



Final

**After Action Report
Fence Repairs at the
Possible Demolition Site, Operable Unit 5
Military Munitions Response Program**

**Iowa Army Ammunition Plant
Middletown, Iowa**

May 2022

Prepared for:

**U.S. Army Corps of Engineers, Omaha District
1616 Capitol Avenue
Omaha, NE 68102-4901**

Prepared under:

**Contract No. W9128F-15-D-0029
Delivery Order No. W9128F20F0054
Modification No. P00002**

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ERRG

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*Submitted by:
Engineering/Remediation Resources Group, Inc.*



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May 4, 2022

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Abbreviations and Acronyms

AAR	After Action Report
AO	American Ordnance, LLC.
CB&I	CB&I Federal Services, LLC
CQC	Contractor Quality Control
ERRG	Engineering/Remediation Resources Group, Inc.
IAAAP	Iowa Army Ammunition Plant
Lovewell	Lovewell Fencing, Inc.
LUC	land use control
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
OU5	Operable Unit 5
PDS	Potential Demolition Site
ROD	Record of Decision
Shaw	Shaw Environmental & Infrastructure, Inc.
Tech	Technician
URS	URS Corporation
USACE	U.S. Army Corps of Engineers
UXO	Unexploded Ordnance

Section 1. Introduction

Engineering/Remediation Resources Group, Inc. (ERRG), under contract to the U.S. Army Corps of Engineers (USACE), has prepared this After Action Report (AAR) to document fencing repairs at the Potential Demolition Site (PDS) Munitions Response Site (MRS) within Operable Unit 5 (OU5) at the Iowa Army Ammunition Plant (IAAAP), in Middletown, Iowa.

The perimeter fence and signage at the PDS MRS requires periodic maintenance and activities to meet the land use control (LUC) requirements implemented due to the presence of munitions and explosives of concern (MEC) at OU5. The Record of Decision (ROD) documents the LUCs selected to address potential MEC at the PDS MRS (CB&I Federal Services, LLC [CB&I], 2014). The purpose of maintaining adequate perimeter fencing and signage at the PDS MRS is to deter entry and inform personnel of the explosive hazard posed to human health and the environment.

The activities documented in this AAR were performed to support the remedial action performed under the Military Munitions Response Program (MMRP) and pursuant to Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 Code of Federal Regulations Part 300).

1.1. PURPOSE AND SCOPE

The purpose of this project was to repair and maintain the selected remedy (LUCs) for the PDS MRS, as documented in the ROD (CB&I, 2014). ERRG identified deficiencies in the LUCs during the 2020 annual inspection (ERRG, 2020b). ERRG repaired and maintained fencing along the perimeter and added additional signage at stream crossings around the PDS MRS. These measures are intended to prevent personnel from entering and potentially being exposed to explosive hazards associated with MEC remaining at the PDS MRS.

1.2. SITE BACKGROUND

This section briefly describes the IAAAP, including the site location and description, physical setting, and LUCs implemented at the PDS MRS.

1.2.1. Site Location and Description

The IAAAP occupies approximately 19,011 acres located roughly 8 miles west of Burlington and directly south of Middletown, Des Moines County, Iowa (Figure 1). The north side of the IAAAP is bordered by U.S. Highway 34, with upland agricultural farms to the east and west, and the Skunk River Valley to the south. Approximately one-third of the IAAAP property is occupied by active or formerly active production or storage facilities. The remaining land is either woodlands or property leased for agricultural use (URS Corporation [URS], 2011).

The PDS MRS is a 40-acre MRS located in the south-central portion of IAAAP. A small arms firing range is within the PDS MRS boundary, but is excluded from the MRS, because it is an active facility and thus ineligible under the MMRP. The topography of the PDS MRS varies, with rolling to steep terrain that ranges in elevation. The vegetative cover consists predominately of dense wooded areas dominated by deciduous oak and hickory trees (Shaw Environmental & Infrastructure, Inc. [Shaw], 2013).

