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Closure Report
for CAU No. 450
Historical UST Release Sites
Nevada Test Site

Volume I

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September 1997

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**CLOSURE REPORT FOR CAU 450
HISTORICAL UST RELEASE SITES
NEVADA TEST SITE**

VOLUME I

**Prepared for
U. S. Department of Energy
Nevada Operations Office
Under Contract No. DE-AC08-96NV11718**

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Revision: 0

**Prepared by
Bechtel Nevada
Remediation Projects**

September 1997

**CLOSURE REPORT FOR CAU 450
HISTORICAL UST RELEASE SITES
NEVADA TEST SITE**

VOLUME I

Approved by: Clayton W. Barrow
for Janet L. Appenzeller-Wing, Project Manager
Industrial Sites Subproject

Date: Sept 22, 1997

Approved by: Stephen A. Mellington
Stephen A. Mellington, Project Manager
Nevada Environmental Restoration Project

Date: 9/22/97

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ACRONYMS AND ABBREVIATIONS

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bgs	below ground surface
CAS	Corrective Action Site
CAU	Corrective Action Unit
C	Centigrade
DOE/NV	U.S. Department of Energy/Nevada Operations Office
EPA	U.S. Environmental Protection Agency
ERD	Environmental Restoration Division
F	Fahrenheit
FFACO	Federal Facility Agreement and Consent Order
ft	feet
gal	gallons
in	inches
L	liters
m	meters
m ³	cubic meters
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NAC	Nevada Administrative Code
NDEM	Nevada Division of Environmental Management
NDEP	Nevada Division of Environmental Protection

ACRONYMS AND ABBREVIATIONS (continued)

NTS	Nevada Test Site
PCB	Polychlorinated Biphenyl
REEC _o	Reynolds Electrical and Engineering Co, Inc.
TCA	trichloroethane
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
UST	Underground Storage Tank
VOC	Volatile Organic Compound
yd ³	cubic yards

EXECUTIVE SUMMARY

This report addresses the closure of 11 historical underground storage tank (UST) release sites within various areas of the Nevada Test Site (NTS). The sites are listed in the Federal Facility Agreement and Consent Order (FFACO) in Appendix III and are identified as Corrective Action Unit (CAU) 450. Closure of the USTs have been accepted by the Nevada Division of Environmental Protection (NDEP). The closure of each hydrocarbon release has not been documented, therefore, this report addresses the remedial activities completed for each release site.

The hydrocarbon release associated with each tank site within CAU 450 was remediated by excavating the impacted soil. Clean closure of the release was verified through soil sample analysis by an off-site laboratory. All release closure activities were completed following standard environmental and regulatory guidelines. Based upon site observations during the remedial activities and the soil sample analytical results, which indicated that soil concentrations were below the Nevada Administrative Code (NAC) Action Level of 100 mg/kg, it is anticipated that each of the release CASS be closed without further action. With approval of the spill CAS closures, CAU 450 can be transferred to Appendix IV of the FFACO "Closed Corrective Action Units."

1.0 INTRODUCTION

This report addresses the closure of 11 historical underground storage tank (UST) release sites. The sites are located at the Nevada Test Site (NTS) in Areas 11, 12, 23, 25, 26, and 27 (Figure 1). The sites are listed in the Federal Facility Agreement and Consent Order (FFACO) in Appendix III and are identified as Corrective Action Unit (CAU) 450 (US DOE, 1996). Each tank and associated hydrocarbon release has been assigned a Corrective Action Site (CAS) number (Table 1).

Closure of the USTs have been accepted by the Nevada Division of Environmental Protection (NDEP). Remedial activities associated with the closure of each hydrocarbon release have not been documented, therefore, this report addresses the remedial activities completed for each release site.

1.1 PURPOSE

The purpose of the Closure Report is to provide documentation of the activities conducted during remediation of the 11 sites along with the verification data collected. The USTs identified in this report were closed by removal between August 1992 and August 1994 by the U.S. Department of Energy, Nevada Operations Office (DOE/NV). Subsequent to tank closure the NDEP was provided amended Environmental Protection Agency (EPA) Forms 7530-1, in addition to tank closure information and analytical data. Based on the closure information provided, the NDEP concurred with the tank closures for these sites. The correspondence provided by NDEP accepting closure of the tanks is provided in Appendix A. Based on approval of this report by NDEP, this CAU can be closed and transferred to Appendix IV of the FFACO.

Hydrocarbon releases were identified at each of the sites based upon laboratory analytical data with exception of Site 11-2-1 where a tanker hose decoupled during product removal. Hydrocarbon concentrations at these sites exceeded the Nevada Administrative Code (NAC) Action Level of 100 milligrams per kilogram (mg/kg) (NAC 459.9973, 1995). NDEP requires assessment and corrective actions for soil with a petroleum hydrocarbon concentration exceeding the NAC Action Level. Each release was reported to the NDEP and the Nevada Division of Emergency Management (NDEM) within 24 hours of identification. The tanks are identified in Table 1 and approximate NTS locations shown on Figure 1.

TABLE 1 - CAU 450 REMEDIATED HYDROCARBON RELEASE SITES

UST ID ¹	UST CAS NUMBER ²	RELEASE CAS NUMBER ³	NDEM NUMBER ⁴	LOCATION	DATE CLOSED ⁵	CONC. DETECTED ⁶ (mg/kg)
11-2-1	11-02-03	11-25-01	H920716B	Area 11 Tweezer Facility	NA (Release from tanker truck not UST)	219 Diesel
12-13-1	12-02-01	12-25-11	H931130E	Area 12 Boiler House	October 20, 1993	116 Diesel
12-26-1	12-02-08	12-25-06	H910802A	Area 12 Service Station	September 28, 1994	33,000 Diesel
23-BPY-1	23-02-13	23-25-07	H941020C	Area 23 Bypass Yard	August 9, 1994	292 Diesel
23-752-2	23-02-11	23-25-06	H910503A	Area 23 Service Station	November 28, 1994	1,735 Diesel
23-752-3	23-02-12					
25-3102-1	25-02-14	25-25-10	H920928B	Area 25 Power House	August 26, 1992	277 Diesel
25-3102-2	25-02-15					
25-3102-4	25-02-16	25-25-11	H940825E	Area 25 Power House	July 20, 1994	126 Diesel
25-3123-1	25-02-17	25-25-12	H940825D	Area 25 Tech. Services Building	July 20, 1994	120 Diesel
25-3129-1	25-02-18	25-25-13	H941020D	Area 25 Tech. Operations Building	July 20, 1994	108 Diesel
26-2104-1	26-02-02	26-25-01	H920928A	Area 26 Power House	September 10, 1992	596 Diesel
27-5170-1	27-02-01	27-25-02	H931130D	Area 27 Boiler House	October 20, 1993	816 Diesel

¹ Underground Storage Tank Identification Number.

² Corrective Action Site Number assigned to the UST within the FFACO.

³ Corrective Action Site Number assigned to the hydrocarbon release within the FFACO.

⁴ Nevada Division of Environmental Management Number assigned at time of release identification.

⁵ Date which tank(s) was closed by removal.

⁶ Concentrations detected at time of Spill Notification (milligrams per kilogram).

1.2 SCOPE

The scope of work was to excavate the hydrocarbon-impacted soil at each site. After soil was excavated soil samples were collected from the area(s) where hydrocarbons were previously identified. The depth of the excavation was based on field observations which included the presence of staining, odor, and headspace readings. If observations indicated that the hydrocarbons had been sufficiently removed, then verification samples were collected using a clean stainless steel scoop.

Samples were placed into clean laboratory-supplied jars with teflon lids, sealed and labeled prior to cooling to approximately four degrees Centigrade (4°C) (39.2° Fahrenheit [F]) in an ice chest. The samples were transported to the Reynolds Electrical and Engineering Co., Inc. (REECo) Laboratory in Mercury, Nevada, following standard chain-of-custody procedures. Samples were analyzed for total petroleum hydrocarbons (TPH) using EPA Method 8015 Modified and other constituents as warranted by past site characterization. The site was considered remediated once representative sample results indicated that TPH concentrations were below the 100 mg/kg action level.

1.3 CLOSURE REPORT CONTENTS

This Plan has been developed to support the closure of 11 UST petroleum hydrocarbon release sites. The format of the report is as follows:

- Section 1.0 - Introduction, purpose, and scope.
- Section 2.0 - Closure activities including:
  - Site Description and Background
  - Spill Notification
  - Remedial Activities (excavation, sampling, site observations)
  - Backfill and Soil Disposal
  - Summary
- Section 3.0 - Conclusions

2.0 CLOSURE ACTIVITIES

2.1 UST 11-2-1 (NDEM NO. H920716B, RELEASE CAS NO. 11-25-01)

2.1.1 Site Description and Background

The site is located at the Area 11 Tweezer Facility, northeast of Building 11-2 (Figure 2). This release was a result of a decoupled hose on a vacuum truck. The hose became decoupled during the transfer of fuel from UST 11-2-1 on July 16, 1992. Vibrations from the truck engine are thought to have caused the hose decoupling. The release was immediately observed by personnel and the pumping activity was ceased. Approximately 95 liters (L) to 151 L (25 gallons [gal] to 40 gal) of diesel fuel was released onto the chip seal road and soil adjacent to the road. Approximate Nevada coordinates for the site are N800,000 and E706,000 (Holmes and Narver, 1986). The nearest active water well is Well C1, located approximately 6.4 kilometers (km) (4 miles [mi]) southwest of the site. The depth to groundwater is approximately 472 meters (m) (1,594 feet [ft]) below ground surface (bgs) (US DOE, 1996). Additional background information is available in the 45-Day Report dated August 27, 1992 (REECo, 1992).

