

Nevada
Environmental
Restoration
Project

DOE/NV-739



Post-Closure Inspection Report for
Corrective Action Unit 453:
Area 9 UXO Landfill
Tonopah Test Range, Nevada
Calendar Year 2000

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June 2001

Environmental Restoration
Division

U.S. Department of Energy
National Nuclear Security Administration
Nevada Operations Office

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**POST-CLOSURE INSPECTION REPORT FOR
CORRECTIVE ACTION UNIT 453:
AREA 9 UXO LANDFILL
TONOPAH TEST RANGE, NEVADA
CALENDAR YEAR 2000**

Prepared for
U. S. Department of Energy
National Nuclear Security Administration
Nevada Operations Office
Work Performed Under Contract No.
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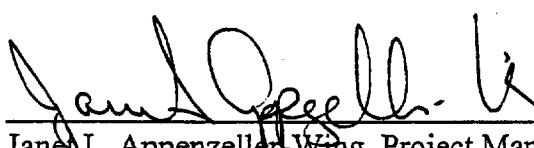
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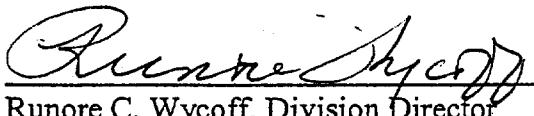
June 2001

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**POST-CLOSURE INSPECTION REPORT FOR
CORRECTIVE ACTION UNIT 453:
AREA 9 UXO LANDFILL
TONOPAH TEST RANGE, NEVADA
CALENDAR YEAR 2000**

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

Date: 6/21/01

Approved by: 
Runore C. Wycoff, Division Director

Date: 6/21/01

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TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 INSPECTION RESULTS	1
2.1 JUNE 20, 2000 INSPECTION	1
2.2 NOVEMBER 21, 2000 INSPECTION	3
3.0 CONCLUSIONS AND RECOMMENDATIONS	3
FIGURES	
FIGURE 1 - AREA 9 UXO LANDFILL CAU 453 LOCATION MAP	2

ATTACHMENTS

- ATTACHMENT A - INSPECTION CHECKLISTS
- ATTACHMENT B - FIELD NOTES
- ATTACHMENT C - PHOTOGRAPH LOG AND PHOTOGRAPHS

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1.0 INTRODUCTION

Post-closure monitoring requirements for the Area 9 Unexploded Ordnance Landfill (Corrective Action Unit [CAU] 453) (Figure 1) are described in Closure Report for Corrective Action Unit 453: Area 9 UXO Landfill, Tonopah Test Range, Nevada, report number DOE/NV--284. The Closure Report (CR) was submitted to the Nevada Division of Environmental Protection (NDEP) on August 5, 1999. The CR (containing the Post-Closure Monitoring Plan) was approved by the NDEP on September 10, 1999.

Post-closure monitoring at CAU 453 consists of the following:

- Site inspections done twice a year to evaluate the condition of the unit.
- Verification that the site is secure.
- Notice of any subsidence or deficiencies that may compromise the integrity of the unit.
- Remedy of any deficiencies within 90 days of discovery.
- Preparation and submittal of an annual report.

