FINAL
ANNUAL OPERABLE UNIT OU-1 LAND USE CONTROL IMPLEMENTATION REPORT

IOWA ARMY AMMUNITION PLANT
MIDDLETOWN, IOWA

Prepared by
American Ordnance LLC
17575 DMC Highway 79
Middletown, Iowa 52638

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ABBREVIATIONS AND ACRONYMS

AO	American Ordnance, LLC
Army	U.S. Army
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Commanding Officer
DoD	U.S. Department of Defense
ESD	Explanation of Significant Differences
EWI	Environmental Work Instruction
HMX	high melt explosive
IAAAP	Iowa Army Ammunition Plant
LAP	load, assemble, and pack
LUC	land use control
LUCIP	Land Use Control Implementation Plan
OU	operable unit
RAB	Restoration Advisory Board
RDX	royal demolition explosive
RG	remediation goal
TNT	2,4,6-trinitrotoluene
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
UU/UE	unlimited use and unrestricted exposure

1.0 INTRODUCTION

This document presents the Iowa Army Ammunition Plant (IAAAP) Annual Operable Unit 1 (OU-1) Land Use Control Implementation Report (LUCIR) for calendar year 2020. This document reports the implementation and maintenance of land use controls (LUCs) as a component of the selected remedy for OU-1 at the IAAAP under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (USC) §9601 et seq. This LUCIR was prepared by American Ordnance, LLC for the U.S. Army (Army) in accordance with contract W52P1J09-E-0001.

The IAAAP is a government-owned, contractor-operated munitions production facility under the command of the U.S. Army Joint Munitions Command, Rock Island, Illinois. The primary activity at the IAAAP since 1941 has been to load, assemble, and pack (LAP) a variety of conventional ammunition and fusing systems for the U.S. Department of Defense (DoD).

The IAAAP occupies approximately 19,000 acres located roughly 8 miles west of Burlington and directly south of Middletown, Des Moines County, Iowa, and 9 miles northwest of the Skunk and Mississippi Rivers (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 usage.

Past munition production has resulted in contamination of soil and groundwater. The primary source of contamination at the IAAAP is attributable to past operating practices in which wastewaters and sludges contaminated with explosives (2,4,6-trinitrotoluene [TNT], royal demolition explosive [RDX], and high melt explosive [HMX]) were discharged to uncontrolled lagoons and impoundments at the IAAAP. Additional sources of contamination included open burning of explosives materials and munitions and landfilling of waste material. Metals, semi-volatile organic compounds, and polychlorinated biphenyls were also identified as contaminants. Hazardous substances have been detected at concentrations above human health-based screening values in soils at the IAAAP.

1.1 PURPOSE

The selected remedy for OU-1 soils includes excavation of soil with contaminant concentrations above the remediation goals (RGs), treatment of the most highly contaminated soils, and permanent disposal at both on-site and off-site facilities (USAEC 1998 and USACE 1998).

The *Explanation of Significant Differences for the Records of Decision Soils OU-1 Addition of Land Use Controls, Off-Site Disposal of Contaminated Soil, and the Fire Training Pit for Iowa Army Ammunition Plant, Middletown, IA* (2018 ESD) (Leidos 2018) established Land Use Controls (LUCs) as the long-term component of the selected remedy for OU-1 to provide overall protectiveness of human health and the environment in accordance with the U.S. Environmental Protection Agency's (USEPA's) remedy selection expectations described in 40 *Code of Federal Regulation* (*CFR*) §300.430(a)(1)(iii)(D) of the National Contingency Plan (NCP), 40 *CFR* Part 300.

Because the OU-1 remedy was based on Commercial/Industrial Land Use, LUCs are required to limit access and exposures to residual soil contaminant concentrations that remain in place above those levels that allow for unlimited use and unrestricted exposure (UU/UE). LUCs are any type of physical, legal, or administrative mechanism that restricts the use of or limits access to real property to prevent or reduce risks to human health and the environment. The LUCs described in this document will be maintained until concentrations of site-related contaminants have been reduced to levels that allow for UU/UE.

1.2 SITE BACKGROUND

The IAAAP occupies approximately 19,000 acres near the town of Middletown in Des Moines County, Iowa (Figure 1). Approximately one-third of the IAAAP property is occupied by active or formerly active production or storage facilities including production lines, former surface impoundments, landfills and disposal areas, burn pads, demolition areas, and fire training areas.

