

Postclosure Inspection Report for the Tonopah Test Range and Nevada Test and Training Range, Nevada, Sites for Calendar Year 2023

October 2024

Approved for public release; further dissemination unlimited



**U.S. DEPARTMENT OF
ENERGY**

**Legacy
Management**

Available for sale to the public from:

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
Telephone: (800) 553-6847
Fax: (703) 605-6900
E-mail: orders@ntis.gov
Online Ordering <https://classic.ntis.gov/help/order-methods/#online>

Available electronically at <https://www.osti.gov/scitech/>

Available for a processing fee to U.S. Department of Energy and its contractors,
in paper, from:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
Phone: (865) 576-8401
Fax: (865) 576-5728
Email: reports@adonis.osti.gov

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 or its contractors or subcontractors.

Contents

Abbreviations	ii
Executive Summary	iii
1.0 Introduction	1
1.1 Scope and Objective	1
2.0 Inspection Results	2
2.1 CAU 407, Roller Coaster RadSafe Area (TTR)	2
2.2 CAU 424, Area 3 Landfill Complexes (TTR)	2
2.3 CAU 453, Area 9 UXO Landfill (TTR)	3
2.4 CAU 487, Thunderwell Site (TTR)	4
3.0 Summary	4
3.1 CAU 407, Roller Coaster RadSafe Area (TTR)	4
3.2 CAU 424, Area 3 Landfill Complexes (TTR)	4
3.3 CAU 453, Area 9 UXO Landfill (TTR)	5
3.4 CAU 487, Thunderwell Site (TTR)	5
4.0 References	5
5.0 Bibliography	5

Figures (in Appendix A)

Figure 1. TTR Site Location Map	A-1
Figure 2. Roller Coaster RadSafe Area	A-2
Figure 3. CAU 424, CAS Locations	A-3
Figure 4. CAU 424, Landfills A3-1 and A3-2	A-4
Figure 5. CAU 424, Landfill A3-3	A-5
Figure 6. CAU 424, Landfill A3-4	A-6
Figure 7. CAU 424, Landfill A3-5	A-7
Figure 8. CAU 424, Landfill A3-6	A-8
Figure 9. CAU 424, Landfill A3-8	A-9
Figure 10. CAU 453, Area 9 UXO Landfill	A-10
Figure 11. CAU 487, Thunderwell	A-11

Appendixes

Appendix A	Figures
Appendix B	Postclosure Inspection Plans
Appendix C	Postclosure Inspection Checklists
Appendix D	Field Notes
Appendix E	Photographs
Appendix F	Postclosure Vegetation Monitoring Report
Appendix G	NDEP Correspondence and Record of Review

Abbreviations

AEC	U.S. Atomic Energy Commission
CAS	Corrective Action Site
CAU	Corrective Action Unit
DOE	U.S. Department of Energy
FFACO	Federal Facility Agreement and Consent Order
LM	Office of Legacy Management
NDEP	Nevada Division of Environmental Protection
NTTR	Nevada Test and Training Range
TTR	Tonopah Test Range
UR	use restriction
UXO	unexploded ordinance

Executive Summary

This U.S. Department of Energy Office of Legacy Management (LM) report provides the results of the annual postclosure use restriction (UR) inspections at Corrective Action Sites (CASs) on the Tonopah Test Range (TTR) and Nevada Test and Training Range, Nevada, Sites. This report covers postclosure UR inspections from calendar year 2023 and includes visual inspections and repair activities completed at the following Corrective Action Units (CAUs):

- CAU 407, Roller Coaster RadSafe Area (TTR)
- CAU 424, Area 3 Landfill Complexes (TTR)
- CAU 453, Area 9 Unexploded Ordinance Landfill (TTR)
- CAU 487, Thunderwell Site (TTR)

Visual inspections were conducted in accordance with the postclosure requirements outlined in specific CAU and CAS URs approved by the Nevada Division of Environmental Protection. The annual postclosure inspections for CASs associated with CAUs 407, 424, 453, and 487 were conducted on May 31, 2023. Maintenance items identified included animal burrows, loose signs, and broken wire fencing. All repairs were completed during the inspection.

This report, Closure Reports, and the current, approved UR forms are available on the LM public website at https://lmpublicsearch.lm.doe.gov/lmsites/current_tr_userestrictions.pdf.

1.0 Introduction

This report presents results of the inspections conducted by the U.S. Department of Energy (DOE) Office of Legacy Management (LM) at the Tonopah Test Range (TTR) and Nevada Test and Training Range (NTTR), Nevada, Sites. The TTR site is in south-central Nevada, approximately 140 miles northwest of Las Vegas, Nevada, and 30 miles southeast of Tonopah, Nevada. The TTR site is within the boundaries of the NTTR (Appendix A, Figure 1). The TTR site includes Corrective Action Sites (CASs) on both the TTR and NTTR sites.

In 1956, the U.S. Atomic Energy Commission (AEC), predecessor agency to DOE, began testing weapon systems, research rockets, and artillery on the TTR site. All sites related to these AEC activities were closed under the 1996 Nevada *Federal Facility Agreement and Consent Order (FFACO)* (DCNR, DOE, and DOD 1996) (FFACO), as amended, and the majority do not require any continuing actions. CASs within four Corrective Action Units (CAUs) have use restrictions (URs) and require annual inspections. Closure Reports for each CAU establish the postclosure inspection requirements; these were later modified through Records of Technical Change, and all requirements are now documented on UR forms for the sites.

1.1 Scope and Objective

This report includes visual annual inspection results, maintenance and repair activities, and recommendations for calendar year 2023 for URs associated with CASs on the TTR and NTTR sites that are accessed through the TTR and NTTR sites main gate. The TTR site is part of and on the NTTR.

The locations of the CAUs are shown in Figure 1 of Appendix A. The visual inspections were conducted in accordance with the postclosure requirements outlined in specific CAU and CAS URs approved by the Nevada Division of Environmental Protection (NDEP). The following visual inspection results are included in this report:

- **CAU 407: Roller Coaster RadSafe Area (TTR)**
 - CAS TA-23-001-TARC: Roller Coaster RadSafe Area
- **CAU 424: Area 3 Landfill Complexes (TTR)**
 - CAS 03-08-001-A301: Landfill Cell A3-1
 - CAS 03-08-002-A302: Landfill Cell A3-2
 - CAS 03-08-002-A303: Landfill Cell A3-3
 - CAS 03-08-002-A304: Landfill Cell A3-4
 - CAS 03-08-002-A305: Landfill Cell A3-5
 - CAS 03-08-002-A306: Landfill Cell A3-6
 - CAS 03-08-002-A308: Landfill Cell A3-8
- **CAU 453: Area 9 Unexploded Ordinance (UXO) Landfill (TTR)**
 - CAS 09-55-001-0952: Area 9 Landfill
- **CAU 487: Thunderwell Site (TTR)**
 - CAS RG-26-001-RGRV: Thunderwell Site

Site figures are included in Appendix A. There are no postclosure inspection plans in Appendix B because they have been consolidated onto UR forms available on the LM public website at https://lmpublicsearch.lm.doe.gov/lmsites/current_ttr_userrestrictions.pdf. Postclosure inspection checklists from May 31, 2023, are included in Appendix C. Appendix D, “Field Notes,” does not include any field notes because all observations were captured on the postclosure inspection checklists. Appendix E, “Photographs,” does not include any inspection photographs because none were taken or required during the 2023 postclosure inspections. Appendix F, “Postclosure Vegetation Monitoring Report,” does not include any data because vegetation monitoring was not conducted or required at any use-restricted site in 2023. Appendix G “NDEP Correspondence and Record of Review” contains the record of review and any correspondence from NDEP regarding this report.

Depending on specific UR requirements, postclosure UR inspections may include a visual inspection of some or all of the following physical controls:

- Fencing (is present and provides a barrier; at CAUs 407 and 453 only)
- Signs (are present and legible)
- Soil cover (completely covers material)
- Monuments (are present and standing)
- Markers (are present)

2.0 Inspection Results

Visual inspections were conducted on May 31, 2023. The inspection results are summarized below and documented on postclosure inspection checklists, which can be found in Appendix C.