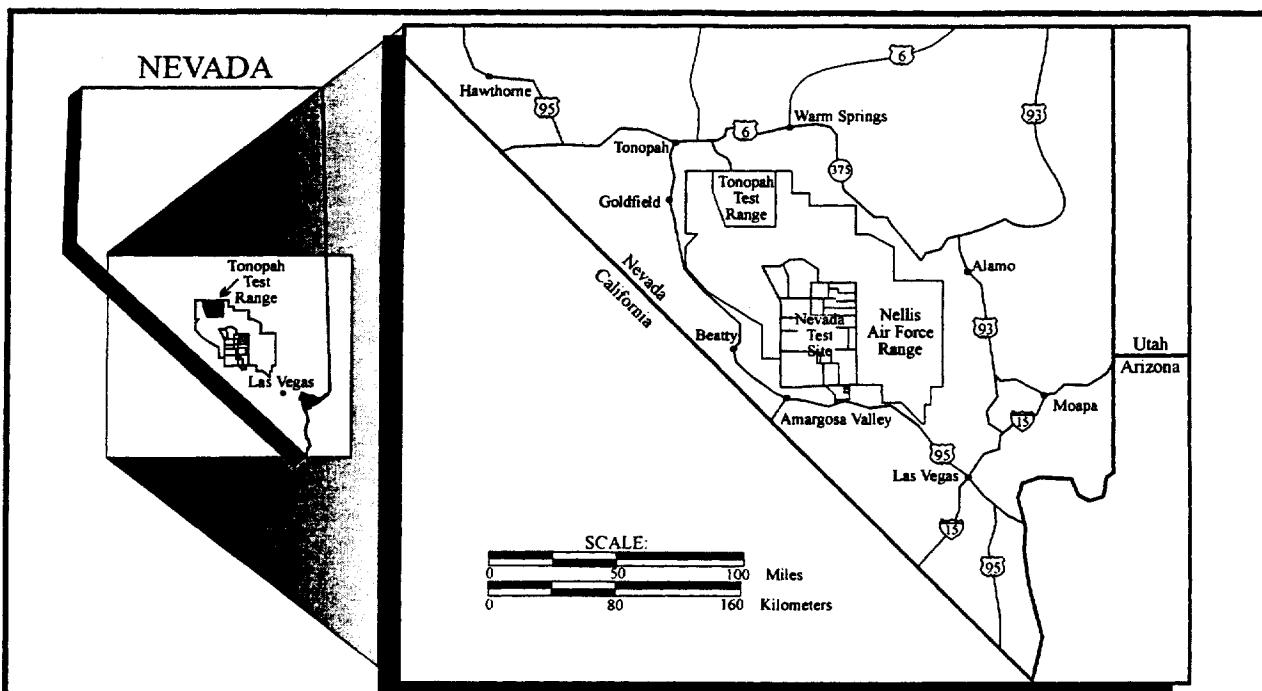
Site inspections were conducted on June 20, 2000 and November 21, 2000. Both site inspections were conducted after NDEP approval of the CR, and in accordance with the Post-Closure Monitoring Plan in the NDEP-approved CR.

This report includes copies of the inspection checklists, photographs, recommendations, and conclusions. The Post-Closure Inspection Checklists are found in Attachment A, a copy of the field notes is found in Attachment B, and inspection photographs are found in Attachment C.

2.0 INSPECTION RESULTS

2.1 June 20, 2000 Inspection

The first inspection was completed on June 20, 2000. The perimeter fence, monuments, and site postings were in excellent condition. A few small mammal burrows were observed just inside the fence, but have not compromised the integrity of the waste cell covers. No cracks, erosion features, or settling were observed in the landfill area. Although closure activities did not include revegetation at the site, some plants were observed in the previously disturbed areas outside of the landfill cover area. No maintenance or repairs to the site were recommended.



