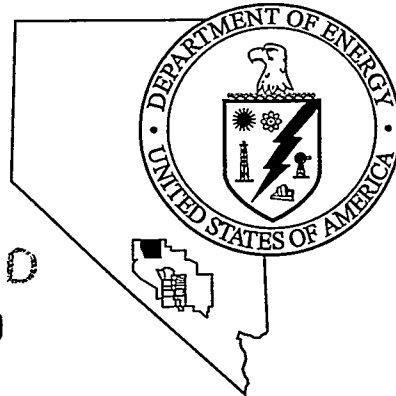


Nevada  
Environmental  
Restoration  
Project

DOE/NV-11718-241  
UC-702



RECEIVED  
MAR 23 1999  
OSTI

Corrective Action Plan for  
Corrective Action Unit 424:  
Area 3 Landfill Complex,  
Tonopah Test Range, Nevada

Controlled Copy No.  
Revision No.: 0

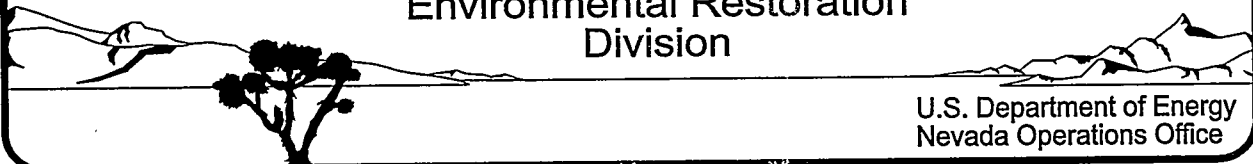
UNCONTROLLED COPY

August 1998

Approved for public release; further distribution is authorized.

Environmental Restoration  
Division

U.S. Department of Energy  
Nevada Operations Office



This report has been reproduced from the best available copy.

DOE and DOE contractors can obtain copies of this report from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831, (423) 576-8401.

This report is publicly available from the National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, VA, 22161, (703) 487-4650.

**CORRECTIVE ACTION PLAN  
FOR CORRECTIVE ACTION UNIT 424:  
AREA 3 LANDFILL COMPLEX  
TONOPAHA TEST RANGE, NEVADA**

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

Controlled Copy No. **UNCONTROLLED COPY**

**Revision: 0**

**Prepared by  
Bechtel Nevada  
Environmental Restoration**

**August 1998**

## **DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

**CORRECTIVE ACTION PLAN  
FOR CORRECTIVE ACTION UNIT 424:  
AREA 3 LANDFILL COMPLEX  
TONOPAH TEST RANGE, NEVADA**

Approved by: Janet Appenzeller-Wing  
Janet L. Appenzeller-Wing, Project Manager  
Industrial Sites Subproject

Date: 8/11/98

Approved by: Robert M. Pangerton Jr.  
for Runore C. Wycoff, Project Manager  
Nevada Environmental Restoration Project

Date: 8/11/98

# TABLE OF CONTENTS

---

FIGURES .....	iv
APPENDICES .....	iv
ACRONYMS AND ABBREVIATIONS .....	v
EXECUTIVE SUMMARY .....	ES-1
1.0 INTRODUCTION .....	1
1.1 Purpose .....	11
1.2 Scope .....	11
1.3 Corrective Action Plan Contents .....	11
2.0 DETAILED STATEMENT OF WORK .....	13
2.1 Alternative Implementation .....	13
2.1.1 Removal of Petroleum-Hydrocarbon Wastes and Impacted Soils .....	13
2.1.2 Repair and Maintenance of Soil Covers .....	14
2.1.3 Posting of Warning Signs and/or Monuments .....	15
2.1.4 Implementation of Administrative Controls to Restrict Land Use .....	15
2.2 Construction Quality Assurance / Quality Control .....	16
2.3 Waste Management .....	16
3.0 SCHEDULE .....	17
4.0 POST-CLOSURE MONITORING PLAN .....	18
5.0 REFERENCES .....	19

## **TABLE OF CONTENTS (continued)**

---

### **FIGURES**

FIGURE 1 - LOCATION OF THE AREA 3 LANDFILL COMPLEX AT THE TONOPAH TEST RANGE .....	2
FIGURE 2 - LOCATIONS OF THE EIGHT AREA 3 LANDFILL SITES .....	3
FIGURE 3 - SITE PLANS FOR LANDFILLS A3-1 AND A3-2 .....	4
FIGURE 4 - SITE PLAN FOR LANDFILL A3-3 .....	5
FIGURE 5 - SITE PLAN FOR LANDFILL A3-4 .....	6
FIGURE 6 - SITE PLAN FOR LANDFILL A3-5 .....	7
FIGURE 7 - SITE PLAN FOR LANDFILL A3-6 .....	8
FIGURE 8 - SITE PLAN FOR LANDFILL A3-8 .....	9

### **APPENDICES**

APPENDIX A - ENGINEERING DRAWINGS	
APPENDIX B - WASTE MANAGEMENT PLAN	
APPENDIX C - DOCUMENT REVIEW SHEET	

## **ACRONYMS AND ABBREVIATIONS**

---

ASTM	American Society for Testing and Materials
CADD	Corrective Action Decision Document
CAIP	Corrective Action Investigation Plan
CAP	Corrective Action Plan
CAS	Corrective Action Site
CAU	Corrective Action Unit
COC	Constituent of Concern
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ft	feet
ft <sup>2</sup>	square feet
ft <sup>3</sup>	cubic feet
in	inches
km	kilometers
m	meters
m <sup>2</sup>	square meters
m <sup>3</sup>	cubic meters
mg/kg	milligrams per kilogram
mi	miles
NDEP	Nevada Division of Environmental Protection



## **ACRONYMS AND ABBREVIATIONS**

---

TTR	Tonopah Test Range
TPH	total petroleum hydrocarbons
yd <sup>3</sup>	cubic yards

## EXECUTIVE SUMMARY

This Corrective Action Plan (CAP) provides the closure implementation methods for the Area 3 Landfill Complex, Corrective Action Unit (CAU) 424, located at the Tonopah Test Range (TTR). The Area 3 Landfill Complex CAU consists of eight landfill sites, each designated as a separate Corrective Action Site (CAS).

Results from the site investigation activities completed in 1997 are documented in the Corrective Action Decision Document (DOE, 1998). Results indicate landfill wastes were encountered at seven of the eight CASs. Since no waste was encountered in Landfill A3-7, the site is no longer considered a landfill. The state of Nevada Regulatory Action Level for total petroleum hydrocarbons (TPH) of 100 milligrams per kilogram (mg/kg) was exceeded in soil samples from Landfill A3-1 (200 mg/kg gasoline and 790 mg/kg diesel) and Landfill A3-2 (48,000 mg/kg waste oil in sludge sample).

Closure activities will consist of removal and closure-in-place of petroleum hydrocarbon-impacted wastes, and steps to minimize future exposure and contact with landfill wastes. Landfill A3-1 will be closed-in-place because the soil is impacted to a lesser degree but to greater depths, making removal less critical but more costly. An area in Landfill A3-2 will be clean closed by removing all soil impacted above the Regulatory Action Level because of the greater concentrations of petroleum hydrocarbons found at shallower depths. The following table summarizes closure activities planned for each of the eight CAU 424 Landfill sites:

### SUMMARY OF PLANNED CLOSURE ACTIVITIES

LANDFILL NUMBER	CAS NUMBER	NO ACTION	REMOVE TPH WASTE	REPAIR/ MAINTAIN COVERS	SITE POSTING <sup>1</sup>	ENACT LURS <sup>2</sup>
A3-1	03-08-001-A301			X	X	X
A3-2	03-08-002-A302		X	X	X	X
A3-3	03-08-002-A303			X	X	X
A3-4	03-08-002-A304			X	X	X
A3-5	03-08-002-A305			X	X	X
A3-6	03-08-002-A306			X	X	X
A3-7	03-08-002-A307	X				
A3-8	03-08-002-A308			X	X	X

Notes: 1 Site posting will include the installation of signs and monuments.  
 2 Land-Use Restrictions (LURs).

## 1.0 INTRODUCTION

This Corrective Action Plan (CAP) describes the selected corrective action alternatives and closure implementation methods for the Area 3 Landfill Complex Corrective Action Unit (CAU) No. 424 at the Tonopah Test Range (TTR). The TTR is located approximately 225 kilometers (km) (140 miles [mi]) northwest of Las Vegas, Nevada (Figure 1). The Area 3 Landfill Complex CAU (Figure 2) consists of eight landfill sites, designated as separate Corrective Action Sites (CASs).

In general, each landfill site is comprised of one or more cells which received wastes from daily operations at the Area 3 Compound during different time intervals from before 1963 to approximately 1993. Cell locations and contents were poorly documented due to the unregulated disposal practices commonly associated with early landfill operations. The Corrective Action Investigation Plan (CAIP) (Department of Energy (DOE), 1997) described how potential cell locations were identified from worker interviews, TTR reports, historical aerial photographs, and geophysical surveys. A field investigation was performed in 1997 and described in the CADD. The results are summarized in Table 1.

**TABLE 1 - SUMMARY OF LANDFILL CHARACTERISTICS**

LANDFILL	CAS NUMBER	SITE MAP	NO WASTE	LANDFILL DEBRIS	PETROLEUM HYDROCARBON WASTE
A3-1	03-08-001-A301	Figure 3		X	X
A3-2	03-08-002-A302	Figure 3		X	X
A3-3	03-08-002-A303	Figure 4		X	
A3-4	03-08-002-A304	Figure 5		X	
A3-5	03-08-002-A305	Figure 6		X	
A3-6	03-08-002-A306	Figure 7		X	
A3-7	03-08-002-A307	Not shown	X		
A3-8	03-08-002-A308	Figure 8		X	

As shown in Table 1, no landfill waste was found in one landfill site (A3-7). Landfill debris was found at all the other landfill sites including the two where total petroleum hydrocarbons (TPHs) were found in excess of the Regulatory Action Level (A3-1 and A3-2). TPH was the only constituent of concern (COC) reported for the Area 3 Landfill Complex in the CADD (1998). The results summarized above in Table 1 are described in more detail below.

- Landfill A3-1 (including cell A3-1a) consists of six cells (Figure 3). These consist of four buried, one open, and one partially buried cells. Landfill debris was found in eleven of fifteen soil borings. Petroleum hydrocarbons were found in four soil samples from one boring (BH1-13) between the depths of 2.1 and 10.4 meters (m) (7 and 34 feet [ft]) and

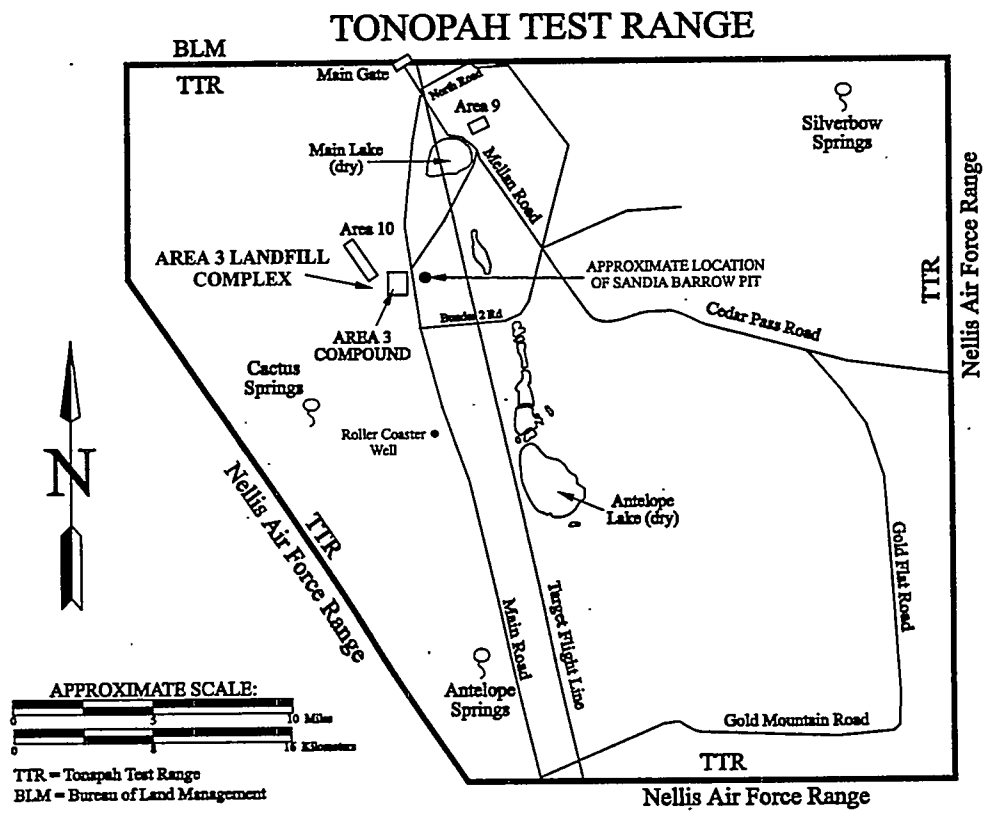
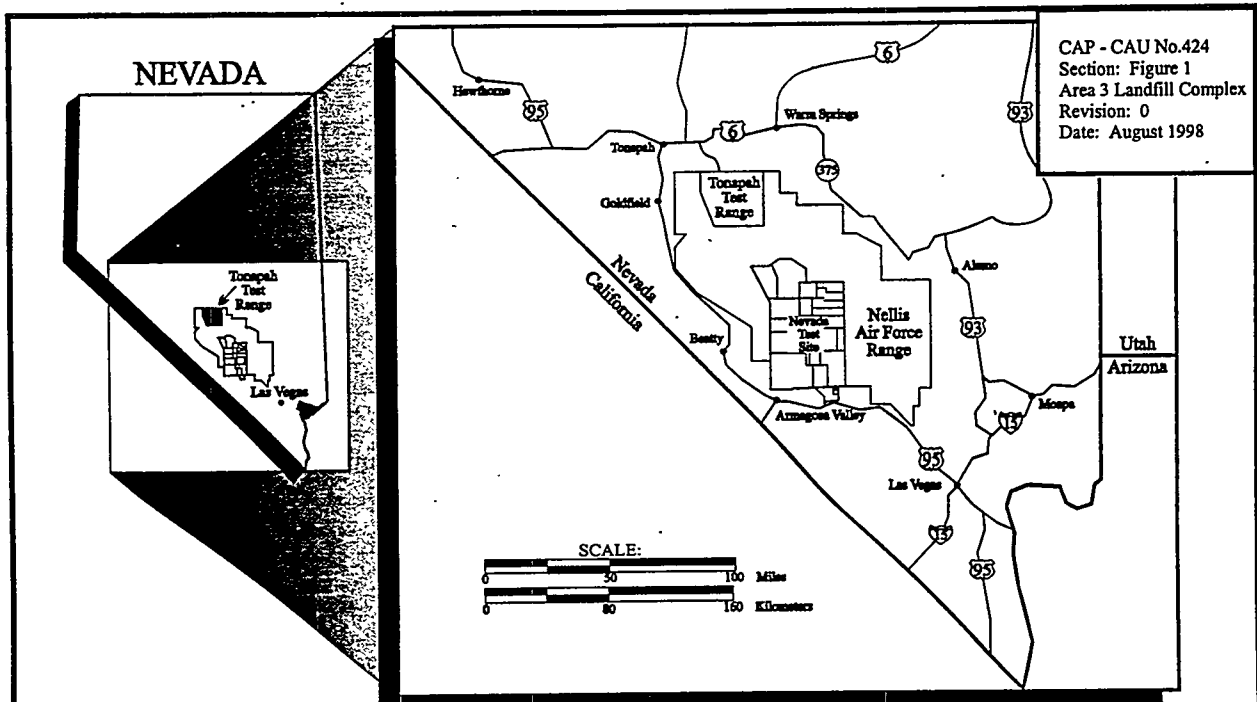


FIGURE 1  
 LOCATION OF THE AREA 3 LANDFILL COMPLEX  
 AT THE TONOPAH TEST RANGE

CAP - CAU No.424  
 Section: Figure 2  
 Area 3 Landfill Complex  
 Revision: 0  
 Date: August 1998

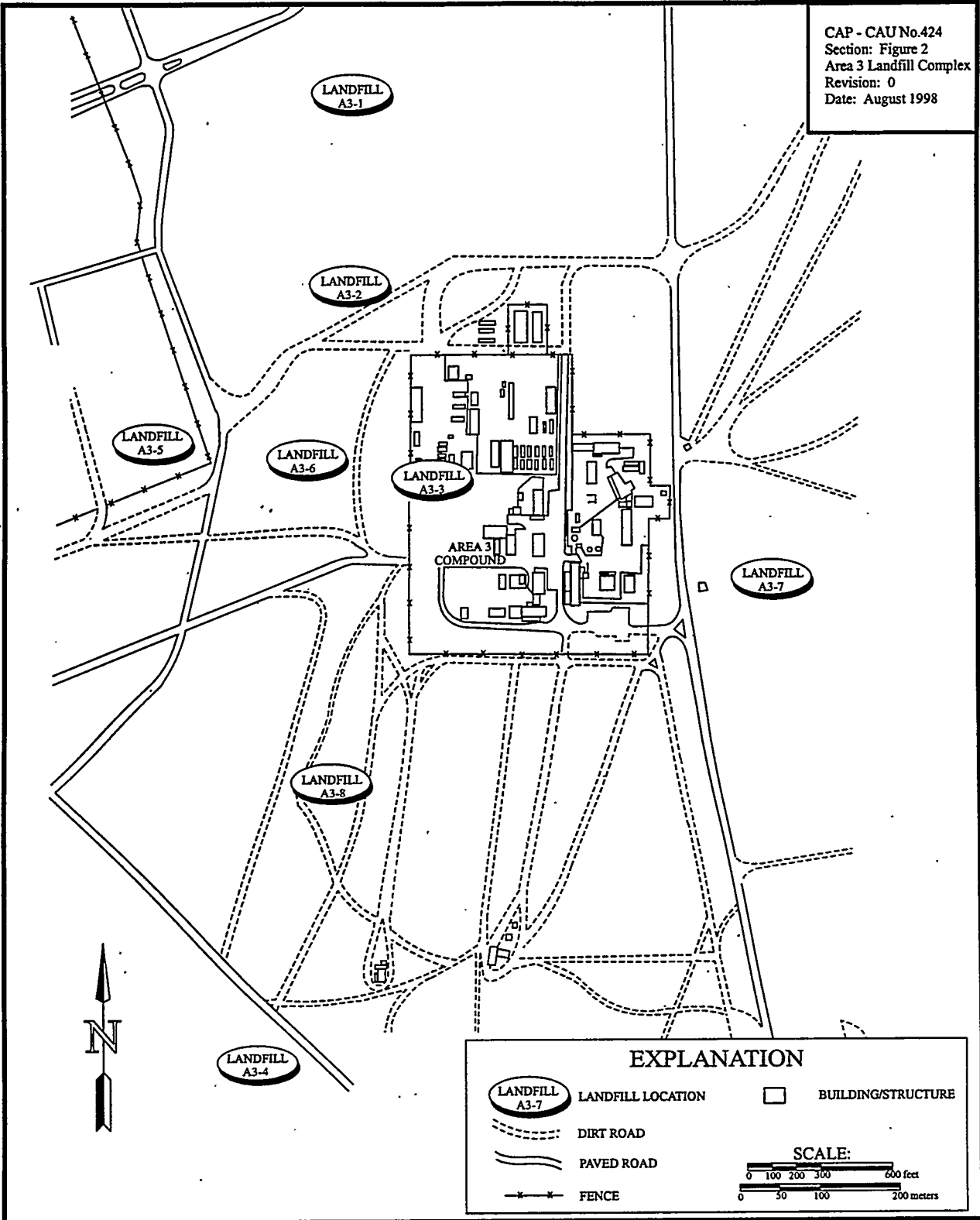
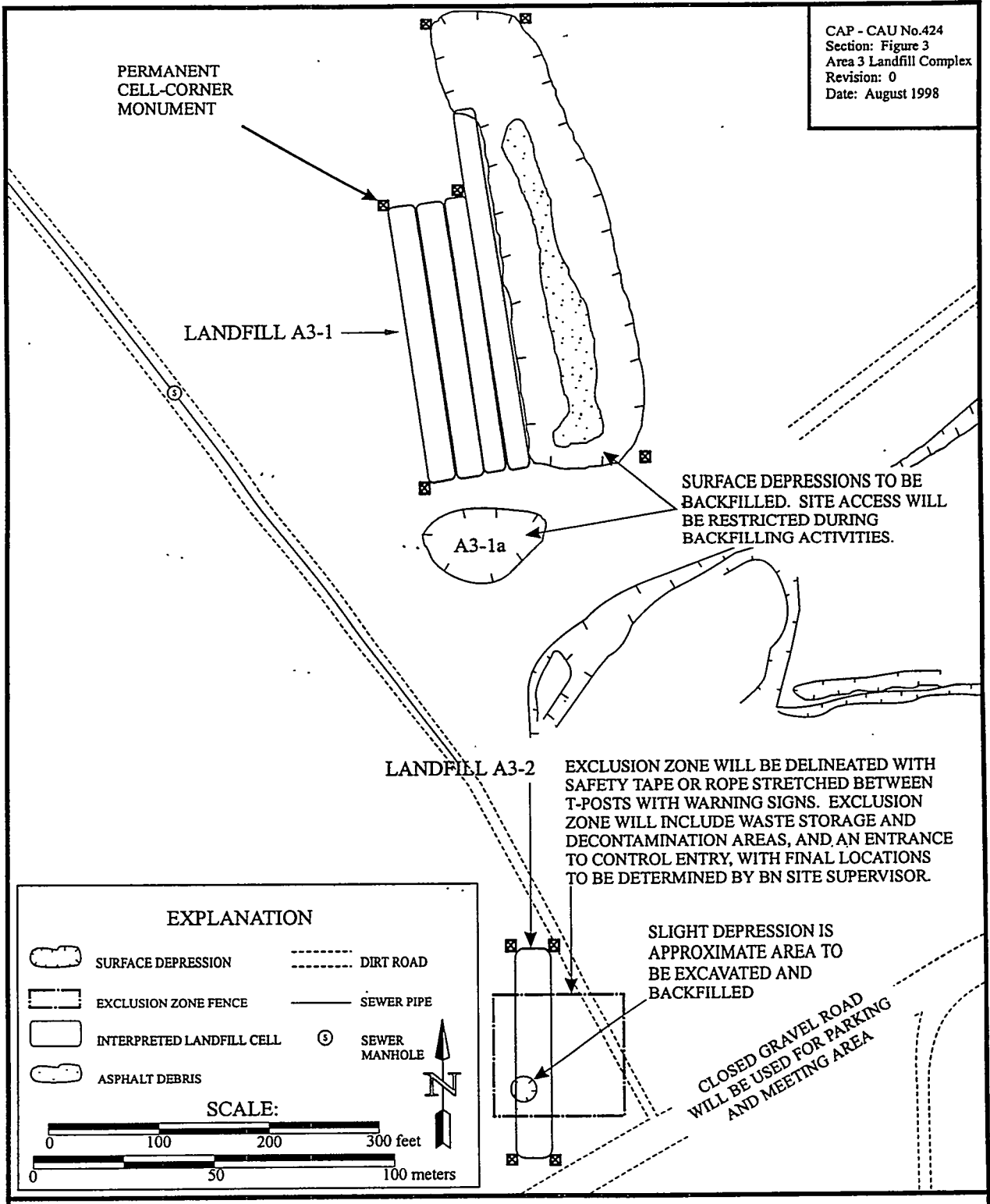


