



**SUMMARY REPORT  
ENVIRONMENTAL ASSESSMENT AND CLEANUP ACTIVITIES  
FORMER HAWTHORNE LANDFILL  
HAWTHORNE, NEVADA**

June 26, 2009  
File: 99433.01

Prepared for:

Nevada Division of Environmental Protection  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701-5249

Prepared by:

Kleinfelder  
4835 Longley Lane  
Reno, Nevada 89502

Copyright 2009 Kleinfelder  
All Rights Reserved

ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS REPORT WAS PREPARED.



4835 Longley Lane  
Reno, NV  
89502  
p | 775.689.7800  
f | 775.689.7810  
kleinfelder.com

June 26, 2009  
File: 99433.01

Lisa Johnson, CEM, CHMM  
Nevada Division of Environmental Protection  
Bureau of Corrective Actions  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701-5249

**SUBJECT: Summary Report  
Environmental Assessment and Cleanup Activities  
Former Hawthorne Landfill  
Hawthorne, Nevada**

Dear Ms. Johnson,

Kleinfelder prepared this report to summarize environmental assessment and cleanup activities performed at the Former Hawthorne Landfill, Hawthorne, Nevada (Site). This report was prepared for the Nevada Division of Environmental Protection (NDEP) Brownfields Program to summarize activities performed at the Site by the U.S. Army Corps of Engineers (USACE) and Kleinfelder. This report describes the results of environmental assessment activities performed by the USACE, and surface debris consolidation, potentially asbestos containing material abatement and fencing activities performed by Kleinfelder. This report was prepared under the existing contract between Kleinfelder and NDEP (Contract No. 06-015) Task K-2.

We appreciate the opportunity to be of service to the NDEP on this project. Please contact either of the undersigned at (775) 689-7800, if you have any questions, or require any additional information.

4835 Longley Lane  
Reno, NV  
89502

p| 775.689.7800  
f| 775.689.7810

kleinfelder.com

Respectfully submitted,

**KLEINFELDER WEST, INC.**

Prepared by:



Joshua Fortmann, C.E.M. #1730, Exp. 6/21/2010  
Environmental Services Manager

*I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable Federal, State and local statutes, regulations, and ordinances.*

Reviewed by:



David Herzog, C.E.M.  
Senior Engineering Geologist

Enclosure: Summary Report

## TABLE OF CONTENTS

Section	Page
1.0 Executive Summary .....	1
2.0 Introduction .....	2
2.1 Project Authorization and Objective .....	2
3.0 Background .....	2
3.1 Site Location .....	2
3.2 Site History .....	2
4.0 Environmental Assessment Documents .....	3
4.1 Phase I Environmental Site Assessment .....	3
4.2 Phase II Physical Characteristics Assessment .....	3
5.0 Cleanup Documents .....	3
5.1 Geophysical Survey .....	3
5.2 Fencing Activities .....	4
5.3 Surface Debris Consolidation .....	4
5.3.1 <i>Planning and Training Activities</i> .....	5
5.3.2 <i>Surface Debris Consolidation</i> .....	6
5.3.3 <i>Surface Debris Disposal</i> .....	6
5.4 Asbestos Abatement .....	7
5.5 Future Site Activities .....	7
6.0 Conclusions .....	8
7.0 Recommendations .....	8
8.0 Limitations .....	8
9.0 References .....	10

### Plates

Plate 1: Site Vicinity Map

Plate 2: Site Plan

Plates 3-7: Site Photographs

### Appendices

Appendix A: CD Copy of Referenced Reports

Appendix B: Site Specific Health and Safety Plan

## 1.0 Executive Summary

This report provides a summary of environmental assessment and cleanup activities performed at the former Hawthorne Landfill (Site) from May 2001 through March 2009. Kleinfelder prepared this report for the Nevada Division of Environmental Protection (NDEP) Brownfields Program. This report is intended for use by Mineral County during subsequent redevelopment planning activities.

The Former Hawthorne Landfill is located to the west of the town of Hawthorne, Nevada and was operated from the early 1920's until 1972. Municipal waste from the town was reportedly disposed in trenches at the Site. The U.S. Army Corps of Engineers (USACE) performed Phase I and Phase II Environmental Site Assessment (ESA) activities in May and October 2001. The USACE Phase II ESA report concluded that no indication of hazardous, toxic, or radioactive waste was present in the landfill trenches at the Site. In 2004, Kleinfelder performed fence and signage installation to define a Site boundary. Kleinfelder also performed asbestos abatement and solid waste consolidation activities at the Site in 2005.

During the solid waste consolidation activities at the Site, potentially asbestos containing materials (ACM) were observed. The locations of ACM at the Site were identified, and the ACM was abated. Large metal and concrete debris was recycled or buried onsite. The only remaining surface debris at the Site consists of recently dumped yard waste, paper, and plastic trash. Mineral County is actively patrolling the Site to remove trash and reduce future dumping.

Based on the activities performed to date, Kleinfelder concludes that assessment and cleanup activities performed at the Site appear to have sufficiently addressed identified environmental concerns. A potential exists that unidentified environmental concerns, including buried ACM, may remain at the Site. Based on the type of future Site redevelopment, additional soil and/or groundwater assessment may be warranted. Site redevelopment planning should address the potential for the presence of unidentified ACM and other unidentified chemicals of concern in the subsurface at the Site.

## 2.0 Introduction

### 2.1 Project Authorization and Objective

NDEP authorized Kleinfelder to prepare this report under Contract #06-015, Task K-2 in a letter dated November 7, 2008. This report is intended to provide a summary of environmental assessment and cleanup activities performed at the Site through the date of this report. This report also provides a brief documentation of fence repair and maintenance activities performed during 2009. This report includes a compact disc copy of the referenced assessment and cleanup documents (see Appendix A).

## 3.0 Background

### 3.1 Site Location

The Site is located in Township 8 North, Range 30 East, and Section 28, M.D.B & M approximately 0.3 miles to the west of the town of Hawthorne, Mineral County, Nevada (see Plate 1). The Site is approximately 162.43 acres in size with a fence and signage defining the Site boundary. The Site boundary is shown on Plate 2 and includes the fenced boundary surveyed in 2004 and the fence line modifications made in 2009. The 2009 fence line modifications resulted in an approximate 21.76 acre decrease in the size of the Site.

### 3.2 Site History

The Site background is compiled from information included in the referenced documents. The Former Hawthorne Landfill was operated from the early 1920's until 1972. Municipal waste was reportedly buried in trenches and burned. Municipal waste consisted of household refuse, metal debris and construction debris. Waste disposal activities were not documented, so available information is based on interviews with individuals formerly associated with the Site who had knowledge regarding waste disposal practices.

#### 4.0 Environmental Assessment Documents

##### 4.1 Phase I Environmental Site Assessment

The May 2001 USACE report presented the results of a Targeted Brownfields Assessment (TBA) of the Site. The scope of the TBA included the collection and review of existing Site documents, interviews with former Site employees, and a site reconnaissance all performed in accordance with the ASTM E 1527-97 requirement for a Phase I Environmental Site Assessment.

The report concluded that waste disposal activities at the Site were not documented by the Site operator. The former Babbitt Landfill was located approximately 0.5 miles to the north of the former Hawthorne Landfill, and waste disposal practices at the former Hawthorne Landfill were reportedly similar to waste disposal practices at the former Babbitt Landfill. The report concluded that, based on investigation activities, groundwater was not adversely impacted at the former Babbitt Landfill. No soil or groundwater investigation was performed at the former Hawthorne Landfill. The report recommended soil and groundwater assessment to confirm that impacts were not present at the former Hawthorne Landfill.

##### 4.2 Phase II Physical Characteristics Assessment

The October 2001 report presented the results of a Phase II Physical Characteristics Assessment (PCA) at the Site. The PCA included excavation of 33 test pits at 21 landfill cells. Thickness of soil cover over waste, depth of waste disposal trenches, and types of waste were documented for each of the 21 cells. The landfill contained mostly household or municipal waste, and some areas of large metal debris and construction debris. The report concluded that the PCA showed no indication of Hazardous, Toxic or Radioactive Waste (HTRW) contamination within the landfill trenches.

#### 5.0 Cleanup Documents

##### 5.1 Geophysical Survey

MACTEC performed a geophysical survey of the Site to identify the locations of subsurface waste disposal. The survey confirmed that locations of buried waste were

generally associated with visible surface features in the form of surface depressions. The survey also confirmed that in general the areas with no vegetative disturbance did not contain buried waste. A copy of the survey was not available at the time of report preparation.

## 5.2 Fencing Activities

In 2004, the NDEP contracted Kleinfelder to provide a legal survey and install a boundary fence at the Site. The purpose of this project was to provide a legal survey and boundary of the Site including all identified landfill cells and the areas of substantial surface debris. The fence provided a safety barrier to reduce potential adverse impacts to the public welfare. The fence also provided a boundary within which to perform landfill cleanup activities. Denson Surveying of Yerington, Nevada performed a survey of the proposed fenceline perimeter using previously marked corners. The survey area included 162.43 acres as shown in Plate 2. Photo 1 in Plate 3 shows existing Site conditions in 2004.

The fence is constructed of t-post and three-strand barbed wire as shown on Photo 2 in Plate 3. Five drive-through gates and six walk through gates were installed for anticipated cleanup activities and recreational access, see Photos 3 and 4 in Plate 4. Informational signs were posted at each of the gated entrances, and reflective markers were installed on the fence to increase visibility.

During February and March 2008, Kleinfelder subcontracted Mineral County to perform fence repairs at locations where vehicles had damaged fence posts. During fence repair, Mineral County collected surface trash that had been recently dumped. Fencing repair was performed on weekends during February, March, April, May, and June 2009.