TONOPAH TEST RANGE

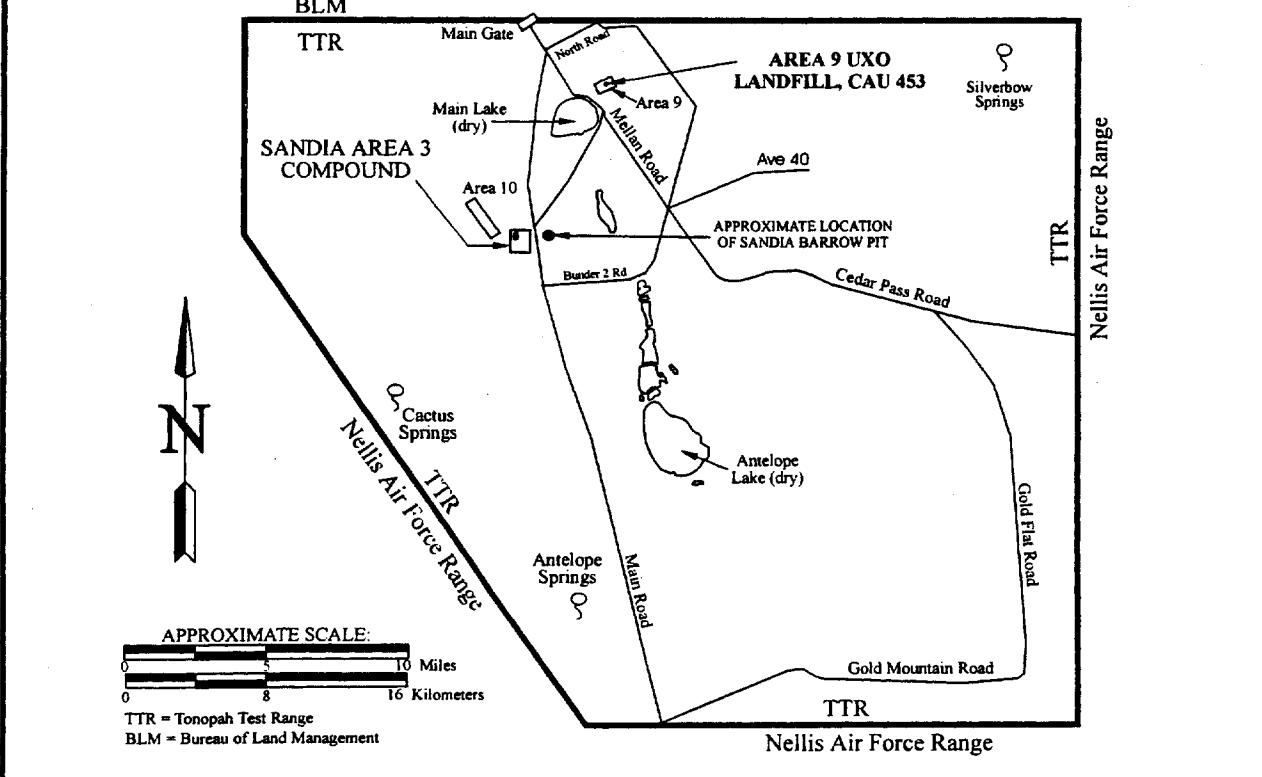


FIGURE 1
AREA 9 UXO LANDFILL CAU 453
LOCATION MAP

2.2 November 21, 2000 Inspection

The inspection was completed on November 21, 2000. The perimeter fence, monuments, and site postings were in excellent condition. One of the warning signs attached to the fence was down; not attached to the fence. The warning sign was re-attached to the perimeter fence by hand. A few small mammal burrows were observed just inside the fence, but have not compromised the integrity of the waste cell covers. No cracks, erosion features, burrows, or settling were observed in the landfill area. Plant growth on the landfill cover was limited to sporadic native grasses and halogeton. No site maintenance or repairs were recommended.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The perimeter fence, monuments, and site postings were in excellent condition. No cracks, erosion features, burrows, or settling were observed in the landfill area. Plant growth on the landfill cover was limited to sporadic native grasses and halogeton.

Modifications/repairs to the cover or inspection frequency are not recommended as a result of the observations conducted.

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ATTACHMENT A
INSPECTION CHECKLISTS

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AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST (ALU453)

Date of Last Inspection:	11/30/1999	Reason for Last Inspection: Bi-annual
Responsible Agency:	DOE/NV	
Inspection Date:	6/20/00	
Inspector (name, title, organization):	Kevin B. Campbell, Geologist/Hydrogeologist, Battelle Nevada ER	
Assistant Inspector (name, title, organization):	Clare Blackburn, Engineer, Westinghouse	

A. GENERAL INSTRUCTIONS

1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection.
3. Any checklist line item marked by an inspector in a SHADeD BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps.
4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist.
5. A standard set of color 35mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken.
6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions.

B. PREPARATION (To be completed prior to site visit)	YES	NO	EXPLANATION
1. Site as-built plans and site base map reviewed.	✓		
2. Previous inspection reports reviewed.	✓		
a. Were anomalies or trends detected on previous inspections?		✓	
b. Was maintenance performed?		✓	
3. Site maintenance and repair records reviewed.	✓		N/A
a. Has site repair resulted in a change from as-built conditions?		✓	N/A
b. Are revised as-builts available that reflect repair changes?		✓	N/A
C. SITE INSPECTION (To be completed during inspection)	YES	NO	EXPLANATION
1. Adjacent off-site features within watershed areas.			
a. Have there been any changes in use of adjacent area?	✓		
b. Are there any new roads or trails?	✓		
c. Has there been a change in the position of nearby washes?	✓		
d. Has there been lateral excursion or erosion/deposition of nearby washes?	✓		
e. Are there new drainage channels?	✓		
f. Change in surrounding vegetation?	✓		
2. Security fence, signs.			
a. Displacement of fences, site markers, boundary markers, or monuments?	✓		
b. Have any signs been damaged or removed? (Number of signs replaced: <u>4</u>)	✓		
c. Were gates locked?	✓		

AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.

- a. Is there evidence of settling?
- b. Is there cracking?
- c. Is there evidence of erosion around the cap (wind or water)?
- d. Is there evidence of animal burrowing?
- e. Have the site markers been disturbed by man or natural processes?
- f. Is vegetation present?
- g. Do natural processes threaten to integrity of any cover or site marker?
- h. Other?

YES	NO	EXPLANATION
	✓	
	✓	
	✓	
✓		Burrows near fence. 1/2 buried fencing. Fence open at points
	✓	
✓		Healthy veg. inside fence. Both grass and shrubs
	✓	
	✓	

4. Photo Documentation

- a. Has a photo log been prepared?
- c. Number of photos exposed (7)

✓	
---	--

D. FIELD CONCLUSIONS

- 1. Is there an imminent hazard to the integrity of the unit?
(Immediate report required)

	✓	
--	---	--

Person/Agency to whom report made:

- 2. Are more frequent inspections required?
- 3. Are existing maintenance/repair actions satisfactory?
- 4. Is other maintenance/repair necessary?
- 5. Is current status/condition of vegetative cover satisfactory?