FIGURE 2  
 LOCATION OF EIGHT AREA 3 LANDFILL SITES

CAP - CAU No.424  
 Section: Figure 3  
 Area 3 Landfill Complex  
 Revision: 0  
 Date: August 1998



**FIGURE 3**  
**SITE PLAN FOR LANDFILLS A3-1 AND A3-2**

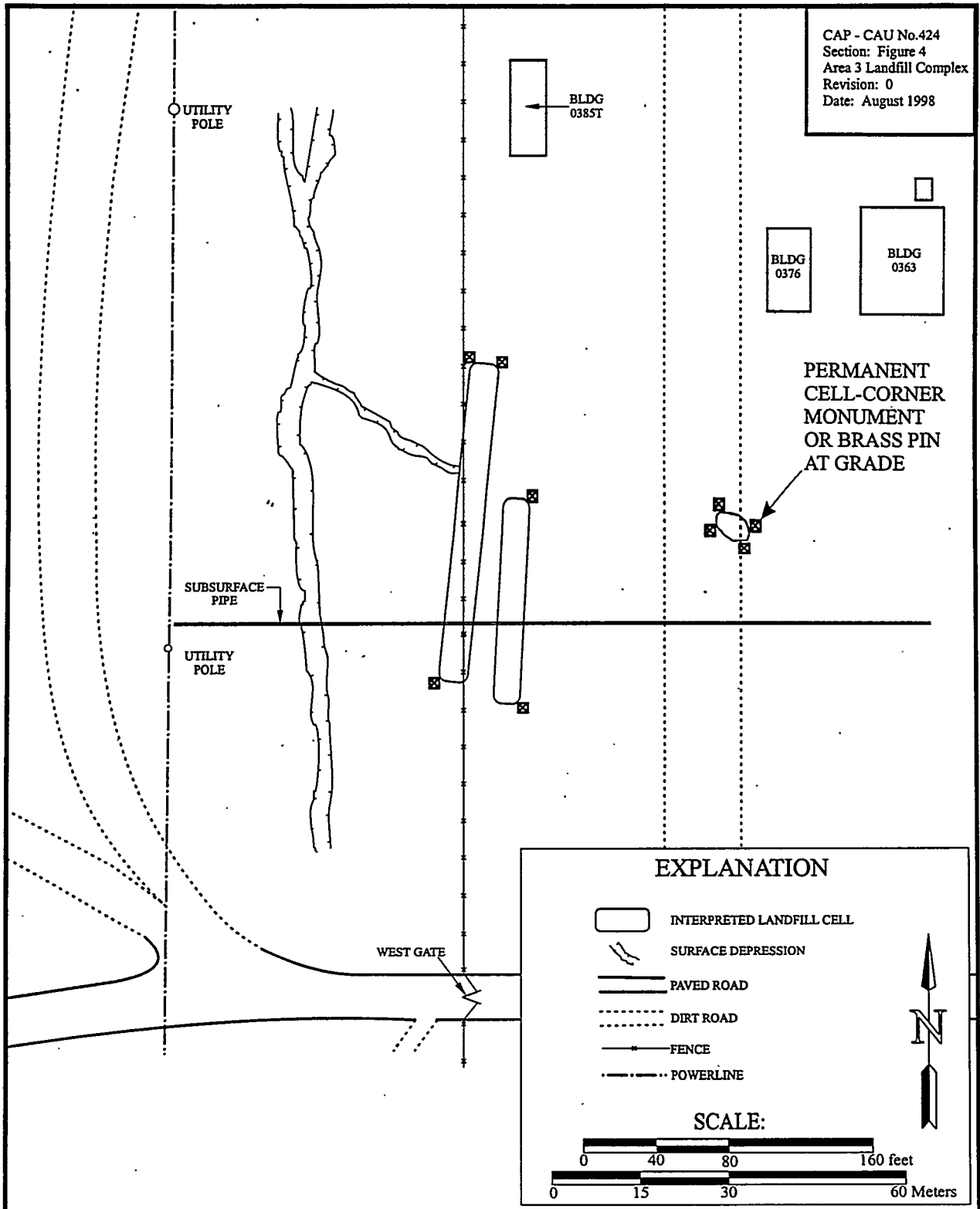


FIGURE 4  
 SITE PLAN FOR LANDFILL A3-3

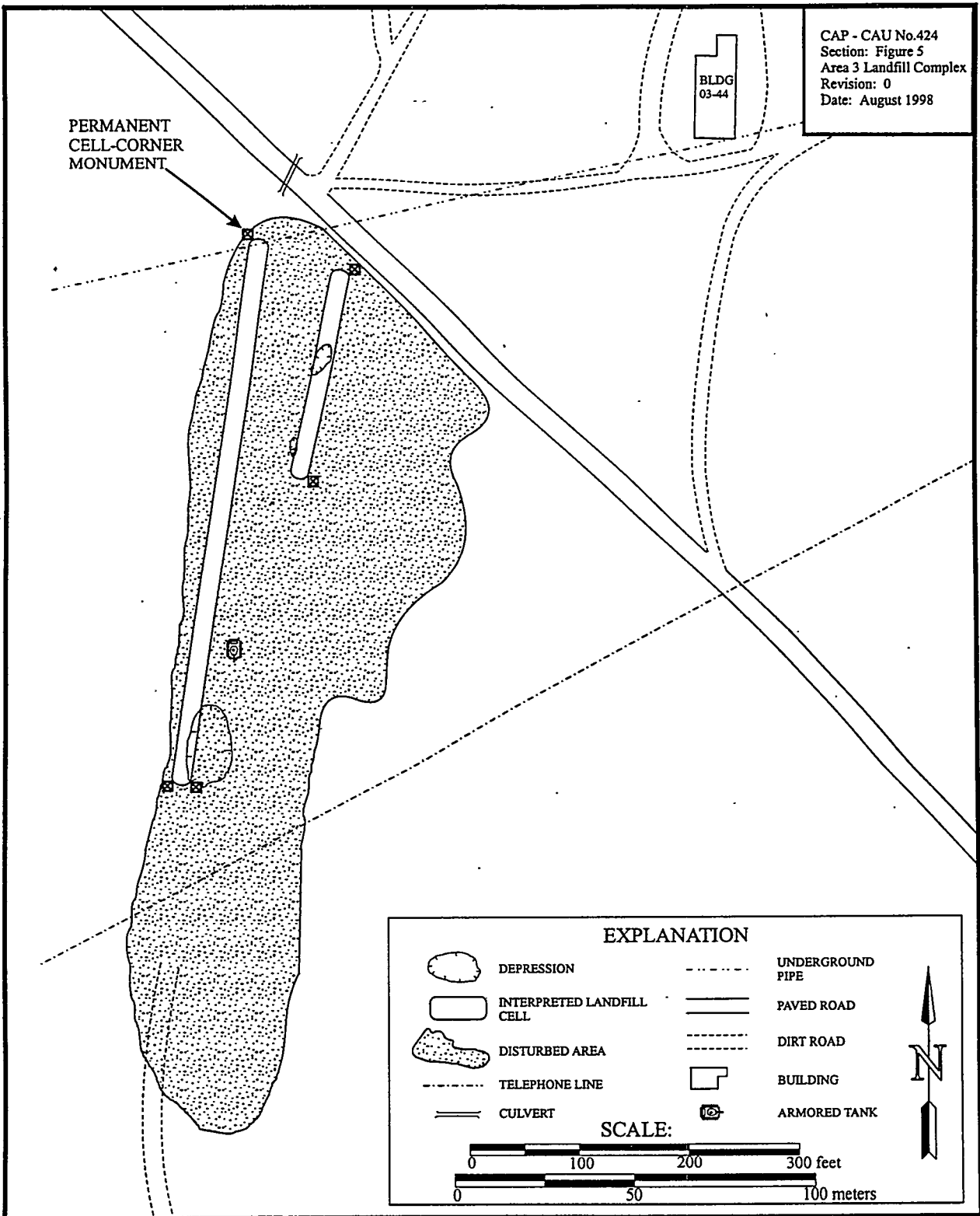


FIGURE 5  
SITE PLAN FOR LANDFILL A3-4



CAP - CAU No.424  
 Section: Figure 6  
 Area 3 Landfill Complex  
 Revision: 0  
 Date: August 1998

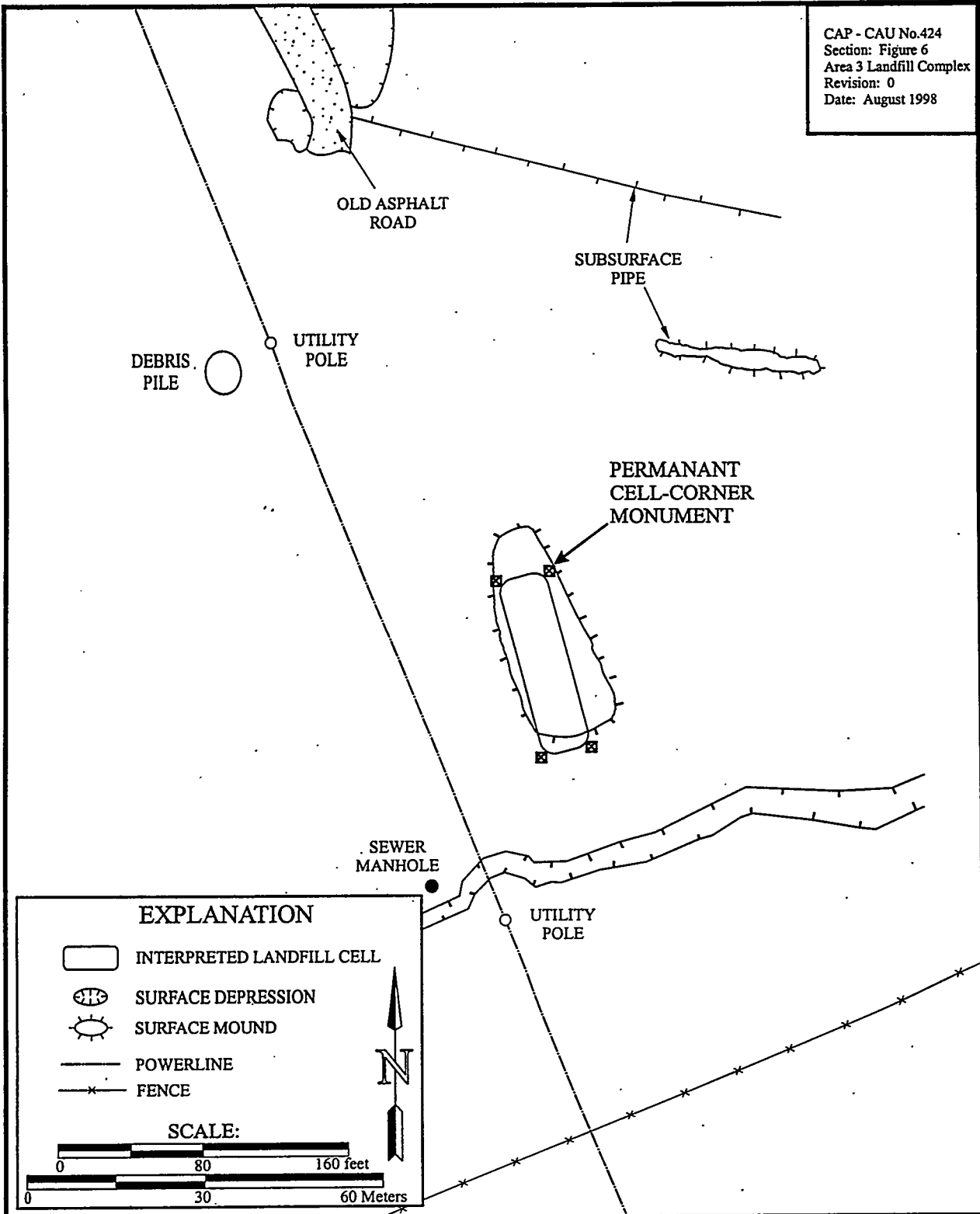
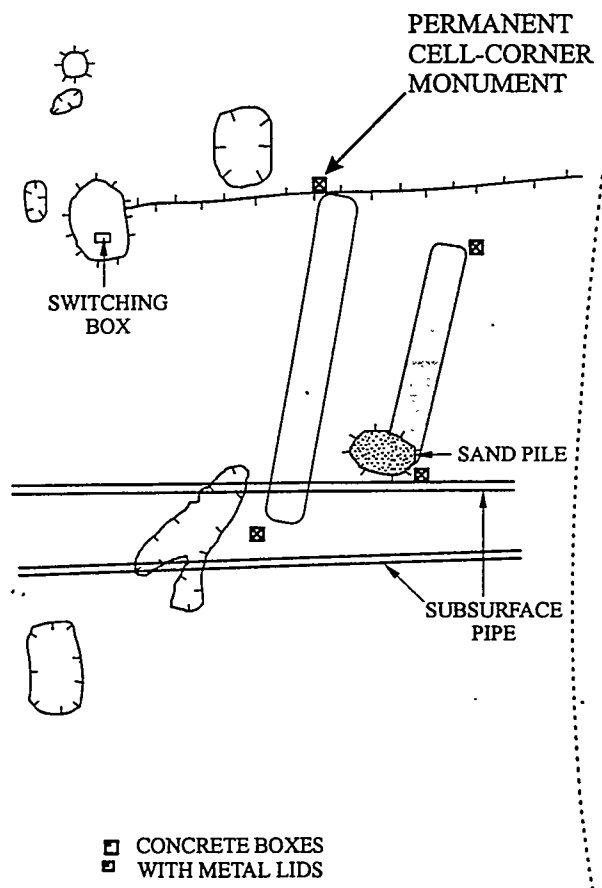


FIGURE 6  
 SITE PLAN FOR LANDFILL A3-5

CAP - CAU No.424  
 Section: Figure 7  
 Area 3 Landfill Complex  
 Revision: 0  
 Date: August 1998



**EXPLANATION**

- INTERPRETED LANDFILL CELL
- DIRT ROAD
- POWER LINE
- SURFACE MOUND
- SURFACE DEPRESSION

**SCALE:**

0 40 80 160 feet

0 15 30 60 Meters

N

FIGURE 7  
 SITE PLAN FOR LANDFILL A3-6

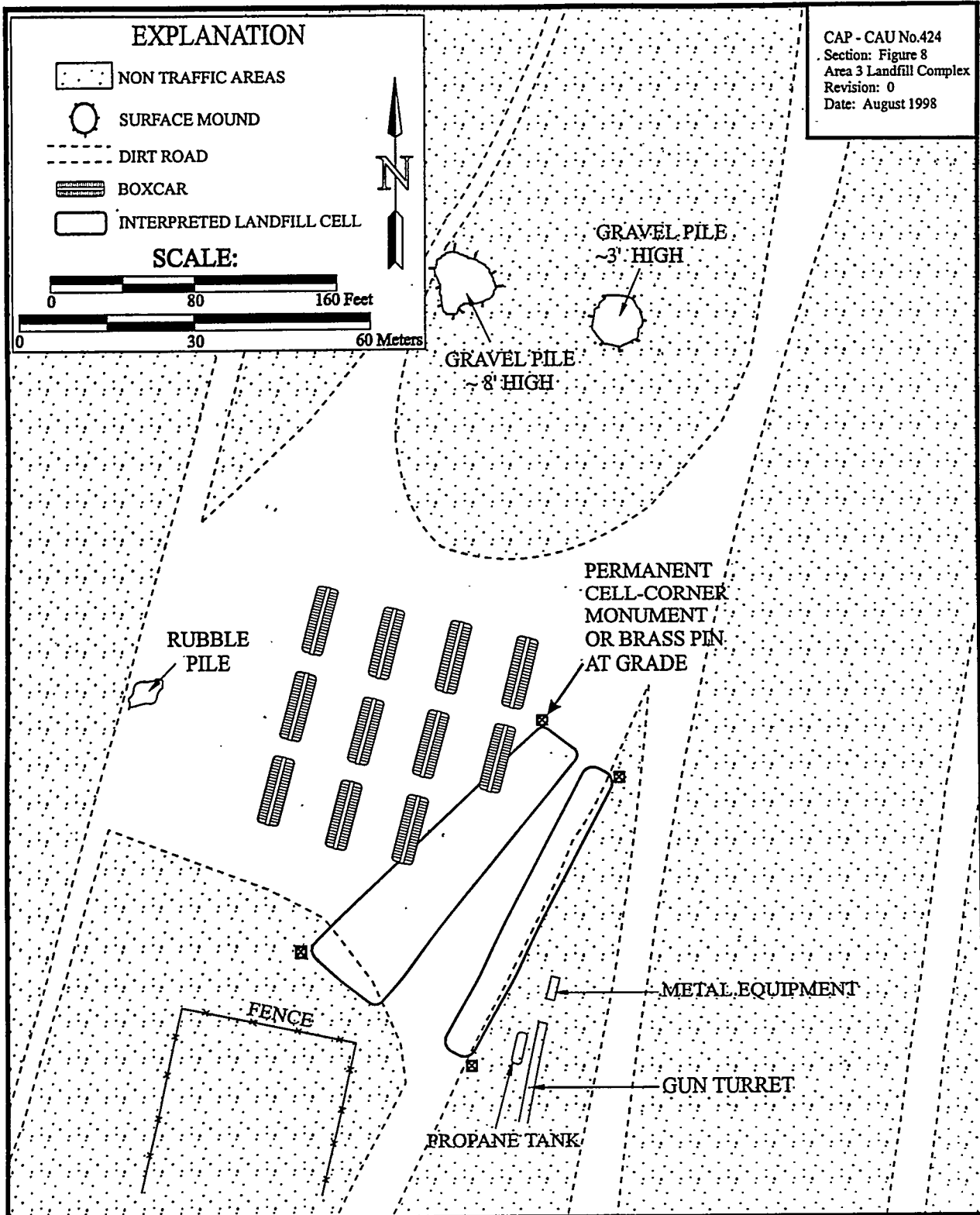


FIGURE 8  
SITE PLAN FOR LANDFILL A3-8

were identified as gasoline (in concentrations up to 200 milligrams per kilogram [mg/kg]) and as diesel (in concentrations up to 790 mg/kg). The Regulatory Action Level for TPH is 100 mg/kg. The open cell is partially filled with asphalt, concrete, and other construction debris. Landfill wastes were not found in cell A3-1a but they were included in the CADD (DOE, 1998). It is a broad surface depression that should be backfilled.