## 5.3 Surface Debris Consolidation

In 2005, the NDEP contracted Kleinfelder to perform cleanup planning and surface debris consolidation. Kleinfelder subcontracted Mineral County to assist in cleanup planning and training activities. In addition, Day & Zimmerman Hawthorne Corporation (DZH) provided training assistance prior to surface debris consolidation activities, and the US Marine Corps provided equipment during surface debris disposal activities.

### 5.3.1 Planning and Training Activities

The Mineral County Brownfields Coordinator and Mineral County Recorder's Office created two job descriptions to assist in the planning and training implementation. A supervisor's position was created to oversee the field work and supervise the laborers. Laborers positions were created to perform the field work.

Mineral County hired Mr. Warren Stevens as the Field Supervisor. Mr. Stevens provided constant oversight of field laborer activities. Laborers were selected from juniors and seniors at the Mineral County High School. The Mineral County High School utilized their school-to-work program guidelines to identify and generate a list of workers. A total of eleven field laborers were hired and trained to perform surface debris consolidation.

The surface debris consolidation component of the cleanup plan required laborers to walk and drive through the Site while cleaning up surface debris using hand tools such as rakes, shovels, and wheelbarrows.

DZH provided environmental awareness training to the field laborers. Each laborer received 8 hours of training that included information on the following topics:

- Air- Clean Air Act
- Water – Clean Water Act
- Solid Waste – Resource Conservation and Recovery Act
- Drinking Water – Safe Drinking Water Act
- Site Contamination and Cleanup – Comprehensive Environmental Response, Cleanup and Liability Act
- Hazardous Materials and Substances – Emergency Planning and Community Right-to-Know Act
- Asbestos – Asbestos Hazardous Emergency Response Act
- Unexploded Ordnance Recognition and Avoidance

DZH also provided the field laborers first aid and hazardous materials awareness training. Each laborer received 8 hours of training intended to provide a basic

knowledge of potential former landfill hazards. Class instructors were certified by the Red Cross and the State of Nevada Fire Marshall's Office.

### *5.3.2 Surface Debris Consolidation*

Following a health and safety meeting, surface debris consolidation started at the northeast corner of the Site and progressed south. Field laborers performed surface debris collection using hand tools, wheelbarrows and a flatbed truck for larger objects. Field laborer activities were documented daily by the Field Supervisor. Fifty days of surface debris consolidation were performed from February 10, 2005 through May 27, 2005.

In addition to the field laborers, a Mineral County operator used a small front-end loader to further consolidate small piles and move objects too large for hand collection. Field laborers did not work in the vicinity of any operating heavy equipment. A total of 37 days of equipment operation occurred from March 1, 2005 through June 5, 2005.

### *5.3.3 Surface Debris Disposal*

Mineral County employees selected existing trench locations to dispose of consolidated surface debris. In addition, two new trenches were excavated adjacent to existing trenches. The existing trenches remained open from historic landfill activities. The disposal locations were selected due to the proximity to the majority of larger solid waste disposal areas. Mineral County Public Works Department equipment and a loader from the US Marine Corps were utilized for debris load and transport. Consolidated debris was loaded and hauled to the disposal trench location, placed in the trenches and covered with native soil; see Photo 5 in Plate 5.

Disposal of approximately 1,000 piles of consolidated surface debris, constituting approximately 20,000 cubic yards of material, was performed. Heavy equipment operations were performed for a total of 13 days. Large pieces of scrap metal were consolidated for recycling. American Salvage of Reno, Nevada provided steel collection and recycling services for the approximately 78 tons of consolidated scrap metal.

#### 5.4 Asbestos Abatement

During cleanup activities, suspected Asbestos Containing Material (ACM) was observed on the ground surface of the Site. The suspected ACM was observed as cementitious roofing tiles and friable pipe insulation material; see Photo 6 in Plate 5 and Photo 7 in Plate 6. The NDEP requested Kleinfelder provide ACM abatement services as a part of cleanup activities.

Kleinfelder provided a scope of services to abate the identified ACM. Kleinfelder prepared an Asbestos Abatement Specification for the Site. The specification described procedures and protocol to be used by the contractor during abatement activities. Kleinfelder subcontracted Diversified Demolition Company of Reno, Nevada to provide asbestos abatement services, and subcontracted Sato Environmental Consultants, Inc., a Nevada licensed abatement consultant, to provide contractor oversight and final clearance services, see Photo 8 in Plate 6 and Photo 9 in Plate 7.

Kleinfelder provided oversight services and communication with both subcontractors. Final clearance was performed visually following abatement activities; see Photo 10 in Plate 7. Documentation of asbestos abatement monitoring and final clearance was performed by Sato Environmental Consultants, Inc.

#### 5.5 Future Site Activities

The abatement specifications were developed based on discussions with the NDEP, with the EPA Region 9, with the Nevada Division of Industrial Relations Nevada Asbestos Abatement Program, and with Mineral County. Asbestos abatement activities were intended to be a source reduction project. As stated in the abatement specification, identified piles of ACM were removed, but a potential exists that unidentified and/or buried ACM remains at the Site following abatement activities. The potential to encounter ACM on the Site should be considered during future site activities.

## 6.0 Conclusions

Based on the activities performed to date, Kleinfelder provides the following conclusions:

- Assessment activities performed at the Site identified ACM as an environmental concern, and ACM abatement was completed;
- A potential exists that unidentified environmental concerns, including buried ACM, may remain at the Site; and
- Based on the type of future Site redevelopment, additional environmental assessment activities may be warranted.

## 7.0 Recommendations

Based on the preceding conclusions, Kleinfelder provides the following recommendations:

- Site redevelopment planning should address the potential presence of unidentified ACM and other unidentified environmental concerns at the Site. Health and safety and environmental contingency planning should be included during any Site redevelopment planning activities;
- Mineral County should implement long term site controls to maintain existing site conditions. Site control options may include, but are not limited to, environmental covenants and ordinances. Mineral County should also perform maintenance of the Site fence and soil cover as part of the Site controls.

## 8.0 Limitations

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our

conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service, which provide information for their purposes at acceptable levels of risk. The client and key members of the design team should discuss the issues covered in this report with Kleinfelder, so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk and expectations for future performance and maintenance.

## 9.0 References

U.S. Army Corps of Engineers Sacramento District, "Targeted Brownfields Assessment for the Former Hawthorne Landfill, Hawthorne, Nevada", May 2001.

U.S. Army Corps of Engineers Sacramento District Environmental Design Section, "Phase II Physical Characteristics Assessment, Former Hawthorne Landfill, Hawthorne, Nevada", October 2001.

Kleinfelder, Inc., "Report of Fencing Observation, Former Hawthorne Landfill, Mineral County, Nevada", July 19, 2004.

Kleinfelder, Inc., "Report of Field Activities, Phase I and II Closure Plan, Former Hawthorne Landfill, Mineral County, Nevada", June 30, 2005.

Kleinfelder, Inc., "Asbestos Abatement Specification, Former Hawthorne Landfill, Hawthorne, Nevada", September 26, 2005.

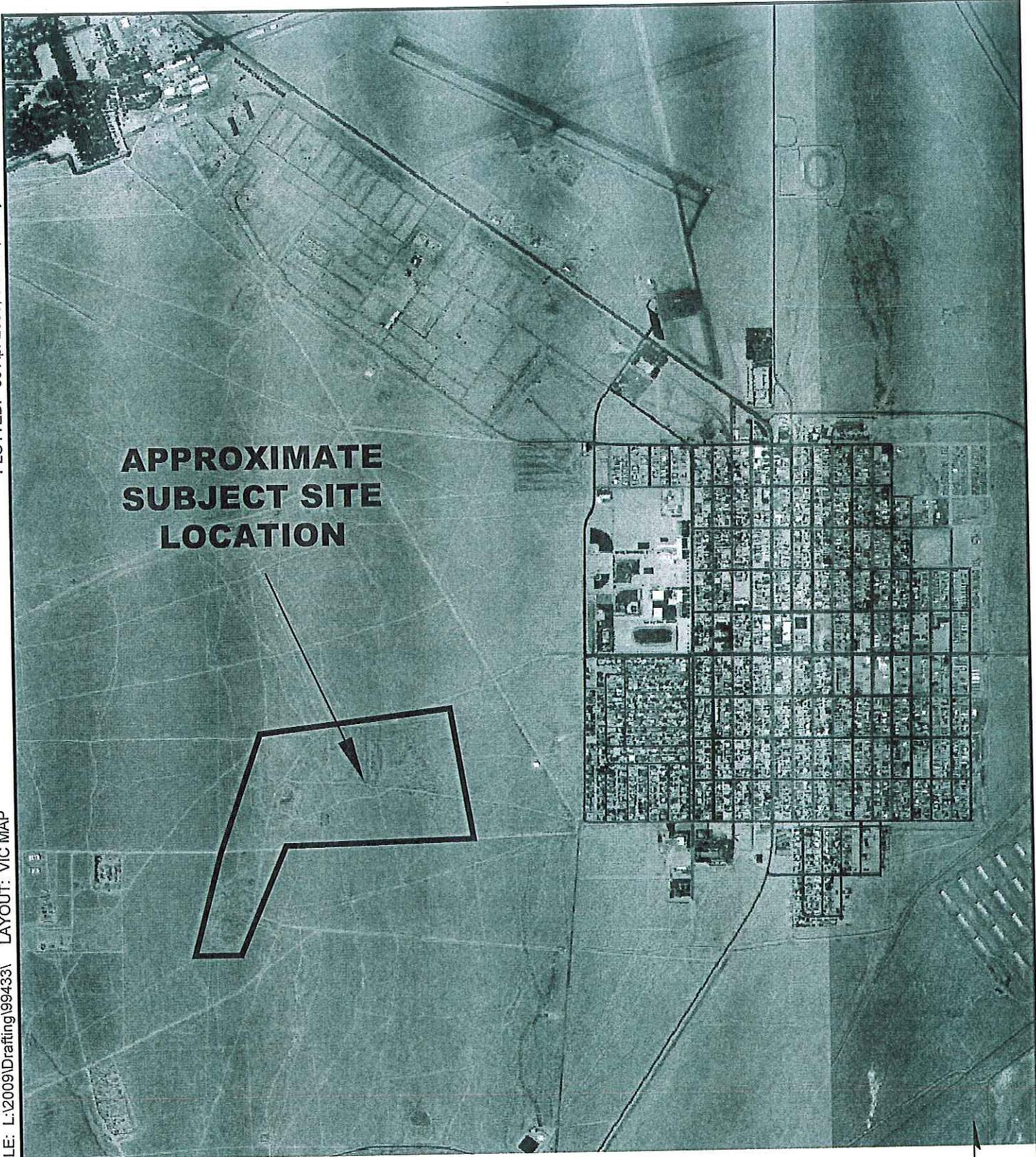
Kleinfelder, Inc., "Report of Asbestos Abatement Activities, Former Hawthorne Landfill, Mineral County, Nevada", January 24, 2005.