The remaining land is either woodlands or property leased for agricultural use. The IAAAP was placed on the National Priorities List in 1990. The DoD established the Defense Environmental Restoration Program (DERP) to address cleanup activities under the CERCLA, the Superfund Amendments and Reauthorization Act of 1986, and the National Oil and Hazardous Substances Pollution Contingency Plan. The Army is the lead DoD agency for implementing the environmental remediation activities at IAAAP with support from the USEPA as the lead regulatory agency. The USEPA and the Army signed the IAAAP Federal Facilities Agreement (FFA) for site cleanup, which became effective December 10, 1990 (U.S. Army and USEPA 1990). Due to the complexity of the remediation associated with the IAAAP, the facility has been divided into several OUs to facilitate project management. Portions of the IAAAP not included in OU-1 are outside the scope of this document.

The Army implemented the remedial actions for surface and subsurface soils at the OU-1 Areas in accordance with the *Interim Action Record of Decision, Soils Operable Unit, Iowa Army Ammunition Plant, Middletown, Iowa* (USAEC 1998), the *Record of Decision Soils Operable Unit 1 Iowa Army Ammunition Plant, Middletown, Iowa* (USACE 1998), and several Explanation of Significant Differences (ESD) documents (USEPA 2003,

Tetra Tech 2006, Tetra Tech 2008, Tetra Tech 2009, Tetra Tech 2011, and Leidos 2018). The remedial action objectives were to (1) prevent human contact with contaminants of concern in soils at levels posing a threat, and (2) minimize potential impacts associated with contaminants leaching from soils to groundwater (USACE 2016).

The selected remedy for OU-1 Areas required excavation of surface and subsurface soil with contaminant concentrations above the Commercial/Industrial RGs, treatment of the most highly contaminated soils or soils exceeding land disposal restrictions, and permanent disposal of excavated soil in both on-site and off-site permitted facilities. The soil contaminants are primarily the explosives RDX and TNT, but also include metals, and polycyclic aromatic hydrocarbons. RGs were developed to reduce human health risks associated with ingestion and dermal contact under an industrial/commercial land use scenario and soil leaching RGs were calculated for RDX and TNT for the protection of groundwater.

Because the OU-1 soil RGs were based on commercial/industrial land use, the remedy leaves hazardous substances in place that pose a potential future risk that requires LUCs until the concentrations of site related contaminants in soil reach concentrations that allow for UU/UE. The 2018 ESD (Leidos 2018) established LUCs as the long-term component of the selected remedy for OU-1 to provide overall protectiveness of human health and the environment.

The IAAAP has 19 OU-1 areas requiring an annual inspection to be completed by 12 November of each year as per the Land Use Controls Implementation Plan (LUCIP) for the Soils Operable Unit (OU-1) at IAAAP in Middletown, Iowa (2019 OU-1 LUCIP – Leidos 2019). The annual inspection for 2020 was completed on 5 November 2020.

2.0 LUC INSPECTIONS AND MAINTENANCE

The November 2020 annual inspection of OU-1 sites was completed by 12 November 2020 by the IAAAP operating contractor, American Ordnance LLC. Appendix A is the Annual LUC Verification Approval Form Inspection Year 2020, which includes a list of the deficiencies noted during the inspection.

LUCs associated with surface and subsurface soil at the 19 OU-1 Areas (Figure 2) at the IAAAP are as follows:

1. Line 1 (perimeter security fence, two access gates and signage)
    a. At Line 1 excavations EU3-C, EU3-D, EU4-A, EU4-B, EU5-A, EU5-F, EU5-H, EU5-I, EU7-E, EU8-A, EU8-B, EU8-C, EU9B-A, EU9B-B, EU9C-A, and EU9C-B the Industrial RGs were not achieved (OU-1 LUCIP – Leidos 2019 – Table 1) OU-1 Area Specific Land Use Control Requirements and warning signs were installed at the two Line 1

entrance gates to restrict intrusive work. The warning signs state "CONTAMINATED SOIL – PERMIT REQUIRED FOR INTRUSIVE WORK" and include an appropriate point of contact (Figure 3 – Sign at East Line 1 entrance gate)