2.1.2 Spill Notification

The release exceeded the NAC Action Level of 2.3 cubic meters (m³) (3 cubic yards [yd³]) of impacted soil and over 95 L (25 gal) of a petroleum released. Notification of the release was reported to the NDEP by DOE/NV on July 16, 1992, and NDEM Case Number H920716B was assigned.

2.1.3 Remedial Activities

Impacted soil was excavated on July 21 and 22, 1992, and August 18, 1992. Analytical results from the July 22, 1992, excavation and composite soil sampling activities reported 127 mg/kg TPH at a depth of 1.0 m (3.2 ft) (east half of trench) and 219 mg/kg TPH at 1.6 m (5.4 ft) (west half of trench). Results from the August 18, 1992, excavation and sampling reported <10 mg/kg TPH at depths of 1.2 m (4 ft) (east half of trench) and 2.3 m (7.5 ft) (west half of trench). Sample locations are shown on Figure 2. Results are summarized in Table 2.

On August 27, 1992, the trench excavation was extended southward towards Building 11-2 and additional samples were collected. Composite samples were collected from the trench bottom from approximately 1.2 m (4 ft) and from the upper to middle portions of the sidewalls. A TPH concentration of 130 mg/kg was detected in the bottom composite sample.

On March 28, 1995, additional excavation was completed in the southern trench area. Soil

consisted of silty sand with gravel and cobble. Two samples were collected from depths of approximately 1.8 m (6.0 ft) below ground surface (bgs) to verify that diesel-impacted soil from the surface release was removed. TPH as diesel was not detected above the laboratory detection limit (<10 mg/kg) for soil samples 11TW2-5N/5.5 and 11TW2-15N/6.0 collected from the excavation bottom from depths of approximately 1.8 m (6 ft) bgs. The samples were collected at a distance of 1.5 m (5 ft) and 4.6 m (15 ft) north of the start of the trench excavation (Figure 2). No hydrocarbon odors or soil staining was observed during the remedial activities on March 28, 1995.

The laboratory analytical data are provided in Volume II, Appendix B (ACS Packet No. FY95-03-064) and are available upon request from DOE/NV Environmental Restoration Division (ERD). Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 2. Analytical results are summarized in Table 2.

2.1.4 Backfill and Soil Disposal

The northern portion of the trench was backfilled on January 26, 1993, and the southern portion was backfilled on June 22, 1995. The trench was backfilled with pea gravel and capped with clean native soil. The soil pile generated during the remedial excavation activities in 1992, consisted of approximately 38 m^3 (50 yd^3) and were stockpiled on and covered with plastic. The soil pile generated during the remedial activities on March 28, 1995, consisted of approximately 15 m^3 (20 yd^3). All remaining stockpiled soil was removed from the site June 22, 1995, and transported to the Area 6 Hydrocarbon Landfill for disposal.

2.1.5 Summary

A Spill Notification Report was completed due to a diesel release resulting from a decoupled hose. The release occurred while removing the product from UST 11-2-1 on July 16, 1992. Analytical results exceeding the NAC Action Level collected within the release area ranged from 127 mg/kg to 219 mg/kg. Additional excavation and characterization was conducted in July and August 1992 and in March 1995. Results from soil samples collected in the 1992 and 1995 remedial activities from the trench excavation bottom and sidewalls indicate that the impacted soil has been removed. All soil removed during the remedial activities was disposed of into the Area 6 Hydrocarbon Landfill.

Figure 2
 UST 11-2-1 Release Site - Location Map

TABLE 2 - RELEASE SITE 11-2-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE NUMBER	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ DIESEL (mg/kg)	TCLP VOCs ² (mg/l)
11-TWZ-3.2	Bottom composite sample adjacent to road	July 22, 1992	1.0 [3.2]	127	NA
11-TWZ-5.4	Bottom composite sample where fuel pooled at soil berm	July 22, 1992	1.6 [5.4]	219	NA
11-TWZ-4.0	Bottom composite sample adjacent to road	August 18, 1992	1.2 [4]	<10	NA
11-TWZ-7.5	Bottom composite sample where fuel pooled at soil berm	August 18, 1992	2.3 [7.5]	<10	NA
11-TWZ-COMP	Composite VOC sample analysis	August 18, 1992	1.2-2.3 [4-7.5]	NA	NA
11-TW2-4E	Composite from 2 locations on excavation bottom	August 27, 1992	1.2 [4]	130	ND
11-TW2-Wall	Composite from 3 locations on sidewalls	August 27, 1992	0.6-0.9 [2-3]	<10	NA
11-TW2-5N/ 5.5	Bottom trench sample	March 28, 1995	1.7 [5.5]	<10	NA
11-TW2-15N/6.0	Bottom trench sample	March 28, 1995	1.8 [6.0]	<10	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Toxicity Characteristic Leaching Procedure (TCLP) US EPA Method 8240.

mg/kg - milligrams per kilogram

mg/l - milligrams per liter

NA - Not analyzed

ND - Not detected

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

2.2 UST 12-13-1 (NDEM NO. H931130E, RELEASE CAS NO. 12-25-11)

2.2.1 Site Description and Background

The site is located at the Area 12 Boiler House Building 12-13. The 5,680-L (1,500-gal) tank removed from this site was located along the north side of the building and provided diesel fuel for the building's boiler (Figure 3). Approximate Nevada coordinates for the site are N890,000 and E650,000 (Holmes and Narver, 1986). The nearest active water well is Well 8, located approximately 11.6 km (7.2 mi) west of the site. The depth to groundwater is approximately 327 m (1,073 ft) bgs (US DOE, 1996).

The tank excavation, removal, and soil sampling occurred on October 20, 1993. Soil samples were collected from approximately 0.3 m (1 ft) below the tank bottom or 2.7 m (9 ft) bgs.

2.2.2 Spill Notification

The sample from beneath the east end of the tank had a TPH concentration of 116 mg/kg. This concentration exceeded the NAC Action Level of 100 mg/kg TPH. Notification of the release was reported to the NDEP by DOE/NV on November 30, 1993, and NDEM Case Number H931130E was assigned.

2.2.3 Remedial Activities

On December 8, 1994, approximately 5.4 m³ (7 yd³) of diesel-impacted soil was removed from the east end of the excavation. The soil was stockpiled on plastic adjacent to the tank excavation and kept separate from the pea gravel. Soil was covered with plastic and secured with sandbags. Excavated soil consisted of damp, gravelly sand to sandy gravel. Hydrocarbon odors or soil staining was not observed.

One soil sample was collected from below the east end of the tank at a depth of approximately 3 m (10 ft) bgs. This sample was taken to verify the removal of impacted soil. One composite sample from two random locations was collected from the soil stockpile for characterization. Both samples were collected on December 8, 1994. Samples were analyzed for TPH as diesel using EPA Method 8015 Modified.

TPH as diesel was not detected above the laboratory detection limit (<10 mg/kg) for soil sample 12-13-1/E collected from the east excavation bottom. The laboratory analytical data are provided in Volume II, Appendix B (ACS Packet No. FY94-12-021) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 3. Analytical results are summarized in Table 3.

2.2.4 Backfill and Soil Disposal

The tank excavation was backfilled on March 21, 1995, with clean pea gravel that was removed from the excavation on December 7 and 8, 1994. The excavation was capped with nearby clean native soil. Associated tank piping was cut and sealed with grout.

The soil pile generated during the remedial activities on December 8, 1994, consisted of approximately 5.4 m³ (7 yd³). It was removed from the site on May 4, 1995, and transported to the Area 6 Hydrocarbon Landfill for disposal.

2.2.5 Summary

Analytical results from the soil sample collected below the tank on the east end on October 20, 1993, exceeded the NAC Action Level of 100 mg/kg. A diesel concentration of 116 mg/kg was detected at a depth of 2.7 m (9 ft) bgs.

Additional excavation and characterization was conducted on December 7 and 8, 1994. Approximately 3.8 m³ (5 yd³) of hydrocarbon-impacted soil was removed from the eastern portion of the excavation. TPH as diesel was not detected(<10 mg/kg) in the bottom sample collected.

Figure 3
 UST 12-13-1 Release Site - Location Map

TABLE 3 - RELEASE SITE 12-13-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE NUMBER (explanation)	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)		
			DIESEL	GAS	OIL
ERUSTP2/1213-W (west bottom)	October 20, 1993	2.7 [9]	<10.0	<5.0	<10.0
ERUSTP2/1213-E (east bottom)	October 20, 1993	2.7 [9]	116	<5.0	<10.0
12-13-1/E (Sample following remedial excavation east bottom)	December 8, 1994	3 [10]	<10.0	NA	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

mg/kg - milligrams per kilogram

NA - Not analyzed

-- Not applicable

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

2.3 UST 12-26-1 (NDEM NO. H910802A, RELEASE CAS NO. 12-25-06)

2.3.1 Site Description and Background

The site is located at the former Area 12 Service Station (Building 12-26). The station had three 37,850 L (10,000 gal) fuel tanks positioned end to end consisting of two gasoline (12-26-1, 12-26-2) and one diesel tank (12-26-3) (Figure 4). Approximate Nevada coordinates for the site are N889,000 and E648,000 (Holmes and Narver, 1986). The nearest active water well is Well 8, located approximately 11 km (6.8 mi) west of the site. The depth to groundwater is approximately 327 m (1,073 ft) bgs (US DOE, 1996).