- Landfill A3-2 (Figure 3) consists of one buried cell. Landfill debris was found in four of the six borings. Sludge was found in Boring BH2-3 at a depth of 3 m (10 ft) and contained 48,000 mg/kg of TPH as waste oil. After the field investigation was completed, a sinkhole appeared and revealed the presence of debris including a diesel storage tank. The sinkhole was backfilled and the tank was buried without documenting the location of the tank or investigating its condition and contents.
- Landfill A3-3 (Figure 4) consists of three buried cells. Landfill debris was found in six of the nine borings. No COCs were found.
- Landfill A3-4 (Figure 5) consists of two buried cells. Landfill debris was found in seven of the eight borings. No COCs were found. Surface depressions and fissures were noted.
- Landfill A3-5 (Figure 6) consists of one buried cell. Landfill debris was found in two of the three borings. No COCs were found.
- Landfill A3-6 (Figure 7) consists of two buried cells. Landfill debris was found in all five borings. No COCs were found.
- Landfill A3-7 was no longer considered a landfill after no landfill debris or COCs were found in the one soil boring; therefore, a site plan is not provided.
- Landfill A3-8 (Figure 8) consists of two buried cells. Landfill debris was found in four of eight soil borings. No COCs were found. The western cell is partially overlain by two railroad boxcars used for storage. The boxcars were set in shallow excavations in order to lower their floors to near ground level. The CADD (DOE, 1998) reported that the excavations intersected the western cell and exposed landfill wastes. A site inspection by Bechtel Nevada on May 12, 1998, could not confirm (or deny) that the landfill cover was breached, but the trenches were observed to be approximately three feet deep and could collect surface debris and run-off.

## 1.1 PURPOSE

The purpose of this CAP is to provide the methods for implementing the corrective action alternatives proposed in the CADD (DOE, 1998).

## 1.2 SCOPE

The scope of this plan is to provide the methods for implementation of the closure of CAU 424. Corrective action alternatives were selected in the CADD (DOE, 1998) and include a number of steps to prevent contact and spread of landfill wastes. The corrective action alternatives consist of the following closure activities:

- Corrective Action Alternative 1 was selected for Landfill A3-7 and cell A3-1a and consists of no action, because landfill wastes were not found. Therefore, A3-7 and A3-1a are no longer considered landfills.
- Corrective Action Alternative 2 was selected for all the landfills except A3-7 and A3-2. This alternative consists of repair and maintenance of the soil cover (backfill, compaction, and re-contouring of surface depressions and subsidence fissures, where needed), posting of warning signs and monuments, and implementation of administrative controls to restrict land use. Alternative 2 will be used to administratively close-in-place Landfill A3-1 where soil samples exceeded Regulatory Action Levels for TPH.
- Corrective Action Alternative 3 was selected for Landfill A3-2, and consists of removal and disposal of petroleum hydrocarbon liquids, sludge, impacted soil (at concentrations above 100mg/kg), and possible discarded storage tanks and drums. Alternative 3 also includes all the activities described previously in Alternative 2, including backfilling the excavation. Clean closure is expected. However, if impacted soil is found to extend to depths or areas greater than predicted in the CADD (DOE, 1998), this corrective action will be re-evaluated and further characterization or closure-in-place may be considered.

## 1.3 CORRECTIVE ACTION PLAN CONTENTS

This CAP is divided into the following sections:

- Section 1.0 - Introduction
- Section 2.0 - Detailed Statement of Work
- Section 3.0 - Schedule
- Section 4.0 - Post-Closure Monitoring Plan

- Section 5.0 - References
- Appendix A - Engineering Drawings
- Appendix B - Waste Management Plan
- Appendix C - Document Review Sheet

This plan was developed using information and guidance from the following documents:

- Corrective Action Decision Document For The Area 3 Landfill Complex, Rev. 0, DOE/NV--496, DOE, 1998.
- Corrective Action Investigation Plan For The Area 3 Landfill Complex, Rev. 0, DOE/NV--476, DOE, 1997.
- Nevada Environmental Restoration Project, Health and Safety Plan, DOE, 1996.
- Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site, Rev. 1, DOE/NV-425, DOE, 1996.
- Nevada Environmental Restoration Project, Project Management Plan, DOE, 1994.

## 2.0 DETAILED STATEMENT OF WORK

### 2.1 ALTERNATIVE IMPLEMENTATION

The objectives of the corrective action alternatives selected in the CADD (DOE, 1998) are to prevent or mitigate human exposure to subsurface soils containing waste, remediate the site according to applicable state and federal regulations, and prevent adverse impacts to ground water. The selected alternatives consist of the following closure activities:

**TABLE 2 - SUMMARY OF CLOSURE ACTIVITIES**

LANDFILL	NO ACTION	REMOVE TPH WASTE	REPAIR/MAINTAIN SOIL COVERS	POST SIGNS AND MONUMENTS	ENACT LAND-USE RESTRICTIONS
A3-1			X	X	X
A3-2		X	X	X	X
A3-3			X	X	X
A3-4			X	X	X
A3-5			X	X	X
A3-6			X	X	X
A3-7	X				
A3-8			X	X	X

Coordination of the closure will include the U.S. Air Force because of the location of the site and land-use status. The future use of any land related to this CAU will be restricted from any activity that may alter or modify the containment control as identified in the Closure Report unless appropriate concurrence is obtained in advance.

#### 2.1.1 Removal of Petroleum-Hydrocarbon Wastes and Impacted Soils

Landfill A3-2 will be partially excavated to remove potential free liquids (including water), sludge, and impacted soils containing 100 mg/kg or more of TPH. The volume of soil to be excavated was estimated in the CADD (DOE, 1998) to be approximately 24 cubic meters (m<sup>3</sup>), or 31 cubic yards (yd<sup>3</sup>). Assuming a bulking factor of 30 percent, approximately 31 m<sup>3</sup> (41 yd<sup>3</sup>) of soil may be impacted and require off-site disposal. A similar volume of backfill will be needed (discussed in Section 2.1.2). If possible, clean soil removed from the excavation will be segregated and re-used as backfill. Inert debris will be left in place. This excavation and removal plan will be re-evaluated if impacted soil extends to significantly greater areas or depths than anticipated, or if unexpected hazardous wastes are found. For example, administrative closure-in-place or more extensive characterization may be appropriate. Standard construction equipment will be used and may consist of, but will not be limited to, hoses, pumps, bailer, drums, vacuum truck, backhoe, and dump trucks.

Samples of impacted soil will be collected and analyzed with field test kits and instrumentation during excavation activities in order to determine when all soil exceeding the cleanup criteria has been removed. At least three final confirmation samples will be collected from the excavation walls and floor and sent to a laboratory for TPH analysis using Environmental Protection Agency (EPA) Method 8015, Modified. If unusual or unidentified waste is encountered, it will be sampled and analyzed prior to, or during, clean-up activities in order to determine waste handling and disposal procedures. Depending on field observations, a full suite of hazardous waste analyses may be performed on these unknown samples.

If containers such as drums or tanks are discovered, their condition and contents will be investigated. If drums or smaller containers are found intact and containing liquids or sludges, those containers will be removed, sampled if necessary, and placed in overpacks. Otherwise, liquids and sludges will be transferred into new drums or tanks. Containers found to be empty and crushed, or filled with inert material such as soil or cement, pose little hazard to ground subsidence and will not be removed from the landfill. Uncrushed empty containers, however, will eventually collapse, causing subsidence of the soil cover. If they can be backfilled properly, empty containers will be left in place. Any work involving excavating, segmenting, and disposal of storage tanks will follow current Bechtel Nevada Environmental Restoration procedures. All wastes removed from waste cells will be properly disposed off-site and not returned to any Area 3 Landfill.

### **2.1.2 Repair and Maintenance of Soil Covers**

Soil covers for all landfills except A3-7 and cell A3-1a will be inspected, repaired, and maintained as needed. Portions of the landfills, which were excavated or have depressions or fissures, will be backfilled and compacted to grade. Construction debris in the open cell of Landfill A3-1 will be re-distributed more evenly along the bottom of the cell before backfilling. Roughly 1000 m<sup>3</sup> (1300 yd<sup>3</sup>) of backfill is estimated to be needed to fill the large open cell of Landfill A3-1 and the smaller A3-1a surface depression. Berms will be constructed adjacent to and below the railroad cars which were installed over Landfill A3-8 (Figure 8) to inhibit precipitation run-on and infiltration into the landfill below the railroad cars.

Standard construction equipment will be used for transporting backfill soil to the sites and compaction activities. Equipment may consist of, but will not be limited to a front-end loader, dump trucks, bulldozer, sheeps-foot compactor, vibratory roller, and water truck. Soil for backfill and re-contouring activities will be obtained from the Sandia Borrow Pit located less than 1.6 km (1 mi) east of Area 3. Water for backfill conditioning, dust suppression, and other construction activities will be obtained from the Roller Coaster Well located approximately 7.2 km (4.5 mi) south of Area 3 (Figure 1).



### **2.1.3 Posting of Warning Signs and/or Monuments**

Permanent signs, and/or monuments warning of buried wastes will be posted at boundary corners of all landfills except A3-7 and cell A3-1a. The signs will be attached to the posts or monuments with the following information:

- Landfill identification (for example, "CAU 424, boundary of Landfill A3-1").
- Warning (for example, "Warning, Buried Landfill Wastes").
- Instructions (for example, "Contact [office] at [phone no.] before digging, trenching, or removing this sign").

Important locations such as cell corners and boreholes from previous investigations will be staked and surveyed for as-built documentation and land-use restrictions. Survey markers will be installed at grade where posts or monuments are not practical due to existing land-use.

### **2.1.4 Implementation of Administrative Controls to Restrict Land Use**

Administrative controls will be implemented to restrict land-use at all landfills except A3-7 and cell A3-1a. This will be done through coordination with TTR administrative, maintenance, and operational organizations. These administrative controls should be effective because the TTR is a restricted access facility.

## **2.2 CONSTRUCTION QUALITY ASSURANCE / QUALITY CONTROL**

Native, undisturbed soil densities are estimated to be between 60 and 80 percent of the maximum density. In order to minimize ponding, infiltration, and subsidence, backfill will be placed and compacted in all depressions 0.15 m (6 inches [in]) or greater in depth below grade and will be compacted to a minimum of 80 percent of maximum density. At least one Proctor Density Test (American Society for Testing and Materials [ASTM], 1995a) will be done on the backfill material. A minimum of four field nuclear-density tests (ASTM, 1995b) will then be done at the beginning of compaction activities on lifts of 0.2 m (8 in). The number of compaction equipment passes, which are needed to compact the lift to at least 80 percent of maximum density, will be designated as the field performance specification. Additional field tests will be done periodically during compaction activities to confirm or modify the field performance specification and to ensure that at least an 80 percent maximum density is achieved. A minimum of one field test will be done in any area backfilled requiring at least one full lift over an area of at least 1 square meter ( $m^2$ ) (10 square feet [ $ft^2$ ]). Additional tests will be done where backfill volumes exceed 1  $m^3$  (35 cubic feet [ $ft^3$ ]) with at least one test in the final top lift. Additional density testing may be done if changes occur in the backfill material (such as significant visual change in the grain size distribution).

## **2.3 WASTE MANAGEMENT**

Wastes containing petroleum hydrocarbons will be generated at Landfill A3-2. Temporary on-site storage will consist of drums and/or overpacks for liquid and sludge wastes. Impacted soil will be stockpiled on, and covered by, plastic sheets. Only hydrocarbon and nonhazardous wastes are expected. If hazardous waste is generated, the waste will be managed and disposed in accordance with U.S. DOE Orders, U.S. Department of Transportation requirements, state and federal regulations, and agreements and permits between DOE/Nevada Operations Office and the NDEP. A Waste Management Plan (Appendix B) has been prepared to address the management of hazardous waste if found during site activities. Stockpiled petroleum hydrocarbon wastes will be transported for disposal to the Area 6 Hydrocarbon Landfill at the Nevada Test Site or other approved disposal facility.

### **3.0 SCHEDULE**

---

The following schedule is planned for TTR Area 3 Landfill Complex CAU 424 closure activities:

- Begin TTR Area 3 Landfill Complex field closure activities within 60 days from the date that NDEP grants approval of the CAP.
- Complete field closure activities for TTR Area 3 Landfill Complex within 60 days after beginning field closure activities.
- Prepare the Closure Report for submittal to NDEP within approximately 120 days after completion of field closure activities.

Flexibility has been placed in the project schedule to account for minor difficulties (weather, equipment breakdowns, etc.). The DOE will keep the NDEP apprised of any condition that may impact the project schedule.

## **4.0 POST-CLOSURE MONITORING PLAN**

A Post-Closure Monitoring Plan for the Area 3 Landfill Complex is proposed and consists of biannual (twice per year) visual inspections to verify that the soil covers remain intact and free of surface depressions, warning signs and monuments are in place and readable, and land-use restrictions are maintained. Additional, nonscheduled inspections may be required after severe weather events such as heavy rainfall, flash flooding, and high winds. Identified maintenance and repair requirements will be remedied within 90 days of discovery and documented in writing at the time of repair. The proposed biannual inspections will be performed for approximately five years after site closure, and will be documented on inspection forms.

The proposed monitoring plan will include an annual report which will describe observations, modifications, and/or repairs made to the cover and cover area. The annual report will be prepared following the second inspection of each year that post-closure monitoring is conducted. The annual reports will include the following information:

- Discussion of observations.
- Inspection checklist and maintenance record.
- Conclusions and recommendations.

A copy of each annual report will be submitted to the NDEP.

## 5.0 REFERENCES

---

ASTM, 1995a, Method D 1557-91: Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort, 1995 Annual Book of ASTM Standards, Volume 04.08, Soil and Rock (I): D 420 - D 4914.

ASTM, 1995b, Method D 2922-91: Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth), 1995 Annual Book of ASTM Standards, Volume 04.08, Soil and Rock (I): D 420 - D 4914.

DOE, 1994, Nevada Environmental Restoration Project, Project Management Plan.

DOE, 1996a, Nevada Environmental Restoration Project, Health and Safety Plan.

DOE, 1996b, Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site.

DOE, 1997, Corrective Action Investigation Plan for the Area 3 Landfill Complex, Tonopah Test Range, Nevada (Corrective Action Unit 424), DOE/NV--476 UC-700.

DOE, 1998, Corrective Action Decision Document for the Area 3 Landfill Complex, Tonopah Test Range, Nevada (Corrective Action Unit 424), DOE/NV--496 UC-700.

EPA, 1996, Region IX Preliminary Remediation Goals (PRGs), San Francisco, CA.

NDEP, 1998, April 16, 1998 letter from Paul J. Liebendorfer to Runore C. Wycoff, CADD For The Area 3 Landfill Complex.

CAP - CAU No.424  
Section: Appendix A  
Area 3 Landfill Complex  
Revision: 0  
Date: August 1998

# **APPENDIX A**

## **ENGINEERING DRAWINGS**

# UNITED STATES DEPARTMENT OF ENERGY

## NEVADA OPERATIONAL ENVIRONMENTAL RESTORATION

### LAS VEGAS, NEVADA

# TONOPAH TEST AREA

# AREA 3 LANDFILL CLEANUP

# AREA

## INDEX

DRAWING NUMBER	REV	DRAWING TITLE	STANDARD NUMBER	DESCRIPTION
<b>TITLE</b>				
SK-052-133-T3	REV 0	TITLE SHEET	STD T1 SHT 1 STD T2 SHT 1	STANDARDS INDEX GENERAL NOTES, DRAFTING SYMBOLS & ANSI STANDARDS
<b>CIVIL</b>				
JS-052-133-C7	REV 0	VICINITY MAP	STD C100 SHT 1	NOTES, LEGEND & SYMBOLS ABBREVIATIONS
JS-052-133-C8	REV 0	A3 LANDFILL COMPLEX SITE PLAN	STD C101 SHT 1	
JS-052-133-C9	REV 0	A3-1.1a SITE PLAN		
JS-052-133-C10	REV 0	A3-2 SITE PLAN		
JS-052-133-C11	REV 0	A3-3 SITE PLAN		
JS-052-133-C12	REV 0	A3-4 SITE PLAN		
JS-052-133-C13	REV 0	A3-5 SITE PLAN		
JS-052-133-C14	REV 0	A3-6 SITE PLAN		
JS-052-133-C15	REV 0	A3-8 SITE PLAN		
JS-052-133-C16	REV 0	MONUMENT DETAILS		

### SCOPE OF WORK

THIS PROJECT INCLUDES THE RESTORATION OF 8 EXISTING LANDFILL LOCATIONS. WORK WILL PRIMARILY INVOLVE FILLING OF LOCAL SURFACE DEPRESSIONS WITH NATIVE SOILS.

AREA EVALUATION FOR RESIDUAL SOIL CONTAMINATION SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH DOE/NV 5480.11 AND THE CONTRACTOR'S STANDARD OPERATING PROCEDURES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES

### PROJECT NOTES

ALL CONSTRUCTION FEATURES, MATERIALS, TESTS AND DETAILS SHALL CONFORM TO "USDOE/NV STANDARD SPECIFICATIONS, DATED DECEMBER 1994". FOR STANDARDS REFERENCED ON THIS PROJECT, SEE THE NTS OVERHEAD POWER LINE STANDARDS AND THE RSH DESIGN DRAWING STANDARDS.