2.1 CAU 407, Roller Coaster RadSafe Area (TTR)

Visual inspections were conducted according to the postclosure requirements for CAU 407, Roller Coaster RadSafe Area (TTR), CAS TA-23-001-TARC, Roller Coaster RadSafe Area, as described in the CAU 407 UR (DOE/EMNV 2019a). The site is shown in Figure 2 in Appendix A. The visual inspection was conducted on May 31, 2023. All signs were legible. The top strand of the wire fence was loose and hung to the ground. The strands were reattached to the T-posts during the inspection. A fallen sign associated with the damaged fence was re-attached and repaired with the fence line. Erosion on the east side of cover was observed, but no maintenance was needed. This erosion could potentially damage cover. Area will be monitored during future site inspections to assess the need for maintenance. No other repair or maintenance needs were observed.

2.2 CAU 424, Area 3 Landfill Complexes (TTR)

Visual inspections were conducted according to the postclosure requirements for CAU 424, Area 3 Landfill Complexes (TTR), CAS 03-08-001-A301, Landfill Cell A3-1; CAS 03-08-002-A302, Landfill Cell A3-2; CAS 03-08-002-A303, Landfill Cell A3-3; CAS 03-08-002-A304, Landfill Cell A3-4; CAS 03-08-002-A305, Landfill Cell A3-5; CAS 03-08-002-A306, Landfill Cell A3-6; and CAS 03-08-002-A308, Landfill Cell A3-8, as

described in the CAU 424 UR (DOE/EMNV 2019b). The landfill locations are shown in Figure 3 of Appendix A. The inspection was conducted on May 31, 2023.

Landfill Cell A3-1 (CAS 03-08-001-A301): All signs, monuments, and survey markers were in good condition. All corner monuments had warning signs. No repair or maintenance needs were observed. The site is shown in Figure 4 of Appendix A.

Landfill Cell A3-2 (CAS 03-08-002-A302): All signs, monuments, and survey markers were in good condition. All corner monuments had warning signs. No repair or maintenance needs were observed. The site is shown in Figure 4 of Appendix A.

Landfill Cell A3-3 (CAS 03-08-002-A303): All signs, monuments, survey markers (on the monuments), and ground survey markers were in good condition. All monuments had warning signs. No repair or maintenance needs were observed. The site is shown in Figure 5 of Appendix A.

Landfill Cell A3-4 (CAS 03-08-002-A304): All signs, monuments, and survey markers were in good condition. All monuments had warning signs. No repair or maintenance needs were observed. The site is shown in Figure 6 of Appendix A.

Landfill Cell A3-5 (CAS 03-08-002-A305): All signs, monuments, and survey markers were in good condition. All monuments had warning signs. No repair or maintenance needs were observed. A survey marker, not previously seen, was identified during inspection. The marker was a 1-foot × 1-foot red triangle spraypainted on the ground. The triangle also had a 2-inch × 2-inch gold survey marker placed in the center. Further communication with site officials confirmed that the survey marker was from a survey conducted by the U.S. Air Force. The marker does not indicate future excavation at the cell. The site is shown in Figure 7 of Appendix A.

Landfill Cell A3-6 (CAS 03-08-002-A306): All signs, monuments, and survey markers were in good condition. All monuments had warning signs. Small animal burrows were present onsite but were not on the landfill cell. No repair or maintenance needs were observed. The site is shown in Figure 8 of Appendix A.

Landfill Cell A3-8 (CAS 03-08-002-A308): All ground survey monuments and markers were in good condition. No repair or maintenance needs were observed. The site is shown in Figure 9 of Appendix A.

2.3 CAU 453, Area 9 UXO Landfill (TTR)

Visual inspections were conducted according to the postclosure requirements for CAU 453, Area 9 UXO Landfill (TTR), CAS 09-55-001-0952, Area 9 Landfill, as described in the CAU 453 UR (DOE/EMNV 2019c). The site is shown in Figure 10 of Appendix A. The inspection was conducted on May 31, 2023. All signs and monuments were in good condition. The perimeter fence was in good condition. UR signs were attached to the fence and legible. Several animal burrows and holes resulting from settling were present along the north and south trenches and were repaired during the inspection. Additionally, water erosion (small rilling) was observed on the cover. At the time, it was not an imminent hazard to the integrity of the cell, but minor erosion and rilling was repaired to prevent further erosion. No other repair or maintenance needs were observed.

2.4 CAU 487, Thunderwell Site (TTR)

Visual inspections were conducted according to the postclosure requirements for CAU 487, Thunderwell Site (TTR), CAS RG-26-001-RGRV, Thunderwell Site, as described in the CAU 487 UR (DOE/EMNV 2019d). The site is shown in Figure 11 of Appendix A. The annual inspection was conducted on May 31, 2023. The site is made up of two land parcels: the A-17 Anomaly and the A-8 Anomaly. All signs, monuments, and survey markers were in good condition. All monuments had warning signs. No repair or maintenance needs were observed.

3.0 Summary

Brief summaries of the annual visual inspections and recommendations are outlined below.

3.1 CAU 407, Roller Coaster RadSafe Area (TTR)

Two signs were loose and were rehung during the inspection. The top strand of the wire fence was loose and hung to the ground and was reattached to the T-post. No other repair or maintenance needs were identified, and no recommendations are proposed at CAS TA-23-001-TARC, Roller Coaster RadSafe Area.

3.2 CAU 424, Area 3 Landfill Complexes (TTR)

The following observations and recommendations are for the seven CASs within CAU 424:

Landfill Cell A3-1 (CAS 03-08-001-A301): No repair or maintenance needs were identified, and no recommendations are proposed.

Landfill Cell A3-2 (CAS 03-08-002-A302): No repair or maintenance needs were identified, and no recommendations are proposed.

Landfill Cell A3-3 (CAS 03-08-002-A303): No repair or maintenance needs were identified, and no recommendations are proposed.

Landfill Cell A3-4 (CAS 03-08-002-A304): No repair or maintenance needs were identified, and no recommendations are proposed.

Landfill Cell A3-5 (CAS 03-08-002-A305): No repair or maintenance needs were identified, and no recommendations are proposed. The red survey marker was utilized for a survey by the USAF. The presence of the marker does not affect Landfill Cell A3-5.

Landfill Cell A3-6 (CAS 03-08-002-A306): Small animal burrows were observed near the cell. They do not represent inherent risk or damage to the cell. No repair or maintenance needs were identified, and no recommendations are proposed.

Landfill Cell A3-8 (CAS 03-08-002-A308): No repair or maintenance needs were identified, and no recommendations are proposed.

3.3 CAU 453, Area 9 UXO Landfill (TTR)

Several animal burrows and holes resulting from settling were present along the southern trenches and were repaired during the inspection. No other repair or maintenance needs were identified, and no recommendations are proposed at CAS 09-55-001-0952, Area 9 Landfill.

3.4 CAU 487, Thunderwell Site (TTR)

No repair or maintenance needs were identified, and no recommendations are proposed at CAS RG-26-001-RGRV, Thunderwell Site.

4.0 References

DCNR (Nevada Department of Conservation and Natural Resources), DOE (U.S. Department of Energy), and DOD (U.S. Department of Defense), 1996. *Federal Facility Agreement and Consent Order (FFACO)*, March 15.

DOE (U.S. Department of Energy)/EMNV (Environmental Management Nevada Program), 2019a. *Record of Technical Change to Closure Report for Corrective Action Unit 407: Roller Coaster RADSAFE Area, Tonopah Test Range, Nevada*, DOE/NV--694-rev 1, ROTC No. DOE/NV--694-rev 1-ROTC 1, Las Vegas, Nevada, November 19.

DOE (U.S. Department of Energy)/EMNV (Environmental Management Nevada Program), 2019b. *Record of Technical Change to Closure Report for Corrective Action Unit 424: Area 3 Landfill Complex, Tonopah Test Range, Nevada*, Rev. 0, DOE/NV/11718--283, ROTC No. DOE/NV/11718--283-ROTC 1, Las Vegas, Nevada, July 2.

DOE (U.S. Department of Energy)/EMNV (Environmental Management Nevada Program), 2019c. *Record of Technical Change to Closure Report for Corrective Action Unit 453: Area 9 UXO Landfill, Tonopah Test Range, Nevada*, DOE/NV/11718--284, ROTC No. DOE/NV/11718--284-ROTC 1, Las Vegas, Nevada, November 19.

