination water generated during the cleaning of equipment, piping, etc.

2.3.2 Waste Management Strategy

Waste types that are generated will be managed in compliance with State and Federal regulations, the RCRA Part B Permit, applicable DOE Orders, and BN procedures. Nonhazardous waste will be handled in accordance with DOE/NV Environmental Restoration Division (ERD) Standard Operating Procedure ERD-05-210 (DOE, 1994b). If the waste is determined to be hazardous based on analytical results, it will be handled in accordance with DOE/NV ERD Standard Operating Procedure ERD-05-211 (DOE, 1994b). Based on this site characterization data, it is anticipated that no radiologically impacted material will be encountered. All waste will be handled in a manner that complies with the Nevada Test Site Performance Objective for Certification of Nonradioactive Hazardous Waste (REECo, 1995). Table 2 provides the methods for the management of waste based on waste type.

2.3.3 Waste Management Regulatory Framework

A number of regulatory issues need to be addressed when hazardous waste is stored at a facility or site. These issues are addressed in detail in the Waste Management Plan (Appendix B). This section of the plan briefly describes the regulatory requirements necessary to properly manage the hazardous waste that will be generated during the closure of this unit.

TABLE 2 -- MANAGEMENT OF REMEDIATION DERIVED WASTE

WASTE TYPE	DECISION
SOIL/SOLIDS	
Impacted soil with less than 100 mg/kg TPH, nonhazardous	Any excavated soil below 50 mg/kg TPH can be used as excavation backfill. If excavated soil is above 50 mg/kg TPH from a site exceeding the NDEP 100 mg/kg TPH Action Level, dispose of soil in Area 6 Hydrocarbon Landfill with WMP approval. Appropriate transfer documentation for disposal (letter from Remediation Projects (RP) recommending disposal, laboratory analytical results, radiological "green tag", weight tickets, and bill of lading) is required to be placed into the task file. Documentation of decisions, correspondence, and site activities is required.
Impacted soil with greater than 100 mg/kg TPH, nonhazardous	Wastes will be stabilized, if required, and transferred to the Area 6 Hydrocarbon Landfill for disposal with WMP approval. Appropriate documentation for disposal (letter from BN RP recommending disposal, laboratory analytical results, radiological "green tag", weight ticket, and bill of lading) are to be placed in the task file.
RCRA-regulated hazardous waste	Remove soil, containerize, label, and place in a temporary Hazardous Waste Storage Area to await analysis. Conduct weekly inspections. To be managed as a RCRA-regulated hazardous waste, it must meet the requirements established in the <u>Performance Objective For the Certification of Non-Radioactive Hazardous Waste</u> (REECo, 1995).
Asbestos-containing pipe, hydrocarbon impacted, nonhazardous	Leave in place where possible. Portions broken during separator removal will be handled appropriately by trained asbestos workers. Sludge will be removed and the interior steam cleaned. With WMP approval, decontamination waste will be solidified and disposed of in the Area 6 Hydrocarbon Landfill and asbestos pipe will be transported to Area 9 U10c Sanitary Landfill under proper chain-of-custody.
Separators, hydrocarbon impacted	Excavate soils from around separator and place directly in dump truck. Remove separator with crane and place it with soil. Excavate potentially impacted soil from beneath separator. Transport everything to Area 6 Hydrocarbon Landfill. Collect verification samples.

TABLE 2 -- MANAGEMENT OF REMEDIATION DERIVED WASTE

WASTE TYPE	DECISION
RCRA-regulated asbestos-containing pipe and South SCEP separator (Building 6-800)	<p>Excavate soils from around separator and piping, place soil in rolloff container, collect two waste characterization samples per rolloff, and move to temporary Hazardous Waste Storage Area to await analysis.</p> <p>Expose pipe section, cover ends with plastic to prevent dripping, and transported to the temporary Hazardous Waste Storage Area to await for analytical results.</p> <p>Remove separator with crane and transport to steam cleaning pad for decontamination. With WMP approval separator will be placed in the Area 9 U10c Sanitary Landfill.</p>
RINSEATE	
TPH is less than 100 mg/L, nonhazardous	Rinseate can be discharged into the sanitary lagoon, if the liquid has no hydrocarbon sheen. If the sheen can not be removed from the water through absorbent materials, then the liquid must be solidified and disposed of within the Area 6 Hydrocarbon Landfill.
TPH is greater than 100 mg/L, nonhazardous	Will be solidified and disposed of within the Area 6 Hydrocarbon Landfill.
Hazardous waste	Place drums containing rinse water in Drum Storage Area, collect sample for waste characterization, and await analysis. If rinseate has been identified as a hazardous waste, follow the three-day Satellite Accumulation storage rule and the twelve-month storage limit for the Area 5 Hazardous Waste Storage Pad.

A generator is classified as a large quantity generator (LQG) by RCRA if more than 1,000 kg (2,205 lb) of hazardous waste is accumulated per month. A LQG may accumulate waste in the accumulation area for less than 90 days, and is not considered an operator of a hazardous waste storage facility, if the generator complies with the following requirements outlined in Title 40 CFR 262.34:

- The waste is placed in containers and the generator complies with Title 40 CFR 265, Subpart I.
- The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.
- While being accumulated on-site, each container is labeled or marked clearly with the words "Hazardous Waste".
- The generator complies with the requirements in Subparts C and D in Title 40 CFR 265 with §265.16, which deals with preparedness and prevention, contingency plans, and personnel training.

2.3.4 Waste Characterization Requirements

A representative waste sample must be collected for the characterization and disposal of the waste where additional information is needed. Sample handling, packaging, and shipping will be done in accordance with DOE/NV ERD Standard Operating Procedure ERD-05-202 (DOE, 1994b). All samples are to be immediately placed into laboratory-supplied jars. The sample containers will be sealed, labeled, placed in an ice chest, cooled to four degrees centigrade, and transferred to the contract laboratory under ERD Chain-Of Custody Procedure ERD-05-201 (DOE, 1994b). Samples will be labeled with the date, time, sample number, parameter(s) to be analyzed, and the sampler's initials. Samples will be analyzed using a four-week turnaround. Table 3 describes the analytical parameters required for waste characterization.

2.3.5 Disposal Recommendations

Based upon the analytical data generated during the characterization field work, waste will be disposed of at three separate locations. Hydrocarbon-impacted, nonhazardous material will be disposed of within the Area 6 Hydrocarbon Landfill. RCRA-regulated hazardous material (below land ban disposal concentrations) will be disposed at an off-site TSDF. Nonhazardous solid waste will be disposed of within the Area 9 U10C Sanitary Landfill. Rinsate water will be disposed within the sanitary sewer system if it meets the criteria outlined in Table 2.

TABLE 3 -- ANALYTICAL PARAMETERS FOR WASTE CHARACTERIZATION

PARAMETER	ESTIMATED NUMBER OF SAMPLES ¹				METHOD	SAMPLE CONTAINER
	Soil	Rinsate	Quality Assurance	Total		
Total Metals		20	2 Replicates	22	SW 846, EPA 6010, 7470	1 - Liter, glass jar
TCLP Metals	28		2	30	SW 846, EPA 1311/6010, 7470	250 mL, glass jar
Ignitability		20	4	24	SW 846, EPA 1010	250 mL, glass
Total VOCs	28	20	4 10 Trip Blanks	52	SW 846, EPA 8260	3 - 40 mL vial (liq) 2-120 mL, glass (soil)
Total SVOCs	28	20	4	52	SW 846, EPA 8270	1 - L, glass jar (liq) 1-500 mL, glass (soil)
TPH	28	20	4	52	SW 846, EPA 8015 Modified	250 mL, glass jar (soil); 2-Liter glass + 120 mL glass with zero headspace (liquids)

Notes: ¹ Assumes 20 drums of rinseate. Assumes 10 sampling days. Matrix spike and matrix spike duplicate samples are included. The number of Quality Assurance (QA) samples is based on taking only one sample per day (1 trip blank, spike, and spike duplicate) and 10 percent blind replicate water and soil samples. The actual number may be more or less depending on sampling efficiency and quantity of waste generated.

3.0 CLOSURE VERIFICATION SAMPLING

Verification sampling is required for a RCRA clean closure. A verification program must support the field decision that all of the regulated material has been removed from the site and provide the regulator with confidence that sufficient samples have been collected to verify that the site has been remediated. For the purpose of the Area 6 SCEP CAU, each component within the unit will be addressed individually. The number of samples that will be collected for each component of the unit, as well as necessary Quality Assurance and Quality Control (QA/QC) samples, have been calculated and are found in Table 4. Verification sampling strategy and estimated quantities are provided below for each component of the SCEP CAU.

3.1 LAYOUT PAD GREASE TRAP VERIFICATION SAMPLING

The Layout Pad drainage line was sealed with concrete in November 1992. The Layout Pad Grease Trap was steam cleaned and sealed with concrete in June 1993. Verification for this unit will consist of the collection of two soil samples from under the grease trap and two samples from under the drainage pipe. The grease trap soil samples will be collected using a backhoe at a depth of 0.6 m (2.0 ft) below the base of each end of the grease trap. The drainage line soil samples will be collected from under pipe joints or fittings. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Layout Pad and Grease Trap will be considered closed, when all verification soil samples have TPH concentrations below the NAC Action Level of 100 mg/kg.

3.2 TEST PAD VERIFICATION SAMPLING

The Test Pad drainage line was sealed with concrete in November 1992. Verification for this unit will consist of the collection of two soil samples from under the drainage pipe. The drainage line soil samples will be collected from under pipe joints or fittings. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Test Pad will be considered closed, when all verification soil samples have TPH concentrations below the NAC Action Level of 100 mg/kg.

TABLE 4 - AREA 6 SCEP CAU 93 VERIFICATION SAMPLING PARAMETERS

PARAMETER	NUMBER OF SAMPLES	NUMBER OF TRIP BLANKS	NUMBER OF DUPLICATES ^e	SAMPLE TOTAL	ANALYTICAL METHOD	SAMPLE CONTAINER
LAYOUT PAD GREASE TRAP						
TPH ^a	2	NA ^f	1	3	SW 846, EPA 8015	250 mL, glass jar
TEST PAD						
TPH	2	NA	1	3	SW 846, EPA 8015	250 mL, glass jar
BUILDING 6-623 STEAM CLEANING PAD						
TPH	2	NA	1	3	SW 846, EPA 8015	250 mL, glass jar
BUILDING 6-623 GREASE TRAP						
TCLP ^b Metals ^c	4	NA	1	5	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs ^d	4	1	1	6	SW 846, EPA 8260	125 mL, glass jar
TPH	4	NA	1	5	SW 846, EPA 8015	250 mL, glass jar
SPILL RELEASE H910911D						
TPH	12	NA	1	13	SW 846, EPA 8015	250 mL, glass jar
NORTH STEAM CLEANING EFFLUENT POND						
TPH	26	NA	2	28	SW 846, EPA 8015	250 mL, glass jar
BUILDING 6-800 STEAM CLEANING PAD						
TCLP Metals	2	NA	1	3	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs	2	1	1	4	SW 846, EPA 8260	125 mL, glass jar
TPH	2	NA	1	3	SW 846, EPA 8015	250 mL, glass jar

TABLE 4 - AREA 6 SCEP CAU 93 VERIFICATION SAMPLING PARAMETERS

PARAMETER	NUMBER OF SAMPLES	NUMBER OF TRIP BLANKS	NUMBER OF DUPLICATES ^e	SAMPLE TOTAL	ANALYTICAL METHOD	SAMPLE CONTAINER
BUILDING 6-800 SEPARATOR						
TCLP Metals	2	NA	1	3	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs	2	1	1	4	SW 846, EPA 8260	125 mL, glass jar
TPH	2	NA	1	3	SW 846, EPA 8015	250 mL, glass jar
SPILL RELEASE H920625B						
TCLP Metals	2	NA	1	3	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs	2	1	1	4	SW 846, EPA 8260	125 mL, glass jar
TPH	2	NA	1	3	SW 846, EPA 8015	250 mL, glass jar
SOUTH SCEP INFLUENT PIPE						
TCLP Metals	10	NA	1	11	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs	10	2	1	13	SW 846, EPA 8260	125 mL, glass jar
TPH	10	NA	1	11	SW 846, EPA 8015	250 mL, glass jar
SOUTH STEAM CLEANING EFFLUENT POND						
TCLP Metals	9	NA	1	10	SW 846, EPA 1311/ EPA 6010 & 7470	250 mL, glass jar
Total VOCs	9	1	1	10	SW 846, EPA 8260	125 mL, glass jar
TPH	25	NA	2	27	SW 846, EPA 8015	250 mL, glass jar

^a TPH - Total Petroleum Hydrocarbons, EPA Method 8015 Modified

^b TCLP - Toxicity Characteristic Leaching Procedure, EPA Method 1311

^c Metals - Eight RCRA Metals, EPA Methods 6010 & 7470

^d VOCs - Volatile Organic Compounds, EPA Method 8260

^e Number of Duplicates - Five percent of total samples collected

^f NA - Not Applicable

3.3 BUILDING 6-623 STEAM CLEANING PAD VERIFICATION SAMPLING

The Building 6-623 Steam Cleaning Pad drainage line was sealed with concrete in November 1992. Verification for this unit will consist of the collection of two soil samples from under the drainage pipe. The drainage line soil samples will be collected from under pipe joints or fittings. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Building 6-623 Steam Cleaning Pad will be considered closed, when all verification soil samples have TPH concentrations below the NAC Action Level of 100 mg/kg.

3.4 BUILDING 6-623 GREASE TRAP VERIFICATION SAMPLING

The verification sampling associated with the Building 6-623 grease trap is to determine if during the operational history of the grease trap any impacted liquid leaked from the grease trap into the surrounding soil. The verification that the grease trap has not impacted the surrounding soil will be accomplished by collecting two soil samples from under the grease trap after it has been removed. An addition two samples will be collected from any areas of visual or instrument-detected impacted soil. There is some concern that during the operation of the Building 6-623 Grease Trap elevated concentrations of F-listed RCRA wastes could have impacted the soil outside of the grease trap. This concern is based on pre-characterization analytical results, which detected the presence of 2-butanone, methylene chloride, and methyl isobutyl ketone in liquid within the grease trap. The pre-characterization data was evaluated by waste management personnel and determined not to be RCRA-regulated waste (based upon low concentrations, lack of process knowledge, and being common laboratory contaminants).

Two soil samples will be collected from a depth of 0.6 m (2.0 ft) below the base of the grease trap and the other two from any areas of visual or instrument-detected impacted soil. Each sample will be analyzed for TPH, VOC, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Building 6-623 grease trap will be considered closed, when the following compliance criteria are met:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated following the Quality Assurance Project Plan (DOE, 1996c) criteria.
- The TCLP metals data package will be evaluated against the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are below these requirements then the soil is considered to be non-impacted.
- The TPH concentrations do not exceed the NAC Action Level of 100 mg/kg.

3.5 SPILL H910911D VERIFICATION SAMPLING

The pre-closure sampling of the spill release area will determine the extent of waste in this unit. Based upon analytical samples collected from the North SCEP, it is anticipated that the only COC will be TPH. The elevated TPH concentrations are estimated to be confined to a 465 m² (3,000 ft²) area. The depth of TPH impacted soil throughout this area is estimated to be 0.3 m (1.0 ft) and the total volume of TPH-impacted soil excavated and disposed of within the Area 6 Hydrocarbon Landfill is estimated to be 140 m³ (110 yd³).

For the purpose of verification, the Spill H910911D area will be divided into 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grids. The grid system will create approximately 120-1.8 m² (25 ft²) cells, each labeled using a grid coordinate system that will be created in the field. A random number generator (or table) will be used to select 12 (10 percent) of the cells. A surface soil sample will be collected from the center of each of the 12 cells. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all of the elevated TPH impacted soil has been removed. The spill release H910911D closure will require that TPH soil concentrations be lower than the NAC Action Level of 100 mg/kg.

The area, depth, and quantity of hydrocarbon impacted soil is estimated on a worse case scenario. The pre-closure sampling will determine the exact area, depth, and quantity of soil (if any) that exceeds the NAC Action Level of 100 mg/kg.

3.6 NORTH STEAM CLEANING EFFLUENT POND VERIFICATION SAMPLING

It is estimated that the total area of the North SCEP is 545 m² (5,850 ft²), and an approximate excavation depth of one meter (3.0 ft) will be required to remediate the pond to below the NAC Action Level of 100 mg/kg. The total volume of TPH impacted soil anticipated to be generated is 545 m³ (650 yd³).