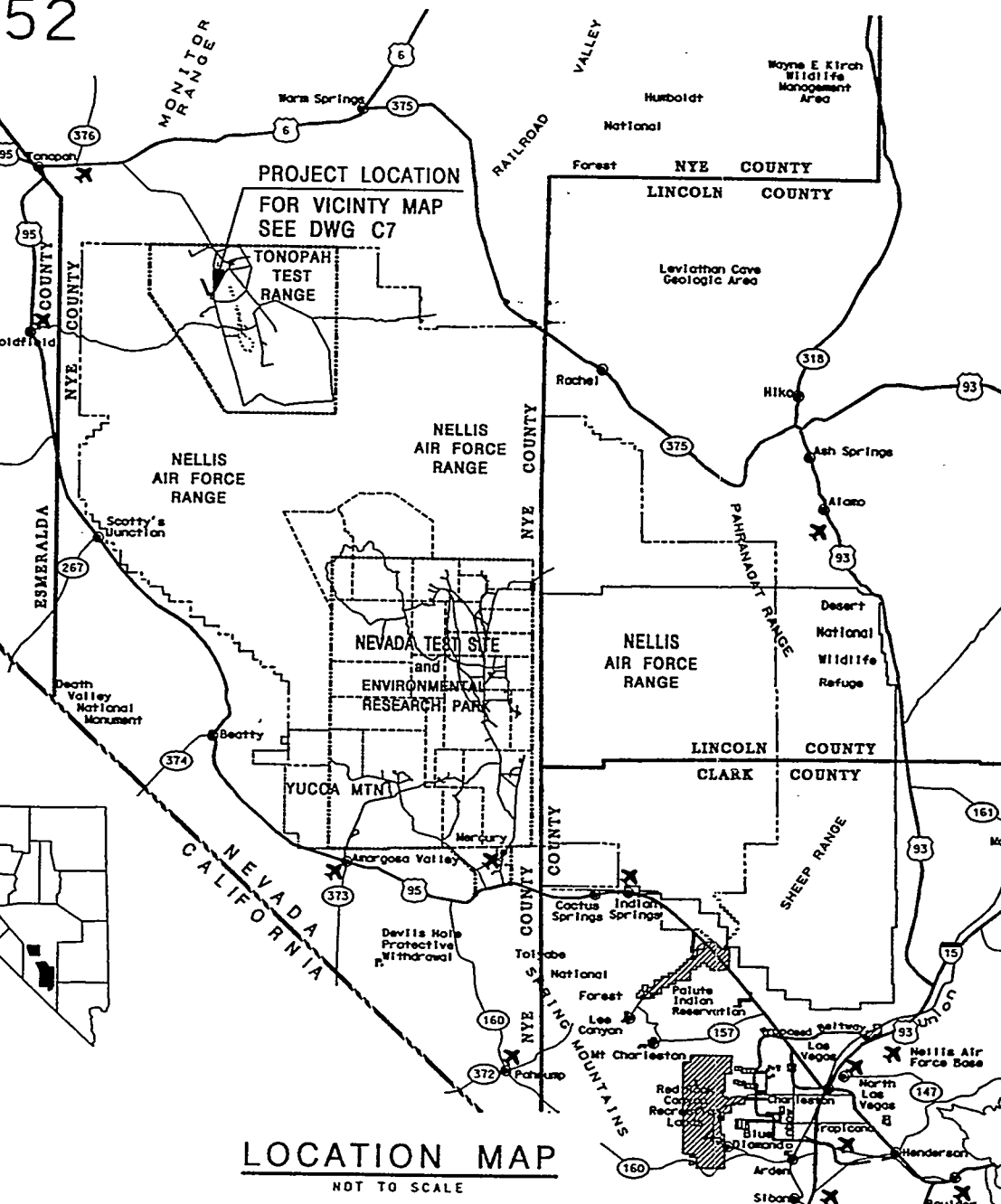
# DEPARTMENT OF ENERGY

OPERATIONS OFFICE  
NEVADA

## TONOPAH RANGE

## CLOSURES CAU 424

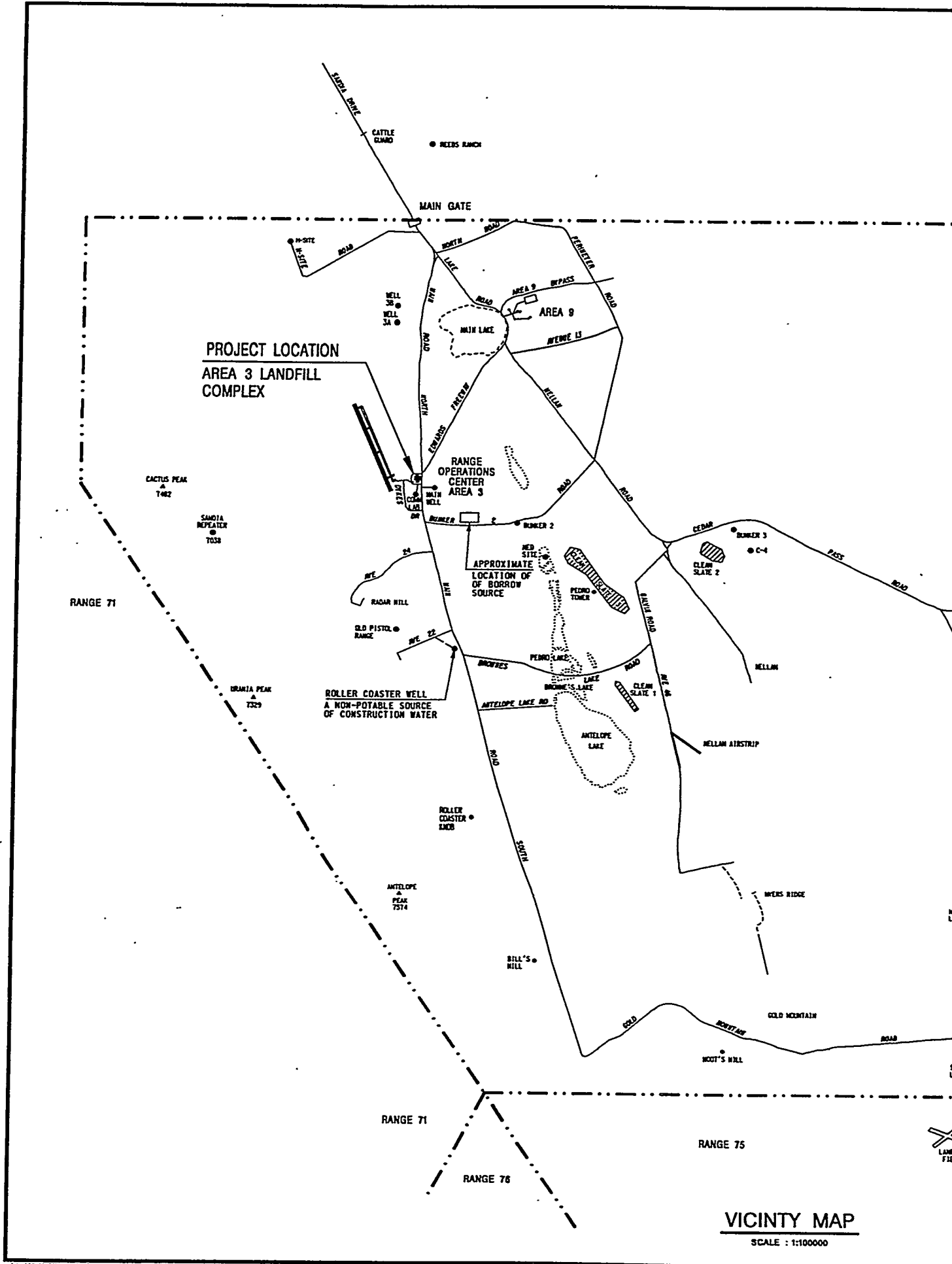
52



LOCATION MAP  
NOT TO SCALE

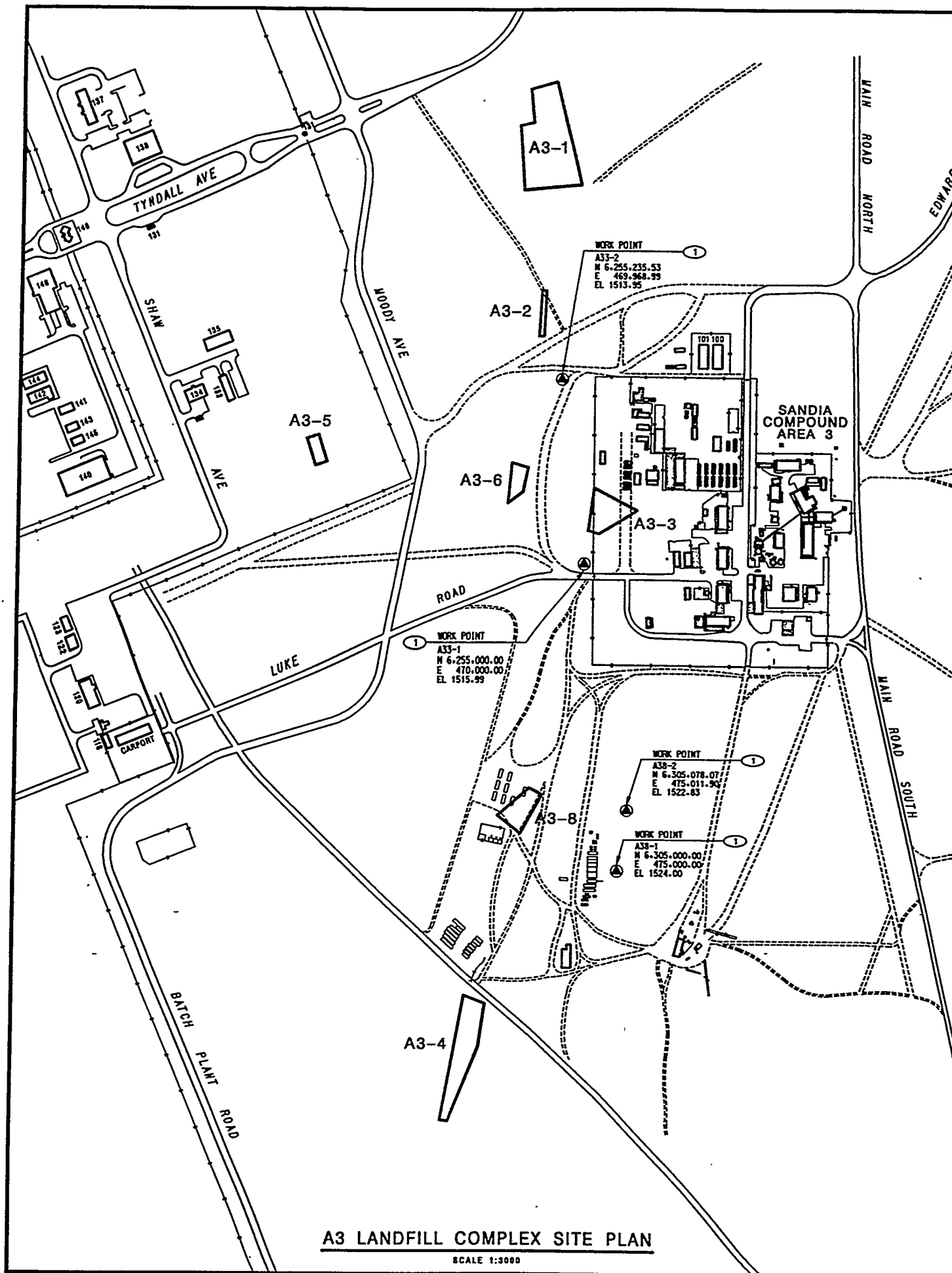
		U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA <b>Bechtel Nevada</b> <small>U.S. GOVERNMENT PRINTING OFFICE: 1975-0-281-001</small>	
TONOPAH TEST RANGE AREA 3 LANDFILL CLOSURES CAU 424		TITLE SHEET	
DRAFTING NUMBER 15-052-133-13	SHEET OF	PROJECT NUMBER 88189-AS2	PROJECT DATE N/A
CHECKED DATE	DESIGNED DATE	DEPT OF ENERGY PROJECT ENGINEER DATE	ISSUED FOR CONSTRUCTION, DATED 7/14/98 NOTATION RECAPTION
N/A	N/A	PROJECT DATE N/A	PROJECT DATE N/A



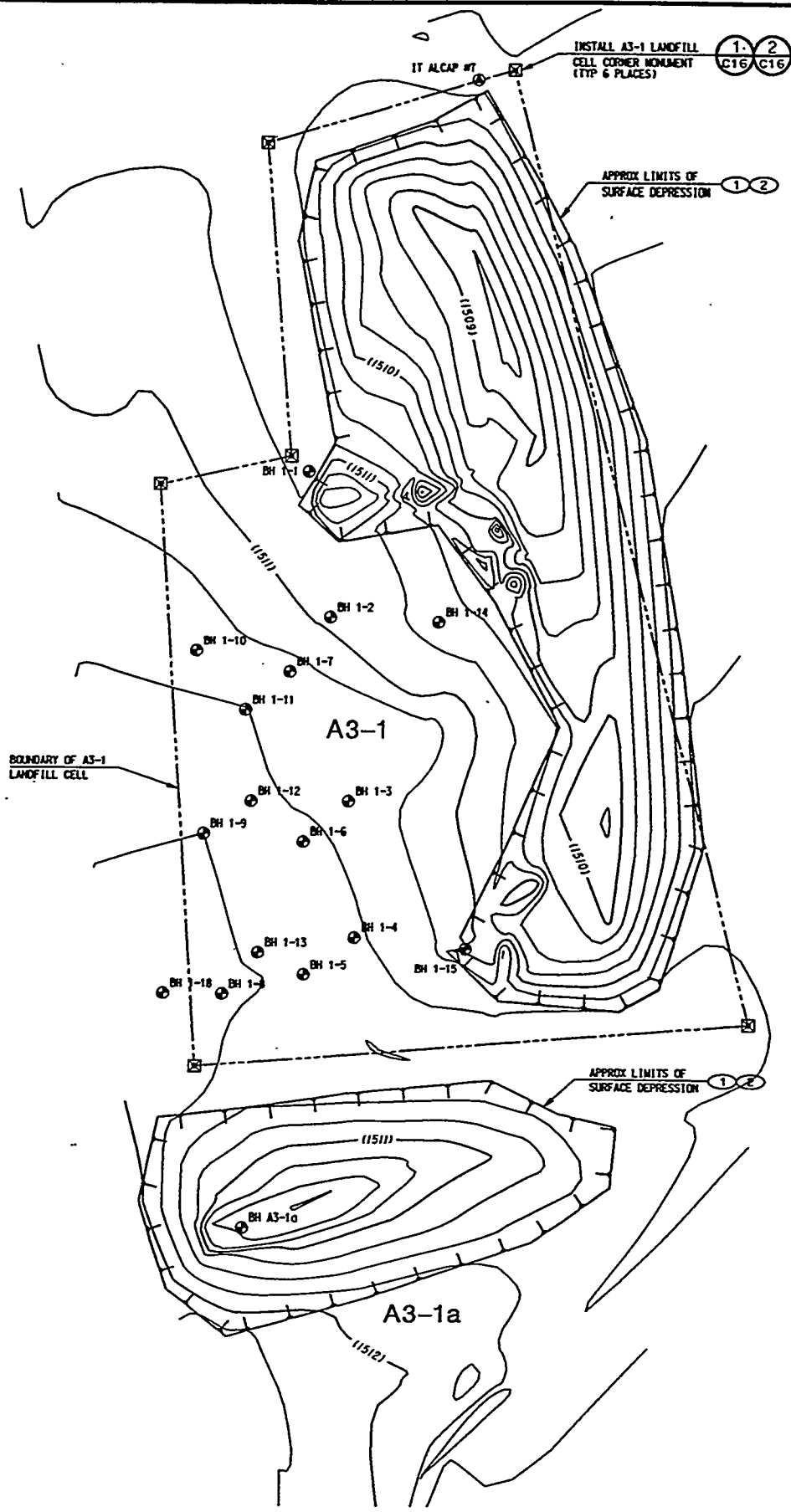


**VICINITY MAP**  
 SCALE : 1:100000









**A3-1,1a SITE PLAN**

SCALE 1:400

**KEY NOTES**

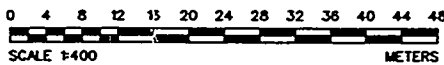
- ① DEPRESSIONS WITHIN LANDFILL CELLS SHALL BE FILLED AND SHAPED TO DRAIN.
- ② OBTAIN BACKFILL MATERIAL FROM BORROW SOURCE SHOWN ON DWG C2.

**NOTES**

- 1. ALL FILL SHALL BE COMPACTED TO 10% OF MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557.
- 2. FOR MORE SPECIFIC PROJECT REQUIREMENTS AND CONSTRUCTION QUALITY CONTROL REQUIREMENTS, SEE THE CORRECTIVE ACTION PLAN FOR AREA 3 LANDFILL COMPLEX, TTR.

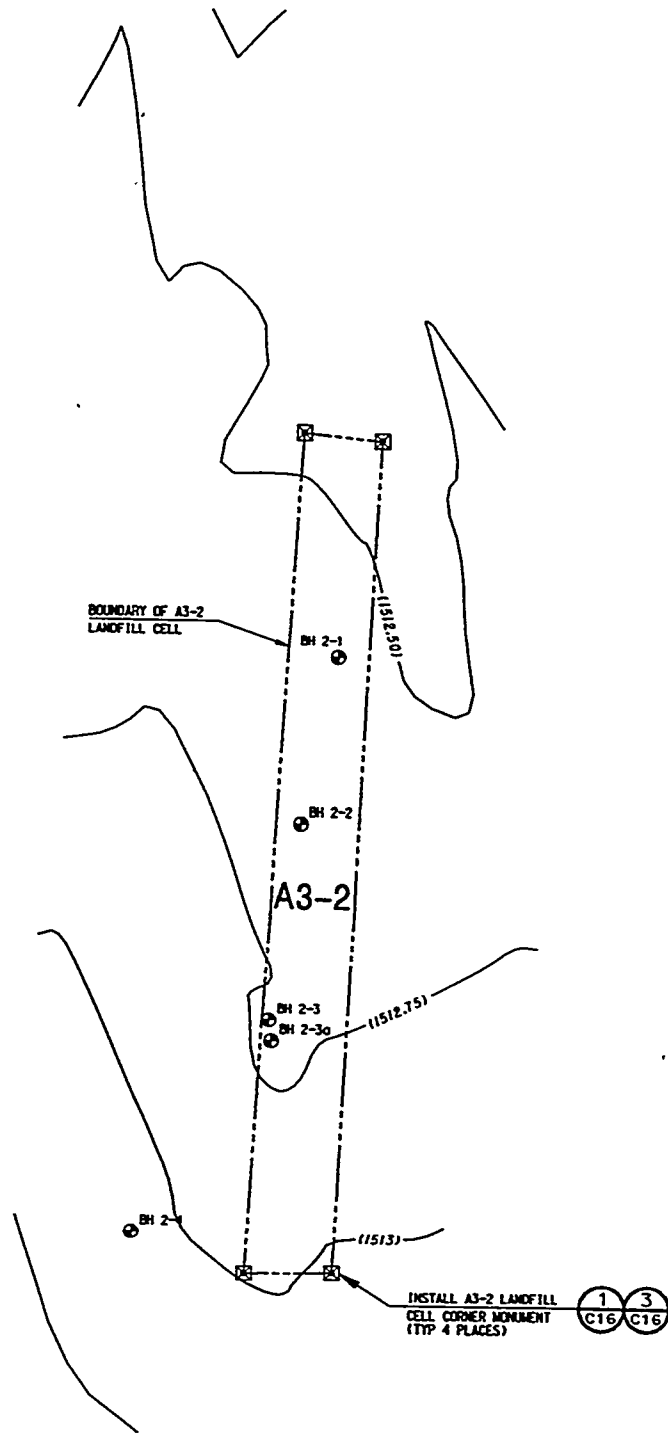


**GRAPHIC SCALE**



(CONTOUR INTERVAL - 0.25M)

U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE 143 SOUTH VERMILION AVENUE LAS VEGAS, NEVADA 89101		BECHTEL NEVADA 143 SOUTH VERMILION AVENUE, SUITE 200 LAS VEGAS, NEVADA 89101	
TONOPAH TEST RANGE AREA 3 LANDFILL CLOSURES CAU 424		AREA 52 A3-1.1a SITE PLAN	
DRAWING NUMBER 15-02-133-C	SHEET OF 1	PROJECT NUMBER 98192.A32	PROJECT TITLE N/A
DESIGNER DATE	CHECKED DATE	DEPT OF ENERGY PROJECT ENGINEER DATE	ISSUED FOR CONSTRUCTION. DATED 7/14/98 REVISION DESCRIPTION NO. DATE