2. Line 2 (perimeter security fence, one access gate and signage)
3. Line 3 (perimeter security fence, one access gate and signage)
4. Line 3A perimeter security fence, one access gate and signage)
5. Lines 4A/4B (perimeter security fence, one access gate and signage)
6. Lines 5A/5B (perimeter security fence, one access gate and signage)
7. Line 6 * (inside Blast Radii with security fencing) two access gates and signage)
8. Line 8 (partial fence without gates)
9. Line 9 (perimeter security fence, one access gate and signage)
10. Line 800 & Line 800 Lagoon (no fencing, has signage)
    a. At the Line 800 excavation, E08 the Industrial RGs were not achieved (OU-1 LUCIP – Leidos 2019 – Table 1) OU-1 Area Specific Land Use Control Requirements and a warning sign was installed at the excavation site. The warning signs state CONTAMINATED SOIL – PERMIT REQUIRED FOR INTRUSIVE WORK" and includes an appropriate point of contact (Figure 3 – Sign at Line 800 Lagoon).
11. East Burn Pads Area (no fencing – has signage)
12. Incendiary Disposal Area * (East of Yard D)
13. Possible Demolition Area * (South of Yard G & Pistol Range)
14. Demolition Area/Deactivation Furnace- (partial fence, one access gate and signage)
15. Burn Cages/West Burn Pads Area (no fencing, has signage)
16. North Burn Pads Area (and Landfill) (no fencing, has signage)
17. Fire Training Pit (no fencing, has signage)
18. Roundhouse Transformer Storage Area (no fencing, has signage)
19. Central Test Area (former AET site)* (fencing, gate access and signage)

**Although AO employees performed the 2020 inspection of signs/fences at the above noted four locations (Line 6-inside Blast Radii, Incendiary Disposal Area, Possible Demolition Area and Central Test Area) the maintenance activities associated with these locations are conducted under an annual Operable Unit 5 –Military Munitions Response Program contract.*

2.1 VERIFICATION OF INSTITUTIONAL CONTROLS

Institutional Controls (ICs) are defined as legal or administrative mechanisms to prevent or reduce risk to human health or the environment by limiting access to real property (DoD 2012). The ICs defined for the OU-1 Areas include land use restrictions, lease restrictions, groundwater well restrictions, and property transfer restrictions. At the IAAAP, the Army uses the *Environmental Work Instruction (EWI) E01-012 Incorporating Land Use Controls in Project Planning* (EWI E01-012) (AO 2020), Appendix A as the land use planning and management system. A Base Master Plan, if developed, will also be used as a land use planning and management system.

2.1.1 Land Use Restrictions

Each year, IAAAP offers a limited number of recreational permits to members of the general public to participate in fishing and hunting activities at the installation. Hunting and fishing are regulated by the *Iowa Army Ammunition Plant Regulation 420-1 Hunting and Fishing Regulation* (IAAAP 2016). Appendix G of Regulation 420-1 details specific areas of the IAAAP that are closed to all recreational use on the IAAAP including the OU-1 Areas. The Army Natural Resources Manager administers the hunting and fishing programs and coordinates with safety and security personnel to ensure these activities comply with federal and state laws and IAAAP regulations including *Regulation 420-1*. Individual permits for IAAAP Recreational Use are issued annually through a permit application process.

The Army Natural Resources Manager also provides instructions and handouts to the permit holders identifying restricted access areas on the installation, including the OU-1 Areas. All recreational users of the IAAAP must follow all rules and regulations concerning hunting and fishing while on the installation. Violations will be reported to the Environmental Restoration Manager.

2.1.2 Hunting and Fishing Regulations

The Army Natural Resource Manager is responsible for issuance of annual hunting and fishing permits which allows individuals to hunt (e.g., small game, wild mushrooms) or fish on IAAAP property. The Natural Resources Manager will provide training and instructions and/or handouts to the permit holders identifying restricted access areas on the installation.

The Operating Contractor is responsible for enforcing the provisions of Regulation 420-1 and controlling recreational user access to the facility.

Any updates to Regulation 420-1 will be reviewed by the IAAAP Natural Resources Manager to ensure OU-1 Areas continue to be closed to hunting and fishing activities.

The Army will conduct an annual review of the Natural Resources instructional information to ensure maps of restricted areas, and the OU-1 Areas in particular, are current and clear. Furthermore, the Army will conduct an annual review of Natural Resource permits and conduct an interview with the Natural Resources Manager to ensure access to identify any issues and possible improvements. The Army will document the results of the record review/interview, including any failures of the controls, lessons learned, and corrective actions in the annual LUC report to the USEPA.