For the purpose of verification, the North SCEP excavated area will be divided into 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grids. The grid system will create approximately 234-1.8 m² (25 ft²) cells, each labeled using a grid coordinate system that will be created in the field. A random number generator (or table) will be used to select 24 (10 percent) of the cells. A surface soil sample will be collected from the center of each of the 24 cells. In addition, two biased samples will be collected in the vicinity of the outfall pipe. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all of the elevated TPH impacted soil has been removed. The North SCEP closure will require that TPH soil concentrations be lower than the NAC Action Level of 100 mg/kg.

3.7 BUILDING 6-800 STEAM CLEANING PAD VERIFICATION SAMPLING

The verification sampling associated with the Building 6-800 Steam Cleaning Pad will determine if liquid leaked from the operation of the steam cleaning pad has impacted the surrounding soil. The verification that the steam cleaning pad has not impacted the surrounding soil will be accomplished by collecting two soil samples from under the steam cleaning pad drainage pipe.

Each soil sample will be collected from under a drainage pipe seal or fitting. Each sample will be analyzed for TPH, VOC, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Building 6-800 Steam Cleaning Pad will be considered closed, when the following compliance criteria are met:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated following the Quality Assurance Project Plan (DOE, 1996c) criteria.
- The TCLP metals data package will be evaluated against the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are below these requirements then the soil is considered to be non-impacted.
- The TPH concentrations do not exceed the NAC Action Level of 100 mg/kg.

3.8 BUILDING 6-800 SEPARATOR VERIFICATION SAMPLING

The verification sampling associated with the Building 6-800 Separator will determine if liquid leaked from the separator and impacted the surrounding soil. The verification that the separator has not impacted the surrounding soil will be accomplished by following the standard industry practice of collecting two soil samples from under the separator after it was been removed.

Each soil sample will be collected from a depth of 0.6 m (2.0 ft) below the base of the separator. Each sample will be analyzed for TPH, VOC, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The Building 6-800 Separator will be considered closed, when the following compliance criteria are met:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated following the Quality Assurance Project Plan (DOE, 1996c) criteria.

- The TCLP metals data package will be evaluated against the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are below these requirements then the soil is considered to be non-impacted.
- The TPH concentrations do not exceed the NAC Action Level of 100 mg/kg.

3.9 SPILL H920625B VERIFICATION SAMPLING

This spill release will be verified to be clean by the collection of two soil samples from the under the most impacted portion of the spill. The areas under which the soil samples will be collected will be determined in the field by the use of PID headspace readings. Each sample will be analyzed by the laboratory for TPH, VOC, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The spill release H920625B will be considered closed, when the following compliance criteria are met:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated per the Quality Assurance Project Plan (DOE, 1996c) criteria.
- The TCLP metals data package will be evaluated against the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are below these requirements then the soil is considered to be non-impacted.
- The TPH concentrations do not exceed the NAC Action Level of 100 mg/kg.

3.10 SOUTH STEAM CLEANING EFFLUENT POND INFLUENT PIPE VERIFICATION SAMPLING

Approximately 122 m (400 ft) of 20 cm (8.0 in) concrete asbestos pipe will be removed during the closure field activities. While initial field work completed on the North SCEP pipeline (DOE, 1996a) indicates that the piping is in good condition and has not leaked, ten verification samples will be collected from various sections of the South SCEP pipeline. The sample locations will be skewed toward areas that have odors, are visually impacted, or register elevated instrument readings (PID, CGA). In the event that no odor, visual, or instrument detected areas are found, ten random (at coupling joints) locations will be selected for sampling.

In the event that a visual observation or instrument reading indicates the presence of impacted soil, a backhoe will over excavate soil from that portion of the pipeline. The soil will be placed within a roll-off container and managed as a hazardous waste. One soil sample will be collected

from under each identified impacted pipeline location. Each sample will be analyzed for TPH, VOC, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all impacted soil has been removed. The South SCEP pipeline will be considered closed, if the following compliance criteria are met:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated per the Quality Assurance Project Plan (DOE, 1996c) criteria.
- The TCLP metals data package will be evaluated against the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are below these requirements then the soil is considered to be non-impacted.
- The TPH concentrations do not exceed the NAC Action Level of 100 mg/kg.

3.11 SOUTH STEAM CLEANING EFFLUENT POND VERIFICATION SAMPLING

As was stated in Section 2.2.13, the closure of this unit will consist of two phases of soil removal. The initial phase will consist of the removal of the RCRA-regulated impacted soil (Zone 2) from the South SCEP. The exact extent of the Zone 2 soil will be determined as part of the pre-closure field work. For planning purposes, an area of 156 m² (1,680 ft²) is assumed to require excavation to a depth of 0.6 m (2.0 ft). The total volume of RCRA-regulated soil to be removed is estimated at 94 m³ (125 yd³).

For the purpose of Zone 2 verification, the excavated area will be divided into 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grids. The grid system will create approximately 64-1.8 m² (25 ft²) cells, each labeled using a grid coordinate system that will be created in the field. A random number generator (or table) will be used to select seven (10 percent) of the cells. A surface soil sample will be collected from the center of each of the seven cells. In addition, two biased samples will be collected in the vicinity of the outfall pipe. Each sample will be analyzed for TPH, VOCs, and TCLP metals (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and the data will be validated prior to deciding if all Zone 2 impacted soil has been removed. The Zone 2 closure will require compliance with the criteria provided below:

- All RCRA-regulated VOCs are reported at or below the method detection limit. The VOC data package will be validated and any laboratory method blanks and/or field blanks will be evaluated following the Quality Assurance Project Plan (DOE, 1996c) criteria.
- The TCLP metals data package will be evaluated using the Title 40 CFR 261.24 Table 1 guidelines for metals. If the TCLP metals concentrations for the eight RCRA metals are

below these requirements, then all Zone 2 material is considered to be removed.

- The TPH samples collected are for information purposes only. It is expected that TPH concentrations will exceed the NAC Action Level of 100 mg/kg. This information will be used primarily for waste characterization purposes for the Zone 3 (TPH impacted soil) soil disposal.

Once it has been confirmed that all of the Zone 2 impacted soil has been removed from the South SCEP (it may be necessary to remobilize and excavate additional soil if the initial verification samples indicate that not all of the Zone 2 soil was removed), all of the remaining soil (Zone 3) from the South SCEP will be excavated and disposed of within the Area 6 Hydrocarbon Landfill. For planning purposes, an area of 390 m² (4,200 ft²) will be excavated to a depth of 1.5 m (5.0 ft). The total volume of TPH soil estimated to be removed is 595 m³ (778 yd³).

For the purpose of Zone 3 verification, the excavated area will be divided into 1.5 m (5.0 ft) by 1.5 m (5.0 ft) grids. The grid system will create approximately 160-1.8 m² (25 ft²) cells, each labeled using a grid coordinate system that will be created in the field. A random number generator (or table) will be used to select 16 (10 percent) of the cells. A surface soil sample will be collected from the center of each of the 16 cells. Each sample will be analyzed for TPH (Table 4). The analytical samples will be submitted for rapid turn-around (two weeks) and validated prior to deciding if all Zone 3 impacted soil has been removed. The Zone 3 closure will require that TPH soil concentrations be lower than the NAC Action Level of 100 mg/kg.

4.0 CLOSURE DOCUMENTATION/CERTIFICATION

4.1 CERTIFICATION

Closure will be verified through appropriate observation and documentation of closure activities. Included in the closure documentation will be daily site reports, verification sampling data summaries, waste disposal documentation, and photographs of closure activities. The closure certification will be conducted by an independent, registered professional engineer and an authorized representative of DOE/NV. The documentation will be included in the final closure report.

4.2 CLOSURE REPORT

Upon completion of the closure activities, a certification and closure report detailing the closure activities will be prepared by DOE/NV and submitted by certified mail or other means of verifiable delivery to the NDEP. The closure report will accompany the closure certification as supporting documentation of the closure activities. The report will contain:

- Information regarding the volume of impacted material removed from the various components of the unit.
- The disposal history for the impacted soil generated during the clean closure of the various components of the unit.
- The methodology used and results of verification sampling of the various components of the unit.
- A copy of the required survey plat.

Included in the closure report will be certifications that the unit has been closed in accordance with the specifications in this plan.

The NDEP has waived the Title 40 CFR 265.115 requirement that the certification and closure report be submitted to the NDEP within 60 days of the completion of closure activities. The closure certification and closure report will be delivered by the date specified in Appendix III of the FFACO (as described in Section 5.0).

A survey plat will be prepared indicating the locations of all of components of the unit with respect to permanently surveyed benchmarks. The plat shall be prepared, annotated, and certified in accordance with Title 40 CFR 265.116 by a surveyor registered in Nevada.

4.3 POST-CLOSURE MONITORING

No post-closure monitoring of the SCEP CAU will be required, as all RCRA-regulated material will have been removed from the unit. However, the unit will be periodically inspected to observe whether maintenance is required due to subsidence or erosion in any of the excavations within the unit. In the event that the NTS is ever released from government control, special deed restrictions will be created for this unit.

5.0 SCHEDULE

The Area 6 SCEPs CAU 93 RCRA closure schedule is outlined in Appendix III of the FFACO. The FFACO schedule requires that the Area 6 SCEPs CAU 93 Closure Plan be submitted for NDEP review by May 2, 1997 and the Closure Report submitted for NDEP review by December 1, 1997. Provided below are detailed activity based schedules describing the way in which the FFACO milestones will be achieved.

5.1 PROJECT SCHEDULE

A project schedule (Figure 5) for the Area 6 SCEPs CAU 93 closure, has been prepared. It is also assumed that since this is a "*clean closure*", an expedited public comment period can be developed. Advanced draft copies of the Closure Plan were provided to the NDEP to facilitate the rapid one-month NDEP turn-around necessary to support this schedule. NDEP comments are provided in Appendix C. The schedule will require modification if conditions exist that are outside the assumptions on which the schedule was developed. The DOE will keep the NDEP apprised of any condition that may impact the project schedule. In the event the project schedule requires modification, the DOE will consult with NDEP personnel prior to initiating any changes.

5.2 FIELD WORK CLOSURE SCHEDULE

The schedule for closure field work for the unit can be found in Figure 6. Field work will be conducted in the most efficient manner possible. It is important to have as few remobilization events as possible. Due to the nature of a clean closure, work must be halted while verification samples are being analyzed. In order to minimize this effect, the closure field work will move from an area requiring verification results to another area within the CAU that requires work. In addition, all verification and waste characterization samples will be submitted for two-week analytical turn-around. This strategy allows for the maximum utilization of the work force. Sufficient flexibility has been placed within the project schedule to account for minor difficulties (weather, equipment breakdowns, etc.). The schedule may require modification if conditions exist that are outside the assumptions on which the schedule was developed.

Sheet 1 of 1

FIGURE 5
AREA 6 SCEP CLOSURE
PROJECT SCHEDULE

ERT1

Early Bar
Progress Bar
Critical Activity

(c) Primavera Systems, Inc.

FIGURE 5
AREA 6 SCEP CLOSURE
PROJECT SCHEDULE

Sheet 1 of 2

ER11

Activity Bar
Early Bar
Progress Bar
Critical Activity

(c) Primavera Systems, Inc.

FIGURE 6
AREA 6 SCEP CLOSURE
ACTIVITY SCHEDULE

Sheet 1 of 1

6.0 REFERENCES

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APPENDIX A

SUMMARY OF PAST AREA 6 SCEP UNIT INVESTIGATIONS

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1.0 INTRODUCTION

Various components within the Area 6 Steam Cleaning Effluent Pond (SCEP) Corrective Action Unit (CAU) have been investigated since the unit was officially inactivated in November 1992. These investigations have been reported in a number of different documents and are presented within this appendix as support for the suggested closure option. This appendix is divided into five sections:

- Past Regulatory Issues
- Preliminary Steam Cleaning Effluent Pond Investigations
- Separator and Pipeline Investigations
- SCEP Model Development
- Characterization Investigation Summary

2.0 PAST REGULATORY ISSUES

Three regulatory incidences have been associated with the SCEP unit since it was inactivated in November 1992. Each issue is briefly discussed below.

2.1 SPILL NOTIFICATION REPORT NUMBER 91-18, NDEM CASE NUMBER H910911D

A large precipitation event caused a breach in the North SCEP berm on August 12, 1991. Erosion along the west section of the berm allowed water to run into the pond, causing an overflow and subsequent release of pond effluent. An area measuring approximately 700 m² (7,500 ft²) was impacted to the north, south, and east of the pond (Figure A-1). Total volume of the release is unknown. Black, stained soil was observed around the perimeter of the release and an oily substance was floating on the water.

On August 14, 1991, a composite soil sample from two locations outside the pond and two water samples, one inside and one outside of the North SCEP were collected by the Management & Operations (M&O) contractor. The samples were analyzed for Volatile Organic Compounds (VOC), Semi-volatile Organic Compounds (SVOC), Total Petroleum Hydrocarbons (TPH), and Toxicity Characteristic Leaching Procedure (TCLP) metals. Based upon the analytical results received on September 11, 1991, the Nevada Division of Emergency Management (NDEM) and Nevada Division of Environmental Protection (NDEP) were notified on that date. NDEM assigned Case Number H910911D to the release.

Analytical results indicate the presence of several TCLP metals (barium, chromium, and cadmium) at concentrations well below RCRA-regulated limits. Methylene chloride was detected in the water sample from inside the pond and in the soil sample at 1.2 mg/L and 0.005 mg/L, respectively. SVOCs were also detected in the water sample from outside the pond. Dimethyl phthalate, di-n-butylphthalate, and bis(ethylhexyl)phthalate were identified at concentrations of 0.009 mg/L, 0.006 mg/L, and 0.119 mg/L, respectively. TPH in the form of oil, gas, or diesel was not detected; however, an unknown hydrocarbon was detected. Report of this release was based on visual observation of the release and a summation of the chromatograph peaks which indicate a TPH concentration above the Nevada Administrative Code (NAC) Action Level of 100 mg/kg (Elle, 1991).

A decision was made by Department of Energy, Nevada Operations Office (DOE/NV) in 1991, that further action with respect to the release would be conducted during the SCEP Project. Samples will be collected prior to the start of the closure of the North SCEP to identify if any corrective action is necessary to close out this spill release.

FIGURE A-1
CAU 93 VICINITY MAP

2.2 SPILL NOTIFICATION REPORT NUMBER 92-42, NDEM CASE NUMBER H920625B

On June 18, 1992, a spill was discovered in the Area 6 Fleet Operations Yard at the underground separator located next to the steam cleaning pad located north of Building 6-800 (Figure A-1). The separator's effluent line was plugged, which caused liquid to back up and overflow out of the manhole. Approximately 114 liters (l) (30 gallons [gal]) of material were released over the concrete pad to the surrounding soil. Approximately 19 m³ (25 yd³) of soil were impacted. An investigation of the incident was made by the M&O contractor on June 22, 1992. The release was determined to exceed the NAC 459.9921 through 459.999 Action Level of 0.28 m³ (10 ft³) of soil impacted with greater than 100 mg/kg TPH. A Spill Notification Report was submitted to the NDEP on June 25, 1992, and NDEM Case Number H920625B was assigned.

Impacted soils were excavated in June and July 1992. Approximately 19 m³ (25 yd³) of soil were removed and stockpiled on, as well as covered with plastic. The excavation was later backfilled because of safety concerns. A soil sample was collected at each end of a shallow ditch located along the east side of the separator pad at a depth of approximately 0.6 m (2.0 ft) below ground surface. The samples were analyzed for VOCs, SVOCs, and TPH. Analytical results indicate TPH concentrations of 861 mg/kg and 3,490 mg/kg, which exceed the NDEP Action Level of 100 mg/kg. Several VOCs were detected (2-butanone, 4-methyl-2-pentanone, 2-hexanone, toluene, xylene) at concentrations below regulatory levels. SVOC (bis[2-ethylhexyl]phthalate, 2-methyl naphthalene, and phenanthrene) were detected again at concentrations less than regulatory limits, where limits have been established (Elle, 1992). The excavated soil was determined to be nonhazardous and was disposed of in the Area 6 Hydrocarbon Landfill.