The USTs at this site were identified for upgrading as required by 40 CFR Part 280. During preliminary excavations to expose the top of the tanks on August 1, 1991, moist soil containing hydrocarbon odors was observed from an approximate depth of 0.6 m to 0.9 m (2.0 to 3.0 ft) in vicinity of diesel tank 12-26-1. Approximately 3 m³ (4 yd³) of impacted soil was removed. One sample was collected from the excavated soil and analyzed for TPH as gasoline using EPA Method 8015, and Toxicity Characteristic Leaching Procedure (TCLP) metals using EPA Extraction Method 1311.

Additional excavation or tank upgrade work was not continued. The tanks were not upgraded due to the reduced mission at the NTS. The service station was closed in the spring of 1994.

2.3.2 Spill Notification

The sample collected from the preliminary excavation contained a TPH concentration of 33,000 mg/kg. TCLP metal concentrations were below regulatory limits. The TPH concentration exceeded the NAC Action Level of 100 mg/kg TPH. Notification of the release was reported to the NDEP by the DOE/NV on August 2, 1991, and NDEM Case Number H910802A was assigned. A 20-Day Report was prepared by REECo documenting the release identification and sampling (REECo, 1991).

2.3.3 Remedial and Characterization Activities

On January 30, 1992, four boreholes were drilled in the vicinity of UST 12-26-1 to characterize the extent of the hydrocarbon release identified in August 1991 (Figure 4). Soil encountered in each of the boreholes was predominantly gravelly sand to silty sands, moist, well graded, brown to light brown with no hydrocarbon odors noted. A total of 15 soil samples were collected and analyzed for TPH. Analytical results indicated that most were below the detection limit for TPH and only one sample collected from a depth of 1.5 m (5 ft) exceeded the NAC Action Level.

Figure 4
 UST 12-26-1 Release Site - Location Map

TABLE 4 - RELEASE SITE 12-26-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)			TCLP METALS ² (mg/l)
				GAS	DIESEL	OIL	
12-26-1-3	Soil at fill-port of UST 12-26-1	August 1, 1991	0.9 [3]	33,000	NA	NA	Ba 0.15 Pb 0.26
B-1-5	Sample collected from borehole B-1	January 30, 1992	1.5 [5]	<5	292	<10	NA
B-1-10	Sample collected from borehole B-1	January 30, 1992	3 [10]	<5	NA	NA	NA
B-1-15	Sample collected from borehole B-1	January 30, 1992	4.6 [15]	<5	NA	NA	NA
B-1-20	Sample collected from borehole B-1	January 30, 1992	6 [20]	<5	NA	NA	NA
B-1-25	Sample collected from borehole B-1	January 30, 1992	7.6 [25]	<5	NA	NA	NA
B-2-5	Sample collected from borehole B-2	January 30, 1992	1.5 [5]	<5	NA	NA	NA
B-2-10	Sample collected from borehole B-2	January 30, 1992	3 [10]	<5	NA	NA	NA
B-2-15	Sample collected from borehole B-2	January 30, 1992	4.6 [15]	<5	NA	NA	NA
B-2-20	Sample collected from borehole B-2	January 30, 1992	6 [20]	<5	NA	NA	NA
B-3-5	Sample collected from borehole B-3	January 30, 1992	1.5 [5]	<5	NA	NA	NA
B-3-15	Sample collected from borehole B-3	January 30, 1992	4.6 [15]	21.4	NA	NA	NA
B-3-20	Sample collected from borehole B-3	January 30, 1992	6 [20]	<5	NA	NA	NA
B-4-5	Sample collected from borehole B-4	January 30, 1992	1.5 [5]	<5	NA	NA	NA
B-4-20	Sample collected from borehole B-4	January 30, 1992	6 [20]	<5	NA	NA	NA

TABLE 4 - RELEASE SITE 12-26-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)			TCLP METALS ² (mg/l)
				GAS	DIESEL	OIL	
B-4-25	Sample collected from borehole B-4	January 30, 1992	7.6 [25]	<5	NA	NA	NA
12-26-3/E	Sample collected from beneath the east side of 12-26-3	September 28, 1994	4.3 [14]	<5	<10.0	NA	NA
12-26-2&3/N	Sample collected from beneath the north side of 12-26-2 & 12-26-3	September 28, 1994	4.3 [14]	<5	<10.0	NA	Ba 0.59
12-26-2&3/S	Sample collected from beneath the south side of 12-26-2 & 12-26-3	September 28, 1994	4.3 [14]	<5	<10.0	NA	Ba 0.47
12-26-1/W	Sample collected from beneath the west side of 12-26-1	September 28, 1994	4.3 [14]	<5	NA	NA	Ba 0.92
12-26-1&2	Sample collected from beneath 12-26-2 & 12-26-3	September 28, 1994	4.3 [14]	<5	NA	NA	Ba 0.70

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Toxicity Characteristic Leaching Procedure: US EPA Method 1311.

mg/kg - milligrams per kilogram

mg/l - milligrams per liter

NA - Not analyzed

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

TCLP Metals: Barium (Ba) 100 mg/l; Lead (Pb) 5.0 mg/l.

2.4 UST 23-BPY-1 (NDEM NO. H941020C, RELEASE CAS NO. 23-25-07)

2.4.1 Site Description and Background

The site is located at the Area 23 Mercury Bypass Yard. The 946-L (250-gal) tank removed from this site provided diesel fuel to a unidentified structure removed prior to identification of the tank (Figure 5). Approximate Nevada coordinates for the site are N695,000 and E694,000 (Holmes and Narver, 1986). The nearest water well is Army Well 1 located approximately 8.4 km (5.2 mi) southwest of the site. The depth to groundwater is approximately 210 meters (690 ft) below ground surface (US DOE, 1996).

The tank excavation, removal, and soil sampling occurred on August 9, 1994. Soil consisted of tan, dry gravels with silt and sand. Hydrocarbon odors were not detected during excavation. The tank integrity was good, no staining, holes, or odors were present. Due to the small size of the tank, one sample was collected from approximately 1.5 m (5 ft) bgs or 0.3 m (1.0 ft) below the tank bottom center. The sample was analyzed for TPH as gas and diesel using EPA Method 8015 Modified.

2.4.2 Spill Notification

The sample collected from beneath the center of the tank bottom had a TPH as diesel concentration of 292 mg/kg (Table 5). This concentration exceeded the NAC Action Level of 100 mg/kg. Notification of the release was reported to the NDEP by DOE/NV on October 20, 1994, and NDEM Case Number H941020C was assigned.

2.4.3 Remedial Activities

On December 6, 1994, an additional 3.8 m³ (5 yd³) of soil was removed from the excavation. The impacted soil was stockpiled and covered with plastic at the site. No staining was observed however, minor hydrocarbon odors were noted.

One sample was collected from the excavation bottom at a depth of approximately 2.7 m (9.0 ft) bgs to verify the removal of the impacted soil. One composite sample was also collected from the soil pile for characterization. The samples were analyzed for TPH as diesel using EPA Method 8015.

TPH as diesel was not detected above the laboratory detection limit (<10 mg/kg) in the sample collected from the excavation bottom (23-BPY-1). Analytical results from the tank closure and remediation activities are summarized in Table 5. The laboratory analytical data from the remedial activity are provided in Volume II, Appendix B (ACS Packet No. FY94-12-014) and

are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 5. Analytical results are summarized in Table 5.

2.4.4 Backfill and Soil Disposal

The tank excavation was backfilled on December 7, 1994. The excavation was filled with pea gravel and capped with clean fill soil. The hydrocarbon-impacted soil was removed from the site on February 15, 1995, and transported to the Area 6 Hydrocarbon Landfill for disposal.

2.4.5 Summary

Analytical results from the soil sample collected at the bottom of the tank excavation on May 2, 1994, exceeded the NAC Action Level of 100 mg/kg. A diesel concentration of 292 mg/kg was detected at a depth of 1.4 m (4.5 ft) bgs. Additional excavation and characterization was conducted on December 6, 1994. An additional 3.8 m³ (5 yd³) of hydrocarbon-impacted soil was removed from the excavation. Soil analytical results from the remedial excavation did not exceed the NAC Action Level. The diesel concentration at a depth of 2.7 m (9 ft) bgs was below the detection limit of 10 mg/kg.

Figure 5
 UST 23-BPY-1 Release Site - Location Map

TABLE 5 - RELEASE SITE 23-BPY-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)		
				GAS	DIESEL	OIL
23-BPY-1	Sample collected beneath tank	August 9, 1994	1.5 [5]	<5	292	<10
23-BPY-1/9	Sample taken from beneath tank after remediation	December 6, 1994	2.7 [9]	NA	<10	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

mg/kg - milligrams per kilogram

NA - Not analyzed

-- Not applicable

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

2.5 UST 23-752-2 & 23-752-3 (NDEM NO. H910503A, RELEASE CAS NO. 23-25-06)

2.5.1 Site Description and Background

The site is located at the Area 23 Mercury Gas Station (Building 23-752). Approximate Nevada coordinates for the site are N695,000 and E696,000 (Holmes and Narver, 1986). The nearest water well is Army Well 1 located approximately 8 km (5 mi) southwest of the site. The depth to groundwater is approximately 210 m (690 ft) bgs (US DOE, 1996).

The service station previously had three 37,850-L (10,000-gal) underground fuel tanks, two gasoline (23-752-1 and 23-752-2) and one diesel (23-752-3). In April 1991, a hydrocarbon release (maximum concentration of 1,735 mg/kg diesel) was discovered at the site during the drilling and installation of vapor monitoring wells which were being installed to meet UST monitoring regulations. The release was considered to be a result of past overfilling of one or more of the tanks. This was based on the good condition of the visible portions of the tanks and that minor staining was observed in the area of the fill ports.