ERRG has performed annual inspections of LUC implementations at OU5, including PDS MRS, since June 2020 under Contract No. W9128F-15-D-0029, Delivery Order W9128F20F0054.

1.2.2. Physical Setting

The typical climate at the IAAAP is characterized by hot, humid summers and mild winters with average temperatures of 74°F and 26°F, respectively. Winter is relatively mild, with infrequent heavy snowfall and ice storms. Snowfall averages approximately 27 inches per year. Rainfall, mostly occurring during the spring and summer, averages 38 inches per year (URS, 2011).

The geology of the PDS MRS is generally characterized by unconsolidated deposits of glacial origin consisting of clayey silt with sand (loess) overlaying glacial till (URS, 2011).

The federally endangered Indiana Bat (*Myotis sodalis*) and federally threatened Northern Long-Eared Bat (*Myotis septentrionalis*) are known to reside at IAAAP and may inhabit areas of the PDS MRS (Gene Stout and Associates and Blythe & Trousil, Inc., 2006). Trees that may be used for bat roosting can only be cut between September 15 and April 15 (USACE, 2014). No archaeological sites have been identified in the PDS MRS (URS, 2011).

1.2.3. PDS MRS LUCs

LUCs were constructed as described in the “After Action Report, Fencing of Possible Demolition Site and Incendiary Disposal Area MRSs, Military Munitions Response Program, Iowa Army Ammunition Plant, Middletown, Iowa” (Shaw, 2013). The constructed LUCs primarily included a 6-foot-high chain link fence with warning signs placed approximately every 200 feet outside the fence, except along the roadways where they were placed approximately every 656 feet.

1.2.4. 2020 Inspection Deficiencies

ERRG reported areas with damaged fencing in need of repair during the 2020 annual LUC inspections. These repairs were also documented in the Annual LUC Implementation Report (ERRG, 2020b). Three locations at the PDS MRS were damaged by tree fall or stream erosion and required replacement of posts and fence panels that were in poor condition. ERRG and their subcontractor performed minor fence repairs during annual inspections and vegetation removal, but additional major repairs were needed. A Request for Proposal was received on April 19, 2021, and ERRG submitted a proposal for modification on May 5, 2021, to complete the necessary repairs to maintain LUCs at the PDS MRS. Modification No. P0002 was approved on July 19, 2021 (USACE, 2021).

1.3. DOCUMENT ORGANIZATION

The remainder of this AAR is organized as follows:

- [Section 2](#) summarizes the field activities performed to repair the fence and install signage at the PDS MRS in 2021.
- [Section 3](#) describes the conclusions based on the field activities completed during this mobilization.
- [Section 4](#) lists the supporting documents used to prepare this report.

Figures are provided after [Section 4](#). The following information documenting the project field activities have been appended to this report:

- [Appendix A](#) – Contractor Quality Control (CQC) Documentation
- [Appendix B](#) – Photographic Field Log

Section 2. Field Activities

This section summarizes the pre-field, field, and post-field activities necessary to repair fencing and install posts with signage at the PDS MRS. A qualified CQC Manager/Site Safety and Health Officer oversaw all field activities. All work was performed in accordance with the Accident Prevention Plan, including the Site Safety and Health Plan ([ERRG, 2020a](#)).

2.1. PRE-FIELD ACTIVITIES

ERRG coordinated with the IAAAP Environmental Restoration Manager to schedule field dates, provide required notifications to IAAAP, and communicate progress. ERRG notified IAAAP regarding underground utility clearance and site access prior to mobilization.

2.1.1. Underground Utility Clearance

American Ordnance, LLC's (AO) utility department was notified of the planned subsurface activity locations prior to mobilization. An AO representative met with ERRG at the PDS MRS on September 14, 2021, to confirm that no underground utilities were present at the PDS MRS.

2.1.2. Site Access, Security, and Working Hours

Security passes were acquired from the Administration Office for all anticipated site workers and visitors to the IAAAP. All field personnel, including subcontractors, checked in at the guard station when entering the IAAAP and were required to have an IAAAP badge to enter the site.