2.1.3 Geographic Information Systems/Overlay Maps

Computerized maps can depict an installation's historic structures, wetlands, utility systems, and other information as layers for purposes of visual display and analysis.

The Army and the Operating Contractor each maintain a GIS database. LUCs will be incorporated into these systems and a separate GIS layer will be created specifically for LUC information at the OU-1 Areas. The data will be updated as needed if LUCs or boundaries change, and act as a tracking mechanism for all land areas under restriction or control.

The Army GIS will be the definitive source of spatial data and maps for LUC implementation and reporting. In addition, metadata describing the terms and condition of LUCs for each OU-1 Area will be recorded in the GIS databases. The GIS information will be reviewed/updated in coordination with EWI E01-012 planning process.

2.1.4 Lease Restrictions

The management of real property at IAAAP for non-Army use is controlled by the USACE Omaha Real Estate Division through an outgrant program. The outgrant program involves managing the Government's real property holdings and authorizing the use of that property by others through the use of leases, permits, easements, or licenses. In the event of potential future agreements, the Army will work with the USACE Real Estate Division to ensure any leases of OU-1 Areas include restrictions on subsurface excavation, digging, drilling, or other surface disturbance and that any leases of the OU-1 Areas shall include language that requires the lessee to provide written notification to the Army of any plans to conduct surface disturbances. No outgrants are currently in place at the OU-1 Areas and are not expected in the near future.

Agricultural leases comprise a major portion of unimproved grounds on IAAAP. Agricultural land use is currently managed by the Contract Administration Branch at the IAAAP. Leases are drawn up by the Natural Resources Manager and once approved are submitted to the USACE for issuance. The Integrated Natural Resources Management Plan 20 *Agricultural Outleases* sets forth regulations that prevent or limit

on-site visitors from exposures to contaminated soil and/or potentially contaminated groundwater at the OU-1 Areas.

2.1.5 Groundwater/Well Restrictions

The Army may require the installation of new or use of existing groundwater monitoring wells in the future to extract small volumes of water to monitor environmental conditions in and near OU-1 Areas. No other wells will be allowed in areas of known groundwater contamination and the suitability of wells near OU-1 Areas will be determined through the Iowa Department of Natural Resources (DNR) permitting process. The Army and Operating Contractor will maintain construction records for each well. The location of each well, along with its construction specifications and intended use, will be stored with the Army and, as appropriate, the Operating Contractor's GIS database.

The potential exposure scenarios used to derive the soil cleanup levels (RGs) were based on human health risks identified for the on-site worker including the potential ingestion of contaminated groundwater and dermal contact with groundwater (USAEC 1998). On-post groundwater remediation is not included under OU-1 and will be addressed separately. Accidental or incidental exposure to contaminated shallow groundwater could result during subsurface excavations. For the OU-1 Areas where the groundwater leaching RGs were not met, methods to prevent worker exposure (e.g. personal protection equipment) and contaminant controls (e.g., water management) must be implemented during any soil disturbance. Prior to any ground disturbance for the installation of groundwater wells, the Army and the Operating Contractor will implement the EWI E01-012 and complete a Safety Work Permit to ensure workers are properly protected during work activities and any soil or water is properly managed for disposal.

2.1.6 Property Transfer Restrictions

The IAAAP is a federally owned facility. No federal transfer of ownership has been conducted and no transfer of ownership is currently anticipated. However, if property transfer were to occur in the future, it would be conducted in accordance with CERCLA Section 120(h), 42 USC § 9620(h) and any pursuant regulations. Any property transfer from the Army will include a CERCLA Section 120(h)(3) covenant that will describe the residual contamination on the property and the environmental use restrictions, expressly prohibiting activities inconsistent with the OU-1 performance goals and objectives.

2.1.7 Stakeholder Outreach

LUCs can only remain effective if they are recognized, respected, and upheld by IAAAP Stakeholders. An effective LUC outreach program is critical to maintain LUCs, respond to the needs of stakeholders, and provide and maintain appropriate LUC notifications and information.