# PLATES

PLOTTED: 30 Apr 2009, 8:54am, kwujcik

CAD FILE: L:\2009\Drafting\994331 LAYOUT: VIC MAP

ATTACHED XREFS:  
RENO, NV



**APPROXIMATE  
SUBJECT SITE  
LOCATION**

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



SCALE UNKNOWN

**KLEINFELDER**  
Bright People. Right Solutions.  
www.kleinfelder.com

PROJECT NO.	99433.01
DRAWN:	APRIL 30, 2009
DRAWN BY:	K. WUJCIK
CHECKED BY:	J. FORTMANN
FILE NAME:	VICINITY MAP.dwg

<b>SITE VICINITY MAP</b>
FORMER HAWTHORNE LANDFILL HAWTHORNE, NEVADA

PLATE <b>1</b>
-------------------

ATTACHED IMAGES:  
ATTACHED XREFS:  
RENO, NV

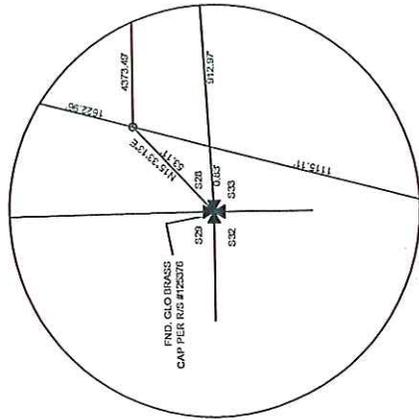
CAD FILE: L:\2009\Drafting\994331 LAYOUT: SITE PLAN

PLOTTED: 01 May 2009, 10:07am, kwujcik

**TOTAL AREA SURVEYED  
185.25 ACRES**

MAP NOTE:  
This map is only delineating the existing brown field area  
and is not creating a parcel.

LINE	BEARING	DISTANCE
1	S24°30'43"7"W	56.57'
2	N14°54'13"E	52.91'

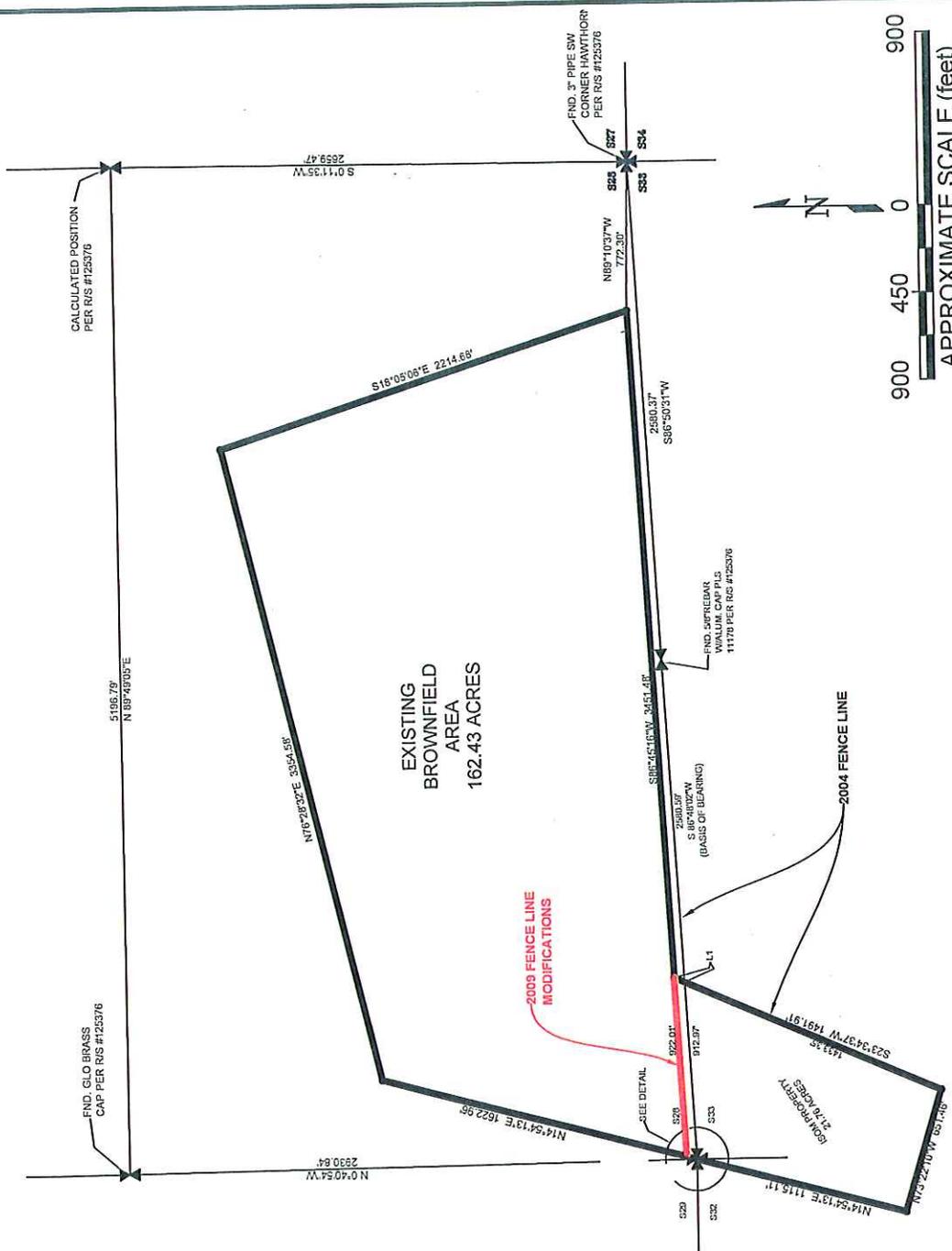


**DETAIL  
(NOT TO SCALE)**

RECORDED OF SURVEY FOR  
**MINERAL COUNTY**  
OF A PORTION  
OF SECTIONS 29, 32 AND 33  
IN SECTION 25 TOWNSHIP 6 NORTH RANGE 30 EAST  
MOUNT Diablo MERIDIAN  
MINERAL COUNTY, NEVADA

Drawn by	Surveyed by	Checked by	Date
C. STRAW JR.	0400785.DWG	0400785	1/27/04
Surveying & Mapping	01028130		
Las Vegas, Nevada	(703) 485-3811		

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. The accuracy, completeness, and reliability of the information is not guaranteed. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or relying on the information.



PROJECT NO.	99433.01
DRAWN:	APRIL 30, 2009
DRAWN BY:	K. WUJCIK
CHECKED BY:	J. FORTMANN
FILE NAME:	SITE PLAN.dwg

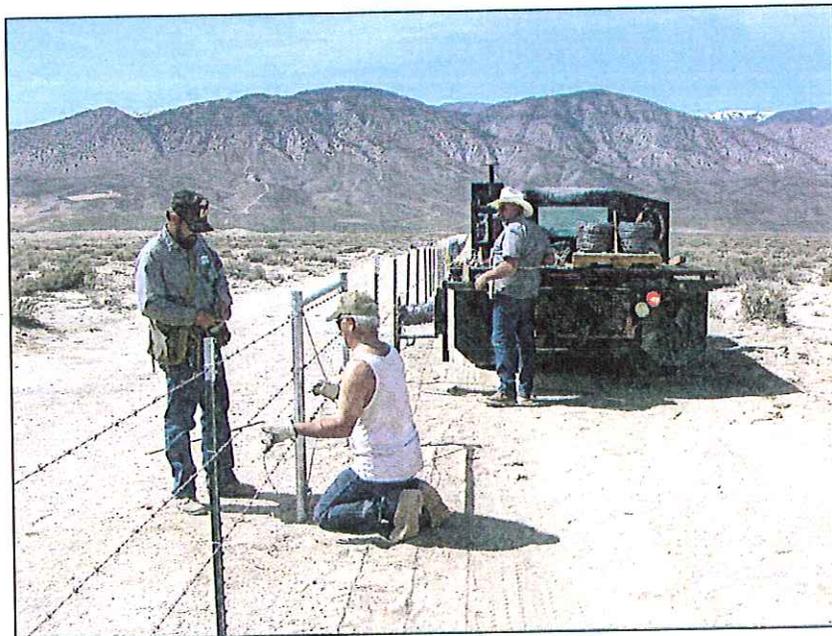
**KLEINFELDER**  
Bright People. Right Solutions.  
www.kleinfelder.com