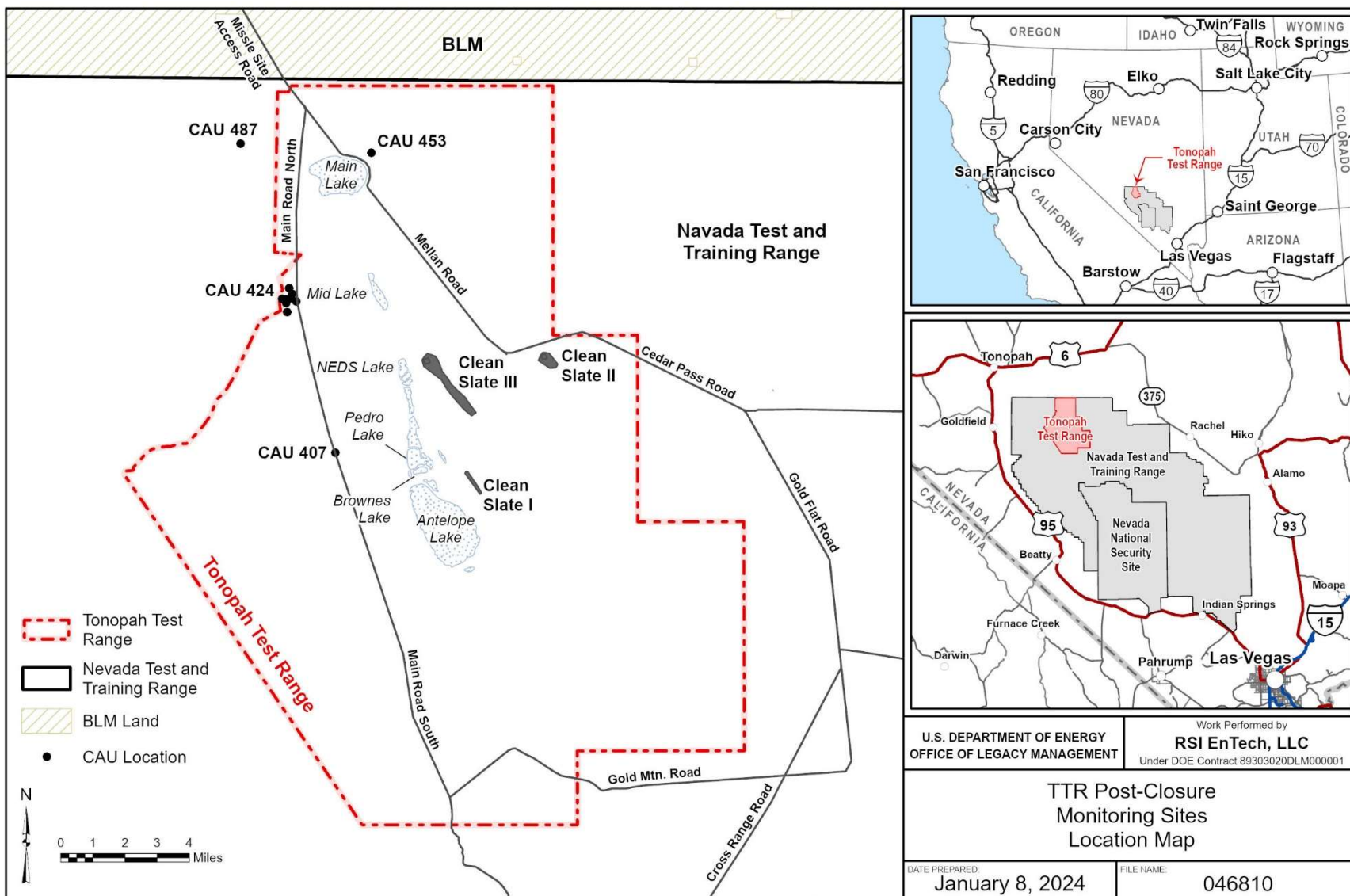
DOE (U.S. Department of Energy)/EMNV (Environmental Management Nevada Program), 2019d. *Record of Technical Change to Corrective Action Decision Document/Closure Report for Corrective Action Unit 487: Thunderwell Site, Tonopah Test Range, Nevada*, Rev. 0, DOE/NV--761, ROTC No. DOE/NV--761-ROTC 3, Las Vegas, Nevada, November 19.

5.0 Bibliography

DOE (U.S. Department of Energy), 2023. *Postclosure Inspection Report for the Tonopah Test Range and Nevada Test and Training Range, Nevada, Sites for Calendar Year 2022*, LMS/TTR/43279, Office of Legacy Management, January.

Appendix A

Figures



Abbreviations: BLM = U.S. Bureau of Land Management, NEDS = Nonviolent Explosive Destruct System