The IAAAP stakeholders include the Army, the contracting operator and IAAAP workers, Recreational users (e.g., hunters and fishermen), community members, the Restoration Advisory Board (RAB), and regulatory agencies. Activities that will be conducted regarding stakeholder outreach communication will include the development of newsletter articles and/or informational brochures, information sharing at RAB Meetings, annual reporting of LUC inspections, and annual training for industrial workers and recreational users of the IAAAP. This document will become part of the information repository for the IAAAP. The IAAAP will also provide training to installation personnel, including the grounds, maintenance, real estate/real property, and contractor personnel regarding the physical location of LUCs and how to care for property subject to LUCs.

Additionally, the effectiveness of LUCs will be evaluated as part of the five-year review process. During the five-year review process, stakeholders are also interviewed and provide feedback on the effectiveness of the remedy implementation and any modifications to the LUCs deemed necessary will be made.

2.2 VERIFICATION OF ENGINEERING CONTROLS

Engineering Controls (ECs) generally consist of physical measures designed to contain or reduce the potential for human exposure to contamination by limiting direct contact with contaminated areas, reducing contamination levels, or controlling migration of contaminants through environmental media (DoD 2012 and ITRC 2008). The ECs that are currently in place include fencing, warning signs, and surface covers. IAAAP is a secure DoD facility; only authorized access to the facility is allowed. Public access to the installation is restricted by property boundary fencing, perimeter warning signs, and the IAAAP security staff. Signs regarding unauthorized entry and site access are posted on the access gates and at select locations around the installation perimeter. Access to the IAAAP is controlled 24-hours a day by site security.

2.2.1 Signage and Fencing Maintenance and Inspections

Warning signs are posted at two locations that did not achieve industrial remedial goals; Line 1 entrances and the Line 800 Lagoon. The warning signs state “CONTAMINATED SOIL – PERMIT REQUIRED FOR INTRUSIVE WORK” and include an appropriate point of contact (Figure 3). Health and safety precautions may be necessary to ensure adequate worker health measures (e.g., personal protection equipment, air monitoring).

Fencing prevents access to the IAAAP by the general public. A 6-foot high fence topped with barbed wire surrounds the IAAAP property. All roads into the facility are gated and locked and/or guarded, and only authorized access is allowed.

2.2.2 Soil Cover Maintenance

During excavation activities at the OU-1 Areas, contaminated soil was removed to the fullest extent possible until the RGs were met. However, some contaminated soil could not be excavated to meet the OU-1 RGs because the soil was adjacent to existing buildings or structures (e.g., walkways, platforms) or below the groundwater table. These areas (OU-1 LUCIP – Leidos 2019 – Table 1) have been defined as inaccessible and require additional soil remediation. However, the best time to complete the remediation is when the buildings or structures are no longer in service and can be demolished.

Additional areas of contaminated soil could not be excavated to meet the OU-1 RGs because the soil is in areas where the potential source of contamination is still present (e.g., asphalt, tar roofing material) and remediation is deferred until after the potential source material is removed (USACE 2019).

One area on Line 1 (EU1-A) exceeds the ecological critical concentration. However, LUCs are not needed due to the area not being good ecological habitat (part of an active munitions LAP operations area) and due to the relatively small areal extent of contamination. For these reasons, the likelihood of ecological receptor exposure and impact is minimal.

As part of the restoration activities at each of the OU-1 Areas, soil with contaminant concentrations less than the RGs was placed as backfill at all excavated areas including those areas defined as inaccessible or continuing source. A re-contouring of the backfill areas and reseeding (to establish a vegetative cover) was completed in order to promote surface water drainage and to prevent soil erosion. The use of a clean soil cover and/or the presence of the concrete foundation serves as a barrier to prevent incidental worker exposure to the underlying contaminated soil at inaccessible areas. Mowing of the vegetative cover area will be conducted (at a minimum) twice annually. Bare spots or lack of growth will be noted and re-seeded as necessary. Invasive trees or bushes will be removed.

3.0 IMPLEMENTATION STRATEGY

LUCs require specific implementation actions (e.g., tracking, monitoring, maintenance, and notification) to be conducted as part of the overall remedial action strategy. This section summarizes the activities that are implemented to ensure the restrictions and controls described in Section 2 are managed and maintained. The AO Annual LUC Verification Approval Form (Appendix A) summarizes the implementation activities and the LUC Site Inspection Checklist (Appendix B) summarizes the monitoring activities. The successful implementation of LUCs is dependent on incorporating the maintenance of LUCs into the existing processes for the installation.