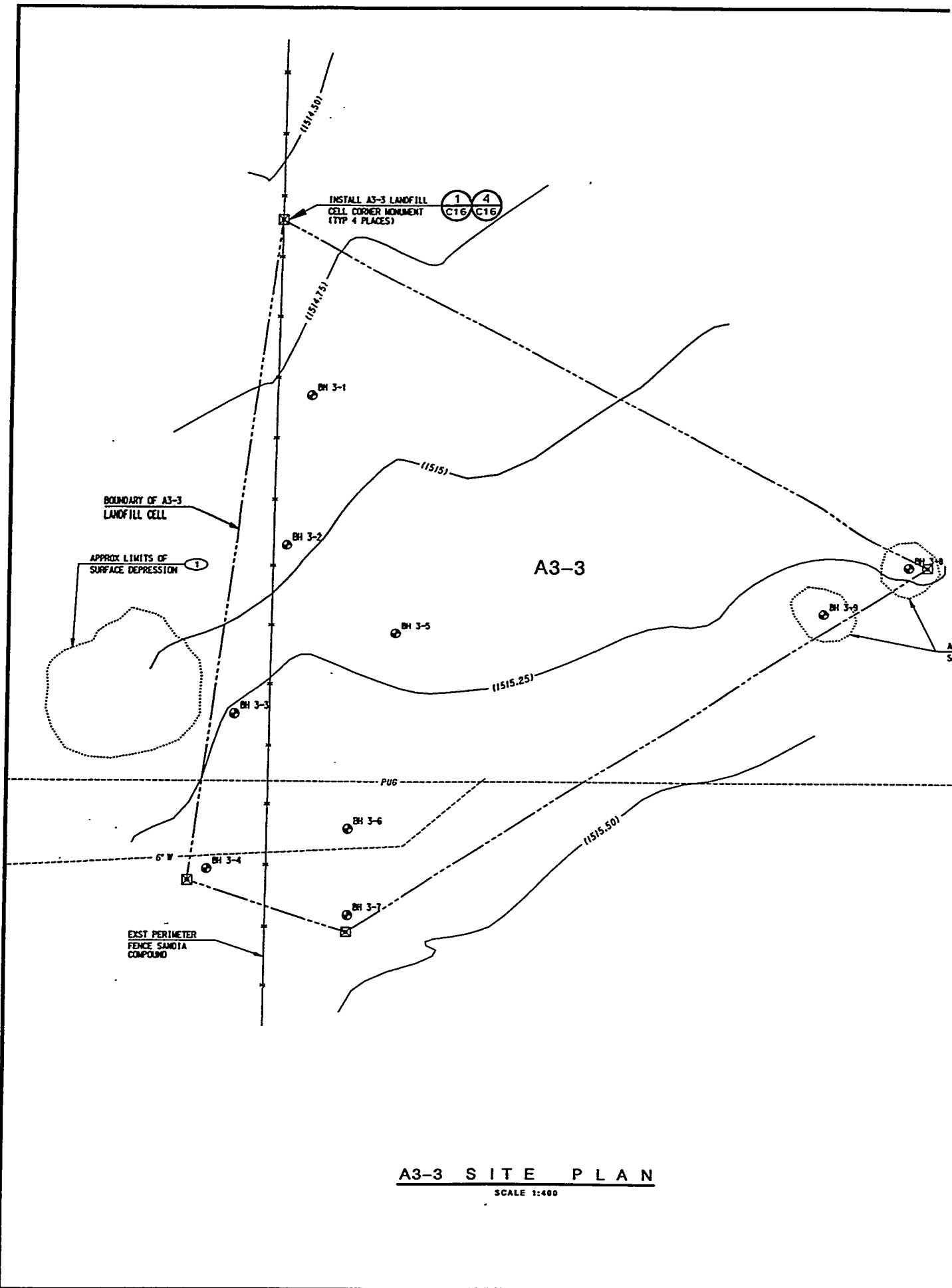


**A3-2 SITE PLAN**

SCALE 1:250



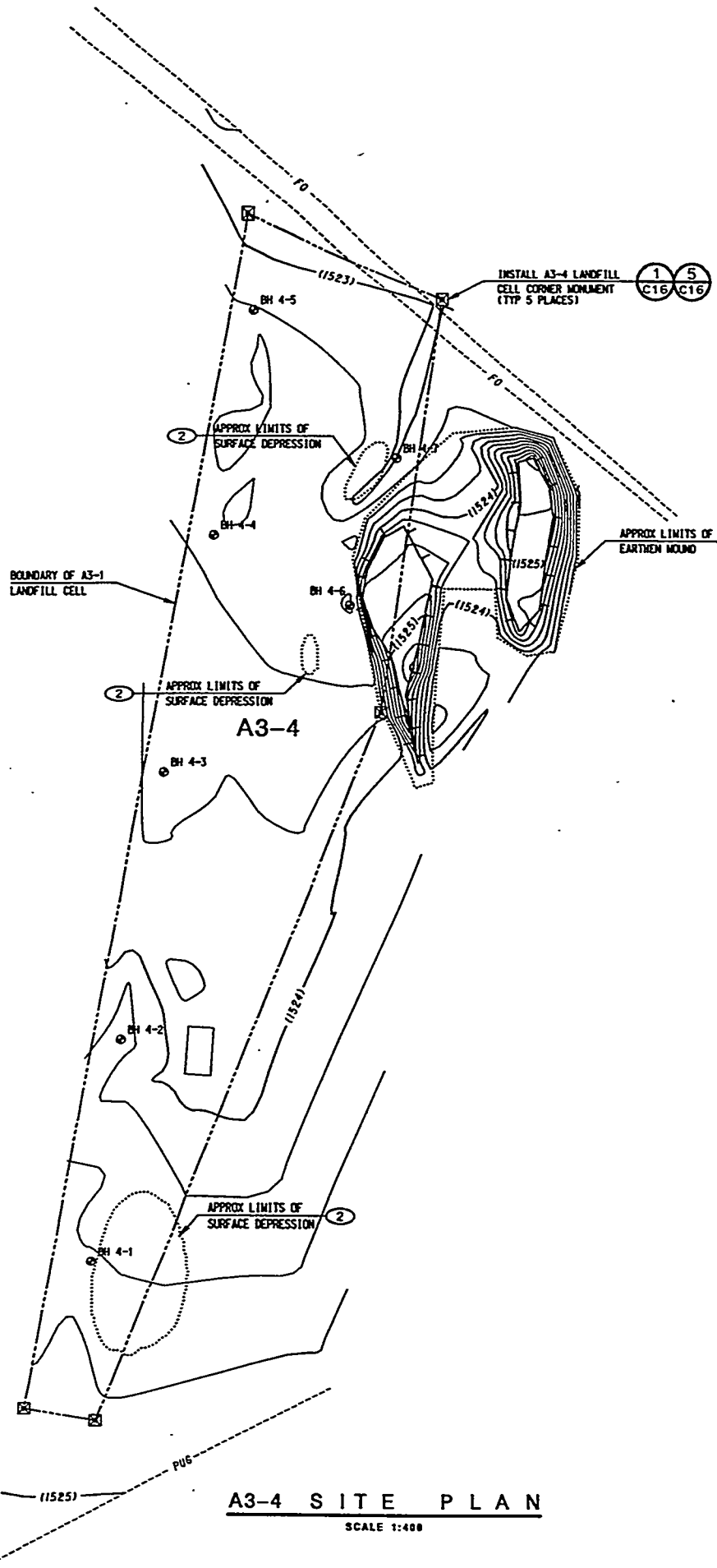




**A3-3 SITE PLAN**

SCALE 1:400





**KEY NOTES**

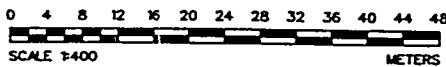
- ① 1. USE EXISTING MOUND IF SUITABLE FOR BACKFILL.
- ② 2. SURFACE FEATURES IDENTIFIED BY IT BUT NOT CONFIRMED BY BN FIELD SURVEY.

**NOTES**

- 1. DEPRESSIONS WITHIN LANDFILL CELLS SHALL BE FILLED AND SHAPED TO DRAIN.
- 2. ALL FILL SHALL BE COMPACTED TO 83% OF MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557.
- 3. FOR MORE SPECIFIC PROJECT REQUIREMENTS AND CONSTRUCTION QUALITY CONTROL REQUIREMENTS, SEE THE CORRECTIVE ACTION PLAN FOR AREA 3 LANDFILL COMPLEX, TTR.



**GRAPHIC SCALE**



(CONTOUR INTERVAL = 0.25M)

U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE U.S. NEVADA REGION		BECHTEL NEVADA U.S. NEVADA REGION	
TONOPAH TEST RANGE AREA 3 LANDFILL CLOSURES CAU 424		AREA 52 A3-4 SITE PLAN	
DRAWN CHECKED DATE	PERMITTED BY REGION LOCAL DEPT OF ENERGY PROJECT ENGINEER	DATE DATE DATE	PROJECT NO. 92189.002 N/A
NO. 123 N/A	PROJECT TITLE NO. N/A	DATE 0	REVISION DESCRIPTION ISSUED FOR CONSTRUCTION, DATED 7/14/98
U.S. DEPARTMENT OF ENERGY BECHTEL NEVADA		SHEET NO. 133-012	

① APPROX LIMITS OF SURFACE DEPRESSION

APPROX LIMITS OF SURFACE DEPRESSION ①

① APPROX LIMITS OF SURFACE DEPRESSION

BOUNDARY OF A3-5 LANDFILL CELL

A3-5

INSTALL A3-5 LANDFILL CELL CORNER MONUMENT (TYP 4 PLACES)

① ⑥  
C16 C16

APPROX LIMITS OF EARTHEN MOUND ①

# A3-5 SITE PLAN

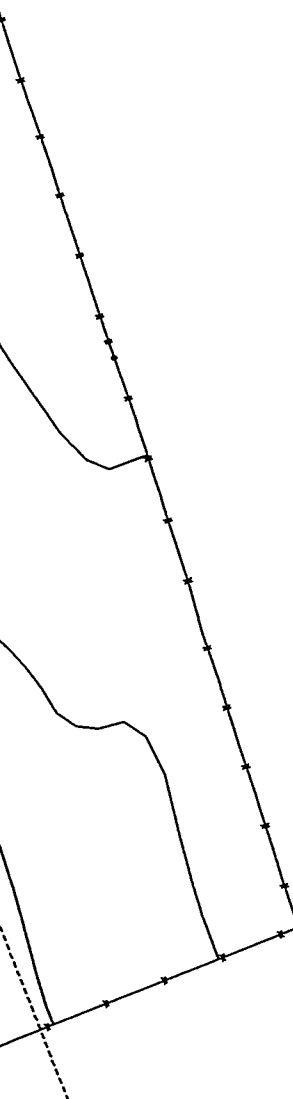
SCALE 1:400

**KEY NOTE**

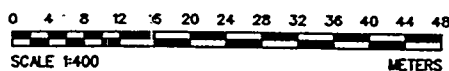
- ① 1. SURFACE FEATURES IDENTIFIED BY IT BUT NOT CONFIRMED BY BM FIELD SURVEY.

**NOTES**

- 1. DEPRESSIONS WITHIN LANDFILL CELLS SHALL BE FILLED AND SHAPED TO DRAIN.
- 2. OBTAIN BACKFILL MATERIAL FROM BARROW SOURCE SHOWN ON DWG C2.
- 3. ALL FILL SHALL BE COMPACTED TO 80% OF MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557.
- 4. FOR MORE SPECIFIC PROJECT REQUIREMENTS AND CONSTRUCTION QUALITY CONTROL REQUIREMENTS, SEE THE CORRECTIVE ACTION PLAN FOR AREA 3 LANDFILL COMPLEX, TTR.

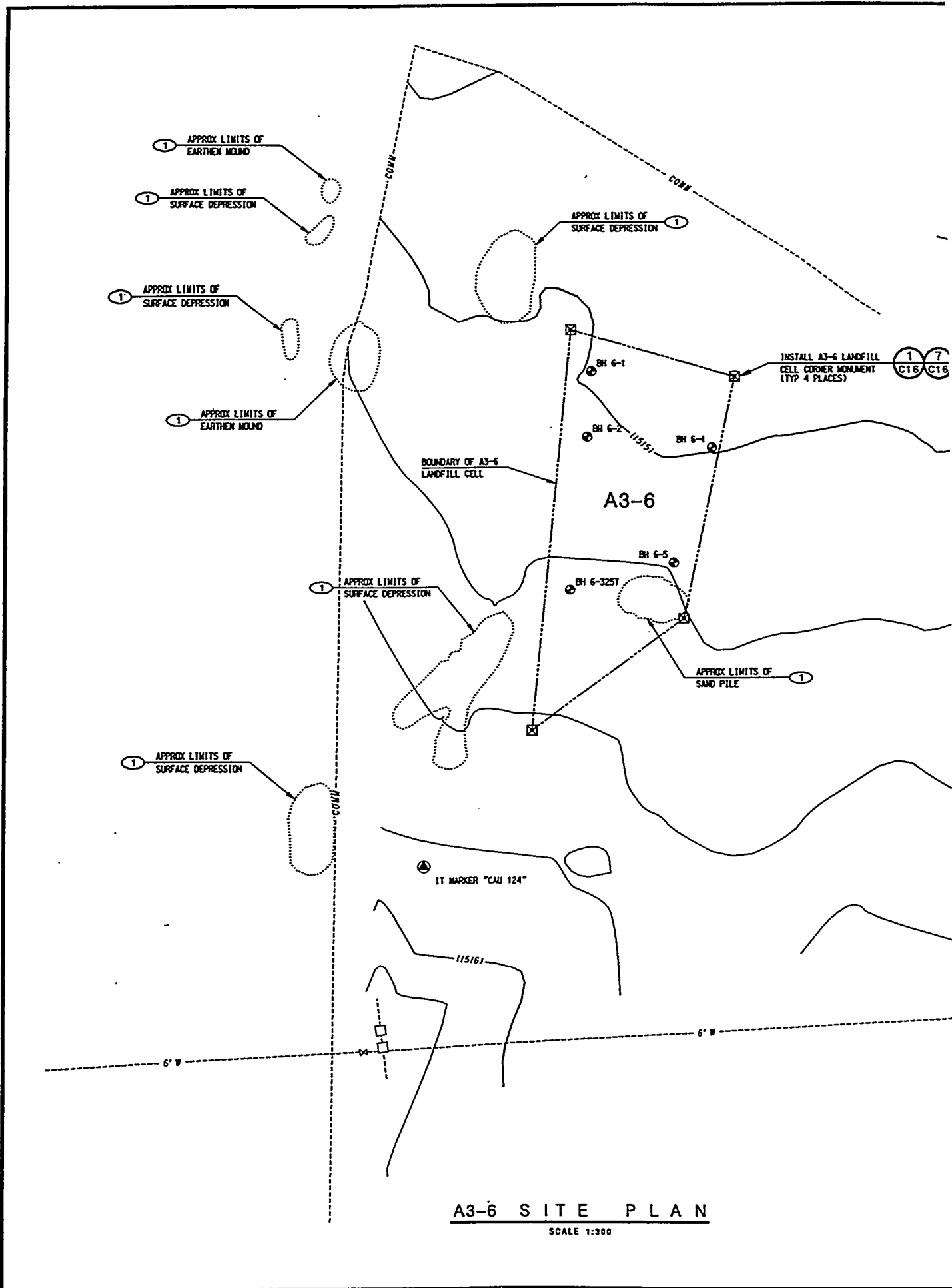


**GRAPHIC SCALE**



(CONTOUR INTERVAL - 0.25M)

U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA 		TONOPAH TEST RANGE AREA 3 LANDFILL CLOSURES CAU 424 A3-5 SITE PLAN		REVISIONS NO. DATE 0 ISSUED FOR CONSTRUCTION, DATED 7/14/98	
AUTHORIZED DRAWN CHECKED DESIGNED SUP. REF. NO.	TITLED DATE	PROJECT NUMBER 98189.A32	PROJECT AUTH. NO. N/A	DATE DATE	DATE DATE
U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA Becital Nevada THE ONLY WAY TO LIVE IN NEVADA		TONOPAH TEST RANGE AREA 3 LANDFILL CLOSURES CAU 424 A3-5 SITE PLAN		REVISIONS NO. DATE 0 ISSUED FOR CONSTRUCTION, DATED 7/14/98	
DRAWING NUMBER 95-052-133-C13		SHEET NO.		TOTAL SHEETS	

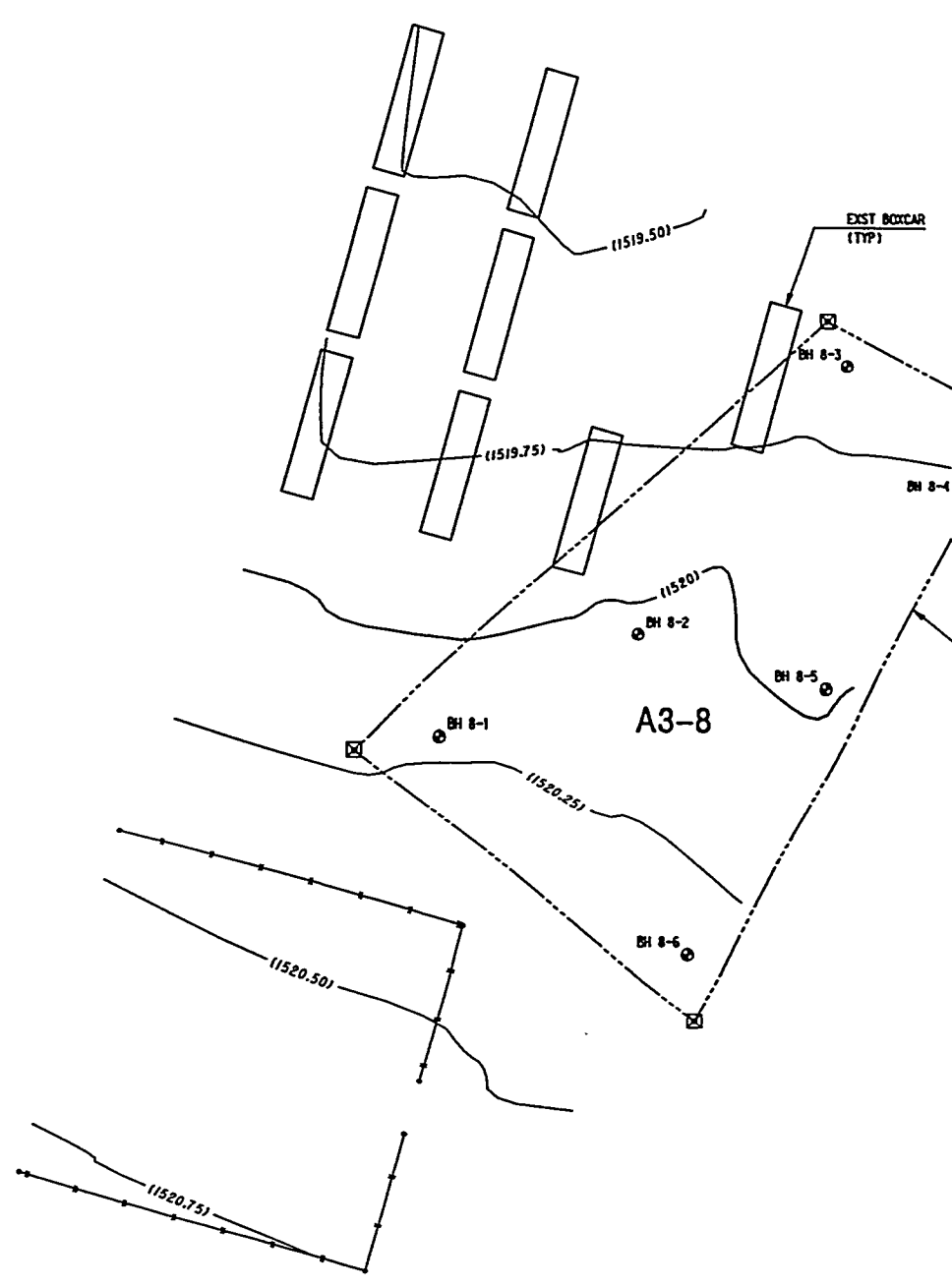


**A3-6 SITE PLAN**

SCALE 1:300







**A3-8 SITE PLAN**  
 SCALE 1:300

# NOTES

1. DEPRESSIONS WITHIN LANDFILL CELLS SHALL BE SURROUNDED BY EARTHEN BERMS OR FILLED.
2. OBTAIN BACKFILL MATERIAL FROM BAIROW SOURCE SHOWN ON DWG C2.
3. ALL FILL SHALL BE COMPACTED TO 80% OF MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557.
4. FOR MORE SPECIFIC PROJECT REQUIREMENTS AND CONSTRUCTION QUALITY CONTROL REQUIREMENTS, SEE THE CORRECTIVE ACTION PLAN FOR AREA 3 LANDFILL COMPLEX, TTR.