Normal working hours were between 7:00 a.m. and 5:30 p.m., Monday through Thursday, excluding government holidays. All work was performed during normal work hours.

A gate access key to the PDS MRS was provided to ERRG every day by site security. The access key allowed ERRG and badged subcontractor personnel direct access to the site through the PDS MRS gates without calling site security to open gates. The gate was always secured during work and non-work hours. During work hours, site access was monitored and the gates remained closed, to the extent practicable, to prevent unauthorized access.

2.2. FIELD ACTIVITIES

This section describes the following field activities that were performed to repair fencing and install signage at the PDS MRS:

- Mobilization and site preparation
- Unexploded Ordnance (UXO) Technician (Tech) escort to ensure safety of personnel during fence installation
- Damaged post and panel removal
- Fence panel and post installation
- Signage installation

Field activities were performed in accordance with the approved scope under the contract modification (ERRG, 2021). [Section 2.4](#) discusses the deviations and modifications from the scope of work based on changed site conditions. [Appendix A](#) provides the field documentation that was prepared and maintained during this project. [Appendix B](#) includes the photographic log of field activities.

2.2.1. Mobilization and Site Preparation

The following equipment and materials were mobilized to IAAAP, as needed, to perform the LUC repairs at the PDS MRSS:

- Support equipment
- Fencing supplies
- Personal protective equipment
- Safety equipment

The CQC Manager maintained all project plans, CQC documentation, and health and safety documentation.

2.2.2. UXO Clearance and Support

Prior to starting fieldwork, the UXO Tech provided an overview of the surface clearance procedures and held a briefing on MEC safety during the daily tailgate meeting. A MEC surface clearance was then performed along access paths prior to mobilizing to each repair area. No material potentially presenting an explosive hazard was found during the surface clearance at the PDS MRS.

Following the MEC surface clearance, an ERRG UXO Tech provided support throughout the duration of field activities.

2.2.3. Fence Repairs

ERRG subcontracted Lovewell Fencing, Inc. (Lovewell), of Davenport, Iowa, to repair fences and install signage at the PDS MRS. Lovewell completed the work using a Kubota SVL tracked skid loader and a Polaris Ranger utility vehicle. Damaged fence posts and paneling were removed followed by installation of new posts and fence panels. During fence installation at the PDS MRS, the UXO Tech provided surface clearance and anomaly avoidance support during all activities within the PDS MRS boundary.

Figure 2 shows the areas where repairs were completed, and Appendix B includes photographs of the completed work and site conditions. The following repairs were completed during the 2021 mobilization:

- At Damage Area 1, approximately 60 feet of fencing and two posts were removed. One new corner post and approximately 60 feet of fencing were installed and secured (see Photographs B-7 through B-11 in Appendix B).
- At Damage Area 2, two posts and approximately 20 feet of fencing were removed and replaced (see Photographs B-3 through B-6 in Appendix B).
- At Stream Crossing 1, a new sign on posts was installed near the new corner post at Damage Area 1 (see Photographs B-12 and B-16 in Appendix B).
- At Stream Crossing 2, a post with remnants of barbed wire was removed, a corner post was straightened and secured, and four new signs were installed on posts at each stream crossing (see Photographs B-2, B-13, B-14, B-15, B-17, B-18, and B-19 in Appendix B).

ERRG installed warning signs at the stream crossing locations displaying the following: “DANGER; UNEXPLODED ORDNANCE—DO NOT ENTER.”

2.3. POST-FIELD ACTIVITIES

A final site cleanup was performed after completion of field activities. All waste materials, rubbish, and removed posts and fence panels resulting from field activities were removed and disposed of off-site. On September 16, 2021, the ERRG CQC Manager informed the USACE representative upon completion of field activities and deviations due to access limitations at the areas noted in Section 2.4. CQC documentation was submitted electronically to USACE at the conclusion of field activities.

2.4. DEVIATIONS

Field activities were performed in accordance with the scope of work modification, except for the deviations discussed in this section.