2.3 JULY 29, 1994 FINDING OF ALLEGED VIOLATION

On July 29, 1994 the NDEP issued a Finding of Alleged Violation (FOAV) against the DOE and M&O contractor for not properly managing the South SCEP. The North and South SCEPs were formally deactivated in November 1992, and the NDEP was notified that all lines to the SCEPs had been plugged or disconnected. In July 1994, the DOE notified the NDEP that a previously unknown connection to the South SCEP influent pipe had been discovered. A sump that collected water from the Building 6-621 roof drains, swamp cooler, and floor drains was discharging liquid into the South SCEP. After discovery of this point source by the M&O contractor and the DOE, the piping between the Building 6-621 sump and the South SCEP influent pipe was sealed with cement. Analytical samples were collected from the liquid within the Building 6-621 sump was determined to not contain hazardous constituents (DOE, 1994).

3.0 PRELIMINARY STEAM CLEANING EFFLUENT POND INVESTIGATIONS

A total of three pre-characterization activities were done at the North and South SCEPs between August 1994 and September 1995. These preliminary investigations were used to develop the model that formed the basis of the Characterization Plan Data Quality Objectives (DQO) (DOE, 1996). Table A-1 provides a summary of the North and South SCEPs pre-characterization analytical results.

3.1 SOUTH SCEP JULY 29, 1994 FOAV SAMPLING EVENT

The first sampling event involved the South SCEP and was done in support of the July 29, 1994 FOAV (DOE, 1994). A total of three samples (two sludge and one soil) were collected from the South SCEP on August 2, 1994. The major constituents of concern (COCs) detected were TPH, methylene chloride, and 2-butanone (Table A-1).

3.2 NORTH SCEP SEPTEMBER, 1994 SAMPLING EVENT

The second sampling event involved the North SCEP and was conducted in September 1994. This sampling event was undertaken to gather initial scoping analytical data for the North SCEP. Five soil samples (including one duplicate) were collected from the bottom of the North SCEP. The only COC identified was petroleum hydrocarbons. No VOCs were detected (Table A-1).

3.3 NORTH & SOUTH SCEP SEPTEMBER, 1995 SAMPLING EVENT

The third pre-characterization sampling event involved both SCEPs and was conducted in September 1995. This sampling event was completed to support the model being developed for the Area 6 SCEPs Characterization Plan. The analytical data generated during this sampling event were used to define the DQOs for these units. A total of seven samples (including one duplicate) were collected in and around the North SCEP and 16 samples were collected from seven locations within the South SCEP. This sampling event confirmed the results found during the two 1994 sampling events.

Results of this sampling event showed that the North SCEP was impacted with petroleum hydrocarbons and the South SCEP was impacted with petroleum hydrocarbons and VOCs (primarily in the side slopes of the pond) (DOE, 1996). The South SCEP contained elevated concentrations of the F001 RCRA-listed solvents; tetrachloroethene, toluene, and total xylenes

TABLE A-1 - SUMMARY OF NORTH AND SOUTH SCEP PRECHARACTERIZATION ANALYTICAL RESULTS

LOCATION	SAMPLE ID	SAMPLE DEPTH (cm [inches])	TPH 418.1 ^a (mg/kg)	TPH 8015M ^b			VOCS ^c (mg/kg)	TCLP ^d VOCs (mg/L)	TCLP SVOCs ^e (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
				GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)					
AUGUST 1994 - SOUTH SCEP SAMPLING (DOE, 1994)											
Below Exposed Outfall Pipe	6-SCEP1a	0-15.2 [0-6]	NA	ND	19,300	37,300	Methylene Chloride 0.005 2-Butanone 0.042	NA	NA	As 23 Ba 510 Cd 9.7 Cr 50 Pb 240	Ba 0.51 Cd 0.18 Hg 0.00075
	6-SCEP4a (Field Duplicate)	0-15.2 [0-6]	NA	ND	19,100	37,000	2-Butanone 0.016	NA	NA	As 37 Ba 580 Cd 15 Cr 51 Pb 230	Ba 0.41 Cd 0.21 Hg 0.00069
Pond Bottom Opposite Outfall Pipe	6-SCEP2a	0-15.2 [0-6]	NA	ND	ND	29,200	Total Xylenes 7.1	NA	NA	As 26 Ba 150 Cd 9 Cr 24 Pb 130	ND
SEPTEMBER 1994 - NORTH SCEP SAMPLING (DOE, 1996)											
Background Sample Outside of Pond	SCP00003	0-15.2 [0-6]	ND	NA	NA	NA	ND	NA	NA	NA	Ba 1.24
North Berm	SCP00004	0-30.5 [0-12]	ND	NA	NA	NA	ND	NA	NA	NA	Ba 0.42
Pond Bottom Southeast Corner	SCP00005	0-30.5 [0-12]	ND	NA	NA	NA	ND	NA	NA	NA	Ba 0.35
20' East of Outflow Pipe	SCP00006	0-20.3 [0-8]	1,940	NA	NA	NA	ND	NA	NA	NA	Ba 0.83 Cd 0.011
	SCP00007 (Duplicate)	0-20.3 [0-8]	2,370	NA	NA	NA	ND	NA	NA	NA	Ba 0.070 Cd 0.008

TABLE A-1 - SUMMARY OF NORTH AND SOUTH SCEP PRECHARACTERIZATION ANALYTICAL RESULTS

LOCATION	SAMPLE ID	SAMPLE DEPTH (cm [inches])	TPH 418.1 ^a (mg/kg)	TPH 8015M ^b			VOCS ^c (mg/kg)	TCLP ^d VOCS (mg/L)	TCLP SVOCs ^e (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
				GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)					
SEPTEMBER 1995 - NORTH SCEP SAMPLING (DOE, 1996)											
Pond Bottom Southwest Location 1	SCEP00002	30.5 [12]	NA	ND			NA	NA	NA	NA	NA
	SCEP00003	61.0 [24]	NA	ND			NA	NA	NA	NA	NA
Pond Bottom Northeast Location 2	SCEP00005	30.5 [12]	NA	53 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00006	61.0 [24]	NA	ND			NA	NA	NA	NA	NA
North Berm Location 3	SCEP00007	30.5 [12]	NA	ND			NA	NA	NA	NA	NA
Pond Bottom Center Location 4	SCEP00025	2.5-15.2 [1-6]	NA	650 (Oil Range C ₁₈ -C ₃₄)			ND	ND	ND	NA	ND
	SCEP00026 (Duplicate)	2.5-15.2 [1-6]	NA	470 (Oil Range C ₁₈ -C ₃₄)			ND	ND	ND	NA	ND
SEPTEMBER 1995 - SOUTH SCEP SAMPLING (DOE, 1996)											
Upper Berm North Side Location 1	SCEP00008	30.5 [12]	NA	ND			NA	NA	NA	NA	NA
	SCEP00009	61.0 [24]	NA	62 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00010	106.7 [42]	NA	58 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
Lower Berm North Side Location 2	SCEP00011	30.5 [12]	NA	990 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00012	61.0 [24]	NA	610 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA

TABLE A-1 - SUMMARY OF NORTH AND SOUTH SCEP PRECHARACTERIZATION ANALYTICAL RESULTS

LOCATION	SAMPLE ID	SAMPLE DEPTH (cm [inches])	TPH 418.1 ^a (mg/kg)	TPH 8015M ^b			VOCS ^c (mg/kg)	TCLP ^d VOCS (mg/L)	TCLP SVOCs ^e (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
				GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)					
Wet Pond Bottom Location 3	SCEP00014	5.1-25.4 [2-10]	NA	42,000 (Oil Range C ₁₈ -C ₃₄)			Acetone 0.520	ND	ND	NA	ND
							Benzene 0.630				
							Ethylbenzene 0.630				
							PCE 0.060				
							Toluene 0.610				
							m,p,-Xylene 3.2				
							o-Xylene 1.2				
Dry Pond Bottom Location 4	SCEP00015	0-30.5 [0-12]	NA	7,900 (Oil Range C ₁₈ -C ₃₄)			ND	ND	ND	NA	Cd 0.016
	SCEP00017	47.5 [18]	NA	2,400 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00018	91.4 [36]	NA	5,100 (Gas C ₄ -C ₁₄ , Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00019	121.9 [0-12]	NA	770 (Oil Range C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00020	182.9 [72]	NA	29 (Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
Berm Sludge South Side Location 5	SCEP00022	15.2-45.7 [6-18]	NA	61,000 (Gas C ₄ -C ₁₄ , Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			cis-1,2- Dichloroethene 1.3	ND	ND	NA	ND
							Ethylbenzene 7.1				
							Toluene 10				
							m,p,-Xylene 39				
							o-Xylene 19				
Dry Pond Bottom	SCEP00023	61-91.4 [24-36]	NA	1,800 (Gas C ₄ -C ₁₄ , Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00024	106.7-121.9 [42-48]	NA	700 (Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA

TABLE A-1 - SUMMARY OF NORTH AND SOUTH SCEP PRECHARACTERIZATION ANALYTICAL RESULTS

LOCATION	SAMPLE ID	SAMPLE DEPTH (cm [inches])	TPH 418.1 ^a (mg/kg)	TPH 8015M ^b			VOCs ^c (mg/kg)	TCLP ^d VOCs (mg/L)	TCLP SVOCs ^e (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
				GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)					
Edge of Wet Pond Bottom Southeast Side Location 7	SCEP00028	129.5 [51]	NA	42 (Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA
	SCEP00029 (Duplicate)	129.5 [51]	NA	41 (Diesel C ₉ -C ₂₄ , Oil C ₁₈ -C ₃₄)			NA	NA	NA	NA	NA

^a **TPH 418.1** - Total Petroleum Hydrocarbons Method 418.1.

^b **TPH 8015M** - Total Petroleum Hydrocarbons Method 8015 Modified.

^c **VOCs** - Volatile Organic Compounds.

^d **TCLP**: Toxicity Characteristic Leaching Procedure.

^e **SVOCs** - Semi-Volatile Organic Compounds.

As Arsenic, **Ba** Barium, **Cd** Cadmium, **Cr** Chromium, **Hg** Mercury, **Pb** Lead.

PCE - Tetrachloroethene

SCEP - Steam Cleaning Effluent Pond

NA - Not Analyzed

ND - Not Detected

cm - centimeter

mg/kg - milligrams per kilogram

mg/L - milligrams per liter

(Table A-1). The high concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds are attributed to the high TPH concentrations also found at these sampling locations and are not believed to be associated with solvent use.

4.0 SEPARATOR AND PIPELINE INVESTIGATIONS

The only portions of the CAU that have been characterized are the two SCEPs. The separator, sump, grease traps, and associated pipelines have not been fully characterized although a number of preliminary investigations have been conducted. These areas will be characterized as part of the separator, sump, grease trap, and pipeline closure activities. The location of these components of the CAU are found on Figure A-1.

Based upon the preliminary investigations and associated analytical data, the following conclusions have been made:

- The piping, separator, and sump associated with the South SCEP had at one time contained both petroleum hydrocarbon and RCRA regulated wastes (Table A-2).
- The contents of the Building 6-800 separator were sampled in August 1994 during the FOAV investigation of the South SCEP. At that time, the contents in this separator were not hazardous (Table A-2).
- The Building 6-621 separator was sampled in August 1994. RCRA hazardous wastes were not detected (Table A-2).
- The contents (both liquid and solids) of the Building 6-623 grease trap were sampled in December 1995. High concentrations of total petroleum hydrocarbons were detected; however, RCRA-regulated constituents were not detected (Table A-2).
- As part of the July 27, 1994 FOAV investigation, a section of the concrete asbestos piping outside the South SCEP was exposed and broken off. The 20 centimeter (cm) (8.0 in) concrete asbestos pipe was 25 percent filled with a viscous black sludge. This sludge was highly impacted with petroleum hydrocarbons, and trace concentrations of RCRA-regulated constituents (Table A-2).

TABLE A-2 - SUMMARY OF SEPARATOR, SUMP, GREASE TRAP, & PIPELINE ANALYTICAL RESULTS

LOCATION	SAMPLE ID	PCBs	TPH 8015M ^a			VOCs ^b (mg/kg)	TCLP ^c VOCs (mg/L)	SVOCs (mg/kg)	TCLP SVOCs ^d (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
			GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)						
JULY 1994 BUILDING 6-800 SEPARATOR AND BUILDING 6-621 SUMP SAMPLING RESULTS (DOE, 1994)											
Bldg. 6-800 Separator West Chamber (liquid)	A6T1-L	NA	ND	14	13	Methylene Chloride 0.070	NA	ND	NA	Ba 6	NA
Bldg. 6-800 Separator West Chamber (sludge)	A6T1-S	NA	ND	4,460	35,600	NA	Chloroform 0.022	NA	4-methyl-phenol 0.46	NA	Ba 0.67
Bldg. 6-800 Separator East Chamber (liquid)	A6T2-L	NA	ND	23	21	Methylene Chloride 0.028	NA	ND	NA	Ba 0.073	NA
Bldg. 6-800 Separator East Chamber (sludge)	A6T2-S	NA	ND	4,060	24,900	NA	Chloroform 0.005	NA	4-methyl-phenol 0.64	NA	Ba 1.20 Cd 0.03 Pb 0.52
Bldg. 6-621 Sump (liquid)	621-L	NA	ND	ND	ND	ND	NA	ND	NA	Ba 0.006	NA
AUGUST 1994 - SOUTH SCEP PIPELINE SAMPLING EVENT (DOE, 1994)											
Soil collected under the S SCEP Piping	6-SSCEP-P2	NA	ND	ND	ND	ND	ND	ND	NA	NA	Ba 1.00
Duplicate Sample of 6-SSCEP-P2	6-SSCEP-P3	NA	ND	ND	ND	Methylene Chloride 7.0	ND	ND	NA	NA	Ba 1.00
Sludge collected within SSCEP Piping	6-SSCEP-P4	NA	ND	8,710	21,000	Methylene Chloride 25,000 Toluene 4,100 Ethylbenzene 13,000 Total Xylene 28,000	ND	Naphthalene 3.0 2-Methyl-naphthalene 5.1 Fluorene 1.5 Phenanthrene 1.25	NA	NA	Ba 1.70
DECEMBER 1995 - BUILDING 6-623 GREASE TRAP SAMPLING (BN, 1996)											
Grease Trap Influent Side (liquid)	A6-SC1-L	ND	ND	ND	97	Methylene Chloride 0.014	NA	ND	NA	Ba 1.6 Cd 0.039 Cr 0.22 Pb 1.8	NA

TABLE A-2 - SUMMARY OF SEPARATOR, SUMP, GREASE TRAP, & PIPELINE ANALYTICAL RESULTS

LOCATION	SAMPLE ID	PCBs	TPH 8015M ^a			VOCs ^b (mg/kg)	TCLP ^c VOCs (mg/L)	SVOCs (mg/kg)	TCLP SVOCs ^d (mg/L)	METALS (mg/kg)	TCLP METALS (mg/L)
			GAS (mg/kg)	DIESEL (mg/kg)	OIL (mg/kg)						
Grease Trap Influent Side (sludge)	A6-SC1-S	ND	ND	ND	ND	NA	ND	NA	ND	NA	As 1.8
Grease Trap Effluent Side (liquid)	A6-SC2-L	ND	ND	ND	ND	Acetone 0.045 2-Butanone 0.032 4-Methyl- 2-pentanone 0.072	NA	Diethyl phthalate 65	NA	As 0.016 Ba 0.46 Cd 0.021 Cr 0.16 Pb 0.65	NA
Grease Trap Effluent Side (liquid)	A6-SC2-S	ND	ND	ND	520	NA	ND	NA	ND	ND	Ba 2.2
APRIL 1996 - NORTH SCEP INFLUENT PIPE SAMPLING (DOE, 1996a)											
Soil under influent pipe. Samples collected from NSCEP to first Manhole	SCEP00180	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND
	SCEP00181	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND
	SCEP00182	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND
	SCEP00183	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND

^a **TPH 8015M** - Total Petroleum Hydrocarbons Method 8015 Modified.

^b **VOCs** - Volatile Organic Compounds.

^c **TCLP** - Toxicity Characteristic Leaching Procedure.

^d **SVOCs** - Semi-Volatile Organic Compounds.

As Arsenic, Ba Barium, Cd Cadmium, Cr Chromium, Pb Lead.

PCBs - Polychlorinated Biphenols

SCEP - Steam Cleaning Effluent Pond

NA - Not Analyzed

ND - Not Detected

mg/kg - milligrams per kilogram

mg/L - milligrams per liter

5.0 SCEP MODEL DEVELOPMENT

5.1 STEAM CLEANING EFFLUENT PONDS MODEL

A model was developed, during the characterization DQO process, based upon the information collected during the three pre-characterization sampling events. A separate model was developed for each steam cleaning effluent pond (DOE, 1996). At that time, it was decided not to characterize the influent pipelines and associated separator, sump, or grease traps. Rather, these areas would be characterized during the closure portion of the program.