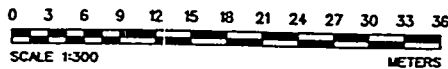
INSTALL A3-8 LANDFILL  
CELL CORNER MONUMENT  
(TYP 4 PLACES)



BOUNDARY OF A3-8  
LANDFILL CELL

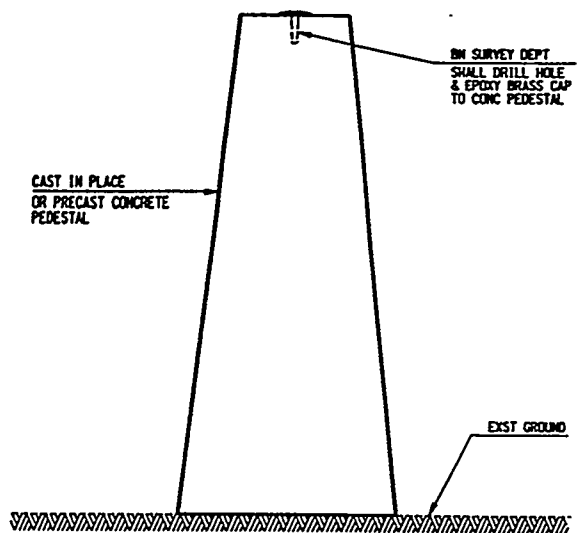


GRAPHIC SCALE

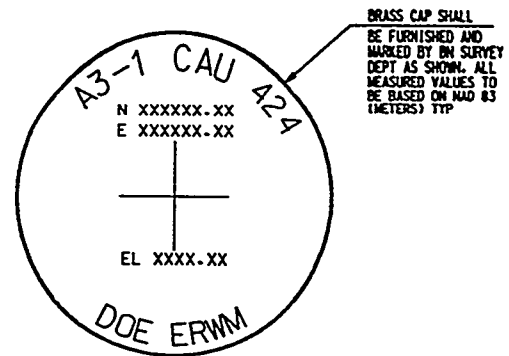


(CONTOUR INTERVAL - 0.25M)

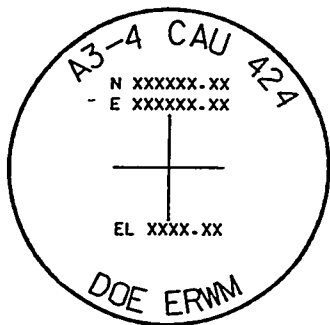
U.S. DEPARTMENT OF ENERGY NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA		BECHTEL Nevada U.S. AND NEVADA STATE REGULATORY COMMISSION	
TONOPAH TEST RANGE AREA 52 AREA 3 LANDFILL CLOSURES CAU 424		A3-8 SITE PLAN	
CHECKED DRAWN DESIGNED EXCISE	AUTHORITY DATE DATE DATE	PROJECT NUMBER 88169-A32	PROJECT TITLE N/A
ISSUED FOR CONSTRUCTION, DATED 7/14/98		REVISION NO 0	REVISION DESCRIPTION
SHEET NUMBER JS-052-133-C15		SHEET OF 0	REV OF 0



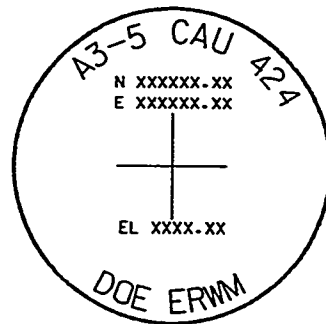
**MONUMENT DETAIL** 1  
 NOT TO SCALE C9 THRU C15



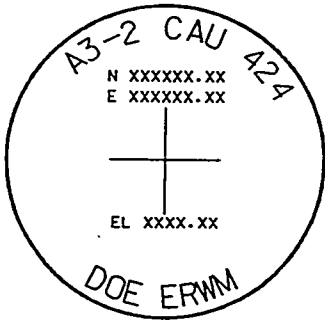
**MARKER DETAIL** 2  
 NOT TO SCALE C9



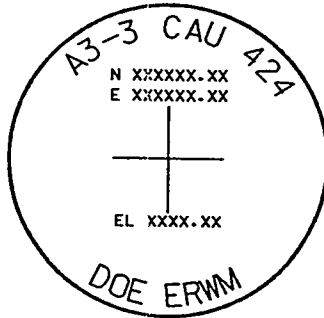
**MARKER DETAIL** 5  
 NOT TO SCALE C12



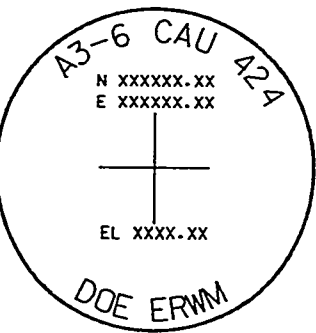
**MARKER DETAIL** 6  
 NOT TO SCALE C13



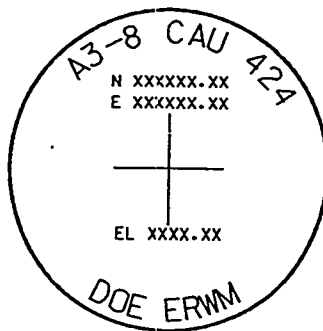
**MARKER DETAIL** ③ C10  
NOT TO SCALE



**MARKER DETAIL** ④ C11  
NOT TO SCALE



**MARKER DETAIL** ⑦ C14  
NOT TO SCALE



**MARKER DETAIL** ⑧ C15  
NOT TO SCALE

<b>U.S. DEPARTMENT OF ENERGY</b> NEVADA OPERATIONS OFFICE LAS VEGAS, NEVADA <b>Bechtel Nevada</b> <small>A U.S. BENTLEY SYSTEMS COMPANY</small>		<b>TONOPAH TEST RANGE</b> AREA 3 LANDFILL CLOSURES CAU 424		<b>MONUMENT DETAILS</b>	
STATUS DESIGN CHECKED DATE DATE DATE DATE DATE	QUANTITY UNIT DATE	PROJECT NUMBER 98189-AS2	PROJECT TITLE N/A	ACTIVITY CODE C12P800E	DATE NO DATE NO DATE NO DATE NO
DRAWING NUMBER <b>55-02-133-C16</b>					
SHEET OF					

CAP - CAU No.424  
Section: Appendix B  
Area 3 Landfill Complex  
Revision: 0  
Date: August 1998

# **APPENDIX B**

## **WASTE MANAGEMENT PLAN**

**WASTE MANAGEMENT PLAN  
FOR CORRECTIVE ACTION ACTIVITIES  
AREA 3 LANDFILL COMPLEX (CAU 424)  
TONOPAH TEST RANGE, NEVADA**

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

**Revision: 0**

**Prepared by:  
Bechtel Nevada  
Environmental Restoration**

**June 1998**

# TABLE OF CONTENTS

---

FIGURES .....	B-ii
TABLES .....	B-ii
ACRONYMS AND ABBREVIATIONS .....	B-iii
1.0 INTRODUCTION .....	B-1
1.1 Background .....	B-1
1.2 Scope of Work .....	B-4
1.3 Purpose .....	B-4
2.0 WASTE STREAM DESCRIPTIONS .....	B-6
2.1 Nonhazardous Solid Waste .....	B-6
2.2 Decontamination Water .....	B-6
2.3 Petroleum Hydrocarbon Waste .....	B-6
2.4 Potential Resource Conservation and Recovery Act Waste .....	B-6
3.0 INVESTIGATIVE DERIVED WASTE MANAGEMENT .....	B-7
3.1 Container Management .....	B-7
3.2 Site Control .....	B-8
3.3 Investigation Derived Waste Management Techniques .....	B-8
3.3.1 Solid Waste .....	B-10
3.3.2 Decontamination Water .....	B-10
3.3.3 Petroleum Hydrocarbon Waste .....	B-10
3.3.4 Potential Resource Conservation and Recovery Act Waste .....	B-10
4.0 WASTE STORAGE REQUIREMENTS .....	B-12
4.1 Container Management .....	B-12
4.2 Preparedness and Prevention .....	B-12
4.3 Contingency Plan .....	B-12
4.4 Personnel Training .....	B-13
4.5 Inspections .....	B-13
5.0 INVESTIGATION DERIVED WASTE SAMPLING AND DISPOSAL .....	B-14
5.1 Introduction .....	B-14
5.2 Waste Sampling Techniques .....	B-16
5.2.1 Solid Waste .....	B-16

## **TABLE OF CONTENTS (continued)**

---

5.2.2 Liquids .....	B-16
5.3 Quality Assurance Samples .....	B-16
5.4 Disposal .....	B-17
6.0 REFERENCES .....	B-18

## **FIGURES**

FIGURE B-1 SITE LOCATION .....	B-2
FIGURE B-2 SITE MAP .....	B-3

## **TABLES**

TABLE B-1 MANAGEMENT OF INVESTIGATION DERIVED WASTE .....	B-19
TABLE B-2 ANALYTICAL PARAMETERS FOR WASTE CHARACTERIZATION ...	B-15

## **ATTACHMENTS**

ATTACHMENT B-1 CONTINGENCY PLAN	
ATTACHMENT B-2 FIELD INSPECTION FORM	



## **ACRONYMS AND ABBREVIATIONS**

---

BN	Bechtel Nevada
CADD	Corrective Action Decision Document
CAS	Corrective Action Site
CAU	Corrective Action Unit
CFR	Code of Federal Regulations
COCs	Contaminants of Concern
DOE	United States Department of Energy
ER	Environmental Restoration Division
EPA	U.S. Environmental Protection Agency
ft	feet
gal	gallons
IDW	Investigation Derived Waste
L	liters
m	meters
mg/kg	milligrams/kilogram
ml	milliliter
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NTS	Nevada Test Site

## **ACRONYMS AND ABBREVIATIONS (Continued)**

PPE	Personnel Protective Equipment
PRG	Preliminary Remediation Goal
RCRA	Resource Conservation and Recovery Act
RP	Remediation Projects
SVOCs	Semi-Volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TTR	Tonopah Test Range
VOCs	Volatile Organic Compounds
WMP	Waste Management Project
USAF	United States Air Force

# 1.0 INTRODUCTION

---

## 1.1 BACKGROUND

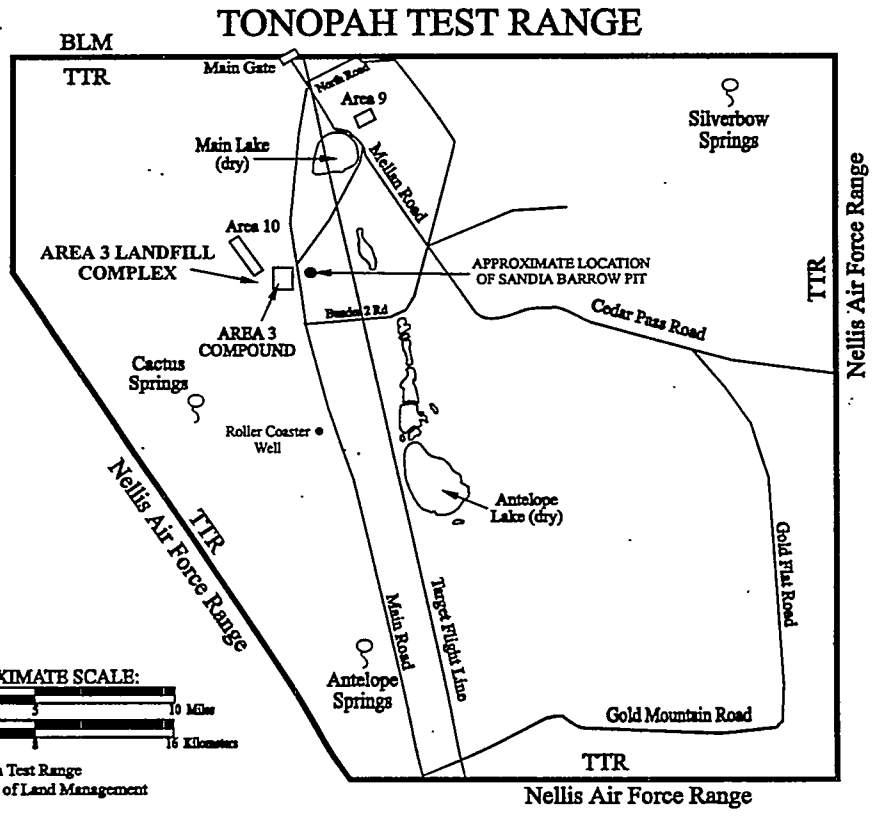
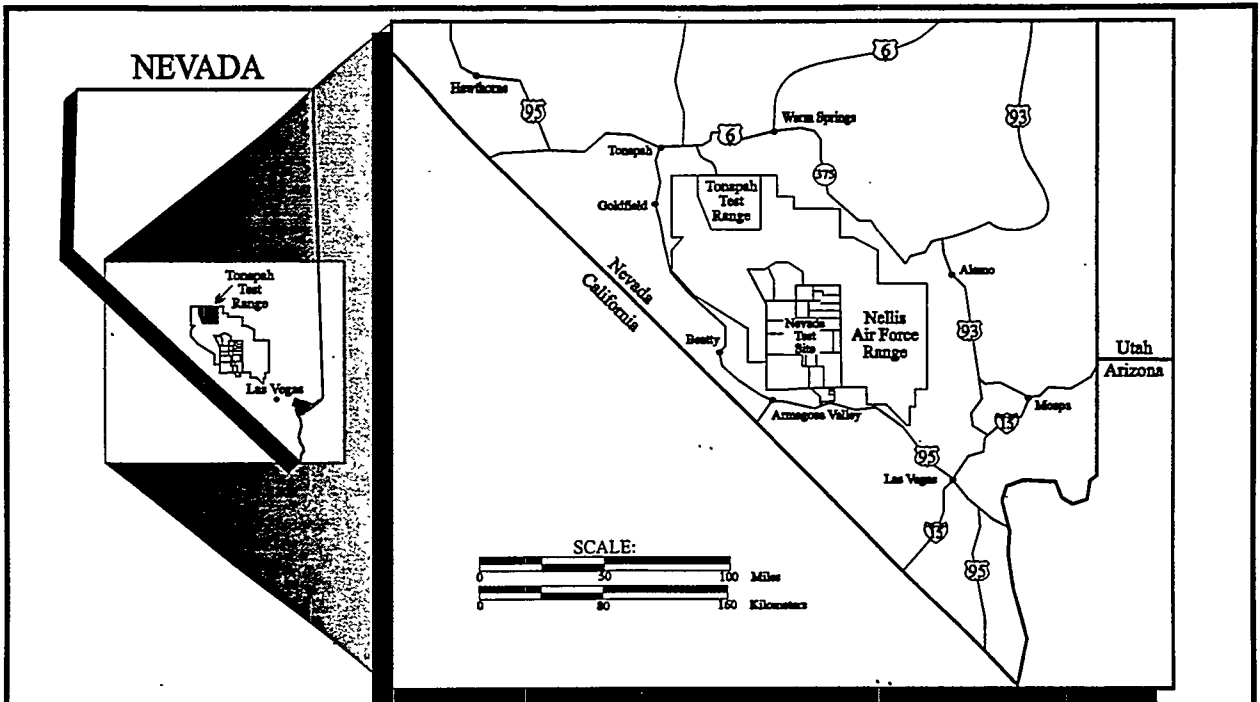
Corrective Action Unit (CAU) 424 is located on the Tonopah Test Range (TTR), approximately 225 kilometers (140 miles) northwest of Las Vegas, Nevada (Figure 1). CAU 424 consists of eight Corrective Action Sites (CAS):

- Landfill A3-1 is CAS No. 03-08-001-A301.
- Landfill A3-2 is CAS No. 03-08-002-A302.
- Landfill A3-3 is CAS No. 03-08-002-A303.
- Landfill A3-4 is CAS No. 03-08-002-A304.
- Landfill A3-5 is CAS No. 03-08-002-A305.
- Landfill A3-6 is CAS No. 03-08-002-A306.
- Landfill A3-7 is CAS No. 03-08-002-A307.
- Landfill A3-8 is CAS No. 03-08-002-A308.

The landfill sites are comprised of one or more cells which received wastes from daily operations at the Area 3 Compound during different time intervals from before 1963 to approximately 1993. Cell locations and contents were poorly documented due to the unregulated disposal practices commonly associated with early landfill operations. A site map is provided in Figure 2.

The results of the 1997 corrective action investigation of the locations and contents of landfill cells were reported in the Corrective Action Decision Document (CADD) (DOE, 1998) and are summarized below:

- Landfill A3-1 (including A3-1a) consists of six cells (four buried, one partially buried, and one open). Debris and/or contaminants of concern (COCs) were encountered in all four buried cells and in the partially buried cell. The COCs were total petroleum hydrocarbons (TPH) as gas and diesel. No debris or COCs were reported in the open cell (A3-1a) but it will be included in corrective action activities because it needs to be backfilled.



**FIGURE 1**  
**LOCATION OF THE AREA 3 LANDFILL COMPLEX**  
**AT THE TONOPAH TEST RANGE**

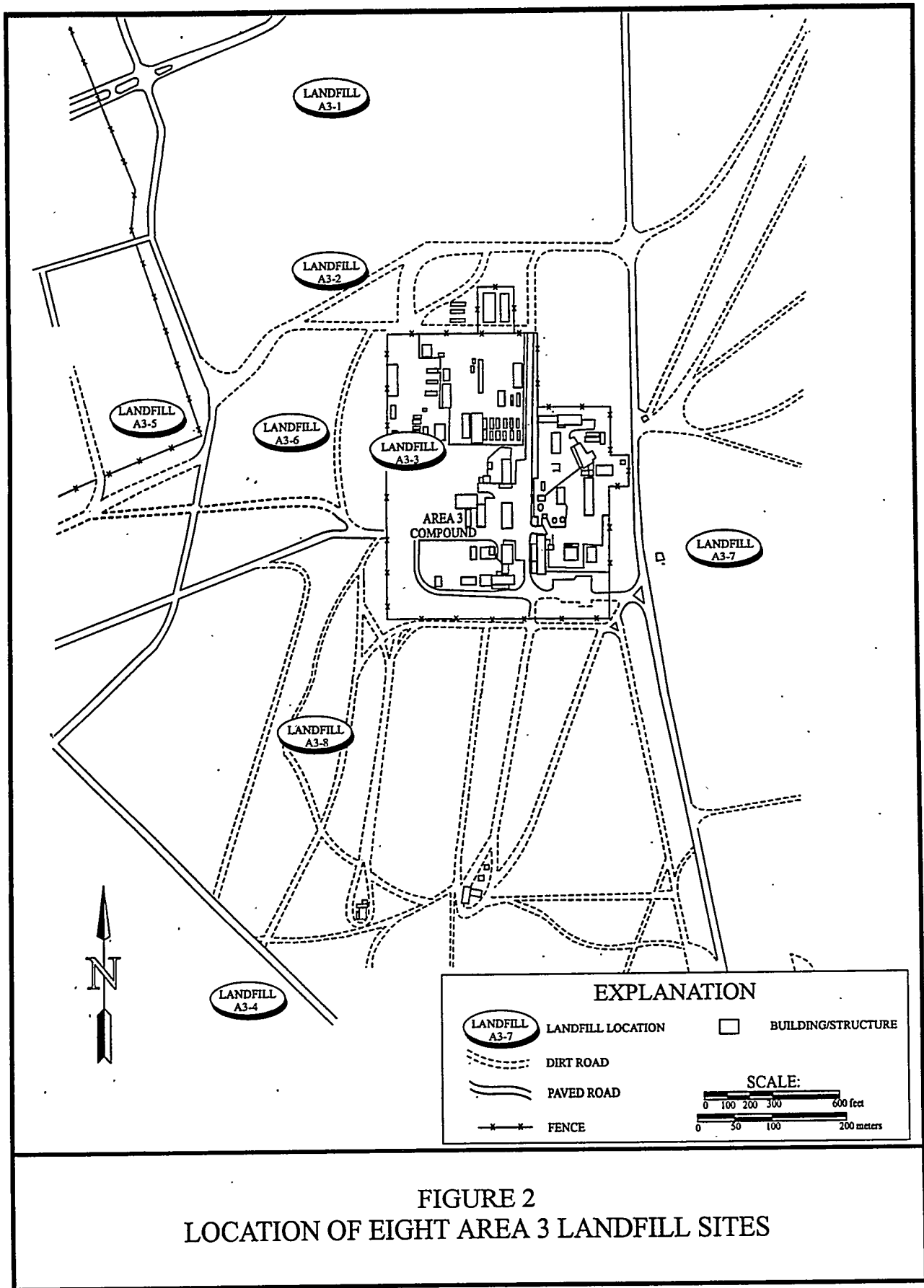


FIGURE 2  
 LOCATION OF EIGHT AREA 3 LANDFILL SITES

- Landfill A3-2 consists of one buried cell. Debris and/or COCs were reported in the cell including petroleum-hydrocarbon sludge in one boring. In addition a sinkhole appeared in the eastern cell after the field investigation had completed and revealed the presence of debris including a diesel storage tank (DOE, 1998). The sinkhole and tank were re-buried without investigating the tank or its contents.
- Results from the other landfill cells indicated COC's were below action levels.

## 1.2 SCOPE

The Corrective Action Plan for CAU 424 has been developed based upon the following alternatives that will be implemented:

- Corrective Action Alternative 1: no action for Landfill A3-7, which is no longer considered to be a landfill.
- Corrective Action Alternative 2: repair and maintenance of soil cover (including backfill, compaction, and re-contouring of surface depressions and subsidence fissures, where needed), posting of warning placards, and implementation of administrative controls to restrict land use for all the landfills except A3-7 and A3-2.
- Corrective Action Alternative 3: removal and disposal of petroleum-hydrocarbon liquids, sludge, impacted soil, and possible discarded storage tanks, as well as all the activities described previously in Alternative 2, for Landfill A3-2.

Nonhazardous solid waste is anticipated to be generated during closure activities. The nonhazardous solid waste will consist of personnel protective equipment (PPE), paper, plastic sheeting, wood, cement/concrete, metal, and other miscellaneous material. Petroleum hydrocarbon impacted soils above the 100 mg/kg TPH Action Level (from Landfill A3-2) will be excavated and disposed of in the Area 6 Hydrocarbon Landfill located at the Nevada Test Site (NTS) or another approved disposal facility. Even though hazardous wastes are not anticipated to be generated, the following sections of this plan have been developed as a contingency to address potential hazardous wastes as well as the nonhazardous hydrocarbon and solid waste.

## 1.3 PURPOSE

The purpose of the Waste Management Plan is to identify all types of waste 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 Bechtel Nevada (BN) Waste Management Project (WMP).
- Conducting inspections and maintaining storage areas until disposal is complete.
- Providing documentation for all disposal activities.

This plan was developed using information and guidance from the following documents:

- Corrective Action Investigation Plan for the Area 3 Landfill Complex, DOE, 1997.
- Corrective Action Decision Document for the Area 3 Landfill Complex, DOE, 1998.
- Nevada Environmental Restoration Project, Project Management Plan, DOE, 1994.
- Nevada Environmental Restoration Project, Health and Safety Plan, DOE, 1996.
- Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site, DOE, 1996.

## **2.0 WASTE STREAM DESCRIPTIONS**

---

### **2.1 NONHAZARDOUS SOLID WASTE**

Solid waste will consist predominantly of compactable trash associated with the posting of signs and monuments. The compactable trash is anticipated to be primarily PPE, paper and plastic sheeting, and miscellaneous rags. Noncompactable waste is anticipated to consist of miscellaneous wood, concrete, and metal.