In January 1992 additional drilling and the installation of vapor monitoring wells (VW-1 through VW-4) were installed in proximity of the south end of UST 23-752-3 to characterize the release identified in April 1991. Samples were analyzed from depths of 3 m (10 ft) and 6 m (20 ft) for TPH as gasoline and diesel and TCLP metals. One sample collected at a depth of 3 m (10 ft) had a TPH as diesel concentration of 4,170 mg/kg. TPH as diesel was not detected (<10 mg/kg diesel) in the sample collected at a depth of 6 m (20 ft). The site layout and sample locations are shown on Figure 6. Analytical results from the well installation and characterization activities are summarized in Table 6.

The tanks were removed from the site on November 28, 1994, and subsequently replaced with the aboveground tanks currently in use. Each of the vapor wells installed in 1992 were abandoned by removal at the time of tank closure activities. Observations during the tank removal indicated hydrocarbon odor and staining at the south side of the excavation. Although a minor amount of rusting was observed on the tank, the overall integrity appeared good and no holes were evident. Soil encountered at the site was light brown to brown, moist medium to dense, fine to coarse gravelly sand to sandy gravel with silt and occasional cobbles.

2.5.2 Spill Notification

Soil samples collected from the drilling operations in April 1991 confirmed the presence of a release above the NAC Action Level of 100 mg/kg. Two samples collected at depths of 2.1 m (7 ft) and 2.4 m (9 ft) from the south end of UST 23-752-2 contained TPH as gasoline concentrations of 238 mg/kg and 210 mg/kg, respectively. One sample collected at a depth of

1.8 m (6 ft) from the south end of UST 23-752-3 had a TPH as diesel concentration of 1,735 mg/kg. Notification of the release was reported to the NDEP by DOE/NV on May 3, 1991, and NDEM Case Number H910503A was assigned.

Prior to the USTs being removed on November 29, 1994, soil samples were taken from within the excavation from approximately 0.3 m (1.0 ft) below each of the north and south tank bottoms (approximately 4.3 m [14 ft] bgs). One sample beneath the south end of tank 23-752-3 contained a TPH as diesel concentration of 2,100 mg/kg, exceeding the NAC Action Level. Analytical results from the tank closure activities are summarized in Table 6.

2.5.3 Remedial Activities

On January 11, 1995, approximately 72-m³ (55 yd³) of impacted soil was removed during the remedial excavation. The hydrocarbon-impacted soil was removed from the south portion of the tank excavation in the previous location of Tank 23-752-3. Hydrocarbon odors and gray-black soil was noted during the remedial excavation at a depth of approximately 4.9 m (16 ft) bgs. After excavating beyond the visibly stained soil, one sample was collected at a depth of 6.5 m (21.5 ft) bgs to verify the removal of the impacted soil. The sample was analyzed for TPH as diesel using EPA Method 8015.

TPH as diesel was detected at a concentration of 73 mg/kg in the sample collected from the excavation bottom (23-752-3S/21.5). The sample results from one soil pile sample (23-752/SP3) reported a diesel concentration of 170 mg/kg. The laboratory analytical data from the remedial activity are provided in Volume II, Appendix B (ACS Packet No. FY95-01-013) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 6. Analytical results are summarized in Table 6.

2.5.4 Backfill and Soil Disposal

The tank excavation was backfilled in January 1995. The excavation was backfilled with pea gravel to 1.2 m (4 ft) bgs. The pea gravel was covered by a 0.3 m (1 ft) layer of sand slurry. Approximately 0.9 m (3 ft) of Type II material was placed on top of the slurry and compacted into place. The excavation was capped with approximately 20 centimeters (cm) (8 inches [in]) of pea gravel.

Soil generated from the tank removal and remedial activities was segregated into five piles to separate between potentially impacted and non-impacted soil. Composite samples were collected from four of the piles and analyzed for TPH as gasoline and diesel to characterize for disposal. The fifth pile, generated from the remedial activities, was characterized based upon the soil analytical results collected during the closure activities. Based on the sample analysis of the four

soil piles and data collected during the tank closure activities, approximately 54 m³ (70 yd³) of impacted soil was removed from the site on February 15, 1995. The soil was disposed of into the Area 6 Hydrocarbon Landfill. The remaining non-impacted soil (approximately 107 m³ [140 yd³]) was transported to the Area 23 Sanitary Landfill and used for fill.

2.5.5 Summary

In April 1995, a hydrocarbon release was identified at the site during the installation of vapor monitoring wells. In January 1992, additional drilling confirmed the presence of impacted soil at a depth of 3 m (10 ft) bgs. One sample collected at the time of tank removal on November 29, 1994, below the south end of Tank 23-752-3, contained a TPH as diesel concentration of 2,100 mg/kg at a depth of 4.3 m (14 ft) bgs.

On January 11, 1995, an additional 72 m³ (55 yd³) of impacted soil was removed from the southeastern portion of the excavation. Soil analytical results of the sample collected at a depth of 6.6 m (21.5 ft) bgs was 73 mg/kg, which is below the NAC Action Level.

The excavation was subsequently backfilled with pea gravel and capped with Type II fill. Hydrocarbon-impacted soil was disposed of into the Area 6 Hydrocarbon Landfill. The remaining non-impacted soil was transported to the Area 23 Sanitary Landfill and used for fill.

TABLE 6 - RELEASE SITE 23-752-2 & 23-752-3 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meter (feet)	TPH ¹ (mg/kg)		TCLP METALS ² (mg/l)
				GAS	DIESEL	
23-752-2-7	Auger Truck	April 26, 1991	2 [7]	238	NA	NA
23-752-2-9			2.7 [9]	210	NA	NA
23-752-2-13			4 [13]	77	NA	NA
23-752-3-6			1.8 [6]	NA	1,735	NA
23-752-3-12			3.7 [12]	NA	59.2	NA
23-VW1-20	Vapor Monitoring Wells	January 9, 1992	6 [20]	ND	ND	ND
23-VW2-10		January 14, 1992	3 [10]	<10.0	<10.0	ND
23-VW3-10		January 15, 1992	3 [10]	<5.0	4,170	ND
23-VW3-20		January 15, 1992	6 [20]	<5.0	<10.0	ND
23-VW4-10		January 16, 1992	3 [10]	<5.0	<10.0	ND
23-752-1/N	Samples collected after the removal of the Tanks. "N" and "S" indicate the north and south ends of the tanks respectively. "SP" indicates a soil pile sample. TCLP Metals were analyzed for lead only where applicable	November 29, 1994	4.3 [14]	<1.0	NA	<0.1 Pb
23-752-1/S				<1.0	NA	<0.1 Pb
23-752-2/N				<1.0	<10.0	<0.1 Pb
23-752-2/S				<1.0	<10.0	<0.1 Pb
23-752-3/N				NA	<10.0	NA
23-752-3/S				NA	2,100	NA
23-752-3S/21.5	Sampled following remedial excavation	January 11, 1995	6.6 [21.5]	NA	73	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Toxicity Characteristic Leaching Procedure (TCLP) US EPA Method 1311.

mg/kg - milligrams per kilogram

mg/l - milligrams per liter

NA - Not analyzed

ND - Not detected

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

TCLP Metals: Lead (Pb) 5.0 mg/l. Resource Conservation and Recovery Act 40 CFR 261.24.

2.6 UST 25-3102-1 & 25-3102-2 (NDEM NO. H920928B, RELEASE CAS NO. 25-25-10)

2.6.1 Site Description and Background

The site is located at the Area 25 Power House at Building 25-3102. Two 7,600-L (2,000-gal) USTs removed from this site provided fuel for diesel-powered generators. The tanks were installed in approximately 1958 along the west side of the building (Figure 7). Approximate Nevada coordinates for the site are N748,000 and E615,000 (Holmes and Narver, 1986). The nearest active water well is Well J12, located approximately 8 km (5 mi) west of the site. The depth to groundwater is approximately 225 m (739 ft) bgs (US DOE, 1996).

The tank excavation, removal, and soil sampling occurred on August 28, 1992. No holes in the tanks, staining, or odors were observed. Soil samples were collected from beneath each tank at each end at a depth of approximately 0.3 meters (1.0 ft) below the tank bottom or 2.7 m (9 ft) bgs. Soil samples were analyzed for TPH as diesel.

2.6.2 Spill Notification

Soil analytical results from samples collected beneath the tanks ranged from 41.3 mg/kg to 277 mg/kg. The concentrations of three samples exceeded the NAC Action Level of 100 mg/kg TPH (Table 7). Notification of the release was reported to the NDEP by DOE/NV on September 28, 1992, and NDEM Case Number H920928B was assigned.

2.6.3 Remedial Activities

On May 3, 1995, approximately 23 m³ (30 yd³) of impacted soil was removed from the former tank excavation. The impacted soil was stockpiled on and covered with plastic. Excavated soil consisted of damp, gravelly sand, and was medium brown in color. Slight hydrocarbon odors were noted during the excavation at depths from 2.7 m (9.0 ft) to 3.4 m (11 ft). A hard resistant soil zone was encountered at a depth of approximately 3.7 m (12 ft) bgs.

One soil sample was collected from the north bottom of the excavation below the former location of Tank 25-3102-1. The sample was collected from a depth of approximately 4.3 m (14 ft) bgs. Two soil samples were collected from the north and south bottom of the excavation below the former location of Tank 25-3101-2. These samples were collected from a depth of approximately 4 m (13 ft) bgs. These samples were taken to verify the removal of the hydrocarbon-impacted soil. Samples were analyzed for TPH as diesel and oil using EPA Method 8015 Modified.