<b>SITE PLAN</b>	
PLATE	<b>2</b>
FORMER HAWTHORNE LANDFILL HAWTHORNE, NEVADA	

ATTACHED IMAGES: Images: pic 1.JPG Images: pic 10.JPG Images: pic 2.jpg Images: pic 3.jpg Images: pic 4.jpg Images: pic 5.jpg Images: pic 6.jpg Images: pic 7.JPG Images: pic 8.JPG Images: pic 9.JPG  
 ATTACHED XREFS: PLOTTED: 23 Jun 2009, 4:08pm, kwujcik  
 RENO, NV CAD FILE: L:\2009\Drafting\99433\ LAYOUT: PICTURE PLATE 3



METAL SURFACE DEBRIS AT SITE PRIOR TO CLEAN-UP ACTIVITIES



MINERAL COUNTY PERSONNEL INSTALLING SITE PERIMETER FENCE

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



PROJECT NO. 99433.01  
 DRAWN: MARCH 12, 2009  
 DRAWN BY: K. WUJCIK  
 CHECKED BY: J. FORTMANN  
 FILE NAME:  
 PICTURE PLATES.dwg

**SITE PHOTOGRAPHS**

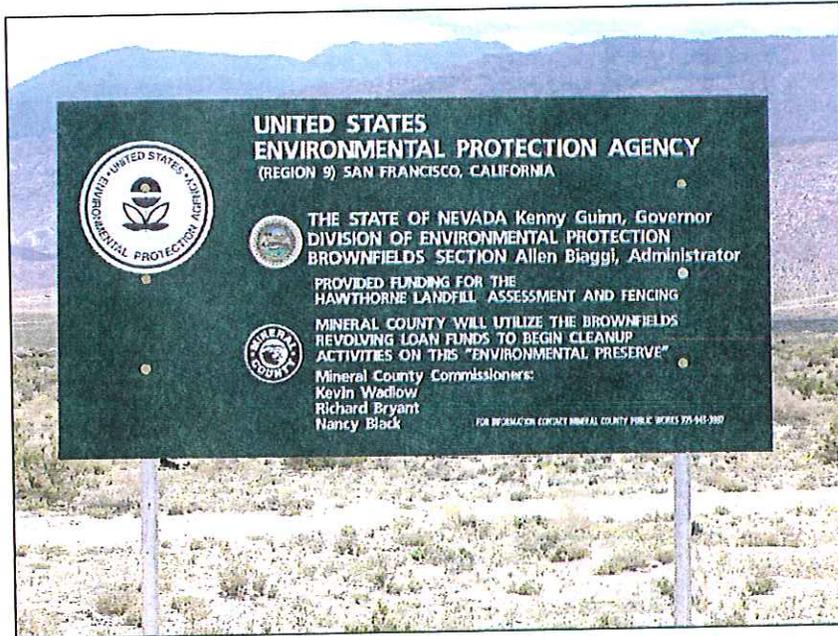
FORMER HAWTHORNE LANDFILL  
 HAWTHORNE, NEVADA

PLATE

**3**



ACCESS GATE TO SITE AND SIGNAGE



PROJECT IDENTIFICATION SIGN

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



PROJECT NO.	99433.01
DRAWN:	MARCH 12, 2009
DRAWN BY:	K. WUJCIK
CHECKED BY:	J. FORTMANN
FILE NAME:	PICTURE PLATES.dwg

<b>SITE PHOTOGRAPHS</b>	PLATE
FORMER HAWTHORNE LANDFILL HAWTHORNE, NEVADA	<b>4</b>

ATTACHED IMAGES: Images: pic 1.JPG Images: pic 10.JPG Images: pic 2.jpg Images: pic 3.jpg Images: pic 4.jpg Images: pic 5.jpg Images: pic 6.jpg Images: pic 7.JPG Images: pic 8.JPG Images: pic 9.JPG  
 ATTACHED XREFS: RENO, NV

PLOTTED: 23 Jun 2009, 4:08pm, kwujcik  
 CAD FILE: L:\2009\Drafting\99433\ LAYOUT: PICTURE PLATE 5



**SURFACE DEBRIS CONSOLIDATION, DISPOSAL  
 AND FINAL GRADING ACTIVITIES**



**ASBESTOS CEMENT TILES LOCATED ON-SITE  
 PRIOR TO ABATEMENT**

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



PROJECT NO. 99433.01  
 DRAWN: MARCH 12, 2009  
 DRAWN BY: K. WUJCIK  
 CHECKED BY: J. FORTMANN  
 FILE NAME:  
 PICTURE PLATES.dwg

**SITE PHOTOGRAPHS**

FORMER HAWTHORNE LANDFILL  
 HAWTHORNE, NEVADA

PLATE  
**5**

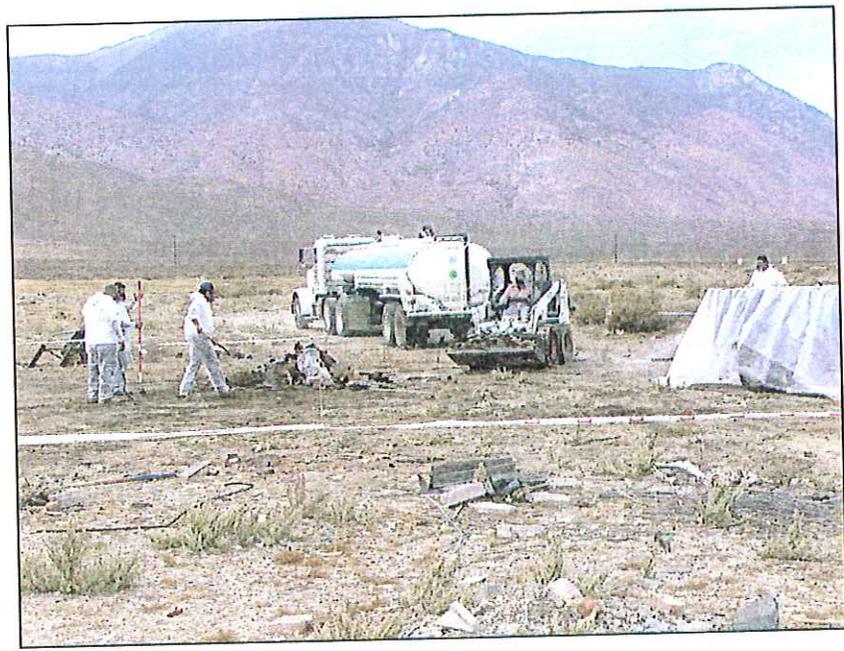
Images: pic 1..JPG Images: pic 10..JPG Images: pic 2.jpg Images: pic 3.jpg Images: pic 4.jpg Images: pic 5.jpg Images: pic 6.jpg Images: pic 7..JPG Images: pic 8..JPG Images: pic 9..JPG  
 ATTACHED IMAGES: pic 1..JPG Images: pic 10..JPG Images: pic 2.jpg Images: pic 3.jpg Images: pic 4.jpg Images: pic 5.jpg Images: pic 6.jpg Images: pic 7..JPG Images: pic 8..JPG Images: pic 9..JPG  
 ATTACHED XREFS: RENO, NV

PLOTTED: 23 Jun 2009, 4:08pm, kwujcik

CAD FILE: L:\2009\Drafting\99433\ LAYOUT: PICTURE PLATE 6



ASBESTOS-CONTAINING THERMAL SYSTEM  
 INSULATION LOCATED ON-SITE  
 PRIOR TO ABATEMENT



ASBESTOS ABATEMENT ACTIVITIES

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

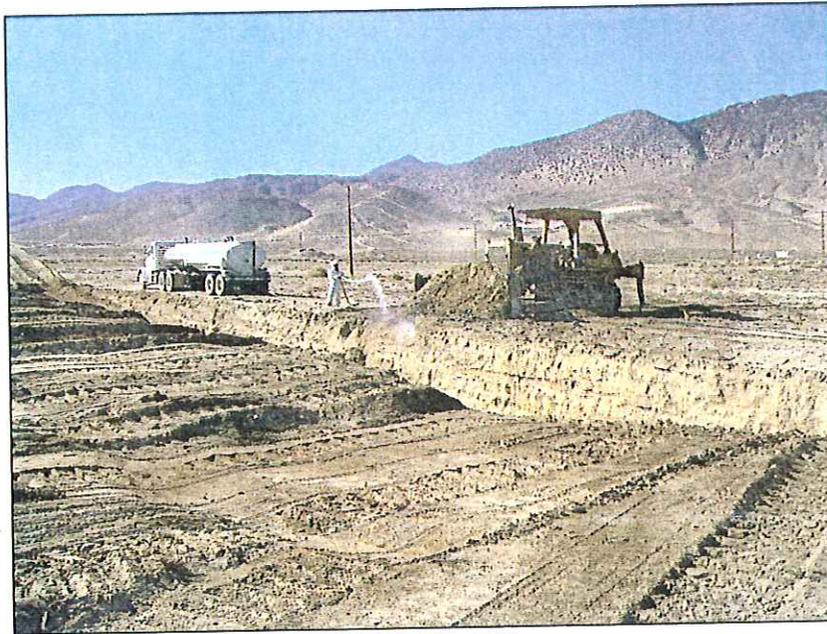
**KLEINFELDER**  
 Bright People. Right Solutions.  
 www.kleinfelder.com