Figure 1. TTR Site Location Map



Figure 2. Roller Coaster RadSafe Area



Figure 3. CAU 424, CAS Locations

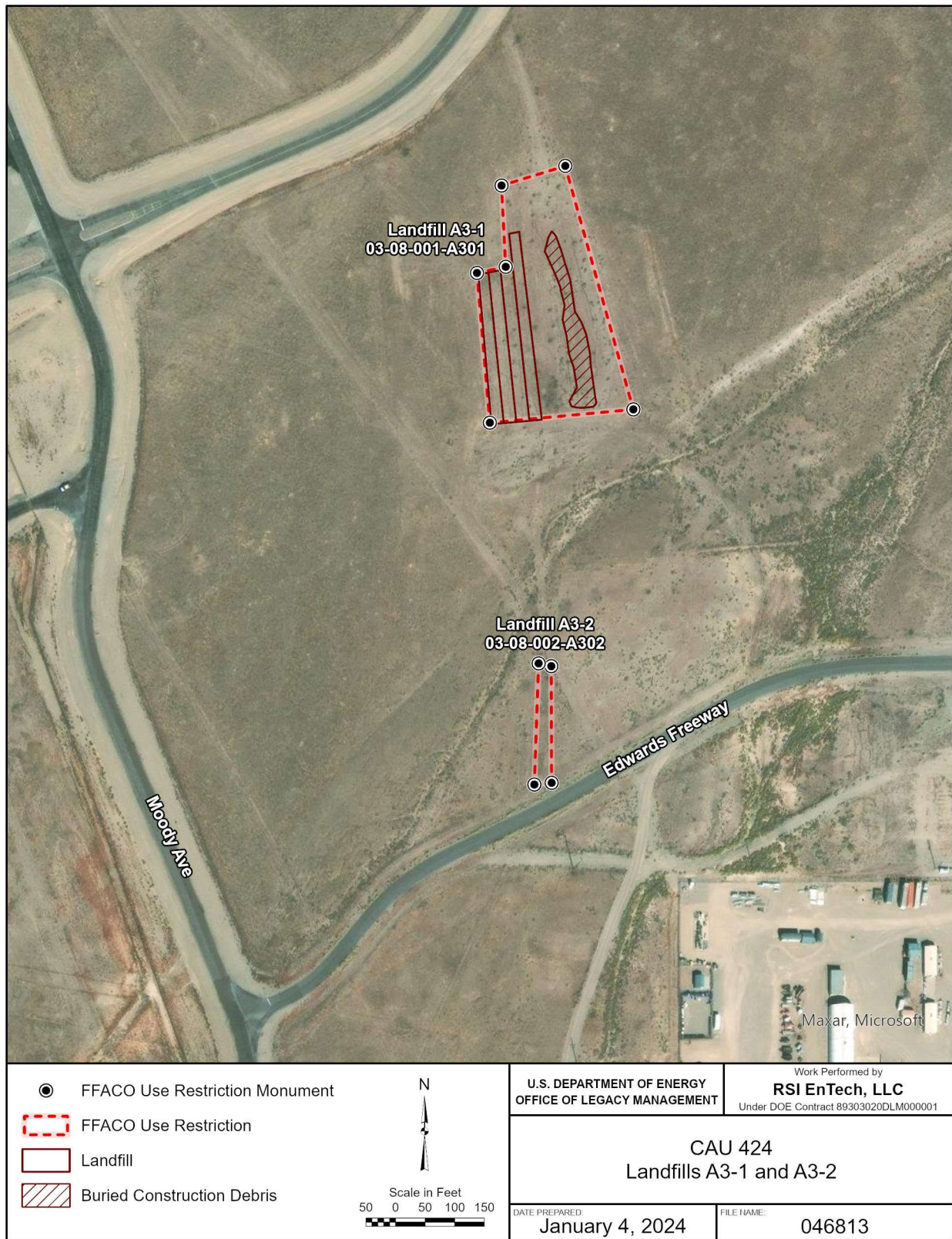


Figure 4. CAU 424, Landfills A3-1 and A3-2

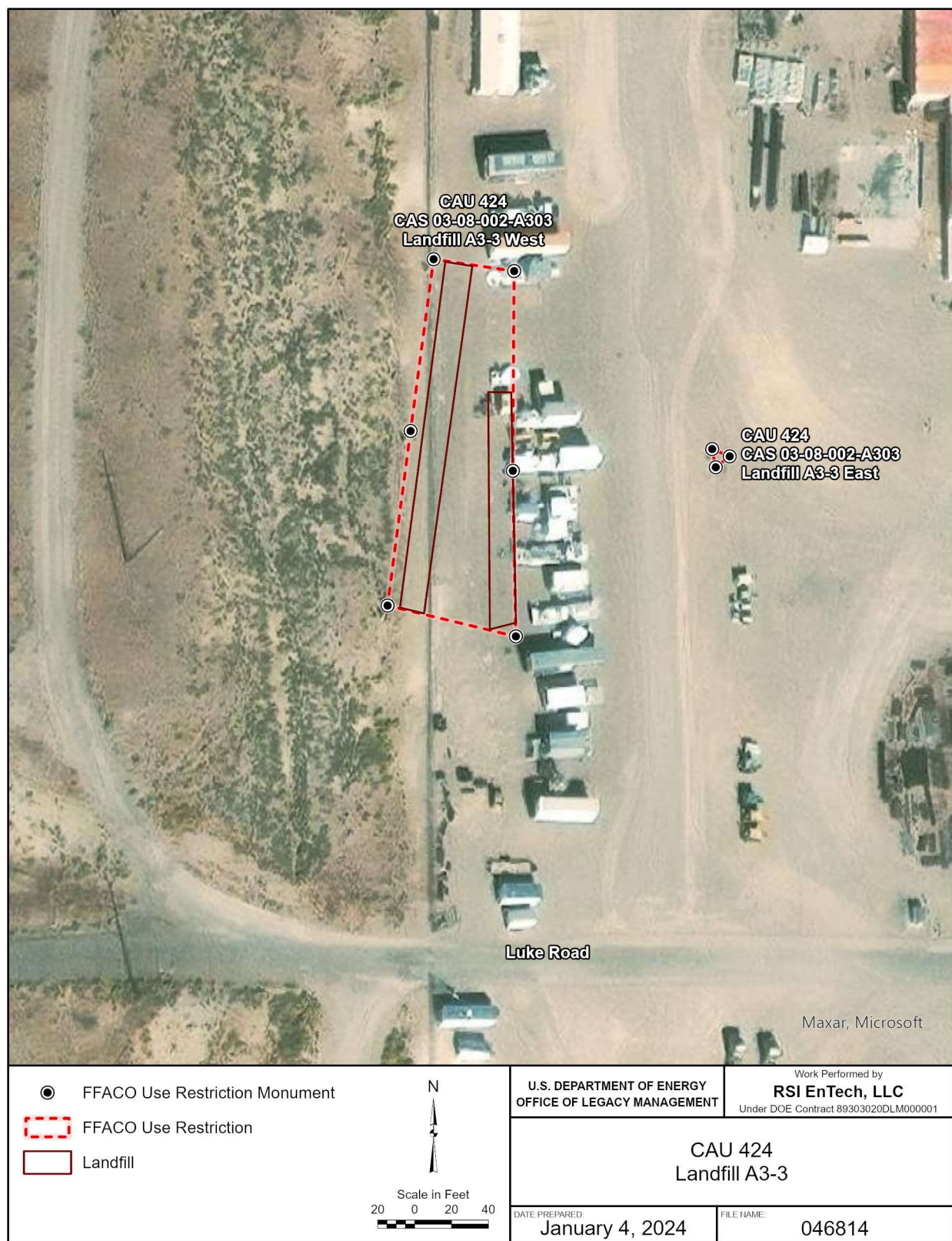


Figure 5. CAU 424, Landfill A3-3

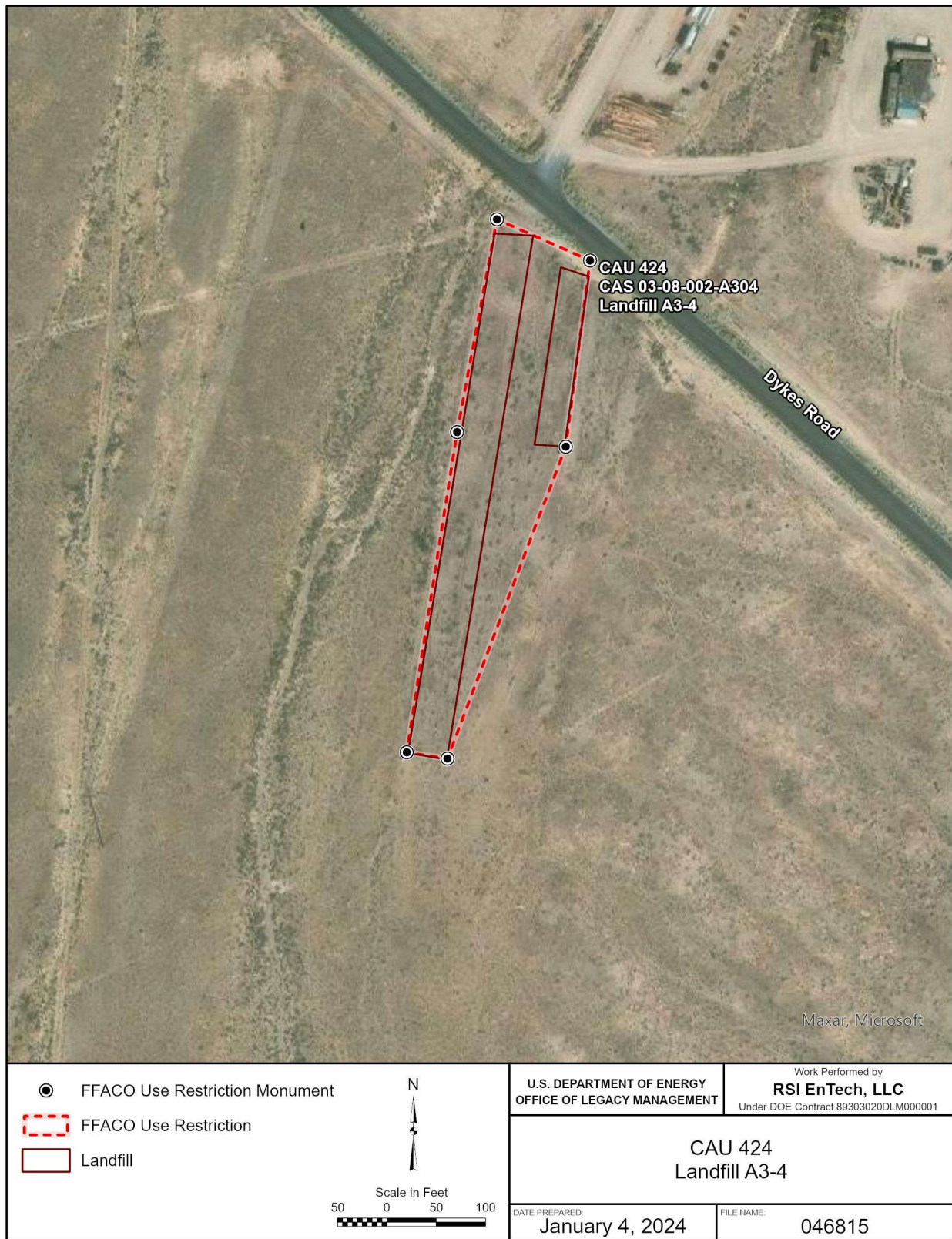


Figure 6. CAU 424, Landfill A3-4

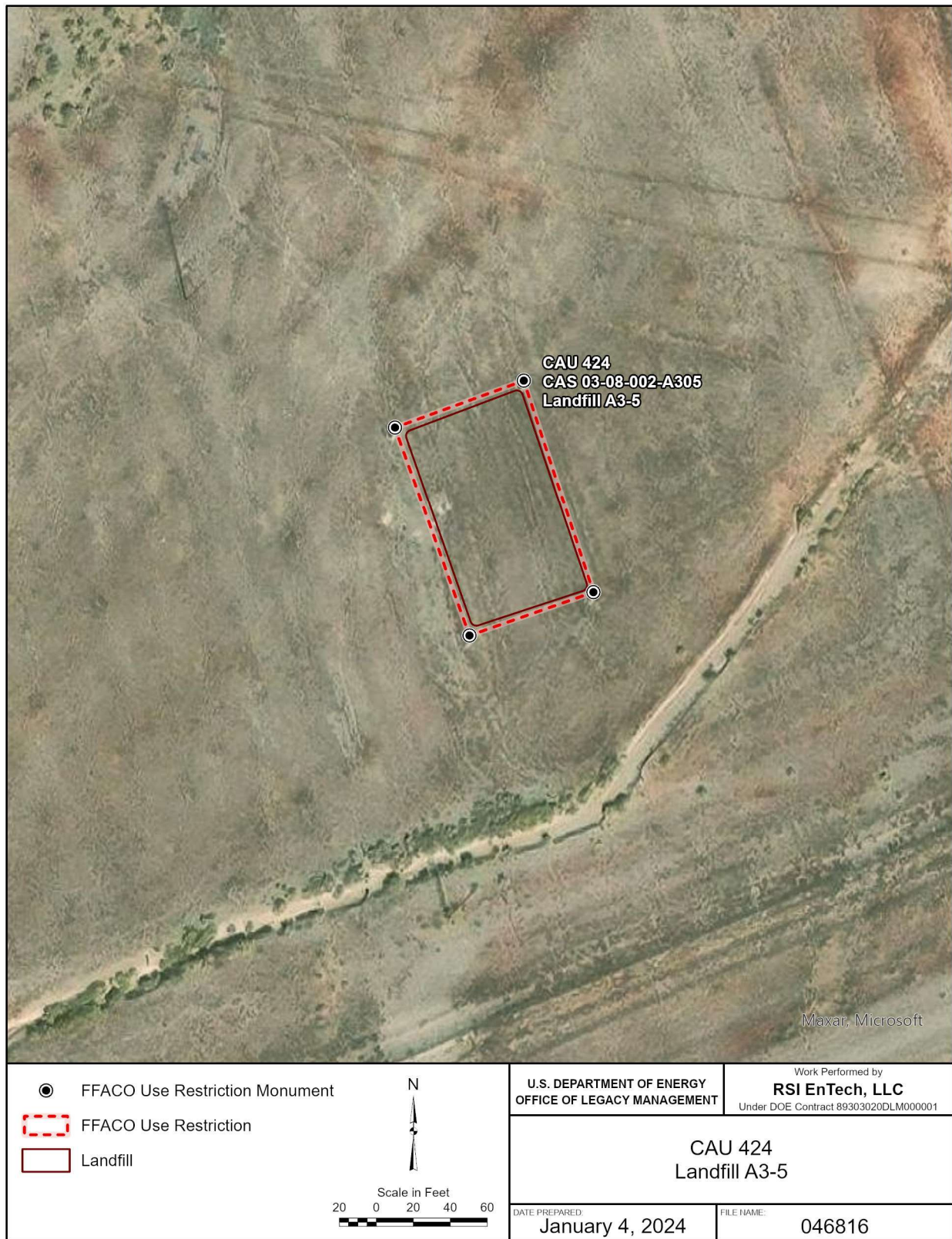


Figure 7. CAU 424, Landfill A3-5



Figure 8. CAU 424, Landfill A3-6

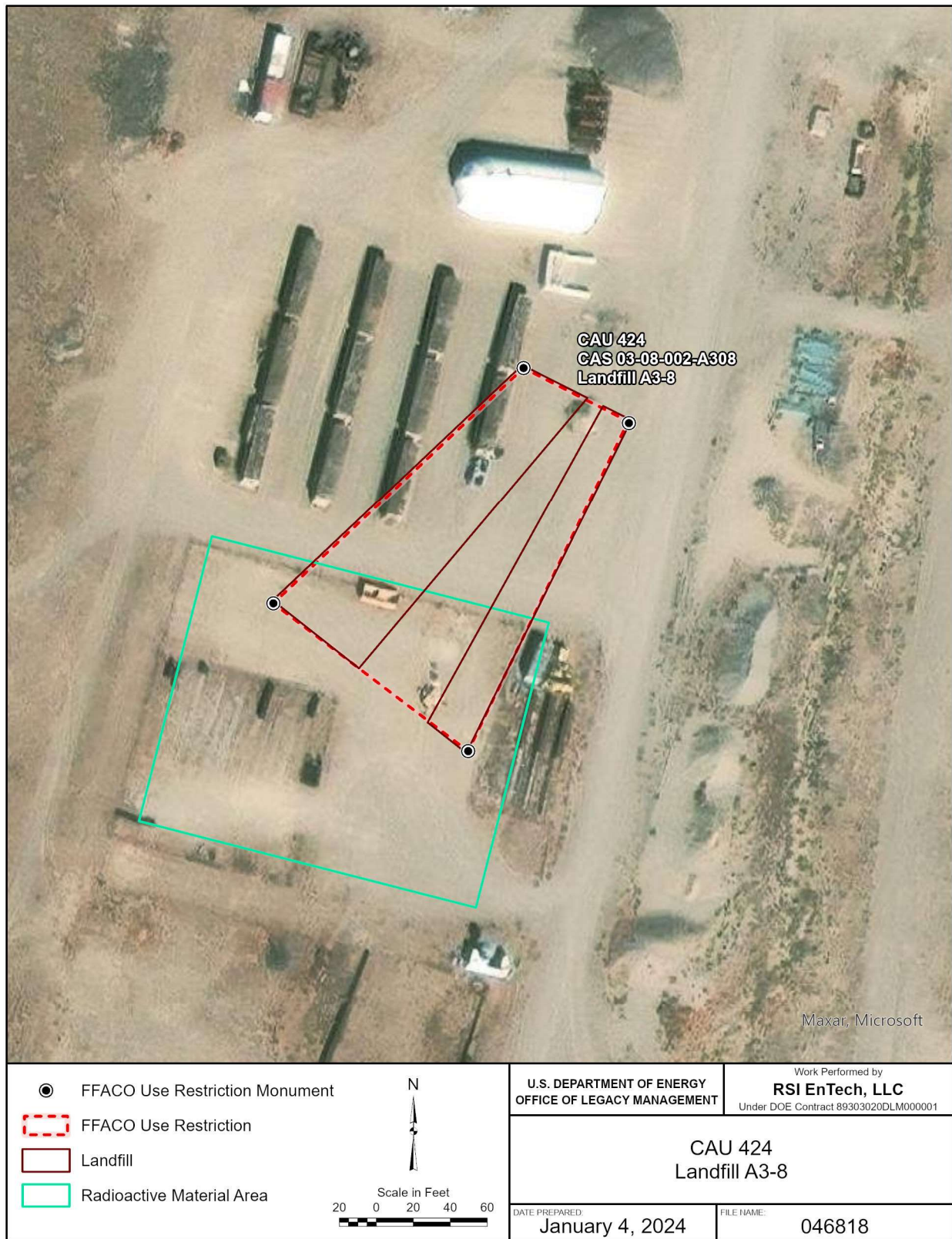


Figure 9. CAU 424, Landfill A3-8

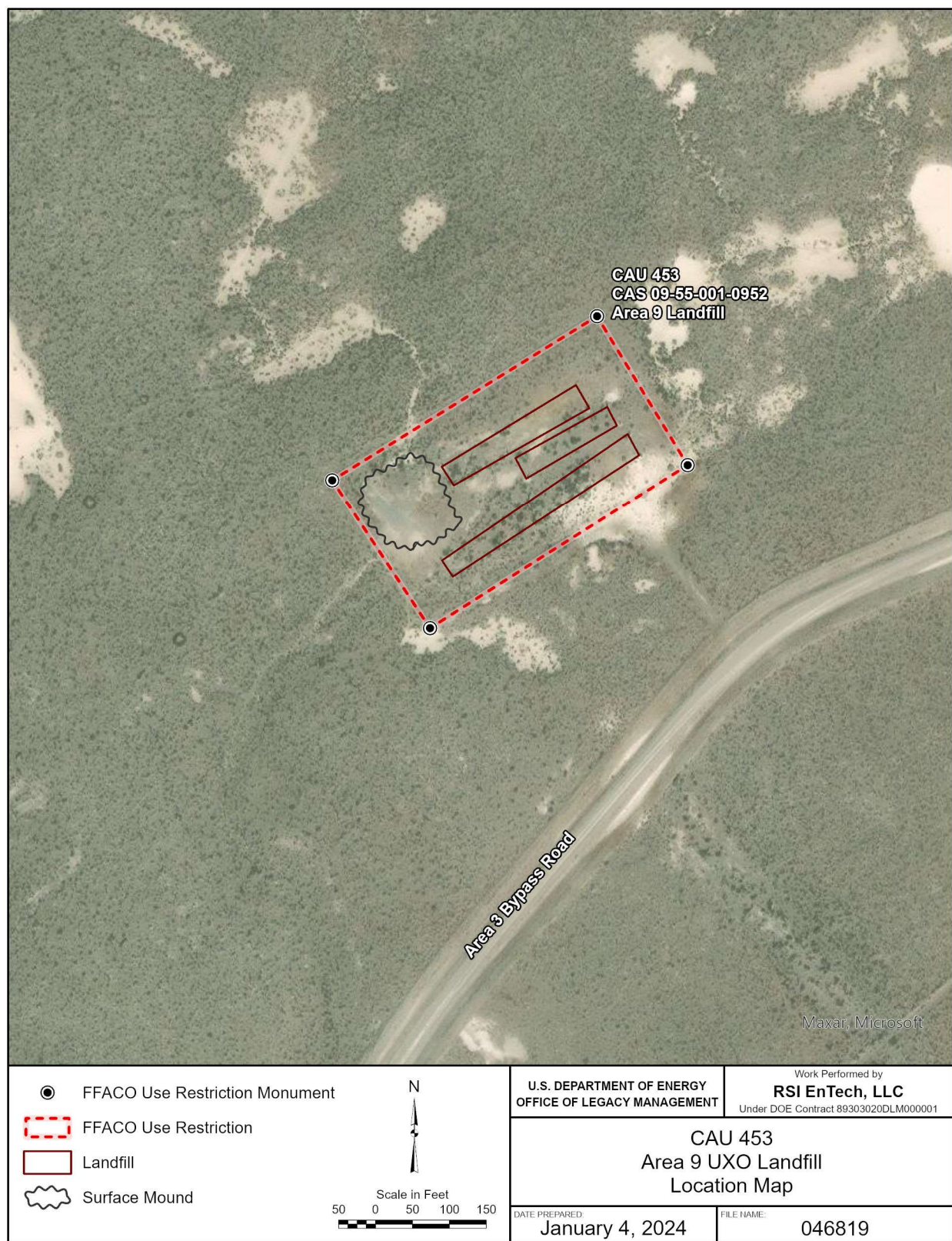


Figure 10. CAU 453, Area 9 UXO Landfill

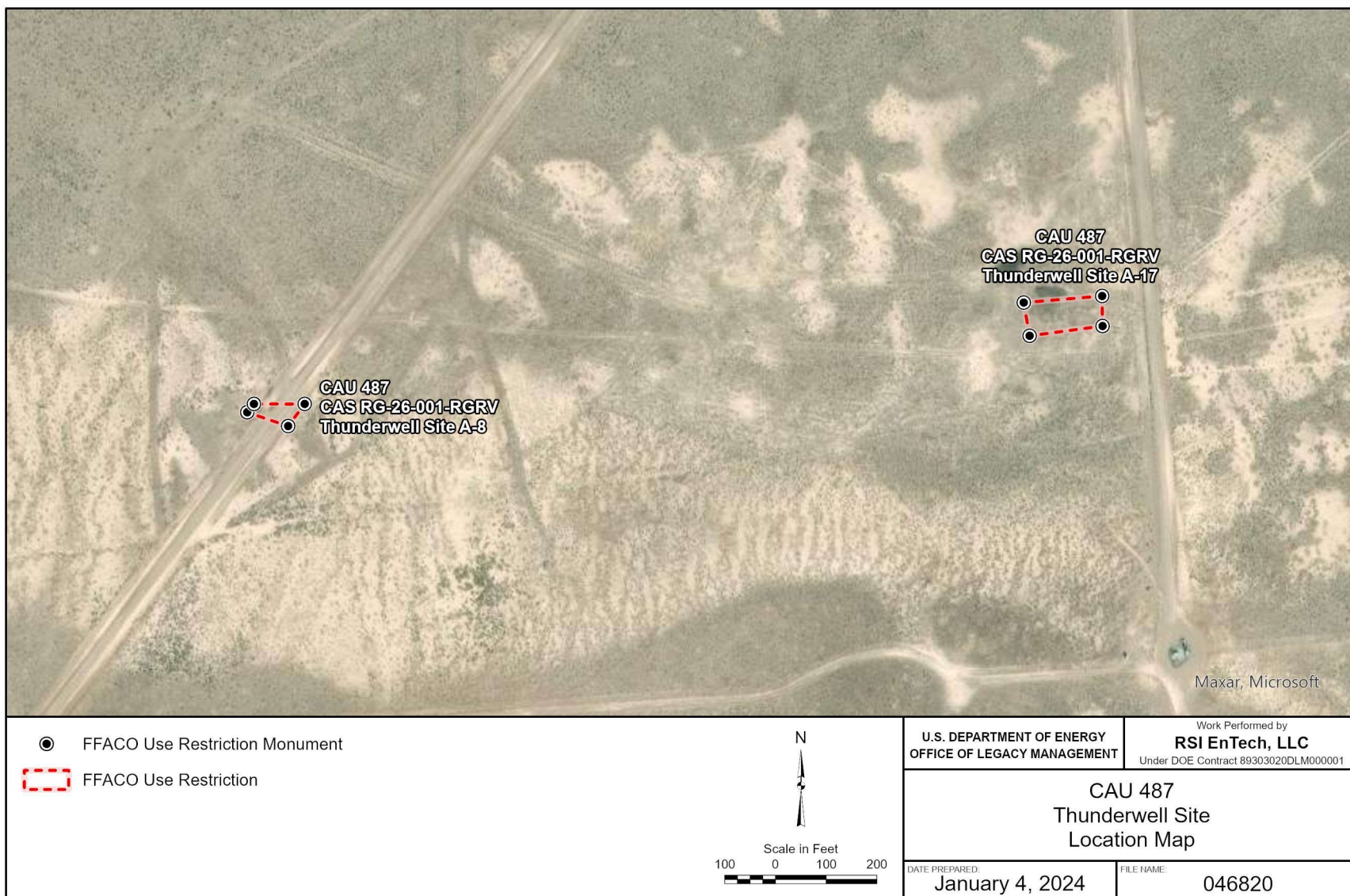


Figure 11. CAU 487, Thunderwell

Appendix B

Postclosure Inspection Plans

Postclosure inspections are conducted according to site-specific UR forms, so individual or annual inspection plans are not needed. Current, approved UR forms are available on the LM public website at https://lmpublicsearch.lm.doe.gov/lmsites/current_tr_userrestrictions.pdf.

Appendix C

Postclosure Inspection Checklists