TPH as diesel was not detected above the laboratory detection limit (<10 mg/kg) in the samples analyzed. The laboratory analytical data are provided in Volume II, Appendix B (ACS Packet No. FY95-05-004) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 7. Analytical results are summarized in Table 7.

2.6.4 Backfill and Soil Disposal

The tank excavation was backfilled with pea gravel on May 3, 1995, and capped with nearby clean native soil. The soil pile generated during the remedial activities on May 3, 1995, consisted of approximately 23 m^3 (30 yd^3). Disposal of the excavated soil was based on the soil sample analytical results collected during the tank removal. Impacted soil was removed from the site June 20, 1995, and transported to the Area 6 Hydrocarbon Landfill for disposal.

2.6.5 Summary

Analytical results from the soil samples collected below the north bottom of Tank 25-3102-1 and below the north and south bottom of Tank 25-3102-2 on August 28, 1992, exceeded the NAC Action Level of 100 mg/kg. Diesel concentrations exceeding the action level ranged from 185 mg/kg to 277 mg/kg and were detected at a depth of approximately 2.7 m (9 ft) bgs.

Additional remedial excavation was completed on May 3, 1995. Approximately 23 m^3 (30 yd^3) of hydrocarbon-impacted soil was removed from the excavation. TPH as diesel or oil from the remedial excavation were not detected (<10 mg/kg) in the bottom samples collected. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

Figure 7
 UST 25-3102-1 & 25-3102-2 Release Sites - Location Map

TABLE 7 - RELEASE SITE 25-3102-1 & 25-3102-2 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)	
				DIESEL	OIL
25-3102-1S	Samples collected below the tank bottom at time of removal	August 26, 1992	2.7 [9]	41.3	NA
25-3102-1N			2.7 [9]	185	NA
25-3102-2S			2.7 [9]	277	NA
25-3102-2N			2.7 [9]	264	NA
25-3102-1N/14	Samples collected subsequent to remedial excavation	May 3, 1995	4.3 [14]	<10	<10
25-3102-2S/13		May 3, 1995	4 [13]	<10	<10
25-3102-2N/13		May 3, 1995	4 [13]	<10	<10

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified.

mg/kg - milligrams per kilogram

NA - Not Analyzed

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

2.7 UST 23-3102-4 (NDEM NO. H940825E, RELEASE CAS NO. 25-25-11)

2.7.1 Site Description and Background

The site is located at the Area 25 Power House at Building 25-3102. One 2,120 L (560 gal) UST removed from this site provided fuel for a wall heater within Building 3102. The tank was located at the northeast corner of the building and abandoned in place after facility operations at Building 25-3102 were discontinued (Figure 8). Approximate Nevada coordinates for the site are N748,000 and E615,000 (Holmes and Narver, 1986). The nearest active water well is Well J12, located approximately 8 km (5 mi) west of the site. The depth to groundwater is approximately 225 m (739 ft) bgs (US DOE, 1996).

The tank excavation, removal, and soil sampling occurred between July 14 and 20, 1994. Excavated soil consisted of gravelly silt that was medium brown in color and slightly damp. Hydrocarbon odors were noted, but no soil staining was observed. Although some rust on the tank was observed, the overall integrity of the tank appeared good and no holes were evident. Soil samples were collected from below the north and south end of the UST at approximately 0.46 m (1.5 ft) below the tank bottom or 2.6 m (8.5 ft) bgs. Samples were analyzed for TPH as gas, diesel and oil, volatile organic compounds (VOCs), semi-VOCs, and polychlorinated biphenyls (PCBs). The additional soil parameters were analyzed since there was not sufficient product to sample in the tank in order to verify what the contents were.

2.7.2 Spill Notification

TPH as diesel were detected in the north and south samples at concentrations of 126 mg/kg and 18.4 mg/kg, respectively. TPH as gas (<5.0 mg/kg) or oil (<10.0 mg/kg) were not detected. VOCs, semi-VOCs, or PCBs were not detected in the samples analyzed. TCLP barium was detected below the regulatory action level of 100 mg/l in the north and south soil samples at concentrations of 0.23 mg/l and 0.82 mg/l, respectively. A summary of soil analytical results is provided in Table 8.

The sample from beneath the north (fill port) end of the tank exceeded the NAC Action Level of 100 mg/kg TPH. Notification of the release was reported to the NDEP by DOE/NV on August 25, 1994, and NDEM Case Number H940825E was assigned.

2.7.3 Remedial Activities

Additional soil was removed on October 18, 1994. Soil was excavated in an effort to remove the limited extent of hydrocarbon-impacted soil from the northern portion of the tank cavity. Approximately 5 m³ (7 yd³) of soil were excavated using backhoe equipment. The excavated soil

consisted of silty sand and gravelly sand with silt. The soil was medium brown in color and was damp. No staining or hydrocarbon odors were noted during the remedial excavation.

One sample from the north portion of the UST excavation was collected at a depth of 3.2 m (10.5 ft) bgs (Figure 8) and analyzed for TPH as diesel using EPA Method 8015 Modified. No other parameters were analyzed since the initial excavation samples only contained elevated TPH as diesel concentrations (barium concentrations were well below the action level of 100 mg/l).

TPH as diesel was not detected (<10.0 mg/kg) above laboratory detection limits in the sample analyzed. Laboratory analytical data are provided in Volume II, Appendix B (ACS Packet 94-10-049) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 8. Analytical results are summarized in Table 8.

2.7.4 Backfill and Soil Disposal

The tank excavation was backfilled on October 26, 1994, with pea gravel. The top 0.30 m to 0.47 m (1ft to 1.5 ft) of the excavation was capped with Type II fill material and compacted into place. The soil was transported to the Area 6 Hydrocarbon Landfill and included all soil from the tank removal and remedial excavation activities. Approximately 17 m^3 (22 yd^3) of hydrocarbon-impacted soil were removed from the site on October 25, 1994.

2.7.5 Summary

The soil sample collected below the north tank bottom on July 20, 1994, exceeded the NAC Action Level of 100 mg/kg. A diesel concentration of 126 mg/kg was detected at a depth of 2.6 m (8.5 ft) bgs. Additional excavation and characterization was conducted on October 18, 1994. During the remedial excavation, approximately 5 m^3 (7 yd^3) of hydrocarbon-impacted soil was removed. Soil analytical results from the remedial excavation did not exceed the NAC Action Level. Diesel was not detected (<10.0 mg/kg) at a depth of 3.2 m (10.5 ft) bgs. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

Figure 8
 UST 25-3102-4 Release Site - Location Map

TABLE 8 - RELEASE SITE 25-3102-4 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID (Explanation)	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)			VOCs ² (mg/kg)	SEMI-VOCs ³ (mg/kg)	TCLP METALS ⁴ (mg/l)	PCBs ⁵ (mg/kg)
			GAS	DIESEL	OIL				
25-3102-4/N (North Tank Bottom)	July 20, 1994	2.6 [8.5]	<5.0	126	<10.0	ND	ND	Ba 0.23	<0.05
25-3104-4/S (South Tank Bottom)	July 20, 1994	2.6 [8.5]	<5.0	18.4	<10.0	ND	ND	Ba 0.23	<0.05
25-3102-4/ 10.5/N (remedial verification sample)	October 18, 1994	3.2 [10.5]	NA	<10.0	NA	NA	NA	NA	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Total Volatile Organic Compounds: US EPA Method 8240

³ Total Semi-Volatile Organic Compounds: US EPA Method 8270

⁴ Toxicity Characteristic Leaching Procedure Metals: US EPA Method 7470

⁵ Polychlorinated Biphenyls: US EPA Method 8080

NA: Not analyzed

ND: Not detected

mg/kg: milligrams per kilogram

mg/l: milligrams per liter

Ba: Barium

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 g/kg.

Barium: Toxicity Characteristic Leaching Procedure Action Level of 100 mg/l per 40 CFR 261.24.

2.8 UST 25-3123-1 (NDEM NO. H940825D, RELEASE CAS NO. 25-25-12)

2.8.1 Site Description and Background

The site is located east of the Area 25 Technical Services Building 25-3123. One 9,463 L (2,500 gal) UST removed from this site provided diesel fuel for a boiler within Building 3123. Engineering records indicate that the tank was installed in May 1959 (Drawing 3108-SW1). Approximate Nevada coordinates for the site are N748,000 and E615,000 (Holmes and Narver, 1986). The nearest active water well is Well J12, located approximately 8 km (5 mi) west of the site. The depth to groundwater is approximately 225 m (739 ft) bgs (US DOE, 1996).

The tank excavation and removal occurred between July 14 and 20, 1994. Soil samples were collected on July 20, 1994. Excavated soil consisted of gravelly sand and silt with cobbles to 0.3 m (1.0 ft.) in diameter. The soil was medium brown in color and slightly damp. No hydrocarbon odors were noted; however, minor soil staining around the fill port (south end of tank) was observed while exposing the top of the tank. Upon tank removal, some rusting was observed; however, the overall tank integrity appeared good and no holes were evident.

Soil samples were collected from below the north and south end of the UST at approximately 0.3 meters (1.0 ft) below the tank bottom or 3.0 meters (10 ft.) bgs and analyzed for TPH as diesel, semi-VOCs, and TCLP metals.