PROJECT NO.	99433.01
DRAWN:	MARCH 12, 2009
DRAWN BY:	K. WUJCIK
CHECKED BY:	J. FORTMANN
FILE NAME:	PICTURE PLATES.dwg

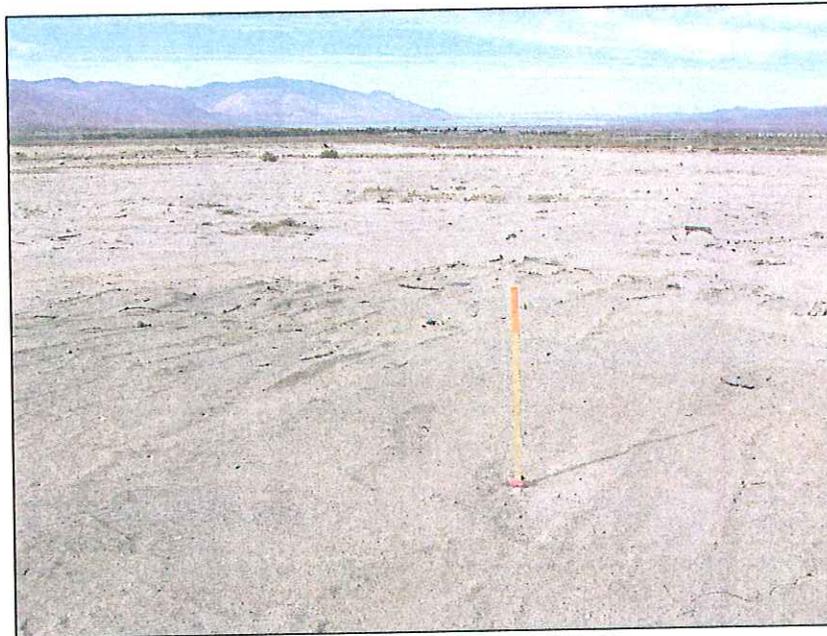
<b>SITE PHOTOGRAPHS</b>
FORMER HAWTHORNE LANDFILL HAWTHORNE, NEVADA

PLATE
<b>6</b>

ATTACHED IMAGES: Images: pic 1.JPG Images: pic 10.JPG Images: pic 2.jpg Images: pic 3.jpg Images: pic 4.jpg Images: pic 5.jpg Images: pic 6.jpg Images: pic 7.JPG Images: pic 8.JPG Images: pic 9.JPG  
 ATTACHED XREFS: CAD FILE: L:\2009\Drafting\99433\ LAYOUT: PICTURE PLATE 7  
 PLOTTED: 23 Jun 2009, 4:09pm, kwujcik



ASBESTOS ABATEMENT ACTIVITIES



COMPLETED ABATEMENT AT FORMER THERMAL SYSTEM INSULATION LOCATION

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.



PROJECT NO. 99433.01  
 DRAWN: MARCH 12, 2009  
 DRAWN BY: K. WUJCIK  
 CHECKED BY: J. FORTMANN  
 FILE NAME:  
 PICTURE PLATES.dwg

**SITE PHOTOGRAPHS**

FORMER HAWTHORNE LANDFILL  
 HAWTHORNE, NEVADA

PLATE

**7**

# **APPENDIX A**

## **APPENDIX B**



**SITE SPECIFIC HEALTH AND SAFETY PLAN  
FORMER HAWTHORNE LANDFILL  
HAWTHORNE, NEVADA**

**January 30, 2009**

Copyright 2009 Kleinfelder  
All Rights Reserved

ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS REPORT WAS PREPARED.



A Health and Safety Plan Prepared for:

Nevada Division of Environmental Protection  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

**SITE SPECIFIC HEALTH & SAFETY PLAN  
FORMER HAWTHORNE LANDFILL  
HAWTHORNE, NEVADA**

Kleinfelder Job No. 100676.01

Prepared by:

---

Joshua P. Fortmann, C.E.M.  
Project Geologist

---

Melissa Sherman, C.E.M.  
Environmental Scientist  
Area Safety Representative

**KLEINFELDER**  
4835 Longley Lane  
Reno, Nevada 89502  
(775) 689-7800

January 30, 2009

## SUMMARY

The purpose of this summary is to provide a quick field reference for the commonly referred to items covered in the Health and Safety Plan. It is not the intent of this summary to replace or supersede the information referred to in the Health and Safety Plan.

### REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Safety Glasses
- Gloves (Leather/Nitrile/Latex)
- Steel Toe/Shank Work Boots
- Work Clothes (long sleeve, long pants)
- Dust Mask

### POTENTIAL CHEMICAL HAZARDS

- √ Asbestos Containing Materials

### POTENTIAL PHYSICAL HAZARDS

- √ Cold Stress
- √ Underground Hazards
- √ Slips, Trips, and Falls
- √ Biological Hazards (Venomous Snakes, Scorpions and Spiders)
- √ Heavy Lifting/Moving Equipment
- √ Pinch Points

### EMERGENCY CONTACTS

Josh Fortmann, Project Manager Phone (775) 689-7800 x109 Don Orndorff, On-Site Safety Coordinator Mobile (775) 312-0340 - On-site	Melissa Sherman, Project Safety Manager Kleinfelder, Inc. (775) 689-7800 x128
Fire                            911 Police                            911 Paramedics                    911	Mount Grant Hospital First and "A" Street Hawthorne, Nevada (775) 945-2461

### EMERGENCY TELEPHONE CALL PROTOCOL

- Give: *Name*  
 Address/location (Former Hawthorne Landfill)  
 Brief description of emergency  
**(Do not hang up until information is repeated back.)**

## TABLE OF CONTENTS

Chapter	Page
1 INTRODUCTION.....	1
1.1. <u>Site Description and Background</u> .....	1
1.2. <u>Purpose of Plan</u> .....	1
2 KEY PERSONNEL AND ASSIGNMENT OF SAFETY RESPONSIBILITY .....	2
3 WORK OBJECTIVES.....	3
4 JOB HAZARD ANALYSIS.....	4
4.1. <u>Potential Chemical Hazards</u> .....	4
4.1.1. Asbestos.....	4
4.2. <u>Potential Physical Hazards</u> .....	4
4.2.1. Cold Stress .....	4
4.2.2. Slips, Trips, and Falls .....	5
4.2.3. Heavy Lifting, Moving Equipment by Hand, Handling Sharp Objects ....	5
4.2.4. Underground Hazards .....	6
4.2.5. Biological Hazards - Venomous Snakes, Spiders and Scorpions....	6
4.3. <u>Fire Prevention and Protection</u> .....	7
4.4. <u>General Safety Rules and Requirements</u> .....	7
4.5. <u>Required Levels of Protection</u> .....	9
5 EMPLOYEE TRAINING .....	10
5.1. <u>Employee Training</u> .....	10
6 SITE CONTROL, DECONTAMINATION PROCEDURES & EMERGENCY RESPONSE PLAN.....	11
6.1. <u>Site Control Areas and Decontamination Procedures</u> .....	11
6.2. <u>Emergency Response Plan</u> .....	11

### ATTACHMENTS

Information Verification/Safety Briefing and Attendance Sheet  
 Mount Grant Hospital Location Map  
 Job Loss Analysis Documents:  
     General Site Activities  
     Field Work with Biological Hazards  
     Moving and Loading Equipment by Hand

## 1 INTRODUCTION

---

This document describes the worker health and safety, and contingency plans associated with fencing repairs at the former Hawthorne Landfill located approximately one-quarter mile to the west of Hawthorne, Nevada (Site).

Workers will be required to work in areas that may contain asbestos associated with building material debris. The work objectives involve tasks that have a potential for exposure to these potential contaminants. Therefore, work practices which reduce the potential for worker exposure will be implemented.

### 1.1. Site Description and Background

Project Name: Former Hawthorne Landfill  
Client Name: Ms Lisa Johnson (NDEP)  
Client Phone: (775) 687-9379

The Site was operated as an unregulated landfill from the 1920's until 1972. Municipal waste was reportedly placed in trenches, burned and then covered with soil. Previous site assessments showed no indication of Hazardous, Toxic, or Radioactive Waste (HTRW) contamination existing within landfill trenches.

### 1.2. Purpose of Plan

This health and safety plan is intended to prescribe basic procedural and minimum equipment requirements for worker protection of personnel during normal operations and in the event of an emergency. Planned normal operations consist of fence post installation and barbed wire fencing installation.

If site conditions change during the project, personnel may be required to modify operations as necessary, which may include upgrading or downgrading levels of protection. No changes to this plan will be permitted without prior approval by Kleinfelder's project manager and project safety manager. Personnel who are assigned work within or plan to enter the work areas must read the site health and safety plan and verify through signature that they are familiar with its provisions. Unauthorized personnel are not permitted in the restricted work zones.

## 2 KEY PERSONNEL AND ASSIGNMENT OF SAFETY RESPONSIBILITY

---

Clear lines of authority will be established for enforcing compliance with the health and safety procedures.

### **On-Site Safety Coordinator**

The project manager/on-site safety coordinator (see Summary), is responsible for advising personnel working in the area of the potential hazards and the minimum general requirements of the health and safety plan.

The on-site safety coordinator is responsible for the implementation of the site-specific health and safety program. This includes providing field supervision, informing personnel of safe work and hygiene practices, proper use of personal protective equipment, and communicating approved modified safety requirements to site personnel. Specific site duties include, but are not limited to: conducting daily health and safety field meetings, maintaining a first aid kit, providing first aid as necessary, notifying the proper response agency in the event of an emergency, and completing the necessary record keeping.