	✓	

6. Rationale for field conclusions:

Based on observations the cover appears in good condition with no obvious damage! The fence is in excellent condition with all signs accounted for.

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: <i>Kevin B. Campbell</i>	Printed Name: <i>Kevin B. Campbell</i>
Title: <i>Geologist / Hydrologist</i>	Date: <i>6/20/00</i>

AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

Date of Last Inspection:	6/20/00		Reason for Last Inspection:	Bi Annual	
Responsible Agency:	DOE/NV		Project Manager:	W. Johnson BN/ER	
Inspection Date:	11/21/00				
Inspector (name, title, organization):	Dan Tobiason, Scientist, BN/ER				
Assistant Inspector (name, title, organization):					
A. GENERAL INSTRUCTIONS					
<ol style="list-style-type: none"> 1. All checklist items must be completed and detailed comments made to document the results of the site inspection. The completed checklist is part of the field record of the inspection. Additional pages should be used as necessary to ensure that a complete record is made. Attach the additional pages and number all pages upon completion of the inspection. 3. Any checklist line item marked by an inspector in a SHADED BOX, must be fully explained or an appropriate reference to previous reports provided. The purpose of this requirement is to provide a written explanation of inspector observations and the inspector's rationale for conclusions and recommendations. Explanations are to be placed on additional attachments and cross-referenced appropriately. Explanations, in addition to narrative, will take the form of sketches, measurements, annotated site maps. 4. The site inspection is a walking inspection of the entire site including the perimeter and sufficient transects to be able to inspect the entire surface and all features specifically described in this checklist. 5. A standard set of color 35mm photographs (or equivalent) is required. In addition, all anomalous features or new features (such as changes in adjacent area land use) are to be photographed. A photo log entry will be made for each photograph taken. 6. This unit will be inspected biannually with formal reporting to the Nevada Division of Environmental Protection to be done annually. The annual report will include an executive summary, this inspection checklist with field notes and photo log attached, and recommendations and conclusions. 					
B. PREPARATION (To be completed prior to site visit)		YES	NO	EXPLANATION	
1. Site as-built plans and site base map reviewed.		✓			
2. Previous inspection reports reviewed.		✓			
a. Were anomalies or trends detected on previous inspections?			✓		
b. Was maintenance performed?			✓		
3. Site maintenance and repair records reviewed.				N/A	
a. Has site repair resulted in a change from as-built conditions?				N/A	
b. Are revised as-builts available that reflect repair changes?				N/A	
C. SITE INSPECTION (To be completed during inspection)		YES	NO	EXPLANATION	
1. Adjacent off-site features within watershed areas.					
a. Have there been any changes in use of adjacent area?			✓		
b. Are there any new roads or trails?			✓		
c. Has there been a change in the position of nearby washes?			✓		
d. Has there been lateral excursion or erosion/deposition of nearby washes?			✓		
e. Are there new drainage channels?			✓		
f. Change in surrounding vegetation?			✓		
2. Security fence, signs.					
a. Displacement of fences, site markers, boundary markers, or monuments?			✓		
b. Have any signs been damaged or removed? (Number of signs replaced: <u>0</u>)			✓	Sign on N/E side down. mountain holes worn through. Sign attached to fence.	
c. Were gates locked?			✓		

AREA 9 UXO LANDFILL, POST-CLOSURE INSPECTION CHECKLIST

3. Waste Unit cover.

- a. Is there evidence of settling?
- b. Is there cracking?
- c. Is there evidence of erosion around the cap (wind or water)?
- d. Is there evidence of animal burrowing?
- e. Have the site markers been disturbed by man or natural processes?
- f. Is vegetation present?
- g. Do natural processes threaten to integrity of any cover or site marker?
- h. Other?

YES	NO	EXPLANATION
	/	
	/	
	/	
/		Ins. defences and around perimeter.
	/	
/		
	/	
/		Horse activity (scat, tracks) outside fence.

4. Photo Documentation

- a. Has a photo log been prepared?

✓	
---	--

- c. Number of photos exposed (7)

D. FIELD CONCLUSIONS

- 1. Is there an imminent hazard to the integrity of the unit?
(Immediate report required)

	✓
--	---

Person/Agency to whom report made:

- 2. Are more frequent inspections required?