2.8.2 Spill Notification

TPH as diesel was detected at a concentration of 120 mg/kg in Sample 25-3123-1/S, collected beneath the south (fill port) end of the tank exceeding the NAC Action Level of 100 mg/kg TPH (NAC, 1995). Notification of the release was reported to the NDEP by DOE/NV on August 25, 1994, and NDEM Case Number H940825D was assigned. A summary of the soil analytical results is provided in Table 9.

2.8.3 Remedial Activities

The hydrocarbon-impacted soil from the southern portion of the tank excavation was removed on October 18, 1994. Approximately 3.8 m³ (5 yd³) of soil were excavated using backhoe equipment and stockpiled with the previously excavated soil. One sample (25-3123-1/11.5/S) from the south portion of the UST excavation was collected at a depth of 3.5 m (11.5 ft) bgs and analyzed for TPH as diesel.

TPH as diesel was not detected (<10.0 mg/kg) above laboratory detection limits in the sample analyzed. Laboratory analytical data are provided in Volume II, Appendix B

(ACS Packet 94-10-049) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 9. Analytical results are summarized in Table 9.

2.8.4 Backfill and Soil Disposal

The tank excavation was backfilled on October 25, 1994. The excavation was backfilled with pea gravel and capped with Type II fill. Approximately 34 m³ (45 yd³) of hydrocarbon-contaminated soil were removed from the site. The soil was transported to the Area 6 Hydrocarbon Landfill on October 26, 1994, for disposal.

2.8.5 Summary

Analytical results from the soil sample collected below the tank south bottom on July 20, 1994, exceeded the NAC Action Level of 100 mg/kg. A diesel concentration of 120 mg/kg was detected at a depth of 3 m (10 ft) bgs.

Additional excavation and characterization was conducted on October 18, 1994. During the remedial excavation approximately 3.8 m³ (5 yd³) of hydrocarbon-impacted soil was removed from the southern excavation bottom. Soil analytical results from the remedial excavation did not exceed the NAC Action Level. Diesel was not detected (<10.0 mg/kg) at a depth of 3.5 m (11.5 ft) bgs. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

Figure 9
 UST 25-3123-1 Release Site - Location Map

TABLE 9 - RELEASE SITE 25-3123-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE NUMBER (explanation)	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ DIESEL (mg/kg)	SEMI-VOCs ² (mg/kg)	TCLP METALS ³ (mg/l)
25-3123-1/N (north bottom)	July 20, 1994	3 [10]	<10.0	ND	Ba 0.43
25-3123-1/S (south bottom)	July 20, 1994	3 [10]	120	ND	Ba 0.41
25-3123-1/11.5/S (remedial verification sample)	October 18, 1994	3.5 [11.5]	<10.0	NA	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Total Semi-Volatile Organic Compounds: US EPA Method 8270

³ Toxicity Characteristic Leaching Procedure Metals: US EPA Method 1311

NA-Not analyzed

ND - Not detected

mg/kg - milligrams per kilogram

mg/l - milligrams per liter

Ba - Barium

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

Barium: Toxicity Characteristic Leaching Procedure Action Level of 100 mg/l per 40 CFR 261.24.

2.9 UST 25-3129-1 (NDEM NO. H941020D, RELEASE CAS NO. 25-25-13)

2.9.1 Site Description and Background

The site is located west of the Area 25 Technical Operations Building 3129. One 7,570 L (2,000 gal) UST removed from the site provided diesel fuel for a boiler within the building (Figure 10). Engineering records indicate that the tank was installed between the period of April 1961 and March 1962 (Drawing 400-004-05.2). Approximate Nevada coordinates for the site are N 748,000 & E 615,000 (Holmes and Narver, 1986). The nearest active water well is Well J12, located approximately 8 km (5 mi) west of the site. The depth to groundwater is approximately 225 m (739 ft) bgs (US DOE, 1996).

The tank excavation and removal occurred between July 14 and 20, 1994. Soil samples were collected from below the UST on July 20, 1994. Excavated soil consisted of gravelly sand and silt with cobbles to 20 cm (8 in.) in diameter. No hydrocarbon odors were noted. Upon tank removal, some rusting was observed, however, the overall tank integrity appeared good and no holes were evident.

Soil samples were collected from below the east and west tank bottom at depths of 0.30 m (1.0 ft) and 0.46 m (1.5 ft) or 3.0 m (10 ft) and 3.2 m (10.5 ft) bgs, respectively. The samples were analyzed for TPH as diesel, semi-VOCs, and TCLP metals.

2.9.2 Spill Notification

TPH as diesel was not detected (<10.0 mg/kg) in the east and west soil samples. However, TPH as oil was detected at 108 mg/kg in the east sample collected. The presence of oil in the sample is likely representative of highly weathered diesel from the tank. Semi-VOCs were not detected in the samples analyzed. TCLP barium was detected below the regulatory action level of 100 mg/l in the east and west soil samples at concentrations of 0.30 mg/kg and 0.17 mg/kg, respectively. A summary of soil analytical results is provided in Table 10.

The sample from beneath the east end of the tank exceeded the NAC Action Level of 100 mg/kg TPH (NAC, 1995). Notification of the release was reported to the NDEP by DOE/NV on October 20, 1994, and NDEM Case Number H941020D was assigned.

2.9.3 Remedial Activities

The hydrocarbon-impacted soil from the eastern portion of the tank excavation was removed on October 18, 1994. Approximately 2 to 4 m³ (3 to 5 yd³) of soil were excavated using backhoe equipment and stockpiled with the previously excavated soil. One sample (25-3129-1/12/E) from the east portion of the UST excavation was collected at a depth of 3.7 meters (12 ft) bgs and analyzed for TPH as diesel. Soil sample analytical results reported that TPH as diesel and oil was not detected (<10.0 mg/kg). Laboratory analytical results from the additional site characterization are provided in Volume II, Appendix B (ACS Packet No. 94-10-049) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 10. Analytical results are summarized in Table 10.

2.9.4 Backfill and Soil Disposal

The tank excavation was backfilled on October 26, 1994. The excavation was backfilled with pea gravel and capped with Type II fill. The associated product lines were sealed with cement grout prior to placing the Type II fill cap. The hydrocarbon-impacted soil was removed from the site on October 24, 1994, and transported to the Area 6 Hydrocarbon Landfill for disposal.

2.9.5 Summary

Analytical results from the soil sample collected below the tank east bottom on July 20, 1994, exceeded the NAC Action Level of 100 mg/kg. A oil concentration of 108 mg/kg was detected at a depth of 0.3 meters (1 ft) below the tank bottom. The presence of oil in the sample is likely representative of highly weathered diesel from the tank.

Additional excavation and characterization was conducted on October 18, 1994. During the remedial excavation approximately 2 m³ to 4 m³ (3 yd³ to 5 yd³) of hydrocarbon-impacted soil was removed from the eastern excavation bottom. Soil analytical results from the remedial excavation did not exceed the NAC Action Level. Diesel or oil was not detected (<10.0 mg/kg) at a depth of 3.7 m (12 ft) bgs. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

TABLE 10 - RELEASE SITE 25-3129-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID (explanation)	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹		SEMI-VOCs ² (mg/kg)	TCLP METALS ³ (mg/l)
			DIESEL (mg/kg)	OIL (mg/kg)		
25-3129-1/E (east bottom)	July 20, 1994	3.0 [10]	<10.0	108	ND	Ba 0.30
25-3123-1/W (west bottom)	July 20, 1994	3.2 [10.5]	<10.0	NA	ND	Ba 0.17
25-3129-1/12/E (remedial verification sample)	October 18, 1994	3.7 [12]	<10.0	<10.0	NA	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Total Semi-Volatile Organic Compounds: US EPA Method 8270

³ Toxicity Characteristic Leaching Procedure Metals: US EPA Method 6010

NA: Not analyzed

ND: Not detected

mg/kg: milligrams per kilogram

mg/l milligrams per liter

Ba - Barium

Action Levels:

TPH: NAC 459.9973 TPH Action Level of 100 mg/kg.

Barium: TCLP Action Level of 100 mg/l per 40 CFR 261.24.

2.10 UST 26-2104-1 (NDEM NO. H920228A, RELEASE CAS NO. 26-25-01)

2.10.1 Site Description and Background

The site is located north of the Area 26 Power House Building 26-2104 (Figure 11). Fuel for the diesel power generators was supplied from two 3,785 L (1,000 gal) USTs (Tank Numbers 26-2104-1 and 26-2104-2). Engineering records indicate the tanks 26-2104-1 and 26-2104-2 were installed in 1960 and 1963, respectively. Approximate Nevada coordinates for the site are N750,000 and E650,000. The nearest active water well is Well 5B, located approximately 16 km (10 mi) east of the site. The depth to groundwater in this well is approximately 208 m (684 ft) bgs (US DOE, 1996).

The tanks were removed on September 10, 1992. At the time of removal four soil samples were collected between 0.15 m to 0.2 m (0.5 ft to 1.0 ft) below the bottom ends of the tanks or 1.8 m (6 ft) to 2 m (7 ft) bgs. Soil samples were analyzed for TPH as diesel, VOCs, and TCLP metals.

2.10.2 Spill Notification

Soil samples 26-2104-1E and 26-2104-1W collected below the tank bottom contained TPH as diesel concentrations of 596 mg/kg and 131 mg/kg, respectively. VOC results were below the laboratory detection limits for all constituents with the exception of methylene chloride and 1,1,1-trichloroethane (TCA). The detection of methylene chloride is attributed to laboratory contamination. The concentration of TCA detected (0.016 mg/kg) was well below the 40 CFR Subpart S proposed regulatory level of 7,000 mg/kg. TCLP metals were below laboratory detection levels with the exception of barium which was below the regulatory action level of 100 mg/l.