### **Project Safety Manager**

The project safety manager, Melissa Sherman, will provide technical consultation and guidance regarding site health and safety issues. In summary, the safety manager will evaluate the effectiveness of the health and safety plan, and when necessary, provide changes in the form of addenda.

### **Training Requirements**

Personnel and subcontractor's accessing the Site will have reviewed this health and safety plan and signed the signature sheet.

### 3 WORK OBJECTIVES

---

The work objectives for the field activities at the Site are listed below:

1. Install fence posts and barbed wire fencing.

## 4 JOB HAZARD ANALYSIS

---

### 4.1. Potential Chemical Hazards

The identified chemical contaminants are expected to be present in sufficiently low concentrations such that respiratory equipment is not anticipated for this project. However a dusk masks should be present onsite if needed.

#### 4.1.1. Asbestos

HAZARD: Suspected ACM was previously located at multiple locations on the Site, and undiscovered ACM may remain in the vicinity of the site. The asbestos was present as friable pipe insulation and non-friable roofing tiles.

RISK: Potential chronic health hazards include asbestosis, lung cancer and mesothelioma.

#### SAFE WORK PRACTICES:

1. Avoid moving or disturbing any suspect material.
2. If moving suspect ACM material wear dusk mask.

### 4.2. Potential Physical Hazards

The potential physical hazards associated with the field activities include those typically involving outdoor work activities. Accidents or injuries can be avoided with the use of common sense and proper vigilance to the task being conducted and conditions of the site.

#### 4.2.1. Cold Stress

HAZARD: Work will be performed during the winter months where temperatures may be in extremely low and workers may be susceptible to cold stress and related illnesses.

RISK: Potential to develop frost bite or hypothermia.

SAFE WORK PRACTICES:

1. Wear appropriate clothing and shoes.
2. Take frequent breaks to warm up.
3. Adequate food and beverage consumption.
4. Use buddy system.
5. Be able to recognize symptoms of cold stress including disorientation, discoloration, and shivering.

SEE ATTACHED JOB LOSS ANALYSIS – GENERAL SITE ACTIVITIES FOR MORE INFORMATION.

4.2.2. Slips, Trips, and Falls

HAZARD: The areas where work will be conducted may contain various types of man-made and natural hazards that can pose slipping, tripping, and falling hazards.

RISK: Slips, trips and falls can lead to various types of injuries.

SAFE WORK PRACTICES:

1. To minimize risks, prior to beginning work on site personnel will assess the presence landfill and natural features.
2. On-site personnel shall have high traction soles on steel toe shoes to improve footing and to prevent slips, trips, and falls.
3. Work area should be kept clean and free of debris when possible.
4. Cover open holes
5. Continuously look where you are stepping

SEE ATTACHED JOB LOSS ANALYSIS – GENERAL SITE ACTIVITIES FOR MORE INFORMATION.

4.2.3. Heavy Lifting, Moving Equipment by Hand, Handling Sharp Objects

HAZARD: The fencing equipment is awkward in size and shape and the barbed wire is sharp.

RISK: Not using the proper lifting techniques can lead to back injuries. The fencing equipment has pinch points which can lead to hand injuries. The barbed wire can lead to lacerations and eye injuries.

SAFE WORK PRACTICES:

1. Use proper lifting techniques – bend knees, no twisting, get help with heavy objects
2. Be aware of possible pinch points
3. Wear proper PPE including long sleeve shirt and pants, leather gloves, eye protection and steel shanked boots when handling fencing materials and barbed wire.

SEE ATTACHED JOB LOSS ANALYSIS –MOVING AND LOADING EQUIPMENT BY HAND FOR MORE INFORMATION.

4.2.4. Underground Hazards

HAZARD: The areas where work will be conducted may contain various types of man-made and natural hazards that can have sharp objects or edges.

RISK: Puncture wounds.

SAFE WORK PRACTICES:

1. To minimize risks, prior to beginning work on site personnel will assess the presence landfill and natural features.
2. On-site personnel shall have steel shanked work boots.
3. Work area should be kept clean and free of debris when possible.
4. Continuously look where you are stepping

SEE ATTACHED JOB LOSS ANALYSIS – GENERAL SITE ACTIVITIES FOR MORE INFORMATION.

4.2.5. Biological Hazards - Venomous Snakes, Spiders and Scorpions

HAZARD: Venomous snakes and spiders may be present in pits or other areas at the Site. Scorpions have been observed at the Site, predominantly under surface debris.

RISK: Bites and Stings, Allergic Reaction.

## SAFE WORK PRACTICES:

1. Tap ahead of you with a walking stick before entering an area with an obscured view of your feet.
2. Do not thrust hands or feet into any areas if you cannot see into the area.
3. If a snake, spider or scorpion bite does occur, keep the victim calm, restrict movement, and keep the affected area below heart level to reduce the flow of venom. Cover the bite with a clean, cool compress or a clean, moist dressing to reduce swelling and discomfort. **GET MEDICAL HELP IMMEDIATELY.**

SEE ATTACHED JOB LOSS ANALYSIS -FIELD WORK WITH BIOLOGICAL HAZARDS FOR MORE INFORMATION.

### 4.3. Fire Prevention and Protection

General fire prevention can be accomplished by good site preparation and housekeeping. At least a 5-lb. ABC fire extinguisher will be available at the Site. Personnel will immediately report all fires regardless of size or damage to the on Site safety coordinator. Personnel will not attempt to extinguish fires, which appear to be out of control.

### 4.4. General Safety Rules and Requirements

The following general safety rules and requirements will be followed by all personnel entering the work area.

**Accident/Incident Reporting:** All accidents/incidents (near misses, property damage, and personal injury/illness) must be reported, following the stabilization of the resulting emergency conditions to the on-site health and safety officer. The accident injury/illness investigation report will be completed by the on-site safety officer.

**Vehicle Safety:** Vehicles and equipment used on this project shall be legally registered and have valid operating permits. All personnel will wear seat belts while driving or riding as passenger, and obey the posted speed limit.

**Alcohol, Drugs and Firearms:** Alcoholic beverages, unauthorized narcotics, or firearms will not be permitted within the boundaries of the project or in vehicles. Individuals suspected to be under the influence of alcohol or drugs will not be allowed on site, or operate equipment or vehicles.

**Horseplay:** Horseplay will not be tolerated on any activity associated with this project. Personnel will be either warned or removed from the site, depending on circumstances.

**Unsafe Conditions:** Any person observing an act by another individual or a condition which may jeopardize the health and safety of personnel, environment, or the community on this project will immediately warn others present, and then notify the on-site health and safety coordinator.

**Smoking:** Smoking will not be permitted in the vicinity of the work areas.

**Equipment and Tools:** Equipment (i.e., pumps, filters, and generators), hand tools and machines will be operated in accordance with the manufacturer's recommended safe practices. Personnel will maintain tools and equipment in safe working order. Personnel who are unfamiliar with the proper use and safety features of a tool or piece of equipment will be given thorough instructions prior to use, and close supervision thereafter.

**Housekeeping:** Project areas, equipment, and vehicles shall be maintained in a clean and safe condition. Areas and surfaces shall be kept free of debris, unnecessary tools and material, and any other item capable of causing slips, trips or falls.

**Safe Work Practices:** Personnel will follow safe work practices to minimize back injuries from improper lifting procedures; fire from failing to eliminate fire hazards; head injuries from falling objects, low overheads; eye injuries from dusts, flying objects, etc.; hand and foot injuries from improper use of hand tools, sharp objects, falling objects, etc.; and consideration will be given to all moving physical hazards such as being struck by, struck against, or being caught in, on, or between site materials, structures, or machinery.

**Personal Communications:** Communication between on-site personnel must be maintained at all times. Emergency communication signals shall be prearranged. Hand signals used to guide operating equipment or control traffic shall be standardized and prearranged.

**Direct Contaminant Contact:** Direct contact with contaminated or suspected contaminated materials shall be avoided. Individuals whose skin comes into contact with contaminated or suspected contaminated materials must immediately remove the contaminated material and wash the skin with soap and water. Workers must also wash their hands prior to eating, drinking and smoking.

The above list of potential physical hazards is not all inclusive. Personal efforts will be initiated to sense conditions that can contribute to an accident and the most appropriate remedial measure will be taken to eliminate the unsafe condition. Each worker should make a conscious effort to work safely.

Worker safety field monitoring will be completed by the on-site safety coordinator. The purpose of the field monitoring is to recognize unsafe acts or conditions during various operations, and to implement preventative measures. Unsafe acts are unacceptable and will not be tolerated.

#### 4.5. Required Levels of Protection

The individual components of protective clothing and equipment must be assembled into a full protective ensemble that protects the worker from site-specific hazards and minimizes the hazards and drawbacks of the personal protective equipment itself. The Environmental Protection Agency defines the following levels of protection:

- Level A: Should be worn when the hazardous substance requires the highest level of protection for skin, eyes, and the respiratory system.
- Level B: Should be worn when the type and atmospheric concentrations have been identified and require a high level of respiratory protection and moderate skin protection.
- Level C: Should be worn when the atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect, or be absorbed through, any exposed skin and an air purifying respirator is available that can remove the contaminants.
- Level D: Should be worn when the atmosphere contains no known hazard or work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

#### SITE SPECIFIC LEVEL OF PROTECTION:

All on-site workers are required to wear modified Level D. Level D (modified) protection is as follows:

- Safety glasses (ANSI Z87.1 Standards);
- Safety footwear (ANSI Z41.1 Standards);
- Leather gloves.