5.2 NORTH STEAM CLEANING EFFLUENT POND MODEL

The North SCEP model, developed during the characterization DQO process, states that the only Constituent of Concern (COC) would be petroleum hydrocarbons above the 100 mg/kg Action Level. The vertical extent of contamination would not exceed 1.5 m (5.0 ft) below the base of the pond, and the extent of horizontal contamination would be confined within the boundary of the North SCEP. The model was based upon the core samples collected during the September 1995 sampling event.

5.3 SOUTH STEAM CLEANING EFFLUENT POND MODEL

The South SCEP model segregated the SCEP into four zones.

5.3.1 Zone 1

The first zone was the sludge at the base of the pond. It was estimated (based upon the September 1995 core samples) that the sludge did not extend deeper than three meters (10 ft) below the base of the pond. It was also assumed that the sludge contained high concentrations of petroleum hydrocarbons and concentrations of chlorinated solvents above contract detection limits (CDL) but below land ban restrictions (LBR).

5.3.2 Zone 2

The second zone consists of stained soil located on the sides of the South SCEP berm. This zone is expected to contain high concentrations of petroleum hydrocarbons and concentrations of chlorinated solvents above contract detection limits (CDL) but below land ban restrictions

(LBR). Based upon the core samples collected during the September 1995 sampling event, the total thickness of this zone is expected to be 0.6 m (2.0 ft).

5.3.3 Zone 3

The third zone encompasses the remainder of the South SCEP. This zone was non-hazardous and impacted by petroleum hydrocarbons above the 100 mg/kg action level and includes all portions of the berm that are not contained in Zones 1 and 2. This zone is expected to be confined to the South SCEP berm walls and a limited vertical profile beneath the pond.

5.3.4 Zone 4

The last zone consists of unimpacted soil outside the South SCEP.

The location of each zone is provided on Figure A-2. A cross section of the South SCEP is provided on Figure A-3. These figures were originally provided in the Characterization Report (DOE, 1996a).

Section A - A'

EXPLANATION

- ① Contaminant zones
- Lower boundary of contaminant zones

Note: All of the Zone 1 material and part of the Zone 2 and 3 material have already been removed and disposed.

SOURCE: DOE, 1996a

FIGURE A-3
SOUTH SCEP CROSS SECTION

Section B - B'

6.0 CHARACTERIZATION INVESTIGATION SUMMARY

The characterization plan was developed to confirm the models for the South and North SCEPs. Sufficient flexibility was built into the Characterization Plan that enough data would be collected to develop a Closure Plan even if the models were proven to be inaccurate. The basic characterization approach was to use a backhoe to create four trenches across each SCEP and collect samples every 1.5 m (5.0 ft) (in the horizontal and vertical direction) (DOE, 1996). These samples were analyzed at an on-site mobile laboratory. The on-site analysis was used to direct the horizontal and vertical extent of excavation at each SCEP. A percentage of the samples were also sent off-site for analysis. These samples were used to confirm the mobile laboratory data and document the extent of impacted soil.

6.1 NORTH STEAM CLEANING EFFLUENT POND

The model for the North SCEP identifies only petroleum hydrocarbons as a COC. The characterization field work collected numerous samples from the North SCEP and found that the distribution of petroleum hydrocarbons across the pond floor was not uniformly distributed. The petroleum hydrocarbons appear to be concentrated near the outfall pipe. Preliminary data indicated that the petroleum hydrocarbon-impacted soil did not extend past a depth of 1.5 m (5.0 ft) (DOE, 1996a).

6.2 SOUTH STEAM CLEANING EFFLUENT POND SUMMARY

The South SCEP characterization field work required that a number of waste management activities be conducted along with the characterization process. It was decided that the RCRA hazardous waste generated during the characterization field activities would be stockpiled and properly disposed of at an off-site Treatment, Storage and Treatment Facility (TSDF). The Characterization Plan (DOE, 1996) required that all Zone 1 and Zone 2 soil removed from the South SCEP be managed as Hazardous Waste.

During the characterization field work, all of the Zone 1 soil was removed and disposed of in a offsite RCRA-permitted TSDF. The Characterization Plan (DOE, 1996) was developed such that only a limited portion of the South SCEP was excavated (i.e., four narrow trenches). However based upon field observations, this zone is thought to be approximately 0.6 m (2 ft) thick. Review of the analytical data generated during the characterization field work reveals that while numerous F001 and one F002 listed solvents were detected, none were reported in concentrations that exceeded land ban restrictions (DOE, 1996a).

Due to the targeted sampling area within the South SCEP during the characterization investigation, the exact horizontal and vertical extent of the Zone 2 layer is not well known. Prior to initiating closure activities, additional samples will be collected to facilitate the segregation and minimization of potential RCRA-regulated wastes. This activity will reduce project costs and keep the closure on schedule (i.e., less likely that any Zone 2 soil will require excavation based upon verification sample results).

The zone locations and associated depths for the South SCEP have been estimated and presented in the Characterization Report (DOE, 1996a) and reproduced in this plan as Figure A-3. The Zone 3 and Zone 4 subsurface expressions were developed and are found in the Characterization Report (DOE, 1996a) based upon the analytical results from samples collected during the field characterization (Figure A-3). The field sampling protocol required that the depth of impacted soil be determined by the collection of soil samples in a vertical plane. Samples were collected in 1.5 m (5 ft) lifts and were analyzed by an on-site mobile laboratory. The field sampling protocol required that two non-impacted samples be collected from each sampling location. The collection of these vertical sample profiles along with the 1.5 m (5 ft) spacing between the sample locations across the four trenches allowed the creation of the model shown in Figure A-3.

A one dimensional flow model was developed and used to simulate the subsurface conditions under the South SCEP. A model of the soil underlying the South SCEP was requested by the NDEP after the submittal of the Final Characterization Report (DOE, 1996a). This model has been submitted as a separate letter report. The model selected was CHEMFLO which is a one dimensional flow model developed at Oklahoma State University for the EPA. Since site specific saturated hydraulic conductivities for Zone 1 were not obtained as part of the characterization field work, the major source of infiltration was assumed to be through the pond bottom or berm side walls (i.e., the effect of the Zone 1 sludge lower permeability was ignored). This assumption is the most conservative assumption used within the model, therefore the predicted depth of saturation and wetting front indicate a extremely conservative estimate.

The following input parameters and values were used within the South SCEP simulation (DOE, 1997):

Saturated Hydraulic Conductivity (cm/day)	0.00863
Porosity (cc/cc)	0.446
Residual Porosity (cc/cc)	0.070
van Genutchen α (cm ⁻¹)	0.0343
van Genutchen N (dimensionless)	1.3926

The following boundary conditions were used within the South SCEPT simulation (DOE, 1997):

- The infiltration of water through the base of the pond was not restricted by the lower permeability sludge layer (Zone 1).
- The South SCEPT was half full (1.5 m [4.9 ft]) of water for the entire 23-year period that it was in operation.
- The initial hydraulic head potential in the subsurface material was at a pressure of - 1000 cm (approximately - 1 bar).

The model results for the above listed parameter inputs and boundary conditions, predict that depth of saturated soil underlying the South SCEPT is 4.2 m (13.6 ft) deep with a wetting front extending to 4.8 m (15.7 ft). Comparing this model prediction to physical observations and analytical data indicate that Zone 1 has significantly reduced the depth of saturation. Soil underlying Zone 1 was not saturated and had limited visual indications of contamination transport into the underlying soil. The non-saturated condition observed under Zone 1 sludge is not unexpected given the difference in saturated hydraulic conductivities between the two layers (i.e., Zone 1 much lower than the underlying soil). The slow release of water from the Zone 1 sludge makes it extremely unlikely that the underlying soil to achieve saturation. Therefore, we believe that the model along with the physical observation and analytical results confirm the extent of impacted material presented in Figure A-3.

APPENDIX B

WASTE MANAGEMENT PLAN

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LIST OF ACRONYMS AND ABBREVIATIONS

BN	Bechtel Nevada
CAU	Corrective Action Unit
CFR	Code of Federal Regulations
CGA	Combustible Gas Analyzer
cm	centimeter
COCs	Constituents of Concern
DOE	United States Department of Energy
DQOs	Data Quality Objectives
ECO	Environmental Compliance Office
ERD	Environmental Restoration Division
FFACO	Federal Facility Agreement Consent Order
FOAV	Finding of Alleged Violation
ft	foot
gal	gallon
IDW	Investigation Derived Wastes
in	inch
kg	kilogram
L	liter
LEL	Lower Explosive Limit
LQG	Large Quantity Generator

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

m	meter
mL	millimeter
mg	milligrams
NAC	Nevada Administrative Code
NDEM	Nevada Division of Emergency Management
NDEP	Nevada Division of Environmental Protection
NTS	Nevada Test Site
NV	Nevada
O ₂	Oxygen
PE	Professional Engineer
PID	Photo-ionization Detector
PPE	Personnel Protective Equipment
ppm	parts per million
PVC	polyvinyl chlorine
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
REEC _o	Reynolds Electric & Engineering Company
RP	Remediation Projects

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

SCEP	Steam Cleaning Effluent Pond
sec	second
SVOCs	Semi-Volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TSDF	Treatment Storage Disposal Facility
VOCs	Volatile Organic Compounds
WMP	Waste Management Program
yd	yard

1.0 INTRODUCTION

1.1 BACKGROUND

The North and South Steam Cleaning Effluent Ponds (SCEPs) consist of two unlined retention ponds located in Area 6 of the Nevada Test Site (Figure B-1). The North Pond received discharge from three steam cleaning pads originating in the Heavy Duty Equipment Storage Yard. It was constructed in 1975 and used until November 1994. The pond measures 19.8 meters (m) (65 feet [ft]) by 27.5 m (90 ft) and is 2.4 m (8.0 ft) deep. The South Pond is connected to the steam cleaning pad located next to Building 6-800 and to a separator inside Building 6-621. The pond is approximately 27.5 m (90 ft) long and 26 m (85 ft) wide and is surrounded by a dirt berm (DOE, 1996). The South Pond was constructed in 1969 and was used until November, 1992.

The steam cleaning pads were used to clean various types of heavy equipment such as drill rigs, tractors, front-end loaders and engine blocks. Consequently, effluent to the ponds contained oil, grease, lubricants, and solvents.

A preliminary evaluation of the SCEPs was conducted in 1989. Samples were taken of the influent water to the pond, pond sediments, pond water, and sediment in the pond effluent lines (REECo, 1991). The analytical results indicated the presence of hydrocarbons along with Resource Conservation and Recovery Act (RCRA) regulated volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

In August 1994, a sampling event took place in response to a Nevada Department of Environmental Protection (NDEP) Finding of Alleged Violation (FOAV) regarding unpermitted discharges into the South SCEPT. Samples collected from this pond indicated predominately total petroleum hydrocarbons (TPH). No RCRA-regulated constituents were identified above the Regulatory Level (DOE, 1994). Additional samples were collected from both ponds in September 1995. The results from the North SCEPT indicated the presence of petroleum hydrocarbons only, which was above the Regulatory Level. The South SCEPT samples indicated the presence of petroleum hydrocarbons above the NDEP Action Level and several F-listed RCRA VOCs that exceeded the RCRA land disposal restrictions (DOE, 1996).

Characterization of the ponds was done in April 1996 (DOE, 1996a). Characterization of the South Pond included the removal of the Zone 1 impacted soil from the pond bottom and partial removal of the Zone 2 material (DOE, 1996a). The soil was placed into rolloff containers. Analytical results indicated that four of the eleven containers contained soil impacted with RCRA-regulated solvents below Land Disposal Restrictions (LDR), six containers contained soil with high concentrations of petroleum hydrocarbons, and one roll-off was sent to the sanitary.

landfill. After this activity was completed trenches were excavated and soil samples were collected to delineate the extent of the impacted soil. Trench samples collected at the North Pond indicate that the zone of impacted soil is restricted to an area around the outfall pipe and primarily on the surface. Petroleum hydrocarbons are the only Constituent of Concern (COC).

1.2 SCOPE OF WORK

The Closure Plan for the Area 6 SCEP Corrective Action Unit (CAU) 93 has been developed based on a clean closure design. The Closure Plan should be referred to for details regarding the closure. The unit consists of two steam cleaning effluent ponds, the Building 6-800 Separator, Building 6-621 Sump, Layout Pad Grease Trap, Test Pad, Building 6-623 Steam Cleaning Pad, Building 6-623 Grease Trap, and the concrete asbestos piping connecting these components to both SCEPs (Figure B-2). In addition, soil from two spill releases within the CAU are addressed in the Closure Plan.

1.3 PURPOSE

The purpose of the Waste Management Plan is to identify all types of Investigation Derived Waste (IDW) that could be generated during the closure process, describe proper sampling and management techniques for each waste stream, and provide recommendations for disposal. The following items are discussed in this plan:

- Segregating, containerizing, and labeling all waste types.
- Sampling the waste streams for disposal purposes.
- Tracking, controlling, and managing waste.
- Compiling analytical data.
- Coordinating disposal with the BN Waste Management Program (WMP).
- Conducting inspections and maintaining storage areas until disposal is complete.
- Providing documentation for all disposal activities.

2.0 WASTE STREAM DESCRIPTIONS

Four waste streams are to be generated during closure activities. These waste streams are:

- Hydrocarbon impacted, nonhazardous material (North SCEP soil, South SCEP Zone 3 soil, and Building 6-623 Grease Trap, North SCEP piping, Nevada Division of Emergency Management (NDEM) spill release number H910911D, and NDEM spill release number H920625B).
- RCRA-regulated hazardous material (South SCEP Zone 2 material, hazardous debris).
- Nonhazardous solid waste (soil, Personal Protective Equipment (PPE), plastic sheeting, and other miscellaneous material).
- Decontamination water generated during the cleaning of equipment, piping, etc.

All waste will be stored, sampled, analyzed, and disposed of in accordance with applicable State and Federal regulations, the RCRA Part B Permit, United States Department of Energy (DOE) Orders, and Bechtel Nevada (BN) Procedures. Where additional information is required for waste characterization, samples will be collected and submitted for analysis to determine the concentrations of COCs. Analytical results will be validated and submitted to the BN Waste Management Program (WMP) for disposal recommendations and implementation.

2.1 HYDROCARBON IMPACTED MATERIAL

2.1.1 Soil

Clean closure of the North SCEP will be accomplished by removing the top one meter (3.0 ft) of soil from the floor of the North SCEP which is impacted with petroleum hydrocarbons only. Samples will be collected from the bottom of the pond to verify that all soil with Total Petroleum Hydrocarbons (TPH) concentrations above the NDEP Action Level of 100 milligrams per kilogram (mg/kg) has been removed. It is anticipated that a total volume of 545 m³ (650 yd³) of hydrocarbon-impacted soil will be removed from the North SCEP.

Closure of the South SCEP will begin with the reopening of the ramp which was constructed for characterization activities. Soil from this activity will be disposed of in the Area 6 Hydrocarbon Landfill. The remaining hazardous material from the interior of the pond will then be removed. Excavation of the hydrocarbon impacted soil will continue after analytical results have been

received which indicate that all RCRA-regulated soil was removed. Samples will be collected to verify that all soil with TPH concentrations above the NDEP Action Level was removed. It is anticipated that a total volume of 595 m³ (778 yd³) of hydrocarbon-impacted soil will be removed from the South SCEP.

Clean closure of NDEM spill release number H910911D will be done by removing the top 0.6 m (2.0 ft) of soil from the areas within the spill that exceed the NDEP Action Level of 100 mg/kg. It is anticipated that a total volume of 140 m³ (110 yd³) of hydrocarbon-impacted soil will be removed from the spill area.

2.1.2 Building 6-623 Grease Trap

The Building 6-623 grease trap was discovered while investigating a small release of liquid from the effluent pipe into the North SCEP. The trap is an underground, two chambered, 1,000 gallon tank located approximately 61 m (200 ft) north of the North SCEP (Figure B-2). At the time of discovery the grease trap was approximately two thirds full of a black, hydrocarbon-based liquid and sludge. Samples were collected from both chambers and from both the liquid and sludge phase on December 18, 1995. In addition, a small hole was drilled in the effluent pipe at the outfall in order to drain any liquid from the pipe. This liquid, consisting primarily of oil, was also sampled. Analytical results indicate high concentrations of petroleum hydrocarbons and low concentrations of some F-listed RCRA-regulated constituents were detected. The WMP evaluated the sampling data and concluded that the waste within the Building 6-623 Grease Trap was not RCRA-hazardous. Based on these results and the results of previous sampling events, all waste associated with the North SCEP is nonhazardous and impacted with petroleum hydrocarbons only (DOE, 1997).