Since these concentrations exceeded the NAC Action Level of 100 mg/kg TPH, the release was reported to the NDEP by the DOE/NV on September 28, 1992, and NDEM Case Number H920928A was assigned. A 45-Day Report documenting the tank removal and release identification was submitted to NDEP (REECo, 1992).

2.10.3 Remedial Activities

On April 18, 1995, approximately 15 m³ (20 yd³) of soil was removed from the open excavation using backhoe equipment and stockpiled on and covered with plastic. Soil encountered was described as a silty sand with gravel, brown, moist, with no hydrocarbon odors. At a depth of approximately 2 m to 2.4 m (7 ft to 8 ft), a caliche layer was encountered. Sample 26-2104/E8 was collected from the east end of the excavation from a depth of 2.4 m (8 ft) bgs.

Sample 26-2104/W7 was collected from the west end of the excavation at a depth of 2 m (7 ft) bgs. Samples were analyzed for TPH as diesel and Total VOCs.

TPH as diesel or VOCs were not detected above the laboratory detection limits in both sample analyzed. Laboratory analytical data are provided in Volume II, Appendix B (ACS Packet FY95-04-025) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and are available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 11. Analytical results are summarized in Table 11.

2.10.4 Backfill and Soil Disposal

The tank excavation was backfilled on May 9, 1995. The excavation was backfilled with pea gravel and capped with approximately 0.3 m (1 ft) of clean native soil. Approximately 15 m³ (20 yd³) of hydrocarbon-impacted soil was removed from the site. The soil was transported to the Area 6 Hydrocarbon Landfill on June 21, 1995.

2.10.5 Summary

Analytical results from soil samples collected September 10, 1992, from below the bottom of Tank 26-2104-1 exceeded the NAC Action Level of 100 mg/kg. Diesel concentrations of 596 mg/kg and 131 mg/kg were detected below the east (2 m [7 ft] bgs) and west (1.8 m [6 ft] bgs) tank bottom, respectively. VOCs detected were attributed to laboratory contamination or were well below the regulatory action level.

The additional excavation of approximately 15 m³ (20 yd³) was completed on April 18, 1995. TPH was not detected in the soil samples from the remedial excavation collected from approximately 2 m (7 ft) (west end) and 2.4 m (8 ft) (east end) bgs. In addition, VOCs were not detected above laboratory detection limits in the samples analyzed. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

Figure 11
 UST 26-2104-1 Release Site - Location Map

TABLE 11 - RELEASE SITE 26-2104-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID (explanation)	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ DIESEL (mg/kg)	TOTAL VOCs ² (mg/kg)	TCLP METALS ³ (mg/l)
26-2104-1E (east bottom)	September 10, 1992	2.0 [7]	596	ND	Ba 0.79
26-2104-1W (west bottom)	September 10, 1992	1.8 [6]	131	TCA 0.016 Methylene Chloride 0.006B	Ba 0.90
26-2104/E8 (remedial verification east sample)	April 18, 1995	2.4 [8]	<10.0	ND	NA
26-2104/W7 (remedial verification west sample)	April 18, 1995	2.0 [7]	<10.0	ND	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

² Total Semi-Volatile Organic Compounds: US EPA Method 8270

³ Toxicity Characteristic Leaching Procedure Metals: US EPA Method 6010

NA: Not analyzed

ND: Not detected

mg/kg: milligrams per kilogram

mg/l: milligrams per liter

Action Levels:

TPH: NAC 459.9973 TPH Action Level of 100 mg/kg.

Barium: TCLP Action Level of 100 mg/l per 40 CFR 261.24.

TCA (1,1,1-trichloroethane): Proposed Action Level of 7,000 mg/kg 55 FR 30798 Subpart S.

2.11 UST 27-5170-1 (NDEM NO. H931130D, RELEASE CAS NO. 27-25-02)

2.11.1 Site Description and Background

The site is located on the north side of the Area 27 Boiler House Building 27-5170 (Figure 12). The 7,570-L (2,000-gal) tank removed from this site provided diesel fuel to a boiler which was no longer in use at the site. Engineering records indicate that the tank was installed in 1960. Approximate Nevada coordinates for the site are N 735,000 and E 660,000 (Holmes and Narver, 1986). The nearest active water well is Well 5B, located approximately 13.7 km (8.5 miles) northeast of the site. The depth to groundwater is approximately 208 meters (684 ft) bgs (US DOE, 1996).

The tank excavation, removal, and soil sampling occurred on October 20, 1993. Field observations indicate that the tank was in good condition upon removal. Staining or odors were not noted during the excavation activities. However, one small hole was observed on the upper 1/3 of the north side of the tank when it was transferred to the U10c Landfill for segmentation, cleaning, and crushing. Two soil samples were collected approximately 0.3 m (1.0 ft) below the bottom ends of the tank or approximately 2.4 m (8.0 ft) bgs. Samples were analyzed for TPH as gasoline, diesel, and oil using EPA Method 8015 Modified.

2.11.2 Spill Notification

The samples collected from beneath the east and west tank bottom had TPH as diesel concentrations of 816 mg/kg and 471 mg/kg. This concentration exceeded the NAC Action Level of 100 mg/kg. Notification of the release was reported to the NDEP by DOE/NV on November 30, 1993, and NDEM Case Number H931130D was assigned. Analytical results are summarized on Table 12.

2.11.3 Remedial Activities

On May 10, 1995, an additional 23 m³ (30 yd³) of soil was removed from the excavation. The impacted soil was stockpiled and covered with plastic at the site. Slight hydrocarbon odors were noted while digging in the western portion of the excavation. No hydrocarbon odors were noted while digging in the eastern portion of the excavation. The backhoe equipment had difficulty excavating into the native volcanic material (tuff).

Two samples were collected from the excavation bottom from approximately 3.7 m (12 ft) bgs to verify the removal of the impacted soil. The samples were analyzed for TPH as diesel using EPA Method 8015. TPH as diesel was detected at a concentration of 46 mg/kg in Sample

27-5170-E12 collected from the eastern excavation bottom. Hydrocarbons were not detected (<10 mg/kg) in Sample 27-5170-W12 collected from the western excavation bottom.

Analytical results from the tank closure and remediation activities are summarized in Table 12. The laboratory analytical data from the remedial activity are provided in Volume II, Appendix B (ACS Packet No. FY95-05-011) and are available upon request from DOE/NV ERD. Field notes documenting remedial activities are on file and available by request through DOE/NV ERD. The site layout and sample locations are shown on Figure 12. Analytical results are summarized in Table 12.

2.11.4 Backfill and Soil Disposal

The tank excavation was backfilled on June 21, 1995. The excavation was filled with pea gravel and capped with Type II fill. Approximately 23 m³ (30 yd³) of hydrocarbon-impacted soil was removed from the site. The soil was transported to the Area 6 Hydrocarbon landfill on June 21, 1995 for disposal.

2.11.5 Summary

Analytical results from soil samples collected at the bottom of the tank excavation on October 20, 1993, exceeded the NAC Action Level of 100 mg/kg. Diesel concentrations of 816 mg/kg and 471 mg/kg were detected below the east and west tank bottom, respectively from depths of 2.4 m (8 ft) bgs.

Additional excavation and characterization was conducted on May 10, 1995. An additional 23 m³ (30 yd³) of hydrocarbon-impacted soil was removed from the excavation. Soil analytical results from the remedial excavation did not exceed the NAC Action Level. The diesel concentration at a depth of 3.7 m (12 ft) bgs was 46 mg/kg from the east bottom and non-detected (<10 mg/kg) from the west bottom. Soil generated from the remediation activities was disposed of at the Area 6 Hydrocarbon Landfill.

Figure 12
 UST 27-5170-1 Release Site - Location Map

TABLE 12 - RELEASE SITE 27-5170-1 SUMMARY OF SOIL ANALYTICAL RESULTS

SAMPLE ID	EXPLANATION	DATE SAMPLED	SAMPLE DEPTH BGS meters [feet]	TPH ¹ (mg/kg)		
				GAS	DIESEL	OIL
ERUSTP2/5170-E	Sample collected from east excavation bottom	October 20, 1993	2.4 [8]	<5.0	816	<10.0
ERUSTP2/5170-W	Sample collected from west excavation bottom	October 20, 1993	2.4 [8]	<5.0	471	<10.0
27-5170-E12	Remedial excavation sample collected from east bottom	May 10, 1995	3.7 [12]	NA	46	NA
27-5170-W12	Remedial excavation sample collected from west bottom	May 10, 1995	3.7 [12]	NA	<10.0	NA

Notes:

¹ Total Petroleum Hydrocarbons: US EPA Method SW-846 8015, Modified

mg/kg - milligrams per kilogram

NA - Not analyzed

Action Levels:

Total Petroleum Hydrocarbons: Nevada Administrative Code 459.9973 TPH Action Level of 100 parts per million.

3.0 CONCLUSIONS

CAU 450 comprises 11 UST sites at which hydrocarbon releases were identified. The USTs and hydrocarbon releases are identified by independent CAS Numbers. Each of the 11 USTs were closed by removal. The documentation provided to NDEP for each tank was accepted as final closure (Appendix A). Therefore, the CAS associated with each tank site may be considered closed.