Deviations during field activities were a result of site conditions preventing access at the remaining areas. Conditions at the site have changed since the 2020 inspection when the damages were assessed. Additional treefall and vegetation growth prevented access to the fence and creek by the equipment that Lovewell mobilized to the site and additional clearing was not authorized due to sensitive bat species. Restrictions

apply for the protection of endangered Indiana bat habitat. Trees that may be used for bat roosting can only be cut between September 15 and April 15.

Trees in this area are overgrown and large trees need to be removed to allow the machinery access to the creek. At Stream Crossing 3, the wing gates have been causing log backup in the creek and need to be removed. In addition, the stream channel was not able to be accessed due to erosion and large woody debris that has fallen since the 2020 inspection. Examples of obstructions preventing access are provided in Photographs B-20 through B-22 in [Appendix B](#). The following scope items were not completed during the September 2021 field activities ([Figure 2](#)):

- At Stream Crossing 1, new posts with signage were not installed at the west side of the crossing.
- At Stream Crossing 3, the wing gates on each side of the bank were not removed and new corner posts along with posts with signage were not installed.
- At Damage Area 3, two new posts were not installed and approximately 60 feet of fencing was not replaced.
- Because conditions were unsafe to access the stream channel, the wing gates at Stream Crossing 3 were not removed.

Future fence repairs will be addressed outside of the bat roosting restrictions.

Section 3. Conclusions

Fence repairs were performed in September 2021 to repair and maintain the selected remedy (LUCs) for the PDS MRS. Densely vegetated areas and unsafe terrain prevented site access to complete the repairs, as discussed in [Section 2.4](#). Substantial land clearing is required to complete the remaining repairs. During the fieldwork, IAAAP personnel indicated that due to sensitive bat species, trees that may be used for roosting of the Indiana bat can only be removed between September 15 and April 15 ([USACE, 2014](#)). Lovewell inspected the wing gates and concluded they are stable in their current state and are not in danger of becoming detached and damaging the ends of the perimeter fence line. They are not expected to be washed out by fluctuating stream flow or be removed by log debris.

The LUCs at the PDS MRS will continue to be inspected annually and deficiencies will be documented. Minor repairs to fencing will be performed as needed by maintenance contractor as feasible during inspection events. Further evaluation of OU5 fencing is occurring during the FY22 annual LUC inspection to assess additional damage from storms that occurred in December 2021.

Section 4. References

CB&I Federal Services, Inc., 2014. “Final Record of Decision, Operable Unit 5, Iowa Army Ammunition Plant, Middletown, Iowa.” September.

Engineering Remediation Resources Group (ERRG), 2020a. “Accident Prevention Plan for Land Use Controls at Operable Unit 5, Iowa Army Ammunition Plant, Middletown, Iowa.” June.

ERRG, 2020b. “Final Annual Land Use Control Implementation Report for Operable Unit 5 Munitions Reponses Sites, Military Munitions Response Program, Iowa Army Ammunition Plant, Middletown, Iowa.” July.

Gene Stout and Associates and Blythe & Trousil, Inc., 2006. “Integrated Natural Resources Management Plan, 2007–2011, Iowa Army Ammunition Plant, Middletown, Iowa.” December 12.

Shaw Environmental & Infrastructure, Inc., 2013. “After Action Report, Fencing of Possible Demolition Site and Incendiary Disposal Areas MRSS, Iowa Army Ammunition Plant.” February.

URS Corporation (URS), 2011. “Final Remedial Investigation Report, Military Munitions Response Program, Iowa Army Ammunition Plant, Middletown, Iowa.” June.

U.S. Army Corps of Engineers, 2014. “Final Record of Decision, Operable Unit 5, Military Munitions Response Program, Iowa Army Ammunition Plant, Middletown, Iowa.” September.

U.S. Army Corps of Engineers, 2021. “Land Use Controls at Operable Unit 5, Iowa Ammunition Army Plant, Performance Work Statement, Modification P00002.” July.

Figures

Figure 1. Response Site Location Map

Figure 2. Completed Fence Repair Areas

Appendix A. Contractor Quality Control Documentation

Appendix B. Photographic Field Log