POST-CLOSURE INSPECTION CHECKLIST**CA/U 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-001-A301, LANDFILL CELL A3-1**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Were maintenance or repairs performed since the last inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C. SITE INSPECTION (To be completed during the site visit)

UR Signs:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Waste Unit Cover/Fenced Area:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there evidence of erosion (wind or water) on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Is there any waste exposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Are there signs of unauthorized use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Is there vegetation up against the fencing (inside or outside)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Is there damage to or a break in the fencing or fenceposts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Is there trash or debris within the fenced area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any other issues not specifically described in this checklist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there an imminent hazard to the integrity of the landfill cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

N/A

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER
MCCARTY (Affiliate)

Digitally signed by ALEXANDER
MCCARTY (Affiliate)
Date: 2023.06.15 12:59:53 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A302, LANDFILL CELL A3-2**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)

YES

NO

EXPLANATION (required if shaded box is checked)

1. Were anomalies or trends detected on previous inspections?

☒☒

2. Were maintenance or repairs performed since the last inspection?

☒☒**C. SITE INSPECTION** (To be completed during the site visit)**UR Signs/Landfill Markers:**

YES

NO

EXPLANATION (required if shaded box is checked)

1. Are all use restriction signs present and legible?

☒☒

2. Have any of the monuments been disturbed or damaged?

☒☒**Waste Unit Cover:**

YES

NO

EXPLANATION (required if shaded box is checked)

1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?