### **2.2 DECONTAMINATION WATER**

Decontamination water will be generated from construction and sampling equipment cleaning activities. Parts of the equipment that contact the impacted materials will be cleaned by pressure washing or hand-sprayers and scrubbing. Cleaning activities will be conducted over a container or temporary decontamination pad will be constructed and lined with plastic sheeting that will catch the decontamination water. The container or pad should be large enough to clean the largest piece of heavy equipment and contain any over spray. Liquid that collects in the pad sump will be transferred into 208 liter (L) (55 gallon [gal]) drums.

### **2.3 PETROLEUM HYDROCARBON WASTE**

Petroleum hydrocarbon impacted waste is anticipated to consist of soil, wood, paper, plastic, and metal from the excavation activities in Landfill A3-2.

### **2.4 POTENTIAL RESOURCE CONSERVATION AND RECOVERY ACT WASTE**

Potential Resource Conservation and Recovery Act (RCRA) waste may be generated during the closure activities. If suspect material (containers with liquids or other non-inert material) is encountered during the excavation activities in Landfill A3-2, this material will be handled in a manner appropriate for a hazardous waste as described in Section 3.0, "Investigation Derived Waste (IDW) Management."



## **3.0 INVESTIGATION DERIVED WASTE MANAGEMENT**

---

All waste types that are generated will be managed and disposed of in accordance with all state and federal regulations, DOE orders, and BN procedures. Where additional information is required for waste characterization, samples will be collected and submitted for analysis to determine the concentrations of contaminants of concerns (COCs). Analytical results will be validated and submitted to the BN WMP for disposal recommendations and implementation.

Nonhazardous waste will be handled in accordance with DOE Environmental Restoration Division (ERD) 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 Code of Federal Regulations (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.

Rinsate and compactable solid waste will be stored in 208 L (55 gal) drums on pallets and handled as nonhazardous waste. An accumulation area will be set aside for the storage of the drums. This staging area will be located out of the way of heavy equipment traffic. The drum staging area will be fenced using orange safety fencing.

Waste drums will be new with no rust or dents and meet U.S. Department of Transportation requirements. 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 or drum 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.
- Date range that accumulation takes place.
- “Awaiting Analysis” sticker after sampling has been completed (if required).

BN 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 BN Remediation Projects (RP) personnel. RP staff will make arrangements for the disposition of the waste with WMP staff.

### **3.2 SITE CONTROL**

To prevent wild horses and unauthorized persons from entering the excavation area at Landfill A3-2, a rope fence or equal will be erected encompassing the excavation area and waste stockpiling area. “Keep Out” or similar warning signs will be posted on all sides of the fence. Since the waste stockpiling area will be placed in an area that is out of the construction traffic, the site location will be determined during the mobilization/site set-up.

### **3.3 IDW MANAGEMENT TECHNIQUES**

Nonhazardous and petroleum hydrocarbon solid waste is anticipated to be generated during closure activities. The nonhazardous solid waste will most likely consist of PPE, paper, plastic sheeting, wood, cement/concrete, metal, and other miscellaneous material. The petroleum hydrocarbon impacted waste is anticipated to consist of soil, wood, paper, plastic, and metal.

Although hazardous wastes are not anticipated to be generated, this waste type is addressed because there is a potential of generation. Details for the management of IDW are provided in Table B-1.

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

WASTE TYPE	DECISION
<b>SOIL/SOLIDS</b>	
Impacted soil or other material with less than 100 mg/kg TPH, nonhazardous	This waste type is anticipated. If any excavated soil below 50 mg/kg TPH is encountered, it 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 or another approved landfill (with WMP approval). Appropriate transfer documentation for disposal (letter 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 or other material with greater than 100 mg/kg TPH, nonhazardous	This waste type is anticipated. If any TPH wastes exceed 100 mg/kg, solidification will be completed, if required, prior to transfer to the Area 6 Hydrocarbon Landfill at the Nevada Test Site (NTS) for disposal with WMP approval. Appropriate documentation for disposal (letter from RP recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.
RCRA-regulated hazardous waste	This waste type is not anticipated. However, if encountered, 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 (REEC0, 1995)</u> . Appropriate documentation for transfer/disposal (letter recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.
Nonhazardous (PPE, plastic, paper, wood, etc.)	This waste type is anticipated based upon the proposed closure methodology (Section 2.1.1 in the CAP). Disposal in the TTR landfill is preferred if approved by the U.S. Air Force (USAF); otherwise, the materials will be transported to the NTS for disposal in the Area 9 (U10c) or Area 23 Sanitary Landfill. Appropriate documentation for disposal (letter recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.
<b>RINSATE</b>	
TPH is less than 1 mg/L, nonhazardous	This waste type is anticipated. The rinsate can be discharged into the NTS and possibly TTR (requires USAF approval) sanitary sewage 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. Appropriate documentation for disposal (letter recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.
TPH is greater than 1 mg/L, nonhazardous	This waste type is anticipated. The rinsate will be solidified using soil or bentonite and disposed of within the Area 6 Hydrocarbon Landfill at the NTS. Appropriate documentation for disposal (letter recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.
Hazardous waste	This waste type is not anticipated. However, if generated, drums containing rinse water will be placed into the Drum Storage Area. Samples will be collected for waste characterization pending analysis. If rinsate is identified as a hazardous waste, follow the 3-day Satellite Accumulation storage rule and the 12-month storage limit for the Area 5 Hazardous Waste Storage Pad. Appropriate documentation for transfer/disposal (letter recommending disposal, laboratory analytical results/process knowledge, radiological "green tag", weight ticket, and/or bill of lading) are to be placed in the task file.

### **3.3.1 Solid Waste**

Solid waste generated during the closure activities will be segregated from the waste generated from the excavated materials from Landfill A3-2. All solid waste from the posting of signs and monuments is considered nonhazardous waste and will be stored in drums or stockpiled until disposal is coordinated. All nonhazardous solid waste will be disposed of at a local landfill (TTR or Nye County) or a landfill at the NTS.

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.

### **3.3.2 Decontamination Water**

Sampling and construction equipment decontamination water will be stored in 208 liter (L) (55 gallon [gal]) drums. If decontamination rinsate is generated from suspected hazardous waste, sampling will be required to determine disposal options for the rinsate. Cleaning of sampling equipment will be done according to Standard Operating Procedure ERD-05-701 (DOE, 1994b) if sampling is required after generation of rinsate.

Decontamination rinsate from the petroleum hydrocarbon excavation and sampling activities will be solidified and disposed of at the NTS Area 6 Hydrocarbon Landfill or another approved landfill. All rinsate will be stored and disposed of in accordance with applicable regulations.

### **3.3.3 Petroleum Hydrocarbon Waste**

Petroleum hydrocarbon impacted material will be placed on and covered with plastic to minimize spread at the site. After excavation activities are completed, the impacted materials will be transported to the NTS Area 6 Hydrocarbon Landfill or another approved landfill for disposal. Transportation of the impacted materials will be conducted in accordance with applicable Department of Transportation Regulations.

### **3.3.4 Potential Resource Conservation And Recovery Act Waste**

Potential Resource Conservation and Recovery Act (RCRA) waste may be generated during the excavation activities in Landfill A3-2. If containers such as drums or tanks are discovered, their condition and contents will be investigated. Containers found to be empty and crushed, or filled with inert material such as soil or cement, pose no threat of ground subsidence or hazardous waste release and will be left in place. Uncrushed empty containers, however, will eventually collapse, causing ground subsidence. If they can be backfilled properly, empty containers will be

left in place. If solid wastes, including any liquids, are found in the containers, the contents will be considered to be potential hazardous waste. Sampling and analysis will be implemented to characterize the material so that it can be properly handled and disposed off-site.

Liquids and sludges will be removed either by pumping or bailing into new drums before removing the buried container, or by placing intact containers into over packs. The potential RCRA material will be placed in 208 L (55 gal) drums and stored at the site. Containers will be labeled as "Awaiting Analysis"; however, a waste code, if applicable, will not be assigned until analytical data from the sampling is evaluated and a formal decision from the BN WMP is made as to the regulatory status of the material. .

## **4.0 WASTE STORAGE REQUIREMENTS**

---

### **4.1 CONTAINER MANAGEMENT**

Drums/containers containing potential hazardous waste may be encountered during excavation activities in Landfill A3-2. If encountered, the containers will be removed from the excavation and placed in the appropriate containers to reduce the potential of release to the environment. Disposition of the containerized waste will be determined upon receipt and evaluation of analytical results.

### **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]. Even though, this site is not a hazardous waste facility and the hazards posed by the waste stored at this site do not require a specific kind of equipment, fire extinguishers will be available in all vehicles. Two-way radios will be available in field vehicles or as hand-held type.

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

TTR Emergency Response Teams, Fire Department, and TTR Security personnel, must be familiar with the layout of the facility, properties of the waste and constituents detected during the site characterization activities, 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 site.

### **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 generation of hazardous waste is potential during the excavation activities at Landfill A3-2. This plan is designed as a contingency and 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 site personnel must take. A copy of the Contingency Plan can be found in Attachment B-1.

A copy of the plan and all revisions will be maintained at the site and provided to TTR Security personnel and Fire Departments, Medical Facilities, and Emergency Response Teams, if potential hazardous waste is to be generated. Hazardous waste will only be generated if equipment, PPE, and/or personnel contact the impacted materials.

If hazardous waste is generated, there will be at least one employee either on the site or on call at all time. This person will have the authority to commit the resources needed to carry out the Contingency Plan. The emergency coordinator will 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 records at the site, and the site layout.

#### **4.4 PERSONNEL TRAINING**

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.

#### **4.5 INSPECTIONS**

An inspection of the areas in which the containers and soil piles are stored will be conducted at least monthly. The purpose is to identify leaking or deteriorating containers due to corrosion or other factors. An inspection form is included in Attachment B-2. 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 WMP.

## 5.0 INVESTIGATION DERIVED WASTE SAMPLING AND DISPOSAL

---

This section is anticipated to be implemented only if potential hazardous waste is encountered during the excavation activities in Landfill A3-2.

### 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 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 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.



**TABLE B-2 -- ANALYTICAL PARAMETERS FOR WASTE CHARACTERIZATION**

<b>PARAMETER</b>	<b>METHOD</b>	<b>SAMPLE CONTAINER</b>
Total Metals	SW 846, EPA 6010	1 - Liter, glass jar (liquid) 1-250 ml glass (soil)
TCLP <sup>1</sup> Metals	SW 846, EPA 6010	1 - Liter, glass jar (liquid) 1-250 ml glass (soil)
pH	SW 846, EPA 9040/9045	1 - 250 ml plastic bottle (liquid) 1 -250 ml, glass jar (soil)
Total Pesticides	SW 846, EPA 8080	1 - Liter, glass jar (liquid) 1-250 ml glass (soil)
Total VOCs <sup>2</sup>	SW 846, EPA 8260	3 - 40 ml vial (liquid) 2-120 ml, glass (soil)
Total SVOCs <sup>3</sup>	SW 846, EPA 8270	1 - Liter, glass (liquid) 1-500 ml, glass (soil)
TPH	SW 846, EPA 8015 Modified	250 ml, glass jar (soil); 2-Liter glass + 120 ml glass with zero headspace (liquid)

Notes: 1 TCLP: Toxicity Characteristic Leaching Procedure, EPA Method 1311.

2 VOCs: Volatile Organic Compounds.

3 SVOCs: Semi-Volatile Organic Compounds.

## **5.2 WASTE SAMPLING TECHNIQUES**

Each waste stream generated at the site must be sampled unless process knowledge and/or previous sampling results provide adequate information for a disposal determination. Unless potential RCRA hazardous waste is encountered during the excavation activities in Landfill A3-2, sampling will not be required of the waste streams.

### **5.2.1 Solid Waste**

Sampling is not required for wastes known to contain no COCs. Such determination can be based on process knowledge and/or analytical results from previous sampling events. Therefore, only materials/equipment that contact the potential hazardous waste are potentially suspect.

Solid waste, such as PPE, plastic, wood, concrete, etc. will not be sampled. Disposal will be based primarily on the associated activity that generated the waste. If construction material or debris (includes PPE) contact the potential hazardous waste, the materials will be visually inspected by the Site Supervisor. 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.

### **5.2.2 Liquids**

Suspect hazardous liquid waste could be encountered in containers in Landfill A3-2 or from equipment cleaning activities after contact with suspect hazardous materials. Decontamination water will be sampled if equipment contacts suspect hazardous materials. Each container containing suspect hazardous materials or rinsate from equipment contacting suspect hazardous materials will be sampled with a new coliwassa. The samples will be 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 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 ten rinsate sample set. Additional samples will be collected for matrix spike and matrix spike duplicate samples.

## **5.4 DISPOSAL**

All waste types that are generated will be managed and disposed of in accordance with all state and federal regulations, DOE orders, and BN procedures. After receipt and evaluation of the analytical results, a letter will be submitted to the BN WMP or TTR waste management group requesting disposal support. Disposal will be documented with the bill-of-lading, waste manifest, chain-of-custody, etc, as applicable.

## 6.0 REFERENCES

---

DOE, 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.

DOE, 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.

DOE, September 1994b; Nevada Operations Office, Environmental Restoration Division, Sampling Equipment Decontamination., Revision 0.

DOE, 1997, Corrective Action Investigation Plan for the Area 3 Landfill Complex, Tonopah Test Range, Nevada (Corrective Action Unit 424), DOE/NV--476 UC-700.

DOE, 1998, Corrective Action Decision Document for the Area 3 Landfill Complex, Tonopah Test Range, Nevada (Corrective Action Unit 424), DOE/NV--496 UC-700.

EPA, 1996, Region IX Preliminary Remediation Goals (PRGs), San Francisco, CA.

Nevada Administrative Code, 1996, Hazardous Materials: Storage Tanks, Nevada Administrative Code 459.9921 through 459.999.

REECO, December 18, 1995, Nevada Test Site Performance Objective for Certification of Nonradioactive Hazardous Waste.

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

**ATTACHMENT B-1**

*of* **APPENDIX B**

**CONTINGENCY PLAN**

**CONTINGENCY PLAN AND EMERGENCY  
PROCEDURES  
AREA 3 LANDFILL COMPLEX (CAU 424)  
CORRECTIVE ACTION ACTIVITIES**

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

**Revision: 0**

**Prepared by:  
Bechtel Nevada  
Environmental Restoration**

**June 1998**

# TABLE OF CONTENTS

---

FIGURES .....	B-Aii
ATTACHMENTS .....	B-Aii
ACRONYMS AND ABBREVIATIONS .....	B-Aiii
1.0 INTRODUCTION .....	B-A1
1.1 PURPOSE .....	B-A1
1.2 SCOPE .....	B-A1
1.3 FACILITY DESCRIPTION .....	B-A1
1.3.1 Site Location .....	B-A1
1.3.2 Site Description .....	B-A2
1.3.3 Topography .....	B-A2
1.3.4 Climate .....	B-A5
2.0 WASTE DESCRIPTIONS AND ASSOCIATED HAZARDS .....	B-A6
2.1 CHEMICAL HAZARDS .....	B-A6
2.1.1 Hydrocarbons .....	B-A7
2.1.2 Resource Conservation And Recovery Act-Regulated Constituents .....	B-A7
2.2 PHYSICAL HAZARDS .....	B-A7
2.2.1 Hydrocarbons .....	B-A7
2.2.2 Resource Conservation And Recovery Act-Regulated Constituents .....	B-A7
2.2.3 Other Physical Hazards .....	B-A7
3.0 EMERGENCY NOTIFICATION PROCEDURES .....	B-A8
3.1 Designation of Emergency Coordinator .....	B-A8
3.2 Responsibilities .....	B-A8
3.3 Notification .....	B-A9
3.4 Response Procedures .....	B-A10
3.5 Evacuation Plan .....	B-A10
3.6 Emergency Decontamination and First Aid .....	B-A10
3.7 Cleanup .....	B-A11
4.0 EMERGENCY SERVICES .....	B-A12
4.1 On-Site Condition of Emergency Services .....	B-A12
4.2 Medical Services .....	B-A12
4.3 Fire Protection Services .....	B-A12

## **TABLE OF CONTENTS (Continued)**

---

5.0 EMERGENCY EQUIPMENT .....	B-A13
6.0 REFERENCES .....	B-A14

### **FIGURES**

FIGURE 1 - SITE LOCATION MAP .....	B-A3
FIGURE 2 - SITE MAP .....	B-A4

### **ATTACHMENTS**

- ATTACHMENT 1 - EMERGENCY/CONTINGENCY PLAN
- ATTACHMENT 2 - INJURY/ILLNESS/INCIDENT REPORT
- ATTACHMENT 3 - EMERGENCY EQUIPMENT



## **ACRONYMS AND ABBREVIATIONS**

---

BN	Bechtel Nevada
CADD	Corrective Action Decision Document
CAS	Corrective Action Site
CAU	Corrective Action Unit
CFR	Code of Federal Regulations
cm	centimeter
DOE	United States Department of Energy
EC	Emergency Coordinator
ER	Environmental Restoration Division
EPA	U.S. Environmental Protection Agency
EMP	Emergency Management Plan
ft	feet
in	inch
m	meters
mg/kg	milligrams/kilogram
m/s	meters per second

## LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

MSDS	Material Safety Data Sheets
NAC	Nevada Administrative Code
NTS	Nevada Test Site
PPE	Personnel Protective Equipment
PRG	Preliminary Remediation Goal
RCRA	Resource Conservation and Recovery Act
RP	Remediation Projects
TPH	Total Petroleum Hydrocarbons
TTR	Tonopah Test Range
ug/kg	micrograms/kilogram

# 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 Environmental Restoration (ER), Nevada Test Site (NTS), and Tonopah Test Range (TTR) 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 3 Landfill Complex during closure activities.

## 1.2 SCOPE

This Plan covers a variety of possible emergencies at the Area 3 Landfill Complex during closure activities. This document applies to all personnel assigned to the site closure activities. This Plan does not cover any releases incurred by subcontractors who are under contract to remove hazardous waste from the TTR once they have physically left the Area 3 Landfill Complex site.

## 1.3 FACILITY DESCRIPTION

### 1.3.1 Site Location

The site is located on the TTR, approximately 225 kilometers (140 miles) northwest of Las Vegas, Nevada (Figure 1).

### 1.3.2 Site Description

The site consists of eight landfills. The landfill sites are comprised of one or more cells which received wastes from daily operations at the Area 3 Compound during different time intervals from before 1963 to approximately 1993. Cell locations and contents were poorly documented due to the unregulated disposal practices commonly associated with early landfill operations. A site map is provided in Figure 2.