	—
--	---

- 3. Are existing maintenance/repair actions satisfactory?

—	
---	--

- 4. Is other maintenance/repair necessary?

	/
--	---

- 5. Is current status/condition of vegetative cover satisfactory?

	N/A
--	-----

NO vegetative cover

- 6. Rationale for field conclusions:

Unit appears intact and in good condition.
No obvious damage to cover or fence. Small lawns inside fence but do not appear to effect cover integrity.

E. CERTIFICATION

I have conducted an inspection of the Area 9 UXO Landfill, CAU 453, at the TTR in accordance with the Post-Closure Inspection Plan (see Closure Report) as recorded on this checklist, attached sheets, field notes, photo logs, and photographs.

Chief Inspector's Signature: 	Printed Name: DANIEL S. TOBIASON
Title: Scientist	Date: 11/21/00

ATTACHMENT B
FIELD NOTES

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12 TITLEWork continued from Page N/A

PROJECT NO.

BOOK NO.

TTR Post-Closure Inspections - Area 9 UXO Landfill CRU 453

Tuesday June 20, 2000

Worm, clear

12:21 Arrive at UXO for inspection

- Fence, gate, and signs posted on fence all in excellent condition
- All signs clearly visible and legible. ^{no} lock on gate.
- No mesh bunny fencing present. inside fence
- Evidence of animal burrowing present
- Sparse brush and grass present inside fence. Site was not re-vegetated.

All concrete monuments demarcating the 3 landfill cells are in excellent shape and are visible from outside the fence line.

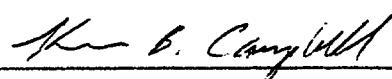
A total of 16 concrete monuments in all present inside fence line
No signs posted on monuments

Vegetation inside fence line appears healthy and consists of sparse grasses and shrubs. Soil pile at west end of area is not vegetated.

Took 7 digital photos

50 Completed Area 9 UXO site inspection

SIGNATURE



DATE

6/20/00

CLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

TIR POST-CLOSURE INSPECTIONS - CONTINUED

TUESDAY NOVEMBER 21, 2000

HIGH CLOUDS, CALM, COLD (20°)

0745 A9 UXO LANDFILL, AREA 9 TIR. INSPECTION

GATE LOCKED AND IN GOOD CONDITION. CHAIN LINK FENCE IN GOOD CONDITION.

ALL SIGNS IN PLACE AND IN GOOD CONDITION EXCEPT FOR THE EASTERN MOST SIGN ON THE NORTH FENCE LINE. THIS SIGN WAS DOWN OFF THE FENCE BUT STILL LEGIBLE AND IN GOOD CONDITION.

EVIDENCE OF HOGSE ACTIVITY NOTED ALONG THE OUTSIDE OF THE FENCE. BURROWS NOTED JUST INSIDE THE FENCE ^{LINE} AROUND THE ENTIRE PERIMETER.

16 ABOVE-GRADE SURVEY MONUMENTS LOCATED AND ALL APPEAR TO BE IN EXCELLENT CONDITION. NO SIGNS NOTED ON MONUMENTS.

~~DO~~ FENCE
VEGETATION INSIDE¹ IS HEALTHY AND CONSISTS MAINLY OF GRASSES AND SHRUBS. SOIL PILE ON WEST END OF FENCED AREA IS NOT VEGETATED.