The sludge and liquid within the Building 6-623 Grease Trap was removed and solidified between September 16 and September 25, 1996. The solidified waste was disposed of within the Area 6 Hydrocarbon Landfill.

2.1.3 Asbestos-Containing Pipe

The pipelines carrying waste from the steam cleaning pads to the ponds is constructed of Transite™, an asbestos-containing material. On May 22, 1996, a 27.4 m (90 ft) section of the pipe was removed from the outfall inside the North SCEP to the first up gradient manhole. After the pipe was exposed by the backhoe, it was pulled apart at the slip joints. The sludge was removed from inside the pipe and the interior was "triple rinsed" with a steam cleaner. The rinse water and sludge were collected, solidified, and disposed of at the Hydrocarbon Landfill based on the grease trap analytical results. After the pipe was cleaned, it was placed on pallets inside the waste accumulation area and covered with 20 mil PVC until arrangements could be made for disposal in the Area 9 U10c Sanitary Landfill.

The pipe that was removed was intact with no evidence of leakage such as staining on the pipe or surrounding soil. Soil samples were collected at two locations beneath the slip joints. Analysis did not detect any COCs. Based on this, it is proposed that the remaining pipeline associated with the North SCEP be closed in place. Some asbestos waste may be generated during the removal of the Building 6-623 Grease Trap.

The Transite™ pipe associated with the South SCEP will be removed and handled as hazardous debris as described in Section 2.2.2.

2.2 RCRA-REGULATED WASTE

2.2.1 Hazardous Soil

After reopening the ramp excavation, the remaining Zone 2 soil and sludge from the interior of the South SCEP, which is significantly impacted with petroleum hydrocarbons and assumed to be RCRA-regulated, will be removed. It is estimated that 76.5 m³ (100 yd³) of impacted soil remain in the pond. This material will be handled in a manner appropriate for a hazardous waste as described in Section 3.0, "IDW Management." Containers will be labeled as "Hazardous Waste;" however, a waste code will not be assigned until analytical data from the sampling is evaluated and a formal decision is made as to the regulatory status of the material. The impacted material will be placed in 15.3 m³ (20 yd³) roll-off containers and stored in the temporary (90-day) Hazardous Waste Storage Area at the site.

2.2.2 Hazardous Debris

The Building 6-800 separator and piping associated with the South SCEP will be managed as hazardous debris based on the Land Disposal Restrictions (LDR) definitions of "debris" and "hazardous debris." Title 40 Code of Federal Regulations (CFR) 268.2(g) defines "debris" as a "solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic matter." "Hazardous debris" is defined by 40 CFR 268.2(h) as "debris that contains a hazardous waste listed in Subpart D of part 261 of this chapter, or that exhibits a characteristic of a hazardous waste identified in Subpart C of part 261 of this chapter." Because they are manufactured items, are intended for disposal, and were used to transport RCRA-regulated materials to the South SCEP, they are considered hazardous.

Approximately 122 m (400 ft) of the South SCEP concrete-asbestos piping will be excavated during the closure of the SCEP CAU. The RCRA-hazardous classification is based upon the

analytical data collected during the July 29, 1994 FOAV response field work. A section of the South SCEP piping was removed and a sludge sample was collected and analyzed for total TPH, VOCs, Toxicity Characteristic Leaching Procedure (TCLP) VOCs, SVOCs, TCLP VOCs, metals, and TCLP metals. The analytical results documented elevated concentrations of petroleum hydrocarbons and RCRA-regulated constituents.

The Building 6-800 separator is constructed of two in-line underground chambers used to trap oil and grease removed from equipment during the steam cleaning process. It was cleaned out in November 1992, the contents were characterized and shipped off-site as hazardous waste. It was then used for a short period of time in a recirculating steam cleaning system until interim status was lost and the unit closed.

On July 28, 1994, liquid and sludge samples were collected from both chambers. Analytical results indicate that the only hazardous constituent detected was chloroform in trace concentrations. Based on EPA guidance (DOE, 1994), it was determined that trace amounts of spent solvents in a wastewater is not within the scope of a listing for a spent solvent and should not be a listed waste. The liquid and sludge were removed and disposed of as a nonhazardous waste. The unit was then steam cleaned and pumped out to RCRA empty standards. The tank is considered to be "treated" and is no longer "hazardous debris." However, if the unit leaked the exterior of the tank may be impacted. As a precautionary measure it will be stored in the Hazardous Waste Storage Area pending analysis of soil samples collected from beneath the separator.

2.3 NONHAZARDOUS MATERIAL

2.3.1 Soil

Nonhazardous soil from above the pipelines will be excavated in order to remove the Transite™ pipe. Excavated soil will be piled next to the excavation until analytical results of the verification samples collected from below the pipe are received. If COCs are either not detected, or are below regulatory limits, the soil will be placed back into the same excavation. If the pipe is located in a high traffic area of the equipment yard it may be necessary to backfill the trench after collection of the verification samples.

2.3.2 Solid Waste

Solid waste will consist primarily of compactable trash which will be placed in 208 liter (55 gal) drums and placed in the drum storage area until disposal arrangements are made. Solid waste will consist of:

- Personal Protective Equipment.
- Plastic sheeting.
- Miscellaneous rags, sampling equipment, etc.

2.4 DECONTAMINATION WATER

Rinse water will be generated during the decontamination of sampling tools including stainless steel bowls and scoops, work tools such as shovels, and excavation equipment. Sampling equipment will be cleaned prior to arrival at the site and between each sample point to reduce the potential of cross-contamination. All rinsewater will be placed in containers, analyzed, stored, and disposed of in accordance with applicable regulations.

3.0 IDW MANAGEMENT

All waste types that are generated will be managed in a manner that complies with all State and Federal regulations, DOE Orders, BN procedures, and the RCRA Part B Permit. Nonhazardous waste will be handled in accordance with Standard Operating Procedure ERD-05-210 (DOE, 1994). If the waste is determined to be hazardous based on analytical results, it will be handled in accordance with Standard Operating Procedure ERD-05-211 (DOE, 1994a). It is anticipated that no radiologically impacted material will be encountered. All waste will be handled in a manner that complies with the Nevada Test Site Performance Objective for Certification of Nonradioactive Hazardous Waste (REECo, 1995)

3.1 CONTAINER MANAGEMENT

All containers will be handled in accordance with Subpart I of 40 CFR, Part 265 which deals with the use and management of containers. Additional requirements for storage of hazardous waste are described in Section 4.0, "Hazardous Waste Management Requirements." All containers must be in good condition (no rust or dents). If the container begins to leak, the contents must be transferred to a container that is in good condition. The containers must be lined or made of a material that will not react with the waste. The containers must always be closed while stored unless waste is added or removed. They must also be handled in such a manner that will not jeopardize the integrity of the container.

Rinseate and compactable solid waste will be stored in 208 liter (L) (55 gallon [gal]) drums and handled as nonhazardous waste. An accumulation area will be set aside for the storage of the drums. This staging area will be located between the two ponds and out of the way of heavy equipment traffic (Figure B-2). It will be located near the decontamination pad and personnel decon area so that the wastes generated during these activities can be easily managed. The drum staging area will be fenced using orange safety fencing.

All compactable solid waste and rinseate will be placed in 208 L (55 gal) drums which will be stored on pallets. Waste drums will be new or reconditioned with no rust or dents and meet United States Department of Transportation requirements. Drum reconditioning must be done by a qualified vendor. The drums must have a metal ring securing the drum top to the drum. The ring will be secured with a drum lock. BN policy does not allow for a 208 L (55 gal) drum to be filled beyond a capacity of 7/8.

Appropriate labels and relevant information must be marked on each container, drum or roll-off, with an indelible marker and must be legible and clearly visible for inspection. Pertinent data may be written on duct tape or a blank adhesive label that is applied to the side of the container.

The following information will be included:

- Waste-Tracking Label.
- Type of waste in container.
- Location waste was derived from, i.e. North or South SCEP, base or berm, etc.
- Date range that accumulation takes place.
- "Awaiting Analysis" sticker after sampling has been completed (if required).

Bechtel Construction and/or WMP personnel are not permitted to remove drums from the site or have the contents of the drums disposed without written approval from RP personnel. RP staff will make arrangements to the disposition of the waste with WMP staff.

3.2 SITE CONTROL

A fenced drum accumulation area has been established between the two ponds for nonhazardous waste such as the North SCEP IDW, decontamination water, solid waste, etc. Another area will be fenced to establish a temporary Hazardous Waste Storage Area to store material that could potentially be RCRA-regulated. This will consist primarily of rolloff bins containing South SCEP soil.

To prevent unauthorized persons from entering the site, a rope fence was erected which fully encompasses both ponds and all of the waste accumulation areas. "Keep Out" or similar warning signs were posted on all sides of the fence. Figure B-2 indicates planned locations for any soil piles, drums, and roll-off containers. These locations may change as field conditions dictate.

3.3 IDW MANAGEMENT TECHNIQUES

Details for the management of IDW is provided in Table B-1.

**TABLE B-1 -- MANAGEMENT OF INVESTIGATION DERIVED
 WASTE**

WASTE TYPE	DECISION
SOIL/SOLIDS	
Impacted soil with less than 100 mg/kg TPH, nonhazardous	Any excavated soil below 50 mg/kg TPH can be used as excavation backfill. If excavated soil is above 50 mg/kg TPH from a site exceeding the NDEP 100 mg/kg TPH Action Level, dispose of soil in Area 6 Hydrocarbon Landfill with WMP approval. Appropriate transfer documentation for disposal (letter from RP recommending disposal, laboratory analytical results, radiological "green tag", weight tickets, and bill of lading) is required to be placed into the task file. Documentation of decisions, correspondence, and site activities is required.
Impacted soil with greater than 100 mg/kg TPH, nonhazardous	Wastes will be stabilized, if required, and transferred to the Area 6 Hydrocarbon Landfill for disposal with WMP approval. Appropriate documentation for disposal (letter from RP recommending disposal, laboratory analytical results, radiological "green tag", weight ticket, and bill of lading) are to be placed in the task file.
RCRA-regulated hazardous waste	Remove soil, containerize, label and place in temporary Hazardous Waste Storage Area to await analysis. Conduct weekly inspections. To be managed as a RCRA-regulated hazardous waste, it must meet the requirements established in the <u>Performance Objective For the Certification of Non-Radioactive Hazardous Waste</u> (REECo, 1995).
Asbestos-containing pipe, hydrocarbon impacted, nonhazardous	Leave in place where possible. Portions broken during separator removal will be handled appropriately by a trained asbestos worker. Sludge will be removed and the interior steam cleaned. With WMP approval, decontamination waste will be solidified and disposed of in the Area 6 Hydrocarbon Landfill and asbestos pipe will be transported to Area 9 U10c Sanitary Landfill under proper chain-of-custody.

**TABLE B-1 (Continued) -- MANAGEMENT OF INVESTIGATION
 DERIVED WASTE**

WASTE TYPE	DECISION
Grease Trap, hydrocarbon impacted	Excavate soils from around grease trap and place directly in dump truck. Remove separator with crane and place it with soil. Excavate potentially impacted soil from beneath separator. Transport everything to Area 6 Hydrocarbon Landfill. Collect verification samples.
RCRA-regulated asbestos-containing pipe and South SCEP separator (Building 6-800)	Excavate soils from around separator and piping, place soil in rolloff container, collect two waste characterization samples per rolloff, and move to temporary Hazardous Waste Storage Area to await analysis. Expose pipe section, cover ends with plastic to prevent dripping, transport to steam cleaning pad for decontamination. With WMP approval, the pipe will be placed in the Area 9 U10c Sanitary Landfill. Drums containing decon water and sludge will be sampled, transported to the temporary Hazardous Waste Storage Area to await analysis. Remove separator with crane and transport to steam cleaning pad for decontamination. With WMP approval separator will be placed in the Area 9 U10c Sanitary Landfill.
RINSEATE	
TPH is less than 100 mg/L, nonhazardous	Rinseate can be discharged into the sanitary lagoon, if the liquid has no hydrocarbon sheen. If the sheen can not be removed from the water through absorbent materials, then the liquid must be solidified and disposed of within the Area 6 Hydrocarbon Landfill.
TPH is greater than 100 mg/L, nonhazardous	Will be solidified and disposed of within the Area 6 Hydrocarbon Landfill.
Hazardous waste	Place drums containing rinse water in Drum Storage Area, collect sample for waste characterization, and await analysis. If rinseate is been identified as a hazardous waste, follow the three day Satellite Accumulation storage rule and the twelve month storage limit for the Area 5 Hazardous Waste Storage Pad.

3.3.1 Hydrocarbon Impacted Material

3.3.1.1 Soil

It is estimated that a total of 1,350 m³ (1,766 yd³) of nonhazardous, hydrocarbon impacted soil will be removed from the two ponds. As the soil is excavated it will be placed directly into dump trucks and transported to the Area 6 Hydrocarbon Landfill. A bill-of-lading, providing a brief description and volume of the waste, will accompany each load. Approximately three feet of soil will be removed from the bottom of the North Pond.

3.3.1.2 Building 6-623 Grease Trap

The contents of the grease trap were removed on September 16 through September 25, 1996, by pumping and applying a high-pressure stream of water to break up the sludge. Thirty-three drums of material were generated, solidified, and disposed of in the Area 6 Hydrocarbon Landfill. Due to the consistency of the sludge and the configuration of the trap, it was impossible to adequately clean the trap. Part of the riser attached to the top of the trap is constructed of brick and, depending of the liquid level, could have leaked. Based on these facts, the appropriate action is to excavate and remove the trap, remove any impacted soil, collect verification samples, and backfill with clean soil. The trap will be transported to the Well 3 Yard Tank Segmentation Pad and an attempt will be made to clean the trap well enough to allow disposal in the sanitary landfill. If this is not feasible it will be crushed or cut and placed in the Hydrocarbon Landfill.

3.3.2 RCRA-Regulated Material

Hazardous waste may be stored on-site for 90 days without a permit; however, the storage areas must conform to the requirements of 40 CFR 262.34. Details are provided in Section B-4.0, Hazardous Waste Storage Requirements.

3.3.2.1 Hazardous Soil

Soil removed from the South SCEP Zone 2 will be removed and placed in 15.3 m³ (20 yd³) roll-off bins which will be supplied by an off-site Treatment, Storage, and Disposal (TSD) Facility. Excavation will continue to a depth where no staining is observed which is estimated to be about two feet into the pond walls. Two samples will be collected from each roll-off as it is being filled (see Section B-5.0, IDW Sampling and Disposal). Samples will be collected inside the pond to verify that all RCRA-regulated material has been removed.

Soil excavated from around and under the Building 6-800 Separator and from under the associated piping will be considered hazardous waste and handled appropriately.

Approximately 7.6 m³ (10 yd³) will be placed in each container due to weight restrictions. The roll-off containers will be placed in a manner that allows for easy drop-off and pick-up. The containers will be lined with plastic prior to placing waste inside. Each roll-off is equipped with a tarp which covers the top of the container. The roll-offs will be covered when they are not in use and for the entire time they are stored at the site.

3.3.2.2 Hazardous Debris

The Building 6-800 separator has previously been steam cleaned and subsequent contents were determined to be nonhazardous; therefore, the separator is considered nonhazardous and impacted with petroleum hydrocarbons only. However, it will be handled as a hazardous waste until a determination can be made based on analytical results of the soil samples collected from below the separator. The separator is constructed from slabs of concrete which will allow disassembly. The pieces will be placed in a separate rolloff container which will be stored in the Hazardous Waste Storage Area. If the sample analytical results indicate the presence of hazardous constituents in the soil the external sides of the separator will be cleaned. Disposal will depend on the analytical results of the rinse water samples.

Hazardous debris must be treated prior to land disposal. After applying one of the alternative treatment standards listed in Table 1 of §268.45, the debris is no longer hazardous as long as it does not exhibit a characteristic of hazardous waste under 40 CFR 261 subpart C. Physical extraction by using high-pressure steam and water sprays is an appropriate treatment technology. This will be used on the separator.

The debris must be treated to a clean debris surface meaning that the surface must be free of all visible contamination except staining, discoloration or waste in cracks or pits providing that such imperfections are limited to less than five percent of each square inch of surface area. Hazardous debris that has been successfully treated by one of the approved treatment standards and does not exhibit a characteristic of hazardous waste after treatment as identified in 40 CFR 261 subpart C is not a hazardous waste and need not be managed in a subtitle C facility.