A summary of closure activities are provided as follows:

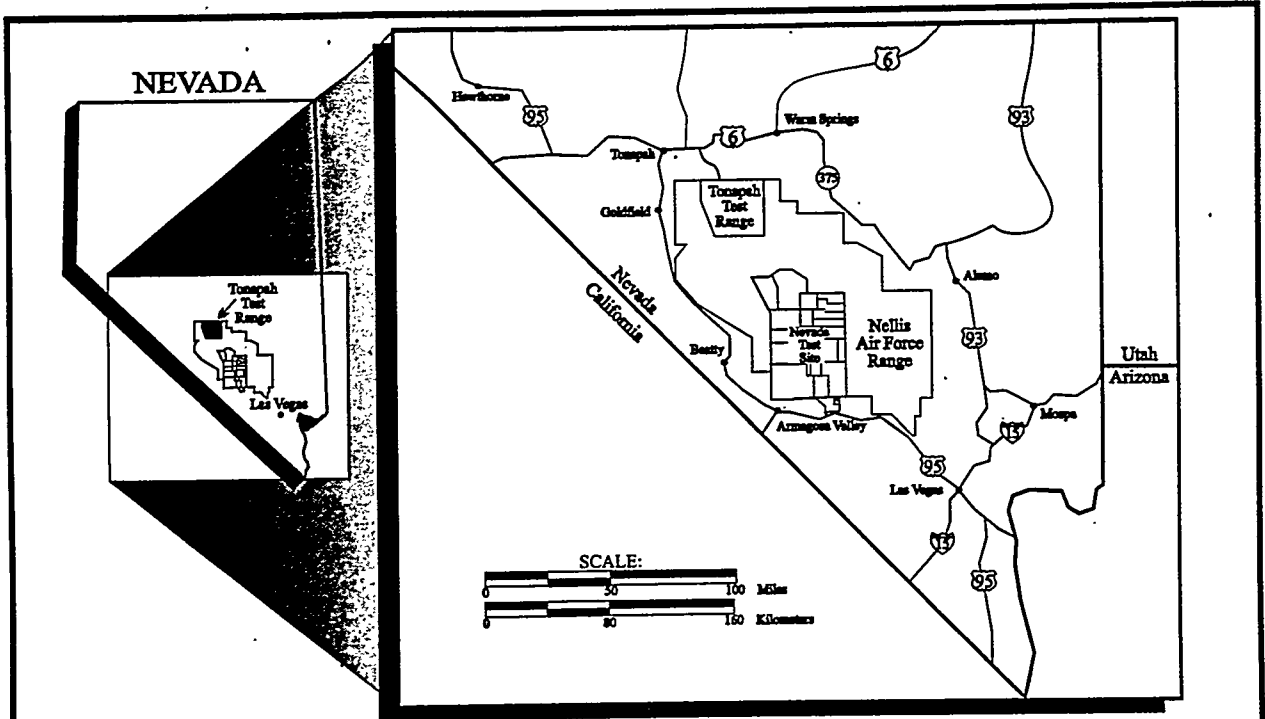
#### SUMMARY OF CLOSURE ACTIVITIES

LANDFILL	NO ACTION	REMOVE TPH WASTE	REPAIR/MAINTAIN SOIL COVERS	POST SIGNS AND MONUMENTS	ENACT LAND-USE RESTRICTIONS
A3-1			X	X	X
A3-2		X	X	X	X
A3-3			X	X	X
A3-4			X	X	X
A3-5			X	X	X
A3-6			X	X	X
A3-7	X				
A3-8			X	X	X

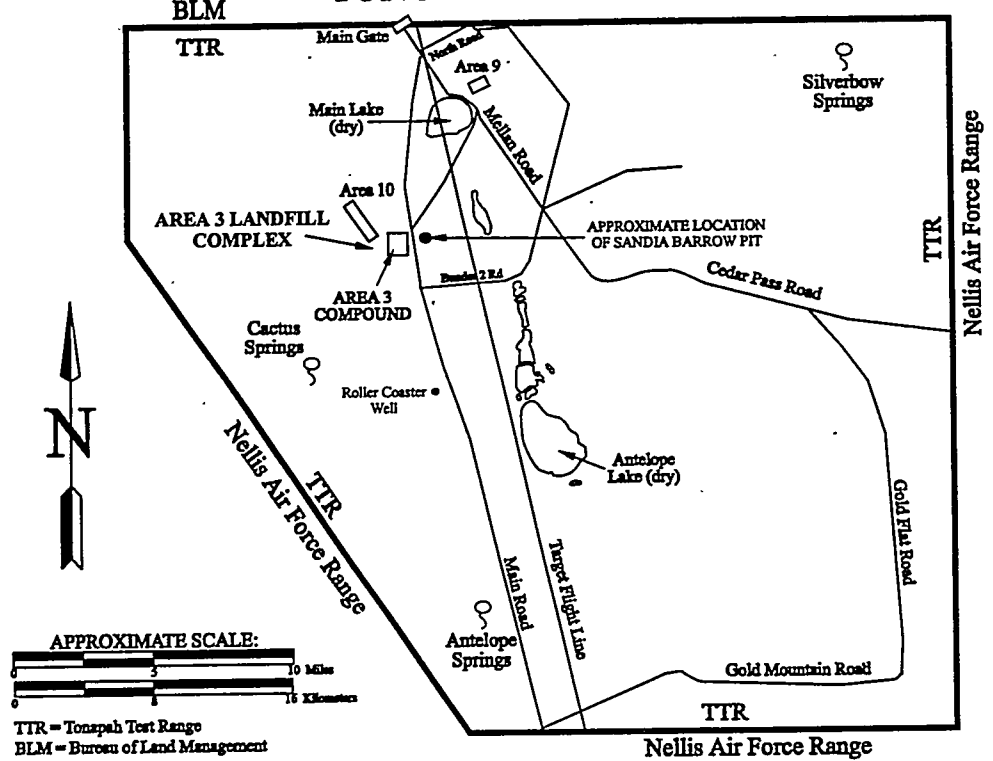
An area at the site will be used for storage of personal protective equipment (PPE), other supplies/equipment, and waste generated during the closure activities. A temporary decontamination pad may be constructed at the site if equipment contacts suspect hazardous waste.

### 1.3.3 Topography

The TTR is located in the Great Basin of the Basin and Range province. The Area 3 Landfill Complex is located on the west side of Cactus Flat and east of the Cactus Range. Cactus Flat is a valley consisting of alluvial fans and dry lakes. The elevation at the site is approximately 1,642 m (5,400 ft) above mean sea level.



**TONOPAH TEST RANGE**



**FIGURE 1**  
**LOCATION OF THE AREA 3 LANDFILL COMPLEX**  
**AT THE TONOPAH TEST RANGE**

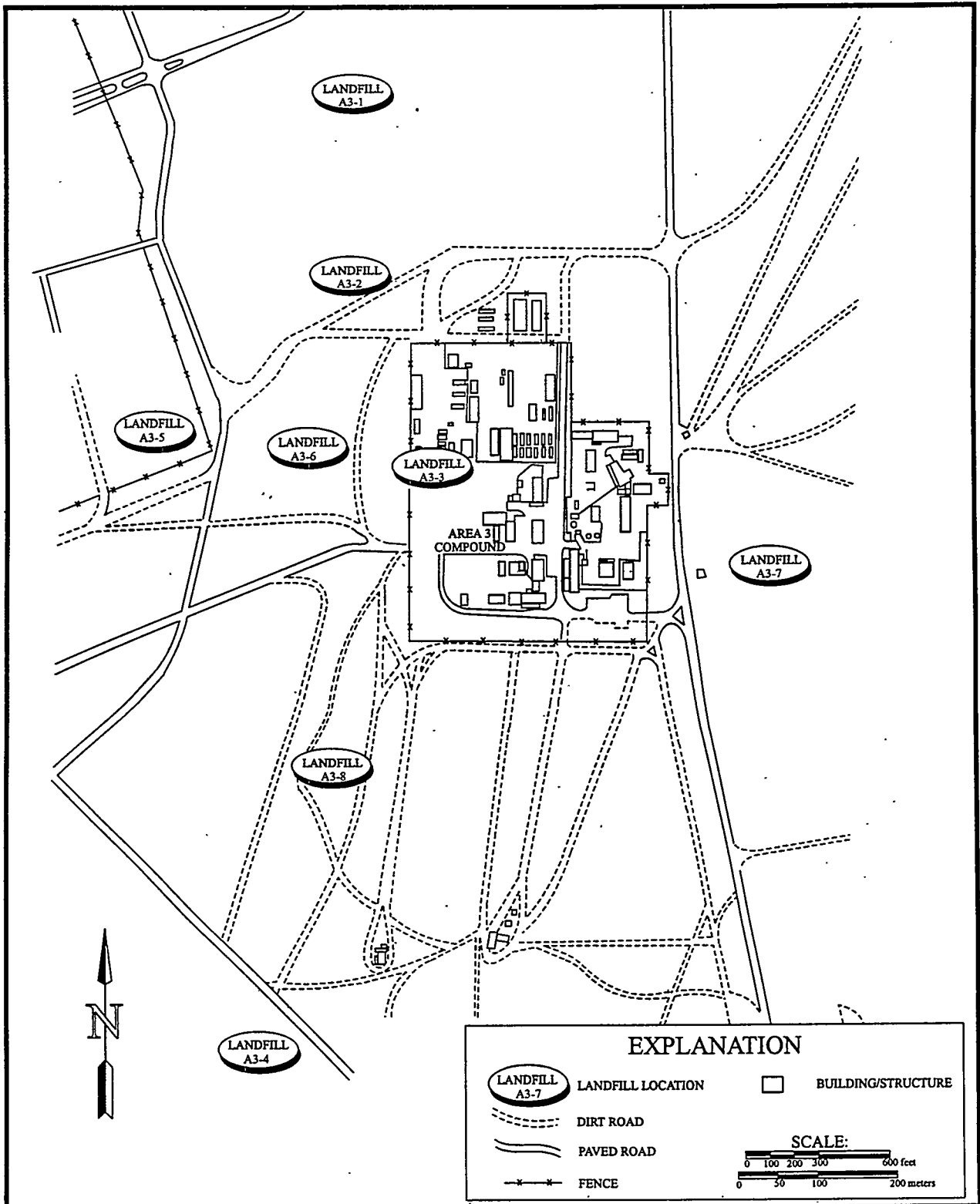


FIGURE 2  
 LOCATION OF EIGHT AREA 3 LANDFILL SITES

### 1.3.4 Climate

The TTR 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 (9 feet per second) in November.

## 2.0 WASTE DESCRIPTIONS AND ASSOCIATED HAZARDS

---

Results from the 1997 characterization activities are documented in the Corrective Action Decision Document (CADD) (DOE/NV, 1998). The results indicate the following:

### SUMMARY OF LANDFILL CHARACTERISTICS

LANDFILL	CAS NUMBER	NO WASTE	LANDFILL DEBRIS	PETROLEUM HYDROCARBON WASTE
A3-1	03-08-001-A301		X	X
A3-2	03-08-002-A302		X	X
A3-3	03-08-002-A303		X	
A3-4	03-08-002-A304		X	
A3-5	03-08-002-A305		X	
A3-6	03-08-002-A306		X	
A3-7	03-08-002-A307	X		
A3-8	03-08-002-A308		X	

Total petroleum hydrocarbons (TPH) was the only constituent of concern (COC) reported for the Area 3 Landfill Complex in the CADD (DOE, 1998). The state of Nevada Regulatory Action Level for TPH of 100 milligrams per kilogram (mg/kg) was exceeded in soil samples from Landfill A3-1 (200 mg/kg gasoline and 790 mg/kg diesel) and Landfill A3-2 (48,000 mg/kg waste oil).

Corrective action activities which will penetrate the landfill cover will be conducted only in Landfill A3-2 to remove and dispose of petroleum hydrocarbon impacted materials. Hazardous waste could be encountered during the excavation and removal activities. Although excavation activities will be conducted with a backhoe (to reduce or eliminate the potential for personnel contact with the impacted materials), potential routes 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 Landfill A3-2.



### **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 in the excavation area in Landfill A3-2. 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 Landfill A3-2.

### **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**

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 Landfill A3-2 in the Area 3 Landfill Complex are 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. Attachment 1 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 ER Project Manager will appoint the ECs prior to field activities. The Emergency Coordinator list is a field document to be prepared prior to field activities.

### **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 3 Landfill Complex Corrective Action Unit (CAU).
- The locations and characteristics of the wastes handled.
- The locations of all the records.
- The Area 3 Landfill Complex CAU.

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

- Stopping all operations, where applicable.

- Implementing this Plan.
- Contacting the TTR Safety Coordinator through the MAYDAY/911 system and making notification of the emergency.
- Notifying all Area 3 Landfill Complex CAU 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 ER) 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 numbers 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 3 Landfill Complex 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 Advanced Security Incorporated (ASI) Security ("Cactus") and the TTR ES&H (Environment, Safety, and Health) Coordinator via the radio on the Cedar Net or the 911 telephone system. 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 ER personnel in the area, that person should follow the notification instructions posted at the perimeter of each landfill at the Area 3 Landfill Complex.

### **3.4 RESPONSE PROCEDURES**

There are two general classifications of release incidents that could occur at the Area 3 Landfill Complex; 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 "Cactus" via the radio on the Cedar Net or by telephone by using the 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. 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 (Attachment 2).

### **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 must account for all personnel.

The assembly area for evacuated personnel will be the BN site office in Area 3. If cover must be taken, personnel will be instructed to use equipment/vehicles and other topographic features at the site.

### **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 Emergency Medical provider (ASI or the USAF) 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 (ASI Security) are capable of responding to all credible emergencies at the TTR. 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 at the Sandia Compound during normal working hours, Monday through Thursday. During other than normal working hours, emergency services are provided by Sandia paramedic personnel and U.S. Air Force 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 3 Landfill Complex is approximately five minutes. Services are also available at the Nye County Regional Medical Center located in Tonopah, Nevada.

### **4.3 FIRE PROTECTION SERVICES**

The Sandia TTR Fire Station serves the TTR 24 hours a day, 7 days a week. It is located in the Sandia Compound 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. Descriptions and on-site locations of the emergency equipment are listed in Attachment 3.

## 6.0 REFERENCES

---

Nevada Administrative Code, 1996, Hazardous Materials: Storage Tanks, Nevada Administrative Code 459.9921 through 459.999.

United States Department of Energy, 1998, Corrective Action Decision Document for the Area 3 Landfill Complex, Tonopah Test Range, Nevada (Corrective Action Unit 424), DOE/NV--496 UC-700.

United States Environmental Protection Agency, 1996, Region IX Preliminary Remediation Goals (PRGs), San Francisco, CA.

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

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 1**  
*of* **ATTACHMENT B-1**  
*of* **APPENDIX B**

**EMERGENCY/CONTINGENCY PLAN**

# **EMERGENCY/CONTINGENCY PLAN**

---

**COMPANY:** Bechtel Nevada

**ADDRESS:** Mercury, Nevada

**LOCATION OF FACILITY:** Tonopah Test Range, Area 3 Landfill Complex

## **PRIMARY EMERGENCY COORDINATOR**

To Be Determined (TBD)

Work:

Home:

## **SECONDARY EMERGENCY COORDINATOR**

TBD

Work:

Home:

Cellular:

## **ALTERNATE EMERGENCY COORDINATOR**

TBD

Work:

Home:

## **DESCRIPTION OF WASTE HANDLED**

Petroleum hydrocarbons (diesel and waste oil) and possible Resource Conservation and Recovery Act hazardous wastes (not determined). Wastes may be in the form of impacted soils, concrete, wood, metal, or other debris. Wastes may also be in containers (buckets, drums, tanks) in the form of liquids, solids, or sludge.

## **EMERGENCY RESPONSE CONTACTS**

All emergency response teams can be contacted through ASI Security ("Cactus") on the Cedar Net Radio and by telephone using the "911" System:

**EMERGENCY DISPATCH:** 295-8345 or 295-8290

### **PRIMARY HOSPITAL:**

Area 3 Medical Facility

(Building 0369)

295-8345 or 295-8290

### **SECONDARY HOSPITAL:**

Nye Regional Medical Center

825 South Main Street

Tonopah, NV

(702) 482-6233

**ATTACHMENT 2**  
*of* **ATTACHMENT B-1**  
*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,

## 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	<input type="checkbox"/> Male <input type="checkbox"/> Female
8. Job Being Done at Time of Incident		9. Experience on This Job or This Equipment (Months) <input type="checkbox"/> Under 3 <input type="checkbox"/> 3 to 12 <input type="checkbox"/> Over 12			
		10. Length of Present Employment (Months) <input type="checkbox"/> Under 3 <input type="checkbox"/> 3 to 12 <input type="checkbox"/> Over 12			

## PART II - INJURY/ILLNESS

11. Body Part(s) Involved <input type="checkbox"/> Left <input type="checkbox"/> Right	12. Nature of Injury/Illness	13. Object/Equip./Substance Inflicting Injury
--	------------------------------	---

## PART III - VEHICLE OR PROPERTY DAMAGE

14. Description of Vehicle/Equipment	15. Vehicle Property No.:	16. Nature of Damage
17. Activity in Progress At Time of Incident	18. Estimated Repair/Replacement Cost	19. Seat Belts Used <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

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

(  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 and/or conditions?

23. What action has or will be taken to prevent recurrence?	Implementation Date(s):
---	-------------------------

24. Preventable <input type="checkbox"/> Yes <input type="checkbox"/> 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 233)
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 factors.

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. **Preventive 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.

**ATTACHMENT 3**  
*of* **ATTACHMENT B-1**  
*of* **APPENDIX B**

**EMERGENCY EQUIPMENT**

# EMERGENCY EQUIPMENT

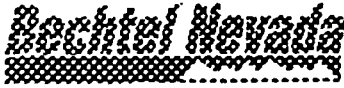
<b>EQUIPMENT</b>	<b>LOCATION</b>
<b><u>Fire Extinguishers</u></b> 20 lb. ABC	Each vehicle Decon Area Office
<b><u>First Aid Kits</u></b>	Each vehicle Decon Area Office
<b><u>Eye Wash Station</u></b>	Decon Area
<b><u>PPE</u></b> Tyvek Nitrile Gloves Surgical Gloves Rubber Boots Rain Suits (3) Hard Hats Face Shields Safety Glasses	Office or Designated Field Vehicle
<b><u>Portable Net 15 Radio (2)</u></b> With charger.	Office and Site Supervisor Vehicle
<b><u>Spill Response Materials</u></b> 55-gallon drums Spill Kit Absorbent Pads	Office or Designated Field Vehicle
<b><u>Miscellaneous</u></b> Garbage Bags Buckets Brushes Soap Kimwipes Plastic Sandbags Duct tape	Office or Designated Field Vehicle

**ATTACHMENT B-2**

*of* **APPENDIX B**

**FIELD INSPECTION FORM**





**TTR AREA 3 LANDFILL COMPLEX (CAU 424)  
INSPECTION FORM**

*Inspect the unit and surrounding area. Look for any unusual change in the unit such as accumulation of water, chemical odors, erosion, etc. Refer to the previous inspection of the unit in order to identify any changes. Inspections should be completed after a problem is reported by a contractor, DOE, NDEP, ER or other BN employees. Routine inspections will be done monthly.*

**GENERAL INFORMATION**

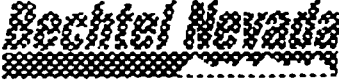
1. Date of inspection: \_\_\_\_\_
2. Facility Manager (name and organization): Bechtel Nevada Environmental Restoration
3. Reason for inspection: Monthly:  Problem Reported:  Unusual weather:   
Details (Name, organization and telephone number of person reporting problem): \_\_\_\_\_  
\_\_\_\_\_
4. Describe weather conditions over the past few weeks (high winds, precipitation, local flooding):  
\_\_\_\_\_

**CONDITION OF UNIT**

5. Describe the condition of the signs (missing, fading, damaged, etc.): \_\_\_\_\_  
\_\_\_\_\_
6. Describe any subsidence, erosion (run-on, run-off, or standing water), excessive vegetation, etc., on the landfill covers: \_\_\_\_\_  
\_\_\_\_\_
7. Describe any unusual activity or condition which could impact the proper operation of the covers: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Any trash or other waste in area? No  Yes  No change   
Details: \_\_\_\_\_  
\_\_\_\_\_
9. What is the (possible) effect of the change? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ACTIVITIES**

10. Describe any activities apparent at the time of inspection: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**TTR AREA 3 LANDFILL COMPLEX (CAU 424)  
INSPECTION FORM**

**WASTE MANAGEMENT**

11. Type of waste present at the site: \_\_\_\_\_
12. Number and volume of containers of waste: \_\_\_\_\_
13. Condition of waste/containers: \_\_\_\_\_

**AREA SURROUNDING THE CAU**

14. Describe any significant changes within several hundred feet of the unit. Changes can include construction, change in land use, storage of materials nearby, soil piles, change in use of the facility, etc.: \_\_\_\_\_  
\_\_\_\_\_
15. Describe the effect (or possible effect) of any changes noted above: \_\_\_\_\_  
\_\_\_\_\_
16. Describe any other discharges into the landfill or along the top of the landfill: \_\_\_\_\_  
\_\_\_\_\_
17. Additional comments, observations, or recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FOLLOW UP**

18. Based on the findings indicated above, is an additional inspection required before the next scheduled inspection: \_\_\_\_\_ If yes, when will this inspection be completed: \_\_\_\_\_

*Any significant changes must be reported to the appropriate supervisor immediately.*

Inspected by: \_\_\_\_\_

(Print)

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Names of other persons present during inspection (print):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **DISTRIBUTION LIST**

## DISTRIBUTION LIST

### Copies

### Controlled

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

P. J. Liebendorfer  
K.K. Beckley

2  
1

**U. S. Department of Energy, Nevada Operations Office**  
P. O. Box 98518  
Las Vegas, NV 89193-8518

S. D. Lawrence

1

### Copies

### Uncontrolled Copies

**U. S. Department of Energy, Nevada Operations Office**  
P. O. Box 98518  
Las Vegas, NV 89193-8518

J. L. Appenzeller-Wing  
K. J. Cabble

1  
1

Public Reading Room  
Technical Information Resource Center

1  
1

**U. S. Department of Energy,**  
**Office of Scientific and Technical Information**  
175 Oak Ridge Turnpike  
P. O. Box 62  
Oak Ridge, TN 37831

2

## DISTRIBUTION LIST (continued)

### Copies

### Uncontrolled Copies

#### **Bechtel Nevada**

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

Correspondence Control

D. K. Cowser

D. D. Madsen

S. J. Nacht

C. M. Obi

K. A. Quintana

1

1

1

1

1

1

#### **IT Corporation**

P.O. Box 93838, M/S 439  
Las Vegas, NV 89193-3838

K. C. Beach

M. E. Todd

1

1