0830 COMPLETED A9 UXO LANDFILL INSPECTION.

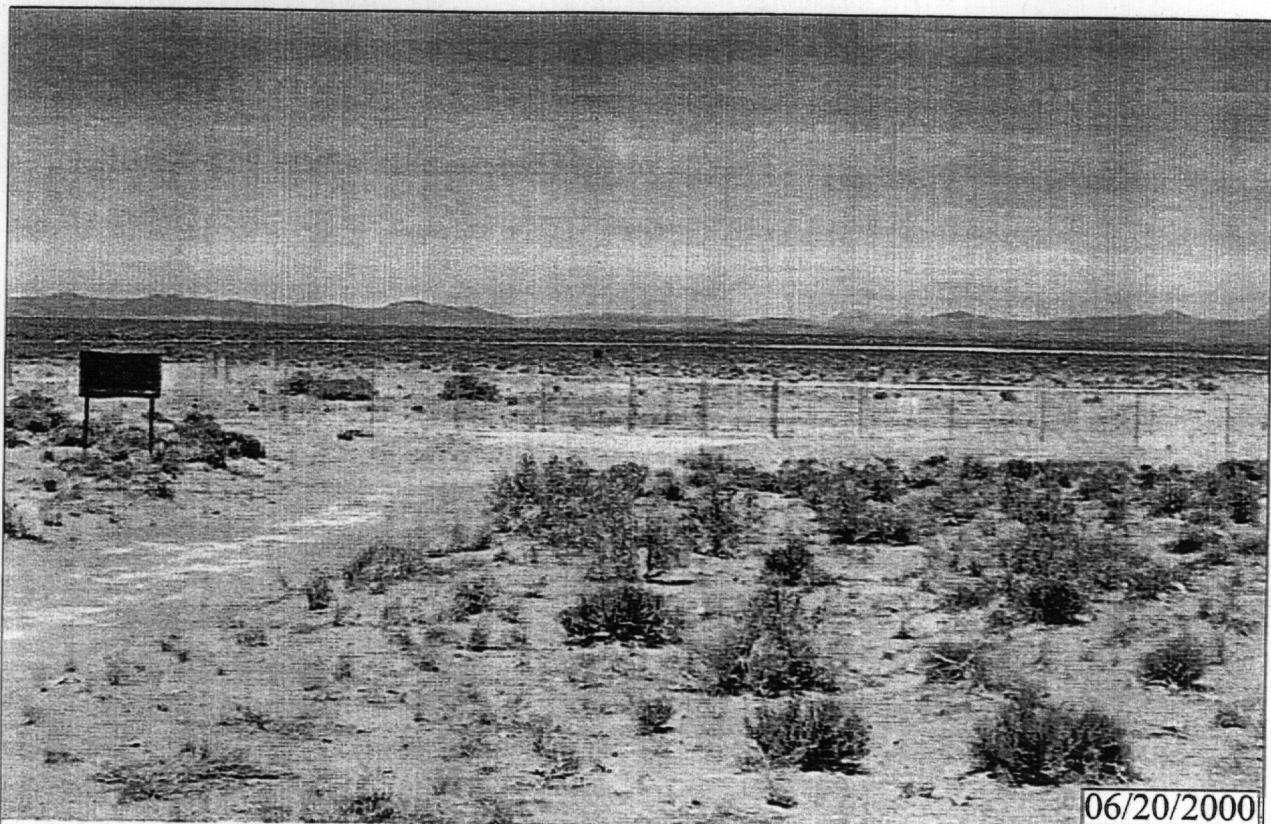
ATTACHMENT C
PHOTOGRAPH LOG AND PHOTOGRAPHS

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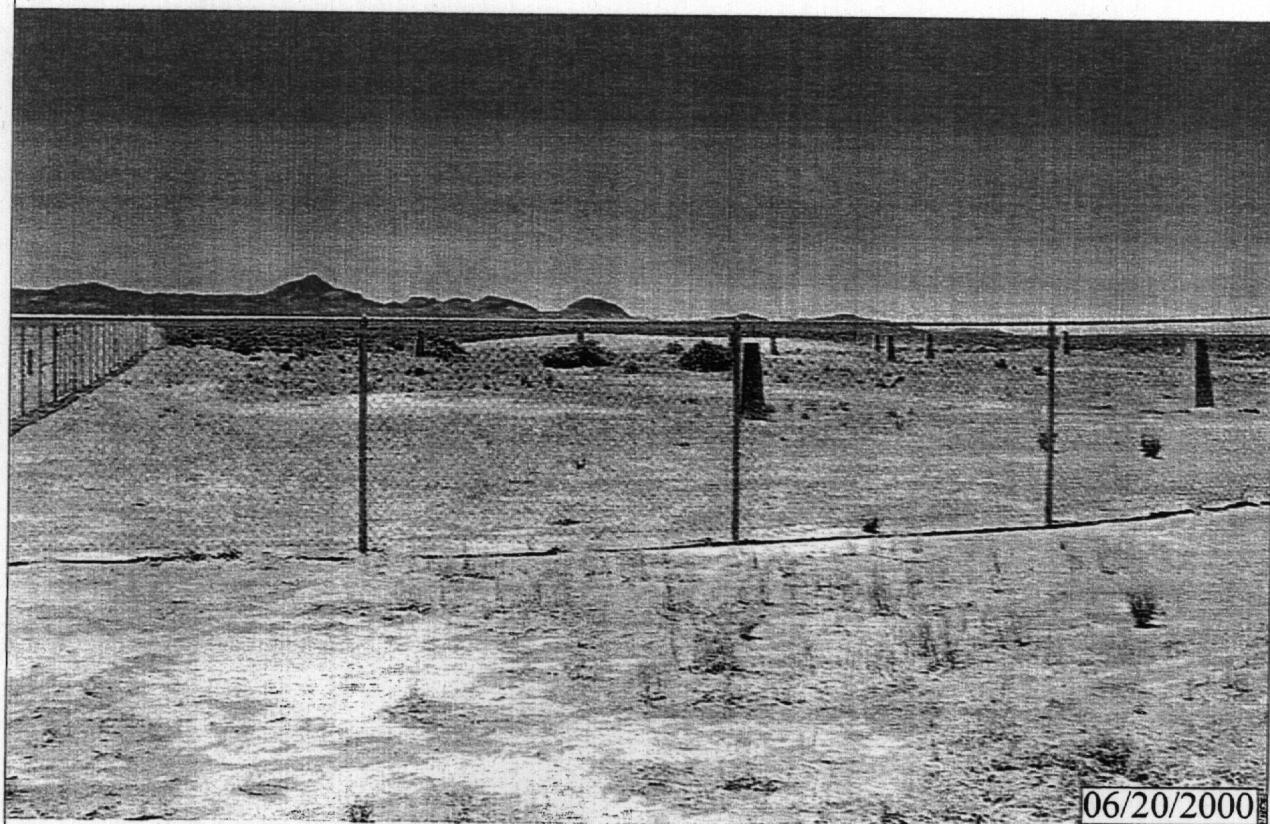
PHOTOGRAPH LOG