These items will be excavated and transported to the temporary steam cleaning pad for decontamination. Wash water used to decontaminate the concrete is subject to the same listed codes.

3.3.2.3 Asbestos-Containing Pipe

The Transite™ pipe associated with the South SCEP will be removed. A section will be exposed, plastic placed under the slip joint to prevent the release of material to the soil beneath the pipe, and the section removed. The exterior of the pipe will be carefully brushed or scraped to remove loose dirt. Each end will be wrapped in plastic and transferred to a lined roll-off located in the temporary Hazardous Waste Storage Area. The three m (10 ft) Transite™ pipe sections will be stacked within the lined roll-off in a manner that will equalize load weight and minimize load shifting during shipping. The roll-offs containing the Transite™ piping will be transported off-site to a TSDF for proper disposal.

3.3.3 Nonhazardous Material

3.3.3.1 Soil

Nonhazardous soil, i.e not impacted with hydrocarbons or RCRA-regulated constituents, will be replaced in its associated excavation or be transported to the Area 9 U10c Sanitary Landfill. Nonhazardous soil piles do not require plastic beneath them; however, the piles will be covered with plastic sheeting to prevent wind dispersal. The piles will be located next to their respective excavation in a location that is convenient to the backhoe operator and will not interfere with traffic, equipment yard activities, etc.

3.3.3.2 Solid Waste

All solid waste from the North SCEP is considered a nonhazardous waste. Solid waste generated during the SCEP closure activities will be visually inspected as it is placed in a waste container. Items associated with the South SCEP Zone 2 material will be segregated from and disposed of with the sludge as hazardous waste.

Solid waste will be segregated from liquid waste and stored in closed drums. Solid wastes must not contain any free liquids. If free liquids are noted, pads should be used to absorb the liquid or an absorbent type material, such as bentonite, should be added to solidify the mixture.

3.3.4 Decontamination Water

Cleaning of sampling equipment will be done according to Environmental Restoration Division (ERD) Standard Operating Procedure ERD-05-701 (DOE, 1994b). The backhoe bucket and other large items will be cleaned with high pressure hot water prior to use at the site and between

each sampling location. A temporary decontamination pad will be constructed and lined with plastic sheeting. The pad should be large enough to steam clean the largest piece of heavy equipment and contain any overspray. Liquid that collects in the pad sump will be pumped into 208 liter (55 gal) drums. Rinseate generated during the North SCEP closure activities will be placed in different drums than rinseate generated during the South SCEP closure activities. The drum contents will be sampled for waste characterization and disposal determination.

4.0 HAZARDOUS WASTE STORAGE REQUIREMENTS

A generator is classified as a large quantity generator (LQG) by RCRA if more than 1,000 kilograms of waste is accumulated per month. If the LQG accumulated the waste for less than 90 days in the accumulation area, he is not considered an operator of a hazardous waste storage facility and is not required to obtain a RCRA storage permit provided that the generator complies with the following requirements outlined in Title 40 CFR 262.34:

- The waste is placed in containers and the generator complies with 40 CFR 265, Subpart I.
- The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.
- While being accumulated on-site, each container is labeled or marked clearly with the words "Hazardous Waste".
- The generator complies with the requirements in Subparts C and D in 40 CFR 265 with §265.16 which deals with preparedness and prevention, contingency plans, and personnel training.

4.1 CONTAINER MANAGEMENT

Title 40 CFR 265, Subpart I, also requires that all hazardous waste container storage areas must have a containment system. However, if the containers hold only wastes that do not contain free liquids and the containers are elevated or are otherwise protected from contact with accumulated liquid, the storage area need not have a containment system [40 CFR 264.175 (c)(2)]. Roll-off bins are equipped with rollers that elevate the base of the bin approximately one foot from the ground surface; therefore, a containment system is not required. Drums containing decontamination water generated during South SCEP closure activities will be placed on spill containment pallets.

4.2 PREPAREDNESS AND PREVENTION

All hazardous waste facilities must be maintained and operated in a manner that minimizes the possibility of a fire, explosion, or any unplanned event [40 CFR, 265 Subpart C]. Hazards posed by the waste stored at this facility do not require a specific kind of equipment; however, fire extinguishers will be available in all vehicles and in the temporary office trailer that will be brought to the site. Two-way radios will be available in field vehicles or as hand held type.

Aisle space between the drums and containers must be sufficient to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in the event of an emergency.

NTS Emergency Response Teams, Fire Department, and Police, must be familiar with the layout of the facility, properties of the hazardous waste, possible excavation routes, etc. Hospitals must be informed of the type of injuries or illness which could result from fires, explosions, or releases at the facility.

4.3 CONTINGENCY PLAN

Each owner or operator of a hazardous waste facility must comply with the requirements detailed in 40 CFR 265 Subpart D - Contingency Plan and Emergency Procedures. The plan must be designed to minimize hazards to human health or the environment in the event of fire, explosion or any unplanned or non-sudden release of hazardous waste or hazardous waste constituent. The provisions of the plan must be carried out immediately after such an event and provide actions facility personnel must take. A copy of the Contingency Plan can be found in Attachment A.

A copy of the plan and all revisions must be maintained at the facility and provided to the Nye County Sheriff and NTS Fire Departments, Medical Facilities, and Emergency Response Teams. There must be at least one employee either on the facility premises or on call at all time. This person must have the authority to commit the resources needed to carry out the Contingency Plan. The emergency coordinator must have thorough knowledge of all aspects of the Contingency Plan, all operations and activities at the facility, the location and characteristics of the waste handled, the location of the record within the facility and the facility layout.

4.4 PERSONNEL TRAINING

Subpart B of 40 CFR 265.16 details the training required for personnel working at a hazardous waste facility. The program may be classroom instruction or on-the-job training. On-the-job training must be designed so that personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, equipment, and systems. The operator of the facility must maintain the training records at the facility (NTS) until closure has been completed.

Title 29 CFR 1910.120 details the occupational safety and health requirements that will be followed for personnel supporting excavation activities. All personnel will be required to read and understand the Site-Specific Health and Safety Plan prior to working at the site. A Tailgate Safety Briefing will be conducted every morning and as needed as activities or circumstances change.

If friable asbestos is encountered during the removal of the Transite™ pipe, i.e. broken pipe ends, only the designated and trained asbestos worker will handle the pipe. Once the friable portion has properly bagged other workers will be allowed to assist in the handling of the pipe.

4.5 INSPECTIONS

An inspection of the areas in which the containers and soil piles are stored will be conducted at least weekly. The purpose is to identify leaking or deteriorating containers due to corrosion or other factors, deterioration of the plastic covers on the soil piles, etc. An inspection form is included in Enclosure B. Unusual circumstances must be reported immediately to the BN task manager so that corrective measures can be taken. Copies of completed inspection forms will be submitted to the Waste Management Program.

5.0 IDW SAMPLING AND DISPOSAL

5.1 INTRODUCTION

A representative waste sample must be collected for the characterization and disposal of the waste where additional information is needed. Sample handling, packaging, and shipping will be done in accordance with ERD Standard Operating Procedure ERD-05-202 (DOE, 1994). All samples are to be immediately placed into laboratory supplied jars. The sample containers will be sealed, labeled, placed in an ice chest, cooled to four degrees centigrade, and transferred to the contract laboratory under ERD chain-of custody procedure ERD-05-201 (DOE, 1994). Samples will be labeled with the date, time, sample number, parameter(s) to be analyzed, and the sampler's initials. Samples will be analyzed using a six week turnaround. Table B-2 describes the parameters that will be analyzed.

Field observations and notes will be documented in a field notebook of all sampling procedures. All entries into the logbook will be made with indelible black ink. Field observations include:

- Time and date.
- Sampler(s).
- Waste type.
- Color.
- Odor.
- Unusual characteristics.

Soil samples will be collected with a stainless steel scoop. Sampling equipment will be decontaminated before and after use and will be stored in a plastic bag until used again. Liquid samples will be collected using a new coliwassa.

5.2 WASTE SAMPLING TECHNIQUES

Waste generated during the closure activities at the North SCEP will be segregated from waste generated at the South SCEP. Waste will be stored mainly in either 15.3 m³ (20 yd³) roll-off containers, 208 L (55 gal) drums, or in soil piles.

TABLE B-2 -- ANALYTICAL PARAMETERS FOR WASTE CHARACTERIZATION

PARAMETER	ESTIMATED NUMBER OF SAMPLES ¹				METHOD	SAMPLE CONTAINER
	Soil	Rinseate	Quality Assurance	Total		
Total Metals		20	2 Replicates	22	SW 846, EPA 6010	1 - Liter, glass jar
TCLP Metals	28		2	30	SW 846, EPA 6010	250 mL, glass jar
Ignitability		20	4	24	SW 846, EPA 1010	250 mL, glass
Total VOCs	28	20	4 10 Trip Blanks	52	SW 846, EPA 8240	3 - 40 mL vial (liq) 2-120 mL, glass (soil)
Total SVOCs	28	20	4	52	SW 846, EPA 8270	1 - Liter, glass (liq) 1-500 mL, glass (soil)
TPH	28	20	4	52	SW 846, EPA 8015 Modified	250 mL, glass jar (soil); 2-Liter glass + 120 mL glass with zero headspace (liquids)

Notes: ¹ Assumes 20 drums of rinseate. Assumes 10 sampling days. Matrix spike and matrix spike duplicate samples are included. The number of QA samples is based on taking only one sample per day (1 trip blank, spike, and spike duplicate) and 10 percent blind replicate water and soil samples. The actual number may be more or less depending on sampling efficiency and quantity of waste generated.

Each waste stream must be sampled unless process knowledge and/or previous sampling results provide adequate information for a disposal determination. When all necessary information has been compiled a letter must be submitted to the WMP requesting disposal support. Disposal will be documented with the bill-of-lading, waste manifest, chain-of-custody, etc, as applicable.

Waste associated with South SCEP closure activities will be sampled. Two soil samples will be collected from each rolloff container as it is being filled. The Site Supervisor will determine which backhoe bucket to sample and ideally the worst-case material will be chosen for sample collection.

5.2.1 Hydrocarbon Impacted Material

Waste generated in association with the North SCEP will not require sampling. Disposal recommendations will be based on analytical results of the samples collected from the Building 6-623 grease trap and pond samples which indicate the presents of petroleum hydrocarbons only. Excavated soil will be placed directly into a dump truck for transport to the Hydrocarbon Landfill. Any piping that is removed will be decontaminated to "triple rinse" criteria and disposed of in the Area 9 U10c Sanitary Landfill under the proper chain-of-custody. Rinse water and sludge generated during this activity will be solidified and disposed of in the Area 6 Hydrocarbon Landfill.

An attempt will be made to decontaminate the Building 6-623 grease trap to allow disposal in a sanitary landfill; however, if this proves to be impractical it will be crushed or cut and disposed of in the Hydrocarbon Landfill.

5.2.2 RCRA-Regulated Soil

Hazardous soil and sludge removed from the interior of the South SCEP will be placed directly into lined roll-off containers which will be stored in the Hazardous Waste Storage Area. Two samples will be collected from the backhoe bucket as the roll-off is being filled. Ideally the most impacted material will be sampled.

Solid waste such as PPE and plastic sheeting generated during the South SCEP hazardous waste removal will be disposed of based on the analytical results of related waste and/or the observations of the site supervisor who will inspect the waste for obvious staining. The waste may be considered nonhazardous if it is not significantly impacted by a hazardous material. Final disposal recommendations will be determined by WMP personnel.

5.2.3 Nonimpacted Soil

Sampling is not required for soil known to contain no COCs. Such determination can be based on process knowledge and/or analytical results from previous sampling events

5.2.4 Solid Waste

Solid waste, such as PPE, plastic, will not be sampled. Disposal will be based primarily on the associated activity that generated the waste. North SCEP solid waste will be considered nonhazardous and will be disposed of in the Area 9 U10c Sanitary Landfill unless it is significantly impacted by petroleum hydrocarbons. The Site Supervisor will visually inspect the waste as it is containerized. In general, only waste associated with the Building 6-800 grease trap has the potential to be significantly impacted.

5.2.5 Decontamination Water

Each drum of decontamination water will be sampled with a new coliwassa and the samples submitted for laboratory analysis for the parameters listed in Table B-2. A composite sample may be collected from two or three drums containing rinse water generated by the same activity.

5.3 QUALITY ASSURANCE SAMPLES

Field quality control samples will be collected in accordance with ERD Standard Operating Procedure ERD-05-401 (DOE, 1994). One trip blank sample will be collected each day that sampling activities are conducted and analyzed for volatile organic compounds. One complete blind replicate set will be collected for every 10 soil or rinseate sample sets. Additional samples will be collected for matrix spike and matrix spike duplicate samples.

6.0 REFERENCES

DOE, see United States Department of Energy

EPA, see United States Environmental Protection Agency

OSHA, see United States Occupational Safety and Health Administration

REEC Co, see Reynolds Electrical & Engineering Company

Reynolds Electrical & Engineering Company, January 1991, United States Department of Energy, RCRA Closure Plan, Area 6 Steam Cleaning Effluent Ponds (SCEPs) Facility, Nevada Test Site.

Reynolds Electrical & Engineering Company, December 18, 1995, Nevada Test Site Performance Objective for Certification of Nonradioactive Hazardous Waste.

United States Department of Energy, September 1994; Nevada Operations Office, Environmental Restoration Division, Standard Operating Procedure, Management and Minimization of Nonhazardous Waste at the Nevada Test Site for the Nevada Environmental Restoration Project., Revision 0.

United States Department of Energy, September 1994a; Nevada Operations Office, Environmental Restoration Division, Standard Operating Procedure, Management and Minimization of Hazardous Waste at the Nevada Test Site for the Nevada Environmental Restoration Project., Revision 0.

United States Department of Energy, September 1994b; Nevada Operations Office, Environmental Restoration Division, Sampling Equipment Decontamination., Revision 0.

United States Department of Energy, March 1996; Resource Conservation and Recovery Act, Industrial Sites, Environmental Restoration, Site Characterization Plan, Area 6 Steam Cleaning Effluent Ponds.

United States Department of Energy, September 1996a; Resource Conservation and Recovery Act, Industrial Sites, Environmental Restoration, Site Characterization Report, Area 6 Steam Cleaning Effluent Ponds.

United States Department of Energy, April 1996; Nevada Environmental Restoration Project, Closure Plan for CAU No. 93 Area 6 Steam Cleaning Effluent Ponds, Nevada Test Site.

6.0 REFERENCES (Continued)

United States Environmental Protection Agency, Title 40, CFR 261, Identification and Listing of Hazardous Wastes.

United States Environmental Protection Agency, Title 40, CFR 262, Standards Applicable to Generators of Hazardous Waste.

United States Environmental Protection Agency, Title 40, CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

United States Environmental Protection Agency, Title 40, CFR 268, Land Disposal Restrictions.

United States Environmental Protection Agency, Title 40, CFR 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

United States Occupational Safety and Health Administration, Title 29, CFR 1910.120, Hazardous Waste Operations and Emergency Response.

ATTACHMENT A
of APPENDIX B
CONTINGENCY PLAN

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1.0 INTRODUCTION

1.1 PURPOSE

This document satisfies the requirements for a contingency plan and emergency procedures required by the federal hazardous waste regulations defined in the Resource Conservation and Recovery Act (RCRA). These requirements are prescribed by:

- Title 40 Code of Federal Regulations (CFR) Part 265, Subparts C and D.
- Title 40 CFR 262.34.
- Title 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.
- Bechtel Nevada (BN) Procedure 4.2.9, Response to Spills of Known Substances.
- BN Emergency Management Plan (EMP).

This plan discusses the actions that the BN Remediation Project (RP) and other Nevada Test Site (NTS) personnel will take in response to fires, explosions, or unplanned sudden or non-sudden releases of hazardous waste or hazardous waste constituents to the air, soil, or surface water at the Area 6 Steam Cleaning Effluent Ponds (SCEPs) during closure activities.

1.2 SCOPE

This Plan covers a variety of possible emergencies at the Area 6 SCEPs. This document applies to all personnel assigned to Area 6 SCEPT project activities. This Plan does not cover any releases incurred by subcontractors who are under contract to remove hazardous waste from the NTS once they have physically left the Area 6 site.