## 5 EMPLOYEE TRAINING

---

### 5.1. Employee Training

Prior to commencing any on-site work, all personnel assigned to this project are required to read the site-specific health and safety plan and verify by signature that they have read and understood the potential hazards and required protection. The on-site safety coordinator shall maintain the site-specific health and safety plan and a current information verification sheet.

## 6 SITE CONTROL, DECONTAMINATION PROCEDURES & EMERGENCY RESPONSE PLAN

---

### 6.1. Site Control Areas and Decontamination Procedures

The on-site safety coordinator will control access to the work areas. No unauthorized person will be permitted within this area.

### 6.2. Emergency Response Plan

Emergency response plan details will be discussed at the initial safety meeting. Emergencies include accidental releases of gases, fires, and personal injuries. Time is a critical factor in an emergency. Personnel must try to remain calm in an emergency to ensure clear thoughts for appropriate decision making.

A safe site area and nearest telephone will be designated upon arrival on site. In an emergency, all personnel (except medical) will evacuate to the safe site area. The nearest medical facility is the **Mount Grant Hospital, Hawthorne, Nevada (see attached map)**. Site personnel will be given direction to the hospital before starting work activities, and a map to the hospital will be posted. Injured personnel should be treated following standard life support and first aid practices, and evacuated at the same time as other personnel. At least one mobile phone/high band radio will be on-site at all times.

A series of short blasts of the vehicle's horn will be adequate when necessary to warn personnel. Work personnel will be equipped with fire extinguishers, first aid kits, decontamination solutions, and water.

When calling for emergency assistance, provide the following information to the response agency:

- Name of person making the call;
- Telephone you are calling from and location;
- Nature of the emergency and type of assistance needed;
- Action already taken;
- Name of any persons injured or exposed; and
- Chemical (agents) involved, if known.

**DO NOT HANG UP UNTIL INFORMATION IS REPEATED BACK TO YOU AND IS ACCURATE. HANG UP ONLY WHEN ADVISED TO BY THE PERSON WHO RECEIVED YOUR CALL.**

All "near-misses" and incidents resulting in personal injury, exposure to toxic substances, illness, or property damage must be reported by the involved individual(s) to the project manager immediately. A written injury report shall be submitted to the project manager and on-site safety coordinator within the 24-hour period. The on-site safety coordinator will conduct a follow up investigation and evaluate what corrective actions are needed to prevent the reoccurrence of the accident.

## ROUTE TO HOSPITAL AND EMERGENCY TELEPHONE NUMBERS

Nearest Emergency Telephone	Cellular On Site	Phone Number
Ambulance Service		911
Police Department		911
Fire Department		911
Hospital	Mount Grant Hospital	(775) 945-2461
Site contact	Don Orndorff	(775) 342-7748
NDEP	Lisa Johnson	(775) 687-4670
Project Manager	Josh Fortmann	W (775) 689-7800
Project Health & Safety Manager	Melissa Sherman	W (775) 689-7800

### Directions to Mount Grant Hospital (refer to attached map)

Mount Grant Hospital  
 First and "A" Street  
 Hawthorne, Nevada  
 (775) 945-2461

**911 Emergency**

**INFORMATION VERIFICATION**

All personnel assigned work at the former Hawthorne Landfill are required to read this health and safety plan. The following Site personnel have read the above plan and are familiar with its provisions.

**SAFETY BRIEFING AND ATTENDANCE SHEET**

Subject: SITE ACTIVITIES PREPARATION MEETING

Date: 1/28/09 Hours: 1

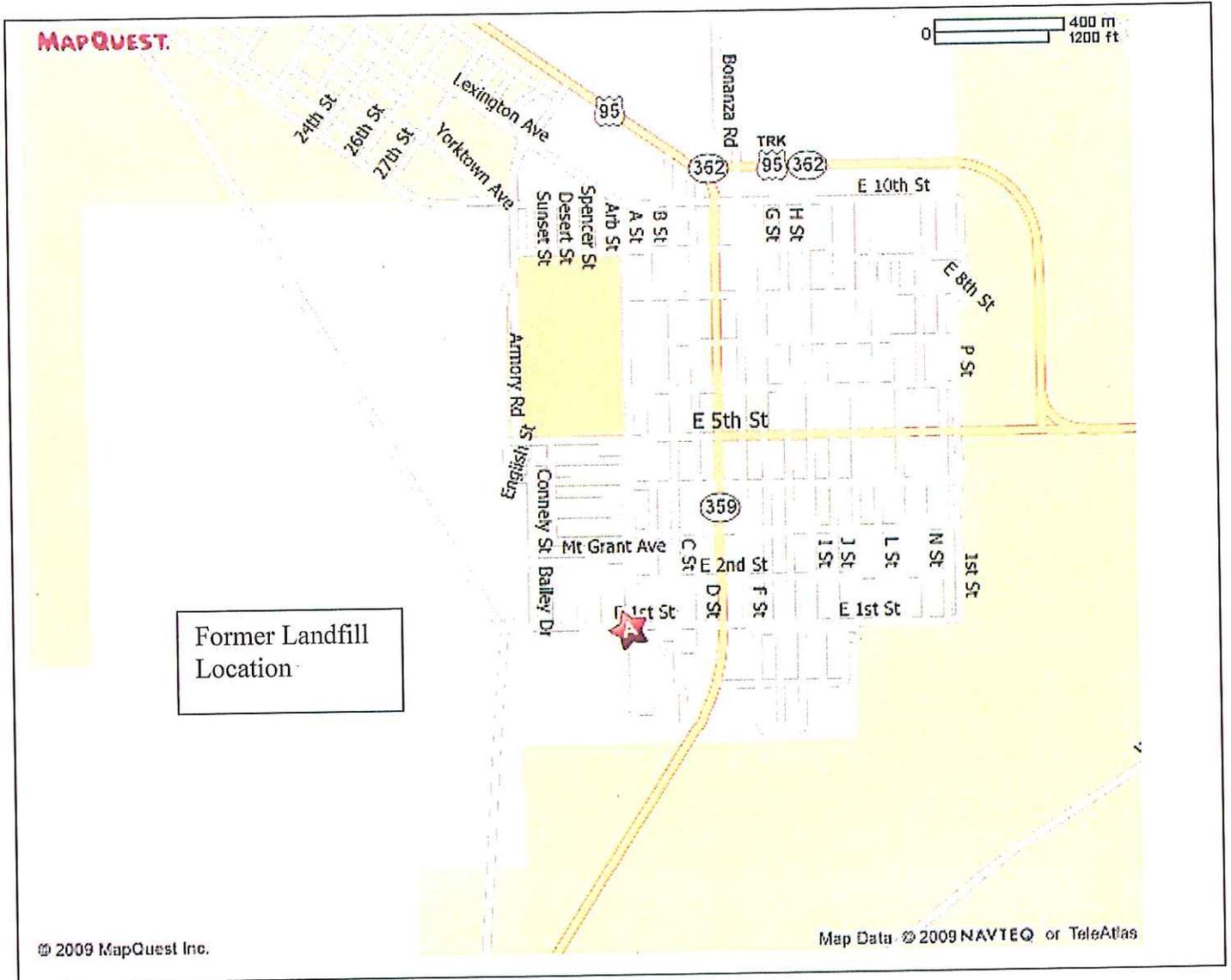
Summary: REVIEW HAS PLAN

Training Materials Provided or Used: HAEP, DISCUSS PREVIOUS ONSITE EXPERIENCE

**ATTENDEES**

<u>Print Name</u>	<u>Signature</u>
<u>JOSEPH FORTMANN</u>	<u>[Signature]</u>
<u>MIKE TRUSTY</u>	<u>[Signature]</u>
<u>Paul McCracken</u>	<u>[Signature]</u>
<u>RICHARD L. DUDLEY</u>	<u>[Signature]</u>
<u>Robert Jenkins Jr</u>	<u>[Signature]</u>
<u>Chris Bandoni</u>	<u>[Signature]</u>
<u>Tom Gallegos</u>	<u>[Signature]</u>
<u>Aaron Underhill</u>	<u>[Signature]</u>
<u>Richard A Hartman</u>	<u>[Signature]</u>
<u>Michael Cauley</u>	<u>[Signature]</u>

# A: Mount Grant Hospital





# Job Loss Analysis

<b>Job Task</b>		General site activities	
Office location:		Date: April 2, 2007	Date Created: June 30, 2006
<b>Group</b>		Environmental; Materials	Category: General
Development Team:		Jessica Hudson/Danielle Digironimo	Review Team: East division PM's; East division OMI's
<b>Minimum Required Personal Protective Equipment (check all that apply)</b>			
<input checked="" type="checkbox"/> Reflective Vest	<input type="checkbox"/> Goggles	<input type="checkbox"/> Supplied Air Respirator	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Air Purifying Respirator	Cartridge: _____
<input checked="" type="checkbox"/> Steel Toed Boots	<input type="checkbox"/> Life/Harness	<input type="checkbox"/> Protective Clothing	Material: _____
<input checked="" type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Gloves	Material: Nitrile / Leather
<b>Job Steps</b>		<b>Quality/Safe Work Practices</b>	
1. Pre-Construction Health & Safety Meeting/General Site Activities	Risks/Hazards	All employees assigned to this task will attend a pre-construction health and safety meeting, which will include the pertinent JSA, Site Safety Procedures manual, types of potential hazards, and actual hazards present and controls for those hazards.	
2. Working in or around Noisy Equipment		Hearing protection must be donned when working around operating equipment if levels are greater than 85dBA.	
3. Working in Hot/Cold Environments		Implement a Heat/Cold Stress Program when necessary due to environmental conditions and use of PPE. Program should include; taking frequent breaks, buddy system, adequate food/beverage consumption and getting work done earlier or later in the day to avoid hottest parts of the day	
4. Working outdoors		Use insect repellants	
		Be alert, avoid approaching; wear snake chaps if high probability of poisonous snake inhabitation	
		Be alert; do not approach; stay safe distance away; do not startle	
5. Working in Traffic Areas		Recognize hazards and avoid contact	
		Follow Traffic Control Devices and Traffic Flow Diagram as listed in Site H&S Procedure Manual Section 7.3.	
		Notify all pedestrians that this is a work zone by delineating work zone and keeping watch. If necessary, delineate work area with caution tape to restrict access.	