The hydrocarbon releases associated with each tank site within CAU 450 were remediated by excavating the impacted soil. Clean closure of the release was verified through soil sample analysis by an off-site laboratory. All release closure activities were completed following standard environmental and regulatory guidelines. Based upon site observations during the remedial activities and the soil sample results, which indicated that soil concentrations were below the NAC Action Level of 100 mg/kg, it is requested that each of the release CASs be closed without further action. Upon approval of the closure of the release CASs it is requested that CAU 450 be promoted to Appendix IV of the FFACO "Closed Corrective Action Units."

4.0 REFERENCES

NAC 459.9973, 1995, Nevada Administrative Code, Chapter 459, Hazardous Materials. Storage Tanks.

REECo, 1991, 20-Day Report of Excavation and Analytical Results for a Release of Unleaded Gasoline from UST 12-26-1 at Area 12 Gas Station, NDEM Case No. H910802A. Reynolds Electrical & Engineering Co, Inc., December 12, 1991.

REECo, 1992, 45-Day Report for Diesel Fuel Release at the Area 11 Tweezer Facility, Nevada Test Site, NDEM Case No. H920716B, Reynolds Electrical & Engineering Co, Inc., August 27, 1992.

REECo, 1992a, 45-Day Report for Nevada Division of Environmental Management Case Number H920928A, Area 26 Power House Underground Storage Tank Number 26-2104-1 and 26-2104-2, Nevada Test Site, Reynolds Electrical & Engineering Co, Inc., November 17, 1992.

US DOE, 1996, Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada, Volume 1, Chapters 1-9, United States Department of Energy, Nevada Operations Office, Las Vegas Nevada, August 1996.

APPENDIX A
NDEP ACCEPTANCE OF UST CLOSURE

(702) 486-7010

FAX (702) 486-7014

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

(Las Vegas Office)

1515 E. Tropicana, Suite 395

Las Vegas, Nevada 89119

June 9, 1993

Dr. Donald R. Elle
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

RE: Permanent Closure and Removal for 11 Abandoned Underground Storage Tanks (USTs) on the Nevada Test Site (NTS)

Dear Dr. Elle:

The Nevada Division of Environmental Protection (NDEP) has received notification relating to the closure of 11 abandoned underground storage tanks located at the Nevada Test Site (NTS), as listed below:

6-YA-1	11-2-1	11-2-2	23-210-1
25-OGS-1	25-3102-1	25-3102-2	26-2104-1
26-2104-2	26-2204-1	26-2204-2	

In accordance with 40 CFR 280.72, the required site assessments have been evaluated and determined to have been conducted satisfactorily.

Accordingly, based on the information provided by the Department of Energy, Environmental Protection Division, the Division of Environmental Protection, State of Nevada accepts as final closure, the documentation for the closure of the above mentioned tanks as presented.

ACTION EPD
INFO _____
MGR _____
AMA _____
AMESSH _____
AMO _____
AMEM _____
FCFO _____

Don Elle
June 8, 1993
Page 2

Continuation of remediation of those closures associated with soil contamination will continue through the spill/release corrective action program, and 40 CFR 280 Subpart F, as previously agreed to.

If any questions should require input from our staff please contact me at (702) 486- 7010.

Sincerely,

Dean Mierau, EMSIII
Project Manager
Bureau of Federal Facilities
Las Vegas Office

DM:dm

cc: Paul Liebendorfer
Richard Serdoz
Frank Bingham
John Robertson

Q:\WPDATA\DEAN\TANKS.CLS

(702) 486-7010

FAX (702) 486-7014

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

(Las Vegas Office)

1515 E. Tropicana, Suite 395

Las Vegas, Nevada 89119

April 12, 1994

Donald R. Elle, Ph.D., Director
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P.O. Box 98518
Las Vegas, NV 89193-8518

RE: Permanent Closure and Removal for 12 Abandoned Underground
Storage Tanks (USTs) on the Nevada Test Site (NTS)

Dear Dr. Elle:

The Nevada Division of Environmental Protection (NDEP) has received notification relating to the closure of 12 abandoned underground storage tanks located at the Nevada Test Site (NTS), as listed below:

11-1-1	12-8-1	12-8-2	12-9-1
12-9-2	<u>12-13-1</u>	12-110-1	23-112-1
25-3102-3	<u>25-3205-1</u>	<u>27-5170-1</u>	27-5310-1

In accordance with 40 CFR 280.72, the required site assessments have been evaluated and determined to have been conducted satisfactorily.

Accordingly, based on the information provided by the Department of Energy/Environmental Protection Division, the Division of Environmental Protection, State of Nevada accepts as final closure, the documentation for the closure of the above mentioned tanks as presented.

Continuation of remediation of those closures associated with soil contamination will continue through the spill/release corrective action program, and 40 CFR 280 Subpart F, as previously agreed to.

Donald R. Elle, Ph.D., Director
April 12, 1994
Page 2

If you should have any questions, please feel free to contact me at
(702) 486-7010.

Sincerely,

Dean Mierau, EMSIII
Project Manager
Bureau of Federal Facilities
Las Vegas Office

DM:kf

cc: Paul Liebendorfer, Chief, NDEP, Carson City, Nevada
Richard Serdoz, Manager, Las Vegas, Nevada
Howard Dickson, REECO, P.O. Box 98521, M/S #417, Las Vegas, NV
89193-8521
Barbara Yoerg, DOE/NTSO, P.O. Box 98518, M/S #701, Las Vegas
Nevada 89193-8518

PETER G. MORROS
Director

STATE OF NEVADA
BOB MILLER
Governor

L. H. DODGION
Administrator

(702) 486-7010

JAN 12 10 33 AM '95
FAX (702) 486-7014

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
(Las Vegas Office)

1515 E. Tropicana, Suite 395
Las Vegas, Nevada 89119

January 4, 1995

Dr. Donald R. Elle
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

RE: Permanent Closure and Removal for 12 Abandoned Underground Storage Tanks (USTs) on the Nevada Test Site (NTS)

Dear Dr. Elle:

The Nevada Division of Environmental Protection (NDEP) has received notification relating to the closure of 12 abandoned underground storage tanks located at the Nevada Test Site (NTS), as listed below:

15-CM-1	25-3101-1	25-3129-1	26-2102-1
23-BPY-1	25-3102-4	25-3123-1	26-2101-1
25-3152-1	25-3110-1	26-2205-1	26-2101-2

In accordance with 40 CFR 280.72, the required site assessments have been evaluated and determined to have been conducted satisfactorily.

Accordingly, based on the information provided by the Department of Energy, Environmental Protection Division, the Division of Environmental Protection, State of Nevada accepts as final closure, the documentation for the closure of the above mentioned tanks as presented.

Don Elle
January 4, 1995
Page 2

Continuation of remediation of those closures associated with soil contamination will continue through the spill/release corrective action program, and 40 CFR 280 Subpart F, as previously agreed to.

If any questions should require input from our staff please contact me at (702) 486-7010.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dean Mierau".

Dean Mierau, EMSIII
Project Manager
Bureau of Federal Facilities
Las Vegas Office

DM:dm

cc: Richard Serdoz
Paul Liebendorfer
Howard Dickson
Barbara Yoerg

(702) 486-2850

FAX (702) 486-2863

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

(Las Vegas Office)

555 E. Washington, Suite 4300

Las Vegas, Nevada 89101

March 28, 1995

Dr. Donald R. Elle
Environmental Protection Division
U.S. Department of Energy
Nevada Operations Office
P. O. Box 98518
Las Vegas, NV 89193-8518

RE: Permanent Closure and Removal of seven (7) Abandoned
Underground Storage Tanks (USTs) on the Nevada Test Site (NTS)

Dear Dr. Elle:

The Nevada Division of Environmental Protection (NDEP) has received notification relating to the closure of seven (7) abandoned underground storage tanks located at the Nevada Test Site (NTS), as listed below:

12-16-4	<u>12-26-1</u>	12-26-2	12-26-3
23-752-1	23-752-2	<u>23-752-3</u>	

In accordance with 40 CFR 280.72, the required site assessments have been evaluated and determined to have been conducted satisfactorily.

Accordingly, based on the information provided by the Department of Energy, Environmental Protection Division, the Division of Environmental Protection, State of Nevada accepts as final closure, the documentation for the closure of the above mentioned tanks as presented.

Don Elle
March 28, 1995
Page 2

Continuation of remediation of those closures associated with soil contamination will proceed through the spill/release corrective action program, and 40 CFR 280 Subpart F, as previously agreed to.

If any questions should require input from our staff please contact me at (702) 486- 2856.

Sincerely,

Dean Mierau, EMSIII
Project Manager
Bureau of Federal Facilities
Las Vegas Office

DM:dm

cc: Paul Liebendorfer
Richard Serdoz
Howard Dickson
Barbara Yoerg

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Paul Liebendorfer
Bureau of Federal Facilities
Division of Environmental Protection
333 W. Nye Lane, Room 13B
Carson City, NV 89706-0866

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Chuck Bulik
Bureau of Federal Facilities
Division of Environmental Protection
555E. Washington, Suite 4300
Las Vegas, NV 89101

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Correspondence Control
Bechtel Nevada
P. O. Box 98521, M/S NLV008
Las Vegas, NV 89193-8521

1

Jerry Bonn
Bechtel Nevada
P. O. Box 98521, M/S NTS306
Las Vegas, NV 89193-8521

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David Cowser
Bechtel Nevada
P. O. Box 98521, M/S NLV082
Las Vegas, NV 89193-8521

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James Kannard
Bechtel Nevada
P. O. Box 98521, M/S NLV022
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Bechtel Nevada
P. O. Box 98521, M/S NTS306
Las Vegas, NV 89193-8521

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Steve Weil
Bechtel Nevada
P. O. Box 98521, M/S NLV042
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