☒☒

2. Is there evidence of erosion (wind or water) on the cover?

☒☒

3. Is there any waste exposed?

☒☒

3. Are there signs of unauthorized use?

☒☒

Are there any other issues not specifically described in this checklist?

☒☒**D. FIELD CONCLUSIONS**

YES

NO

EXPLANATION (required if shaded box is checked)

1. Have photographs of the site been taken?

☒☒

2. Is there an imminent hazard to the integrity of the landfill cover?

☒☒**Notes:**

N/A

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER

MCCARTY (Affiliate)

Digitally signed by ALEXANDER
MCCARTY (Affiliate)Date: 2023.06.15 13:41:39
-06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A303, LANDFILL CELL A3-3**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)

YES

NO

EXPLANATION (required if shaded box is checked)

1. Were anomalies or trends detected on previous inspections?

X

2. Were maintenance or repairs performed since the last inspection?

X

C. SITE INSPECTION (To be completed during the site visit)**UR Signs/Landfill Markers:**

YES

NO

EXPLANATION (required if shaded box is checked)

1. Are all use restriction signs present and legible?

X

2. Have any of the monuments been disturbed or damaged?

X

3. Have any of the ground-flush survey markers been disturbed or damaged?

X

Waste Unit Cover:

YES

NO

EXPLANATION (required if shaded box is checked)

1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?

X

2. Is there evidence of erosion (wind or water) on the cover?

X

3. Is there any waste exposed?

X

4. Are there signs of unauthorized use?

X

Are there any other issues not specifically described in this checklist?

X

D. FIELD CONCLUSIONS

YES

NO

EXPLANATION (required if shaded box is checked)

1. Have photographs of the site been taken?

X

2. Is there an imminent hazard to the integrity of the landfill covers?

X

Notes:

Markers were covered in red lava rock to help with field identification. A3-03 (West) NE monument located below trailer tire.

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER

MCCARTY (Affiliate)

Digitally signed by ALEXANDER
MCCARTY (Affiliate)
Date: 2023.06.15 13:24:07 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A304, LANDFILL CELL A3-4**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Were maintenance or repairs performed since the last inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C. SITE INSPECTION (To be completed during the site visit)

UR Signs/Landfill Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Have any of the monuments been disturbed or damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Waste Unit Cover:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there evidence of erosion (wind or water) on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Is there any waste exposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Are there signs of unauthorized use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any other issues not specifically described in this checklist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there an imminent hazard to the integrity of the landfill covers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

N/A

E. INSPECTION PERSONNEL

Inspector Signature & Date:

 ALEXANDER
 MCCARTY (Affiliate)

 Digitally signed by ALEXANDER
 MCCARTY (Affiliate)
 Date: 2023.06.15 13:20:11
 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A305, LANDFILL CELL A3-5**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Were maintenance or repairs performed since the last inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C. SITE INSPECTION (To be completed during the site visit)

UR Signs, Monuments, and Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Have any of the monuments been disturbed or damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Waste Unit Cover:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there evidence of erosion (wind or water) on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Is there any waste exposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Are there signs of unauthorized use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any other issues not specifically described in this checklist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there an imminent hazard to the integrity of the landfill cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

Survey marker, USAF survey marker identified during inspection. 1'x 1' Red painted triangle w/ 2"x 2" gold survey marker found during inspection.

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER**MCCARTY (Affiliate)**
 Digitally signed by ALEXANDER
 MCCARTY (Affiliate)
 Date: 2023.06.15 12:29:38 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A306, LANDFILL CELL A3-6**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Were maintenance or repairs performed since the last inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

C. SITE INSPECTION (To be completed during the site visit)

UR Signs, Monuments, and Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Have any of the monuments been disturbed or damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Waste Unit Cover:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows, on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there evidence of erosion (wind or water) on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Is there any waste exposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Are there signs of unauthorized use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any other issues not specifically described in this checklist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there an imminent hazard to the integrity of the landfill covers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

Small animal burrows present on site.

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER

MCCARTY (Affiliate)

 Digitally signed by ALEXANDER
 MCCARTY (Affiliate)
 Date: 2023.06.15 13:46:02 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 424, AREA 3 LANDFILL COMPLEXES (TTR) – CAS 03-08-002-A308, LANDFILL CELL A3-8**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Were maintenance or repairs performed since the last inspection?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

C. SITE INSPECTION (To be completed prior to the site visit)

UR Signs, Monuments, and Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Have any of the ground-flush survey markers been disturbed or damaged?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Waste Unit Cover:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there evidence of erosion (wind or water) on the cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Is there any waste exposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Are there signs of unauthorized use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there any other issues not specifically described in this checklist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Is there an imminent hazard to the integrity of the landfill covers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

The second boundary marker is in-between fencepost #4, heading from N to S. Lava rock was placed on markers to help with field identification.

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER

MCCARTY (Affiliate)

 Digitally signed by ALEXANDER
 MCCARTY (Affiliate)
 Date: 2023.06.15 13:16:18 -06'00'

POST-CLOSURE INSPECTION CHECKLIST**CAU 453, AREA 9 UXO LANDFILL (TTR) – CAS 09-55-001-0952, AREA 9 LANDFILL**

Inspection Date: 5/31/23

Reason for Inspection: Annual

Date of Last Post-Closure Inspection: 5/31/22

Reason for Last Post-Closure Inspection: Annual

Inspector (name, title, organization): Alex McCarty, Site Lead, RSI

A. GENERAL INSTRUCTIONS

- **Visual inspection includes features described in this checklist.**
- Field notes are not required if the checklist and associated attachments adequately describe site conditions.
- Photographs are not required but may be taken to document maintenance/repair needs, anomalous features, or new features (such as changes in adjacent area land use).

B. PREPARATION (To be completed prior to the site visit)	YES	NO	EXPLANATION (required if shaded box is checked)
1. Were anomalies or trends detected on previous inspections?	X		Animal burrows on north and south trenches.
2. Were maintenance or repairs performed since the last inspection?	X		Repair of animal burrows noted above.

C. SITE INSPECTION (To be completed during the site visit)

UR Signs, Monuments, and Markers:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Are all use restriction signs present and legible?	X		
2. Have any of the monuments been disturbed or damaged?		X	
Waste Unit Cover/Fenced Area:	YES	NO	EXPLANATION (required if shaded box is checked)
1. Is there evidence of subsidence, settling or cracking, water ponding, or animal burrows on the cover?	X		Six small animal burrows were found.
2. Is there evidence of erosion (wind or water) on the cover?	X		Water erosion migrating towards burrows was found.
3. Is there any waste exposed?		X	
4. Are there signs of unauthorized use?		X	
5. Is there vegetation up against the fencing (inside or outside)?		X	
6. Is there damage to or a break in the fencing or fenceposts (signs of wear)?		X	
7. Is there trash or debris within the fenced area?		X	
Are there any other issues not specifically described in this checklist?		X	
D. FIELD CONCLUSIONS	YES	NO	EXPLANATION (required if shaded box is checked)
1. Have photographs of the site been taken?		X	
2. Is there an imminent hazard to the integrity of the landfill cover?		X	

Notes:

Six animal burrows were found on the south trenches. Burrows were filled in with dirt.

E. INSPECTION PERSONNEL

Inspector Signature & Date:

ALEXANDER
MCCARTY (Affiliate)

Digitally signed by ALEXANDER
MCCARTY (Affiliate)
Date: 2023.06.15 15:44:15 -06'00'

Appendix D

Field Notes

All observations are recorded on the postclosure inspection checklists presented in Appendix C.
Additional field notes were not created in 2023.