## Job Loss Analysis

Job Task		General site activities
6. Moving vehicles and equipment	Hit by/striking another vehicle, property, or person	Use spotters when backing up vehicles and equipment. Make sure to inspect the work area by walking around the vehicle and equipment to identify any potential striking hazards. Insure back up alarms are functioning properly if vehicle or equipment is so equipped
7. Working With Hand Tools.	Misuse of hand tools could result in slips, trips, falls, abrasions, eye injuries and other common injuries.  Hand abrasions, lacerations	Ensure proper training has been conducted prior to using a piece of equipment. Ensure proper inspection of said equipment prior to use. Mark all faulty equipment with red tag and remove from use until fixed.  Follow all housekeeping procedures and work zone delineation as referenced in section 7.6 and 6.2 of Site H&S Procedures Manual.  Wear gloves appropriate to task--leather work gloves for general tasks, Nitrile gloves when handling contaminated materials, and Kevlar gloves when handling sharp/jagged objects.
8. Working With and Sampling For Hazardous Chemicals/Materials.	Cross-contamination of vehicles, persons, or belongings.	Follow the decontamination procedure listed in Section 12.0 in the Site H&S Procedure Manual.  Wear appropriate PPE at all times (listed above). Level D is the standard, upgrade when necessary to Level C.
9. Working in a Confined Space.	Toxic, Flammable Atmospheres; engulfment, entrapment, other general hazards associated with confined spaces.	Refer to Confined Space JSA. Confined Space entry is not a general site activity. A permit must be issued before performing work in a confined space.
10. Performing Hot Work such as Welding or Cutting with equipment that can cause sparks.	Fire, explosion, burns, and other common hot work hazards.	Refer to Hot Work SOP #29. Hot Work is not a general site activity and a Hot Work Permit must be issued before performing any hot work.
11. Working with Direct Reading Instruments.	Faulty readings/equipment	Ensure proper training has been conducted prior to using any DR Instruments. Such training includes proper equipment inspections and calibration.
12. Walking/working surfaces	slips/trips falls	Keep walking paths clear of debris/materials/equipment; ensure walking surfaces clear of ice, snow, or other slippery materials (i.e. oils, greases)
	Trip hazards	Cover open holes/openings immediately; install well covers after sampling; level ruts or uneven ground as soon as possible
	Sharp objects	If walking through undeveloped areas of a Site with limited sight of the ground due to high grass, weeds or debris be cognizant of sharp objects, move slowly and continuously check where you are stepping.
12. Lifting/Carrying/Moving materials or objects	Hand abrasions, lacerations  Back Injuries	Wear gloves appropriate to task--leather work gloves for general tasks, Nitrile gloves when handling contaminated materials, and Kevlar gloves when handling sharp/jagged objects.  Do not lift objects >50 lbs without assistance; use safe lifting/back safety techniques; use mechanical devices to aid or handle loads as much as possible



## Job Loss Analysis

<b>Job Task</b>		Fieldwork in Areas with Biological Hazards	
Office location:	Date:	Date Created: 2/4/08	Revision Date:
RENO, NV	2/4/2008		
<b>Group</b>		<b>Category</b>	
Development Team:		Review Team:	
Steve Siegel Phil Tousignant Melissa Sherman			
<b>Personal Protective Equipment (AS NEEDED)</b>			
<input type="checkbox"/> Reflective Vest	<input type="checkbox"/> Goggles	<input type="checkbox"/> Insect repellent	<input type="checkbox"/> Other:
<input type="checkbox"/> Hard Hat	<input checked="" type="checkbox"/> Bug net	<input checked="" type="checkbox"/> Snake Gators	
<input type="checkbox"/> Life/Harness	<input checked="" type="checkbox"/> High Ankle Boots, good traction	<input checked="" type="checkbox"/> Protective Clothing	Material: long sleeve shirt, pants
<input checked="" type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Gloves	Material: leather, canvas
<b>Job Steps</b>		<b>Risks/Hazards</b>	
Working at a site with the potential presence for: <b>INJURIOUS INSECTS/SPIDERS</b> (i.e. ticks, mosquitos, chiggars, bees, wasps, spiders, lice, fleas, scopions, fire ants)		Bites, stings, allergic reactions, viruses, diseases, infections	
<b>VENOMOUS SNAKES/REPTILES</b>		Bites, bodily injury, loss of limb, shock, circulatory and respiratory problems, infection	
		PPE - long sleeve shirt, pants, gloves, insect repellent, bug nets 1. Become familiar with insects/arachnids present in area 2. Avoid high concentration areas, hives, nests 3. Use insect repellents containing DEET 4. Look before sitting or placing hands to avoid contact 5. Perform self-check when leaving field to detect insects	
		PPE - long sleeve shirt, thick material pants or snake gators, gloves 1. Use buddy system 2. Become familiar with snakes and reptiles present in area 3. Be able to ID snake or reptile 4. Avoid high grasses, debris piles, rock outcrops, burrows if possible 5. Have HASP with Emergency Action Plan, means of communication 6. Don't provoke snake, don't handle, stay body distance away	
<b>Quality/Safe Work Practices</b>			



## Job Loss Analysis

Job Task		Fieldwork in Areas with Biological Hazards	
Office location:	Date:	Date Created: 2/4/08	Revision Date:
	2/4/2008		
Group	Category		
<b>WILD ANIMALS</b>	Bites, viruses, diseases, infections, serious bodily injury	PPE - protective clothing, gloves 1. Avoid handling and contact with dead or alive wild animals 2. Do not provoke animals 3. Do not place hands where you cannot see 4. Do not leave food around work site 5. Use buddy system 6. Avoid closed areas/dust with fecal mater and urine from rodents	
<b>POISONOUS/SPINED PLANTS</b> (i.e. poison oak, water hemlock, poison hemlock, poison ivy, poison sumac, stinging nettle, spined plants)	Rash, skin irritation, eruptions, allergic reaction, vision impairment, punctures, spines implanted	PPE - long sleeve shirt, pants, gloves, Tecnu protectant, face shield or goggles, ankle high boots with good traction 1. Become familiar with poisonous plants present in area 2. Be Alert - Avoid contact with all parts of suspect plants 3. Avoid contact with contaminated clothing - wash in detergent 4. Don't touch eyes, nose or mouth if suspect contact 5. Wash skin with Tecnu wash or soap and cold water after fieldwork 6. Don't eat any plant in the wild	
<b>STREAMS, RIVERS, SURFACE WATER</b>	Waterborn diseases, parasitic diseases, serious illness	1. Always bring fresh potable water for fieldwork 2. Don't drink untreated water from surface water sources 3. Always treat cuts and other wounds, avoid contact with water	
Document Task Activity	Unable to prove through records that task performed as required	Complete task documentation legibly and in a timely manner	
Personnel trained/certified/qualified to perform task	Work is invalid as performed by person not trained/certified/qualified to perform task	Ensure have the correct certification and training to perform the assigned task	
Perform task according to approved plan/procedure	Perform wrong test/job function Miss a step or make a mistake while performing activity	Review work plan or other directing document before performing task Have copy of procedure/standard available while performing task	



# Job Loss Analysis

<b>Job Task</b>		Moving and Loading Equipment (by hand)	
Office location:		Tempe	Date: April 6, 2007
Date Created:		July 31, 2006	
Revision Date:			
<b>Group</b>	Laboratory	<b>Category</b>	General
Development Team:	Simon Gillison, Russ Granfors, Ryan Eberle	Review Team:	Ted Tyler
<b>Minimum Required Personal Protective Equipment (check all that apply)</b>			
<input checked="" type="checkbox"/> Reflective Vest	<input type="checkbox"/> Goggles	<input type="checkbox"/> Supplied Air Reserator	<input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Air Purifying Reserator	Cartridge: _____
<input checked="" type="checkbox"/> Steel Toed Boots	<input type="checkbox"/> Life/Harness	<input type="checkbox"/> Protective Clothing	Material: _____
<input checked="" type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Gloves	Material: <u>Leather</u>
<b>Quality/Safe Work Practices</b>			
<b>Job Steps</b>	<b>Risks/Hazards</b>	Pick-up any debris/equipment/tools in the work area.	
Moving/loading equipment by hand	Slips, trips, falls	Establish clean walk path from equipment obstructions area present on equipment to be moved.	
	Contact with overhead objects	Wear hardhat when overhead obstructions area present on equipment to be moved.	
	Pinch points	Place hands on parts of equipment that are stable (i.e. non-rotating or immovable) and away from areas that may contact other objects when the equipment is moved.	
	Back injury or muscle strain	Lift equipment using legs with a firm grip and straight back.	
	Personal contact with equipment	Check equipment prior to moving to ensure it is free to move and not tied down or connected.	
		Carry equipment with load centered over feet. Do not twist back when carrying load.	
		Get additional assistance (one more person) for each 50 pounds of object weight, or for objects that are located in confined/semi-confined spaces.	
		Verify equipment is stable/secure before removing grip.	