PHOTO NUMBER	DATE	DESCRIPTION
1	6/20/2000	View to northwest from outside of perimeter fence near gate. Concrete monuments indicate locations of the northeast and southwest ends of Landfill Cells A9-1, A9-2, and A9-3. Signs on south fence line visible and in good condition
2	6/20/2000	View to west from outside of perimeter fence. Concrete monuments indicate locations of the southeast ends of the Landfill Cells A9-1, A9-2, and A9-3.
3	11/21/2000	View to northwest from outside of perimeter fence near gate. Concrete monuments in right half of photograph indicate locations of the northeast ends of Landfill Cells A9-1, A9-2, and A9-3. Concrete monuments in left half of photograph indicate the locations of the southwest ends of Landfill Cells A9-1, A9-2, and A9-3.
4	11/21/2000	View to west from outside of perimeter fence. Concrete monuments indicate locations of the northeast, middle, and southwest ends of the Landfill Cells A9-1, A9-2, and A9-3.

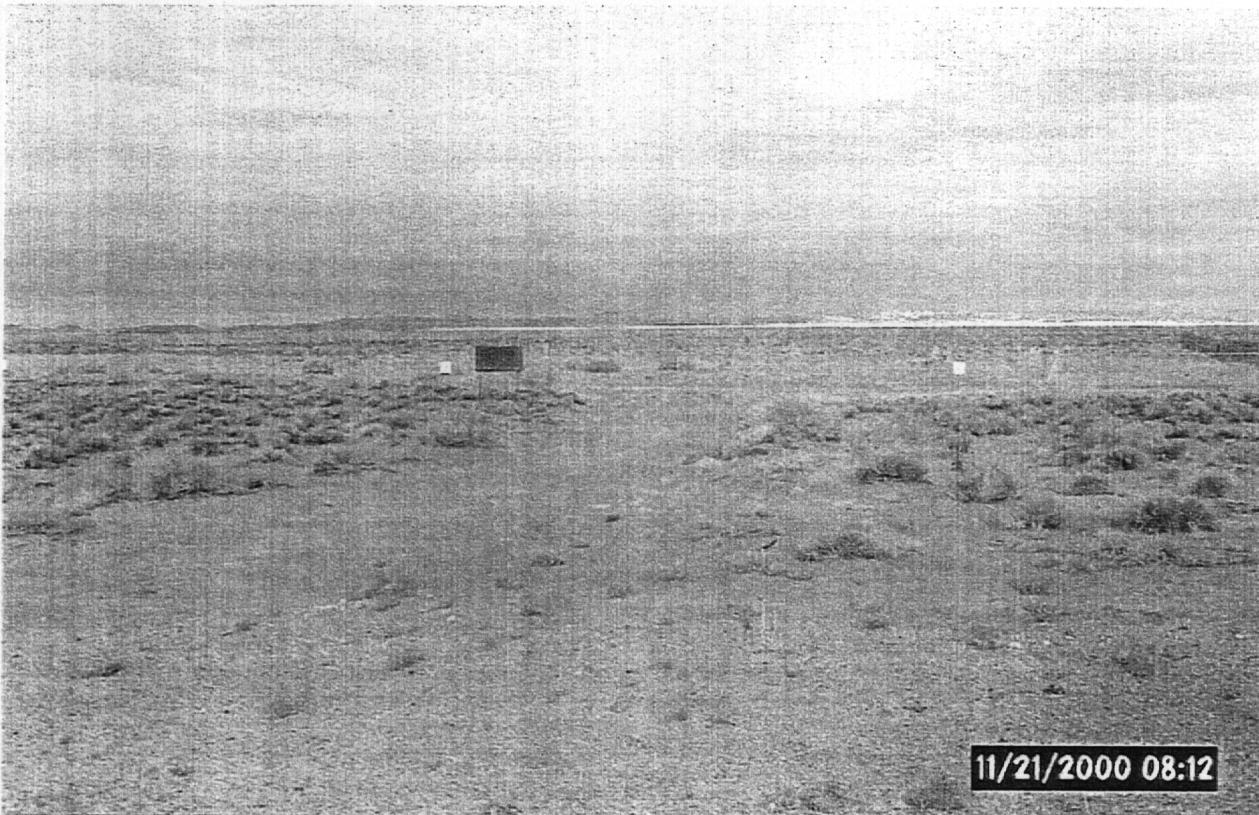
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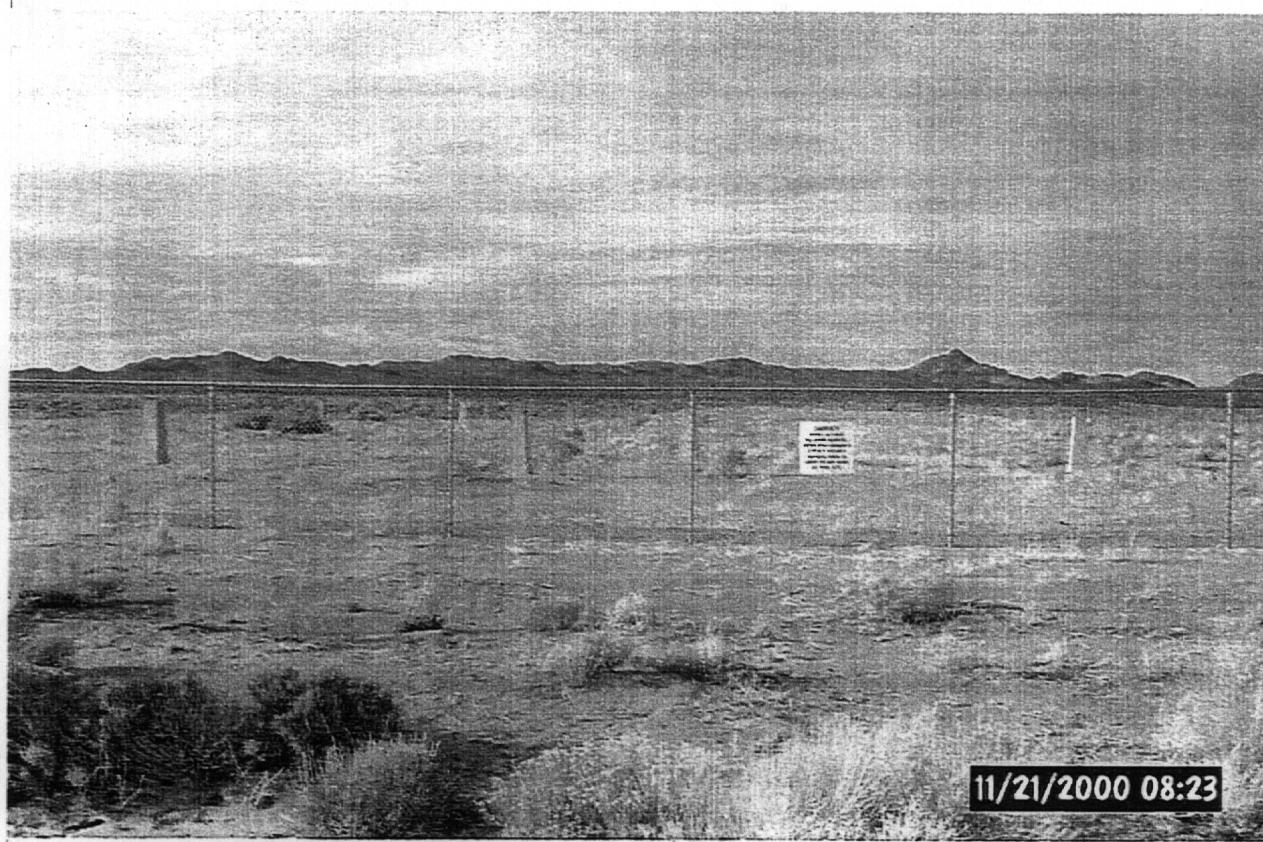


2



11/21/2000 08:12

3



11/21/2000 08:23

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