1.3 FACILITY DESCRIPTION

1.3.1 Site Location

The Steam Cleaning Effluent Ponds are located in Area 6 of the NTS, approximately 20 miles north of Mercury, Nevada (Figure B-A1). The ponds are situated east of 6-05 Road and the Heavy Equipment Storage Yard near the Yucca Flat Airstrip.

1.3.2 Site Description

The North and South SCEPs are two unlined retention ponds located in Area 6 of the NTS. The North Pond received discharge from three steam cleaning pads originating in the Heavy Duty Equipment Storage Yard. It was constructed in 1975 and used until November 1994. The pond measures 19.8 meters (m) (65 feet [ft]) by 27.5 m (90 ft) and is 2.4 m (8 ft) deep. The South Pond is connected to the steam cleaning pad located next to Building 6-800 and to a separator inside Building 6-621. It is approximately 27.5 m (90 ft) long and 26 m (85 ft) wide and is surrounded by a soil berm (DOE, 1996). There are no buildings on the site.

The steam cleaning pads were used to clean various types of heavy equipment such as drill rigs, tractors, front-end loaders and engine blocks. Consequently, effluent to the ponds contained oil, grease, lubricants, and solvents.

A space in Building 6-623 will be used as a temporary office and the center for communication. It will also be used for storage of personal protective equipment (PPE) and other supplies. A temporary decontamination pad will be constructed between the two ponds. Personnel and equipment decontamination will take place there.

1.3.3 Topography

The NTS is located in the Great Basin of the Basin and Range province. The SCEPs are located in a closed basin (Yucca Flat). Yucca Flat is a playa (i.e. dry lake) occupying a topographical depression at the center of the basin. In Area 6, the basin is bordered on the east by the Massachusetts Mountains, the CP Hogback to the south, and Mine Mountain to the west. The elevation is approximately 1195m (3,920 ft) above sea level. Figure B-A2 is a topographic map of the area.

1.3.4 Climate

Area 6 at the NTS receives approximately 15 cm (6 in) of precipitation annually. Annual wind patterns are characterized by strong winds in the spring. The daily cycle is generally light winds at night, increasing winds from morning to afternoon and declining wind speed in the evening. Average monthly wind speed vary from 4.0 m/s (13 feet per second) in April to 2.7 m/s (nine feet per second) in November.

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
 SUPPLEMENTARY CONTOUR INTERVAL 10 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

FIGURE B-A2 TOPOGRAPHIC MAP

SOURCE: U.S. Geological Survey, Yucca Lake, Nevada, 7.5 Minute Quadrangle

2.0 WASTE DESCRIPTIONS AND ASSOCIATED HAZARDS

The Area 6 SCEP contains materials that present chemical and physical hazards. Potential routes of entry of entry could include inhalation, ingestion, absorption, and injection. The specific hazards associated with the site are described in the following sections.

2.1 CHEMICAL HAZARDS

The following is a generalization of the hazards associated with the various chemical classes that may possibly be encountered at the SCEPs. Although analytical data indicates the presence of these chemical classes in the soil, it should be noted that they were detected in small concentrations.

2.1.1 Hydrocarbons

Hydrocarbons may be fatal if swallowed or inhaled. They are capable of being absorbed through the skin, can cause eye damage, chemical burns, and oxygen deficiency in confined spaces.

2.1.2 RCRA-Regulated Constituents

It is possible that RCRA regulated hazardous constituents may be encountered at the South SCEP. Several volatile organic compound that are a F-listed RCRA waste were detected in the soil samples collected in 1989 and 1995. These compounds are often strong oxidizers that may be harmful or fatal if inhaled, swallowed, or absorbed through the skin. Contact can cause irritation of the eyes, nose, and throat, fatigue, headaches, and drowsiness. Target organs include the respiratory system, eyes, liver, and kidneys.

2.2 PHYSICAL HAZARDS

The following are generalizations of the physical hazards associated with the various chemical classes that may possibly be encountered at the SCEPs.

2.2.1 Hydrocarbons

Petroleum hydrocarbon materials may burn, but do not usually ignite readily. When burned, these chemicals give off gases such as carbon monoxide, soot, etc. The vapors of this chemical class are denser than air and will sink to the bottom of depressions such as the ponds. These irritating vapors may build up to toxic or, under unusual conditions, explosive levels. They can degrade the integrity of plastic.

2.2.2 RCRA-Regulated Constituents

Since there are many regulated materials, most do not have a specific hazard associated with an entire class of chemicals. Most of these materials are not flammable and usually will not cause an unexpected chemical reaction. For specific physical hazard information consult the Material Safety Data Sheet (MSDS) for the material, an Industrial Hygienist, or other source.

2.2.3 Other Physical Hazards

Other physical hazards present at the Area 6 SCEP associated with container-handling, heavy equipment operations, and working outdoors. These may include potential back injury, vehicle accidents, and heat and cold stress. Physical hazards are discussed in BN Safety Procedures and the Site Specific Health and Safety Plan.

3.0 EMERGENCY NOTIFICATION PROCEDURES

The reporting and notification procedure outlined in BN Safety Procedure M-A11-007, Accidents/Incident Notifying, Investigating, and Reporting will be followed in the event of an accident, injury or other incident. Expedient reporting and notification will be made for, but not limited to, personnel injury or fatality, toxic material release, fire, or explosion. Appendix A includes the Emergency/Contingency Plan notice that will be posted at the site. Information includes a list of the telephone numbers, emergency response procedures, waste description, etc.

3.1 DESIGNATION OF EMERGENCY COORDINATOR

The Emergency Coordinator (EC) system consists of one primary EC, one secondary EC, and one alternate EC. The ECs are onsite or on call at all times. In the event of an emergency, the primary EC should be contacted; if not available, the secondary EC should be contacted. If neither of these are available the alternate should be contacted. The individual who is available first becomes the EC for the situation. The ECs appointed by the RP Project Manager are as follows:

Primary Emergency Coordinator

Steve J. Nacht
4184 Del Rosa Court
Las Vegas, Nevada 89121

Work: (702) 295-7234
Home: (702) 435-2585
Net 3 #762

Secondary Emergency Coordinator

Jeffery L. Smith
3312 Lingo Street
Las Vegas, Nevada 89129

Work: (702) 295-7775
Home: (702) 363-6891
Net 3 #760; Net 15 #814

Alternate Emergency Coordinator

Angela L. Olson
4584 East Armel Court
Las Vegas, Nevada, 89115

Work: (702) 295-7276
Home: (702) 437-2573
Net 3 #765; Net 15 #812

3.2 RESPONSIBILITIES

The ECs have the authority to commit the necessary resources to implement this plan. Personnel resources will be applied consistent with the requirements of Title 40, CFR 1910.120. The ECs will remain thoroughly familiar with the following:

- All aspects of this Plan.
- All operations and activities under control at the Area 6 SCEPs.
- The locations and characteristics of the wastes handled.
- The locations of all the records.
- The Area 6 SCEPs layout.

In the event of an emergency, the EC will be responsible for the following:

- Stopping all operations, where applicable.
- Implementing this Plan.
- Contacting the 900 Radio Net Coordinator through the MAYDAY/911 system and making notification of the emergency.
- Notifying all Area 6 SCEP personnel of the emergency.
- Acting as the incident coordinator.
- Attempting to stop, slow, or dike the discharge, if it can be done safely with the materials at hand.
- Providing the technical expertise necessary so that all responders (including those outside the Remediation Projects) are fully informed of the potential hazards.

The secondary EC will also be responsible for preparing, posting, and maintaining an emergency information sheet which provides the emergency response information such as telephone number for emergency response teams. The secondary EC is also responsible for personnel evacuation. In the event the secondary EC is not available the alternate EC will conduct these duties.

3.3 NOTIFICATION

The first person who becomes aware of an emergency at the Area 6 SCEPs shall immediately notify the proper authorities. Initial notification should be to their supervisor. If the emergency involves only a release of hazardous materials, the supervisor shall contact the EC who will start the necessary notification.

When the nature of the emergency is a fire, explosion, or involves personnel injury, the supervisor shall immediately notify the 900 Net Coordinator via the MAYDAY/911 system or the Emergency Dispatch number, 295-6377. The 900 Net Coordinator shall notify the Fire Protection Services and/or medical personnel, as required. The supervisor shall contact the EC.

If the first person to become aware of an emergency is not a RP employee and there are no RP personnel in the area, that person should follow the notification instructions posted at the perimeter of the SCEP.

3.4 RESPONSE PROCEDURES

There are two general classifications of incidents that could occur at the Area 6 SCEPs; fire and/or explosions and a spill of potentially hazardous materials. The initial response will be to protect human health and safety, and then the environment. The following actions will be taken:

- 1) Work in the area will cease immediately.
- 2a) For fire: If necessary, contact the Fire Protection Services by utilizing the Net MAYDAY/911 system or use the ABC-type fire extinguisher
- 2b) For spill: Attempt to stop, slow, or dike the discharge without compromising health and safety.
- 3) Notify the cognizant EC who will obtain additional emergency response assistance as required. Excavate area. Verify that all personnel are out of area.
- 4) Remove injured persons and administer first aid as required.
- 5) Shut down operating equipment as practical.
- 6) Complete appropriate documentation (Appendix B).

3.5 EVACUATION PLAN

Notification for personnel to evacuate the area will be received via an emergency signal. The EC will be in possession of a blow-horn that will signal all workers to leave the area and gather in the designated assembly area. All radio nets will be kept clear and be used to transmit emergency information only. The EC will be accountable for all personnel.

The assembly area for evacuated personnel will be across the 6-05 Road in the Building 6-623 parking lot. If cover must be taken, personnel will be instructed to enter Building 6-623 from the office entrance located on the east side of the building. A telephone is available at this location.

3.6 EMERGENCY DECONTAMINATION AND FIRST AID

If a worker is contaminated with a chemical substance, direct the worker to proceed at once to the temporary decontamination pad and drench the worker with copious amounts of water. Pay particular attention to the victim's eyes and face. Do not remove PPE until all contamination has been thoroughly rinsed off. Contact the Occupational Medicine Department for assistance and advice. Move the victim to fresh air.

3.7 CLEANUP

Cleanup of potential hazardous waste will be conducted by personnel having the appropriate training and PPE as determined by the EC. Cleanup will meet all current applicable standards and regulations.

4.0 EMERGENCY SERVICES

4.1 ON-SITE CONDITION OF EMERGENCY SERVICES

The onsite Fire Protection and Emergency Medical Services are capable of responding to all credible emergencies at the NTS. These services are linked to the emergency communications dispatch system and have the capability to respond to emergencies involving hazardous, radioactive, or mixed waste constituents.

4.2 MEDICAL SERVICES

Emergency services are provided in Mercury during normal working hours, Monday through Thursday. During other than normal working hours, emergency services are provided by paramedic personnel only. All nurses and physicians are licensed by the state of Nevada. Paramedical qualifications meet or exceed Department of Transportation Highway Safety Program requirements for emergency medical services. Response time to the Area 6 SCEP is approximately 20 minutes. Services are also available at the Area 6 Medical Facility Monday through Thursday during normal working hours.

4.3 FIRE PROTECTION SERVICES

The NTS Fire Station serves the NTS 24 hours a day, seven days a week. It is located in Area 23 and will be the primary response team. The Fire Protection Services responds to spills, explosions, fires, and non-fire emergencies involving cleanup.

5.0 EMERGENCY EQUIPMENT

Emergency equipment includes equipment for fire control, emergency communications, spill control and cleanup, personnel protection, and first aid. The onsite emergency equipment is inspected monthly to ensure there is adequate inventory and that it is in good working order. Extra PPE and environmental monitoring equipment are available. A list of the available equipment and the location(s) they can be found in Appendix C.

APPENDIX A
of ATTACHMENT A
of APPENDIX B
EMERGENCY/CONTINGENCY PLAN

EMERGENCY/CONTINGENCY PLAN

COMPANY: Bechtel Nevada

ADDRESS: Mercury, Nevada

LOCATION OF FACILITY: Nevada Test Site, Area 6

PRIMARY EMERGENCY COORDINATOR

Steve J. Nacht
4184 Del Rosa Court
Las Vegas, Nevada 89121

Work: (702) 295-1632
Home: (702) 435-2585
Net 3 #762

SECONDARY EMERGENCY COORDINATOR

Jeffery L. Smith
3312 Lingo Street
Las Vegas, Nevada 89129

Work: (702) 295-7775
Home: (702) 363-6891
Net 3 #760; Net 15 #814

ALTERNATE EMERGENCY COORDINATOR

Angela L. Olson
4584 East Arnel Court
Las Vegas, Nevada, 89115

Work: (702) 295-7276
Home: (702) 437-2573
Net 3 #765; Net 15 #812

DESCRIPTION OF WASTE HANDLED

Possible petroleum hydrocarbons and solvents contained in soil and decontamination water. Wastes are contained in 55-gallon steel drums, dump trucks, and 20 cubic yard roll-off containers.

EMERGENCY RESPONSE CONTACTS

All emergency response teams can be contacted through the 900 Net Coordinator:
"MAYDAY, MAYDAY, MAYDAY" OR "911"

EMERGENCY DISPATCH: 295-6377

PRIMARY HOSPITAL:

Area 6 -- 295-3490

SECONDARY HOSPITAL:

Area 23 -- 295-6227/6224

APPENDIX B
of ATTACHMENT A
of APPENDIX B
INJURY/ILLNESS/INCIDENT REPORT

INJURY/ILLNESS/INCIDENT REPORT

The supervisor completes this report immediately after being notified of any work-related accident or incident (injury, illness, vehicle accident, property damage, or near-miss incident) and forwards it to the assigned Safety Representative or the Occupational Safety Department within two working days. Be specific. Provide enough data that anyone reading the report, who is not familiar with the incident, can understand what happened. For near-miss incidents complete Parts I and IV. For accidents, injuries, or illnesses, complete the applicable blocks in Parts I, II, III and IV. (Instructions are listed on the back of the last copy.)

PART I

1. Company:	2. Org./Dept. No.:	3. Date of Occurrence	4. Time (Military)	5. Location	6. Date Reported
7. Employee Name:		Social Security No.:	Job Classification:	Age:	☐ Male ☐ Female
8. Job Being Done at Time of Incident		9. Experience on This Job or This Equipment (Months) ☐ Under 3 ☐ 3 to 12 ☐ Over 12			
		10. Length of Present Employment (Months) ☐ Under 3 ☐ 3 to 12 ☐ Over 12			

PART II - INJURY/ILLNESS

11. Body Part(s) Involved	☐ Left ☐ Right	12. Nature of Injury/Illness	13. Object/Equip./Substance Inflicting Injury
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PART III - VEHICLE OR PROPERTY DAMAGE

14. Description of Vehicle/Equipment	15. Vehicle/Property No.:	16. Nature of Damage
16. Activity in Progress at Time of Incident		18. Estimated Repair/Replacement Cost
		19. Seat Belts Used ☐ Yes ☐ No ☐ N/A

PART IV - DESCRIPTION OF EVENTS, ANALYSIS OF CAUSES, AND ACTIONS TO PREVENT RECURRENCE

(☐ Mark if additional sheets are attached to accomplish adequate detail.)

20. Describe clearly how the accident/incident occurred:

21. What acts, failures to act and/or conditions contributed most directly to this accident/incident?

22. What root causes, basic or fundamental reasons, caused the existence of these failures, acts and/or conditions?

23. What action has or will be taken to prevent recurrence?

Implementation Date(s):

24. Preventable

☐ Yes ☐ No

25. Witnesses

1. _____
2. _____ 3. _____

26. Investigating Supervisor:

Phone:

Signature:

Date:

27. Reviewing Safety Representative:

Phone:

Signature:

Date:

28. Manager:

Phone:

Signature:

Date:

INSTRUCTIONS FOR COMPLETION OF THIS FORM

The following information will assist in the completion of this form.

1. **Company:** Bechtel or Subcontractor.
2. **Org./Dept. No.:** As applicable.
3. **Date of Occurrence:** Date event happened.
4. **Time:** Use military time.
5. **Location:** (Examples: Bldg. 7, Area 6; Whse. A Yard, Area 23)
6. **Date Reported:** Date the incident was reported to supervisor.
7. **Employee Name, Social Security No., Job Classification, Age, Sex:** Self-explanatory
8. **Job Being Done at Time of Incident:** (Examples: Stocking shelves; installing a receptacle; cleaning equipment parts; carrying files to a desk; etc.)
9. **Experience on This Job or This Equipment:** Self-explanatory.
10. **Length of Present Employment:** Check applicable box, based on employee hire date.