Appendix E

Photographs

Photographs were not taken during 2023.

Appendix F

Postclosure Vegetation Monitoring Report

Vegetation monitoring was not conducted in 2023.

Appendix G

NDEP Correspondence and Record of Review



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

STATE OF NEVADA
Department of Conservation & Natural Resources

Joe Lombardo, Governor
James A. Settelmeyer, Director
Jennifer L. Carr, Administrator

May 29, 2024

Ms. Mary Young
Site Manager
U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503

RE: Submittal of Draft Postclosure Inspection Report for the Tonopah Test Range and Nevada Test and Training Range, Nevada, Sites for Calander Year 2023
Federal Facility Agreement and Consent Order (FFACO)

Dear Ms. Young:

The Nevada Division of Environmental Protection, Bureau of Federal Facilities (NDEP) has reviewed the above-referenced Report, dated April 25, 2024, and received electronically on April 26, 2024. Receipt of this Report fulfills the Federal Facility Agreement and Consent Order milestone deadline of June 21, 2024, for the "TTR and NTTR Post-Closure Sites Draft CY 2023 TTR and NTTR Post-Closure Report to State." While this letter does serve as a Notice of Completion for the milestone deadline, the NDEP has the following comments, which should be addressed in the Final Report.

1. Page 2, Section 2.1, CAU 407, Fifth Sentence, Page 4, Section 3.1, First Sentence, and Appendix C, Page C-1, CAU 407 CAS TA-23-001-TARC Post-Closure Inspection Checklist, Notes – Sections 2.1 and 3.1 of the Report state that two signs were loose and rehung during the CAU 407 inspection while the Notes section of the CAU 407 Post-Closure Inspection Checklist (Checklist) states that a fallen sign was reattached to the fence. Please correct this discrepancy.
2. Page 2, Section 2.1, CAU 407, and Appendix C, Page C-1, CAU 407 CAS TA-23-001-TARC Post-Closure Inspection Checklist, Notes – The Notes section of the Checklist states that the erosion on the east side could potentially damage the cover. Please include this information in Section 2.1 of the Report and if this will be monitored or repaired in the future.
3. Page 3, Section 2.3, CAU 453 and Appendix C, Page C-9, CAU 453 Area 9 UXO Landfill – It is stated on the Checklist that there is water erosion on the cover. However, there is no mention of this in Section 2.3 of the Report. Additionally, it is not mentioned in the Report or on the Checklist if this water erosion was repaired or not. Please include this information in the Report.
4. Appendix C, CAU 407 CAS TA-23-001-TARC Post-Closure Inspection Checklist, Section B, Number 1 – Number 1 of Section B of the CAU 407 Checklist states that two signs were loose and rehung. However, the 2022 TTR Post-Closure Inspection Report states that three signs were loose and rehung on the corresponding CAU 407 Post-Closure Inspection Checklist. Please correct this discrepancy.

Ms. Mary Young

Page 2 of 2

May 29, 2024

If you have any questions regarding this matter, please contact Shantae Greene at (702) 668-3902, Meghan Lyle at (702) 668-3924, or me at (702) 668-3911.

Sincerely,

A black rectangular redaction box covering the signature of Christine D. Andres.

FOR

Christine D. Andres

Chief

Bureau of Federal Facilities

CDA/ML/SG

ec: FFACO Group
EM Records, EM
Shantae Greene, NDEP
Meghan Lyle, NDEP
Gail Tackett, NDEP
Valerie Mason, DTRA/RD-TSE
Kathryn Gladden, NNSA/NFO
MSTS Correspondence Management
NNSA/NFO Read File
Jalena Dayvault, DOE-LM
Rick Findlay, RSI
Alex McCarty, RSI



Record of Review

Review requirements are described in the *Document Management Services, Resources, and Procedures* (LMS/PRO/S32818). Reviewers may document any review with this form. This form should not be converted to a PDF until all reviews are complete.

Document Information

Due date¹: Date Review number: 1 Project: NVOS – Tonopah Test Range Charge code: LMCP.LMCP.2. Enter text

Document title, number, and revision: Submittal of Draft Postclosure Inspection Report for the Tonopah Test Range and Nevada Test and Training Range, Nevada, Sites for Calander Year 2023

Author: Mary Young Author's phone: (970) 712 4992 Author's organization: LM

Reviewer: Christine D. Andres Reviewer's phone: (702) 486-2850 ext 232 Reviewer's organization: NDEP

Reviewer's recommendation: ☐ Release without comment ☐ Consider comments ☒ Resolve comments and reroute for review Date²: 05/29/2024

Author's response: ☒ Comments have been addressed

Reviewer's response to comment resolution: ☒ Satisfactory ☐ Unsatisfactory³

DocuSigned by:

Date²: 07/01/2024

Date²: 06/20/2024 | 3:11 P

Author signifies all comments resolved successfully: Enter text

Date: Date

¹ Failure to respond to the review request will be considered approval of issuing the document as written.

² Reviewer or author signature not required. Authorization implied by completing date field and submittal of review.

³ If the author or reviewer is dissatisfied with the resolution, the matter may be elevated to the next level of management. If an impasse develops, management must resolve the issue.

Item Number	Reviewer's Comments and Recommendations	Required	Author's Response (if required)
1	Page 2, Section 2.1, CAU 407, Fifth Sentence, Page 4, Section 3.1, First Sentence, and Appendix C, Page C-1, CAU 407 CASTA-23-001-TARC Post-Closure Inspection Checklist, Notes - Sections 2.1 and 3.1 of the Report state that two signs were loose and rehung during the CAU 407 inspection while the Notes section of the CAU 407 Post-Closure Inspection Checklist (Checklist) states that a fallen sign was reattached to the fence. Please correct this discrepancy.	Yes	The sentence now states, "A fallen sign associated with the damaged fence was re-attached and repaired with the fence line."



Record of Review

Item Number	Reviewer's Comments and Recommendations	Required	Author's Response (if required)
2	Page 2, Section 2.1, CAU 407, and Appendix C, Page C-1, CAU 407 CAS TA-23-001-TARC Post-Closure Inspection Checklist, Notes - The Notes section of the Checklist states that the erosion on the east side could potentially damage the cover. Please include this information in Section 2.1 of the Report and if this will be monitored or repaired in the future.	Yes	Added language to section 2.1 to describe erosion and future maintenance. The following has been added <i>"Erosion on the east side of cover was observed, but no maintenance was needed. This erosion could potentially damage cover. Area will be monitored for potential maintenance in future site inspections. During time of inspection no maintenance was required."</i>
3	Page 3, Section 2.3, CAU 453 and Appendix C, Page C-9, CAU 453 Area 9 UXO Landfill - It is stated on the Checklist that there is water erosion on the cover. However, there is no mention of this in Section 2.3 of the Report. Additionally, it is not mentioned in the Report or on the Checklist if this water erosion was repaired or not. Please include this information in the Report.	Yes	Added language to section 2.3 to describe water erosion observed during inspection. <i>"Additionally, water erosion (small rilling) was observed on the cover. At the time, it was not an imminent hazard to the integrity of the cell, but minor erosion and rilling was repaired to prevent further erosion."</i>
4	Appendix C, CAU 407 CAS TA-23-001-TARC Post-Closure Inspection Checklist, Section B, Number 1 - Number 1 of Section B of the CAU 407 Checklist states that two signs were loose and rehung. However, the 2022 TTR Post-Closure Inspection Report states that three signs were loose and rehung on the corresponding CAU 407 Post-Closure Inspection Checklist. Please correct this discrepancy.	Yes	Section B, Number 1 of the CAU 407 Checklist was edited to <i>"Three signs were loose and rehung."</i>



Record of Review

Item Number	Reviewer's Comments and Recommendations	Required	Author's Response (if required)

Library Distribution List

Copies

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
(865) 576-8401

1 (Uncontrolled, electronic copy)

Southern Nevada Public Reading Facility
c/o Nuclear Testing Archive
P.O. Box 98521, M/S 400
Las Vegas, NV 89193-8521

2 (Uncontrolled, electronic copies)

Manager, Northern Nevada FFACO
Public Reading Facility
c/o Nevada State Library, Archives, and Public Records
100 N Stewart Street
Carson City, NV 89701-4285
(775) 684-3313

1 (Uncontrolled, electronic copy)