ILLNESS/INJURY

11. **Body Part(s) Involved:** (Examples: left arm; right foot; back; both eyes; thumb, left hand; etc.)
12. **Nature of Injury/Illness:** (Examples: Sprain; strain; fracture; laceration; dermatitis; etc.)
13. **Object/Equip./Substance Inflicting Injury:** (Examples: Corner of shelf; point of screwdriver; solvent in dip tank)

PROPERTY DAMAGE

14. **Description of Vehicle/Property/Equipment:** (Clark forklift; warehouse roll-up door; 1987 Dodge pickup; etc.)
15. **Property No.:** Use property number on equipment or license number of vehicles. Note N/A if there is no identifying number.
16. **Nature of Damage:** (Examples: Broken window, left side; second rung of ladder bent, telephone cable cut; etc.)
17. **Activity in Progress at Time of Incident:** (Examples: Placing a pallet on a shelf; Rearranging office furniture, etc.)
18. **Estimated Repair/Replacement Cost:** Self-explanatory.
19. **Seat Belts:** Check applicable block to indicate if seat belts were used or not applicable.

DESCRIPTION OF EVENTS, ANALYSIS OF CAUSES, AND ACTIONS TO PREVENT RECURRENCE

20. **Description of how accident/incident occurred:** Include all facts surrounding the incident. Do not use one-line descriptions.
21. **Acts/failures to act, unsafe conditions contributing to accident:** Be as specific as possible in identifying the contributing factor

The following examples are offered, but should not be considered as the only factors to be considered. Keep in mind that a single incident can involve multiple unsafe acts and unsafe conditions.

Examples of Unsafe Acts:

Used defective equipment
Used wrong tool
Took unsafe position/posture
No protective equipment used
Did not follow established procedure

Examples of Unsafe Conditions:

Inadequate or no guard/safety device
Poor housekeeping
Protruding object hazard
Defective tools/equipment
Close clearance/congestion

22. **Basic or fundamental reasons causing failures, unsafe acts, or unsafe conditions:** Include all identified root causes. Usually there are management failures.

Examples include, but are not limited to:

Inadequate employee training
Inadequate procedures
Inadequate enforcement of procedure

Inadequate maintenance or repair
Inadequate employee selection or placement
Inadequate safety rules or equipment

23. **Preventative action and implementation dates:** Describe what actions have or will be taken to prevent similar incidents. If an action has already been taken, enter the date it was completed. If an action is planned, enter the proposed date of completion.
24. **Preventable:** Determine if the employee reasonably could have done anything to prevent the accident/incident.
25. **Witnesses:** Self-explanatory.

SIGNATURE AND REVIEW PROCESS

26. The supervisor can either complete the form solely and send it to the Safety Representative for review or complete the form along with the assigned Safety Representative.
27. When the form has been signed by both the Supervisor and Safety Representative, submit it to the Manager for signature.
28. After the Manager has signed the form, his/her office will make appropriate distribution of the copies.

NOTE: Forward all photos, statements, diagrams, etc. concerning the accident/incident to the Occupational Safety Dept.

APPENDIX C
of ATTACHMENT A
of APPENDIX B
EMERGENCY EQUIPMENT

EMERGENCY EQUIPMENT

EQUIPMENT

LOCATION

Fire Extinguishers
20 lb. ABC

Each vehicle
Decon Area
Office

First Aid Kits

Each vehicle
Decon Area
Office

Eye Wash Station

Decon Area

PPE

Tyvek
Nitrile Gloves
Surgical Gloves
Rubber Boots
Rain Suits (3)
Hard Hats
Face Shields
Safety Glasses

Office or Designated Field Vehicle

Portable Net 15 Radio (2)
With charger.

Office and Site Supervisor Vehicle

Spill Response Materials
55-gallon drums
Spill Kit
Absorbent Pads

Office or Designated Field Vehicle

Miscellaneous

Garbage Bags
Buckets
Brushes
Soap
Kimwipes
Plastic
Sandbags
Duct tape

Office or Designated Field Vehicle

ATTACHMENT B

of APPENDIX B

FIELD INSPECTION FORM

AREA 6 STEAM CLEANING EFFLUENT PONDS - INSPECTION FORM

Inspect all the containers and surrounding area. Look for any unusual change in the unit such as deterioration of containers, accumulation of water, chemical odors, etc. Refer to the previous inspection of the unit in order to identify any changes.

GENERAL INFORMATION

1. Date of inspection: _____
2. Facility Manager (name and organization): _____
3. Reason for inspection: Weekly: _____ Problem Reported: _____ Unusual weather: _____
Details (Name, organization and telephone number of person reporting problem): _____

4. Describe weather conditions over the past few weeks (high winds, precipitation, local flooding):

CONTAINERS

5. Condition of roll-off containers (leakage, corrosion, covers in place, etc): _____

6. Condition of drums (any leakage, corrosion, drums locked, etc): _____

7. Condition of soil piles (covers in place): _____

8. Condition of fencing (any breaks, posts still vertical): _____

9. Condition of signs (missing signs, fading, damaged): _____

AREA 6 STEAM CLEANING EFFLUENT PONDS - CONTINUED

10. Standing water present in area? No _____ Yes _____ Depth: _____
Does it present a problem to the accumulation area? If so, state corrective actions that might be taken: _____

11. Any trash or other waste in area? No _____ Yes _____ No change _____
Details: _____

12. Signs of erosion indicating runoff from the accumulation areas?
No _____ Yes _____ If yes, explain: _____

AREA SURROUNDING POND AND LINES

13. Describe any significant changes in the general area (within several hundred feet of the unit) from the previous inspection. Changes can include water on the playa, change in land use, storage of materials nearby, soil piles, change in use of the facility, etc. _____

14. What is the (possible) effect of the change? _____

15. Other comments or observations: _____

16. Recommendations: _____

17. Does the finding(s) of this inspection require another inspection prior to the scheduled monthly inspection? No _____ Yes _____ If yes, date of next inspection: _____
Inspected by: _____ Signed: _____ Date: _____
Names of other persons on inspection (print): _____

APPENDIX C

NDEP DRAFT CLOSURE PLAN COMMENT RESPONSE

DOCUMENT REVIEW FORM

1. Document Title/Number: Draft RCRA Closure Plan, Area 6 Steam Cleaning Effluent Ponds, CAU 93
 2. Document Date: January, 1997
 3. Revision Number: 0
 4. Originator/Organization: Sabine Curtis/ DOE/NV ERD
 5. Date Comments Due: March 14, 1997
 6. Review Criteria: Preliminary
 7. Reviewer/Organization: Jon Taylor, NDEP

10. Comment Number/ Location	11. Type ^a	12. Comment	13. Comment Response	14. Accept
1.	M	<p>In Section 2.1.2 Closure Statement of Work, SCEPs Conceptual Model which addresses the conceptual model of the site as a whole makes no reference to the requests by the NDEP to provide reasonable assurance contamination had not migrated beyond the scope of the initial investigation of the ponds. In Section 5.1 South Steam Cleaning Effluent Pond Summary, two reports are referenced addressing contamination for the SCEPs. However, contamination movement to the water table was not expressed as a concern in the two letters, transport of contaminants beyond the proposed investigation was. The summary presentation (Section 5.1, Paragraph 5) is insufficient to address this.</p> <p>The NDEP is requesting the DOE/NV to establish whether the ponds were capable of exhibiting a demonstrable level of containment, and whether the characterization of the ponds reflects the majority of the contamination, based upon available information.</p>	The document will be modified to include a computer simulation of the South SCEP. The computer model is being included within this document not because this information is necessary to demonstrate that contamination has been contained within the upper five feet of the South SCEP, but rather to obtain NDEP concurrence. It is the position of DOE/ERD that the use of a model in a situation where analytical data has been collected is not necessary. This issue needs to be resolved as it is impacting other sites (i.e., Area 6 Decontamination Pond and Area 23 Building 650 Leach Field).	Y
2.	M	N SCEP: Phase 2: Additional (i.e., biased) sampling should be included in the most contaminated area of the pond, primarily in the area of the outfall pipe in addition to the random grid verification (Section 3.2) sampling procedure proposed for the remainder of the pond.	The document has been modified to include the addition of two biased soil samples in the vicinity of the N SCEP outfall pipe.	Y

Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW FORM

10. Comment Number/ Location	11. Type ^a	12. Comment	13. Comment Response	14. Accept
3.	M	N SCEP: Phase 3: Borrow fill should be recompacted using ASTM standard practices. This applies to both ponds and other areas (i.e., the separators) of the SCEPs Site that requires excavation and subsequent regarding. In addition the lake bed should be returned to its natural state as much as is reasonably achievable. This may be reported in the Closure Report for the Site	The document text has been modified to show that each excavation will be compacted to a performance standard of 90 percent. The performance standard will be verified by ASTM method D 2922-91 for nuclear density. In addition, the document has been modified to indicate that the top two feet of material placed in the two SCEPs will be native playa material collected from the surrounding area.	Y
4.	M	N SCEP: Section 2.2.7 Layout Pad Closure Strategy and Section 3.6 Layout Pad Grease Trap Verification Sampling: This section should include a description that additional samples will be taken if any visual or instrument detected soil appears impacted.	The document has been modified as requested.	Y
5.	M	N SCEP: Section 2.2.8 Building 6-623 Grease Trap Closure Strategy and Section 3.7 Building 6-623 Grease Trap Verification Sampling: In a previous correspondence the DOE/NV reported the Grease Trap as being D001 Hazardous, and contaminated with F-listed and U-listed wastes (F005 {2-butanone}, F002 {Methylene Chloride}, and U161 {Methyl Isobutyl ketone}). There is no further correspondence from DOE/NV related to verification of this data and, at this time, the NDEP considers the Grease Trap to be hazardous until the DOE/NV can demonstrate otherwise. The DOE/NV must demonstrate the Grease Trap is no longer hazardous per 40 CFR §261.3 (f) (2), if the "Tank" (as defined by 40 CFR §260.10) has been shown to contain and/or be hazardous then the closure standard applies as per 40 CFR §265.197. Once a definitive determination has been made and presented to the NDEP, the appropriate disposal of the Grease Trap and its' contents (Interceptor, Sand/Oil/Water Separator) may be proposed for review.	<p>A letter is being prepared that will outlining status and waste classification of the Building 6-623 Grease Trap liquid and sludge. The letter will outline the data evaluation process and resampling of the separator for ignitability.</p> <p>In addition, the document has been modified to indicate that RCRA-hazardous constituents were detected within the Grease Trap liquid. Two additional soil samples will be collected from under the Grease Trap. The Grease Trap will be the first portion of the SCEP unit to be address during the closure. The analytical samples will be analyzed within two weeks. The data will be validated and the non-hazardous classification of the Grease Trap confirmed. If the analytical data proves that the Grease Trap contained Rcra-hazardous material, the closure work will be halted and the North SCEP closure will be modified to reflect hazardous waste.</p>	Y

Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW FORM

10. Comment Number/ Location	11. Type ^a	12. Comment	13. Comment Response	14. Accept
6.	M	N SCEP: Section 2.2.10 North SCEP Pipeline Closure Strategy: In light of less than complete knowledge of the SCEPs Site (i.e., installation of the pipelines and associated structures, closure in place of the pipelines and sealing thereof should also incorporate verification of the integrity of the line demonstrating closure has incorporated all junctions of the pipelines, etc.).	<p>Verification of the integrity of the N SCEP Pipeline is not felt justified for the following reasons:</p> <ul style="list-style-type: none"> • Since no hazardous material is contained within the pipeline, verification should not be required. • Verification of the pipeline through conventional methods such as pressure tests does not work well on these gravity drain lines. The pipeline is connected by a series of slip joints. • The integrity of the pipeline will be inspected at a number of points within the N SCEP drainage system (i.e., around each steam cleaning pad and grease trap/separator). If sampling/inspection of the drainage lines around these structures indicate a pattern of damage, the closure strategy will be reconsidered. <p>The document has been modified to indicate that upon excavation of the North SCEP pipeline in the vicinity of various components of the unit (Layout Pad, Test Pad, Building 6-623 Steam Cleaning Pad, and Building 6-623 Grease Trap). Any areas exhibiting visual contamination or if piping is different than "as built" drawings will be investigated.</p>	Y
7.	M	N SCEP: There does not seem to be any mention of the "Steam Cleaning Pad" addressing closure of this part of the Site. Please clarify how, and in what fashion this steam cleaning pad will be closed.	<p>The document has been modified to include the Steam Cleaning Pad as a separate unit. The Steam Cleaning Pad drain was sealed in 1993. The pad did not have a Grease Trap or separator associated with it. The Closure Plan states that two soil samples will be collected from the outlet piping in the vicinity of the Steam Cleaning Pad.</p>	Y

Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW FORM

10. Comment Number/ Location	11. Type ^a	12. Comment	13. Comment Response	14. Accept
8.	M	<p>S SCEP: In Section 2.2.9 the determination that the pipelines are RCRA hazardous has been presented. In this case there are two potential outcomes for the piping.</p> <ol style="list-style-type: none"> 1) To maintain the piping intact and not segregate the hazardous portion from the piping. This material could then be transported offsite to a permitted Treatment, Storage and Disposal Facility. 2) To segregate the hazardous portion (the sludge) from the asbestos piping (using a treatment technology specified in 40 CFR §268.45 for the piping), and then demonstrate the piping no longer meets the definition under 40 CFR §261.3 (a) (iv), via 40 CFR §268.45 Table 1 (A) (1) (e)). 	In the Area 6 SCEPs Waste Management Plan option 1 was selected. The document has been modified to reflect that this option will be used for the S SCEP pipeline.	Y
9.	M	<p>S SCEP: Section 2.3.3 Waste Management Regulatory Framework: Fourth bulleted item, in previous conversations between DOE/NV and the NDEP the two entities have concurred upon a reasonable labeling protocol. That is, if DOE/NV has specific knowledge of the waste (process and/or sampling knowledge) then labeled and marked as "Hazardous Waste" is appropriate, if knowledge is incomplete then labeling with "Hazardous Waste Awaiting (or Pending) Analysis" is appropriate. The DOE/NV may use the protocol appropriate for the given situation.</p>	This guidance has been incorporated into the Waste Management Plan.	Y
10.	M	N SCEP: Basically the same comment as Comment # 2.	Please refer to response to Comment # 2.	Y

Comment Types: M=Mandatory S=Suggested

DOCUMENT REVIEW FORM

10. Comment Number/ Location	11. Type ^a	12. Comment	13. Comment Response	14. Accept
11.	M	S SCEP: Section 3.1 S SCEP Verification Sampling: The delineation between Zone 2 and Zone 3 material is presented as the difference between RCRA contaminated soils and Total Petroleum Hydrocarbons (TPH) contamination. The material (primarily Zone 1 material) removed during the characterization of the ponds had been declared RCRA hazardous due to the presence of F-listed wastes. It must be demonstrated if the verification sampling for the Zone 3 material, the TPH contaminated soils do not "contain" a hazardous waste (i.e., the F listings made for a waste determination).	DOE/NV has reviewed the proposed verification sampling procedure for the S SCEP. The Closure Plan specifies that after the Zone 2 soil has been removed that seven soil samples be collected to verify that no RCRA constituents remain within the S SCEP. If any one of the seven indicate the presence of a RCRA waste then additional soil will be excavated. No Zone 3 soil will be excavated until the Zone 2 verification samples have been evaluated and validated. Further discussions with the NDEP has resulted in the document being modified as follows: A computer simulation has been included within the document. This simulation confirms the expected zone of impacted soil. In addition, two biased verification samples will be collected from the vicinity of the discharge pipe.	Y
12.	M	In Section 2.3.3 Waste Management Regulatory Framework: The DOE/NV has not addressed the quantity of material potentially generated during the Closure of the Site, specifically hazardous waste. Without this clarification, the NDEP would expect the DOE/NV to be in strict accordance with all portions of 40 CFR §262.34 that apply. The NDEP requests clarification of this section prior to field work. Also, prior to field activities, a map identifying the Waste Management Areas, both TPH and RCRA Hazardous Materials, for the SCEPs Site be submitted.	The Waste Management Plan that will be made available to you as Appendix B of the Closure Plan contains the information that is identified above. Any information not contained within this Plan can be added after it has been identified during the NDEP review of the Final Closure Plan.	Y
13.	M	It is being reiterated for clarity that the NDEP views the entire site (as identified by Figure 2, CAU 93 Vicinity Map, page 3 of the referenced document) as CAU 93. The NDEP will not consider the Site to be closed until all aspects and areas of the Site are addressed and all concerns met.	Noted.	Y

Comment Types: M=Mandatory S=Suggested