As the lead agency, the Army is responsible for ensuring the effectiveness of the LUCs as long as the Army controls the property, or until LUCs are no longer needed. The Army has designated the Commanding Officer (CO) at IAAAP as responsible for enforcing the LUCs. The IAAAP Project Manager is responsible for assisting the CO in the enforcement effort and inspecting LUC effectiveness at IAAAP. The USEPA is responsible for regulatory review of LUC effectiveness.

Although responsibility for various actions defined in this document is designated to the Operating Contractor, the Army will retain ultimate responsibility for remedy integrity. If there is no Operating Contractor, the Army will take care of all aspects of implementing, but not limited to, management, enforcement, and compliance.

Access control on all IAAAP property is the responsibility of the Operating Contractor's Security Department. Maintenance of all IAAAP perimeter fencing is the responsibility of the Operating Contractor.

Below are the OU1 LUCs deficiencies for 2020, with the planning and implementing corrective actions:

1. **Line 4A/4B** – Northeast gate needs adjusted and barbwire pressing against gate needs adjusted and retention wire. Fix barbwire at West gate. *REPAIRS COMPLETED BY AO 15 DEC 2020.*

2. **Line 5A/5B** – Southwest gate needs adjusted and barbwire needs repaired. North side barbwire support needs repair or replaced. West site repair barbwire. *REPAIRS COMPLETED BY AO 15 DEC 2020.*

3. **Demolition Area/Deactivation Furnace** – Clear brush at gate and repair/replace barbwire both sides of gate. *REPAIRS COMPLETED BY AO 15 DEC 2020.*

4. **Incendiary Disposal Area** (East of Yard D) – South side fence remove trees and increase tension on wire. *REPAIRS SCHEDULED FOR SPRING 2021 BY THE OU5 LUC MAINTENANCE CONTRACTOR.*

5. **Possible Demolition Area** (South of Pistol Range) – Northeast corner fence damage from trees at crossing D & E. West side fence damage from trees South of crossing B, no fence at creek and trees down in between crossing B & I, large gap under fence at crossing B, H and G, and down trees and fence Northeast of shooting range. *REPAIRS SCHEDULED FOR SPRING 2021 BY THE OU5 LUC MAINTENANCE CONTRACTOR.*

6. **Line 6** – Repair corner post and increase tension on barbwire. *REPAIRS SCHEDULED FOR SPRING 2021 BY THE OU5 LUC MAINTENANCE CONTRACTOR.*

7. **Central Test Area** – West side corner posts need repaired, increase tension on barbwire. South side barbwire needs increase tension. *REPAIRS SCHEDULED FOR SPRING 2021 BY THE OU5 LUC MAINTENACE CONTRACTOR.*

The current LUC requirements are effective, therefore there is no need for any additions to, or reductions in inspection requirements. *Please note: before and after photos of repairs AO completed in 2020 were not captured, but will be included in the next report, as well as the visual inspection of the repairs needed at the four OU-5 sites (Line 6-inside Blast Radii, Incendiary Disposal Area, Possible Demolition Area, and Central Test Area). The maintenance activities associated with these locations are conducted under an annual OU-5 – Military Munitions Response Program (MMRP) contract. The before and after photos of completed repairs will be included in the annual OU-5 – MMRP LUC Implementation Report.*

The FUSRAP 2019 Five-Year Review recommendations for addressing the two issues identified in Section 2.10 follow:

- To address the lack of documentation of LUCs, area-specific LUCs for the FUSRAP areas of OU-1 (Line 1 and the WBPS) need to be documented in a Land Use Controls Implementation Plan.
    - *LUCs are documented in the 2019 OU1 LUCIP section 2.0. FUSRAP specific LUC areas are on page 7, first paragraph.*

- To address areas of soil contamination at inaccessible and continuing source areas, a strategy needs to be developed, documented, and implemented.
    - *The 2019 OU1 LUCIP section 2.4.3 addresses areas of soil contamination at inaccessible and continuing source areas. Building demolition at Line 1 is near complete. FUSRAP is addressing contamination under buildings that were demolished and a new contract is in place for soil remediation at Line 1 under buildings that are not under FUSRAP.*

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Path: W:\IAAAP IRP\OU-1 LUCIP\GIS Projects\Figure 1 IAAAP Site Location Map.mxd

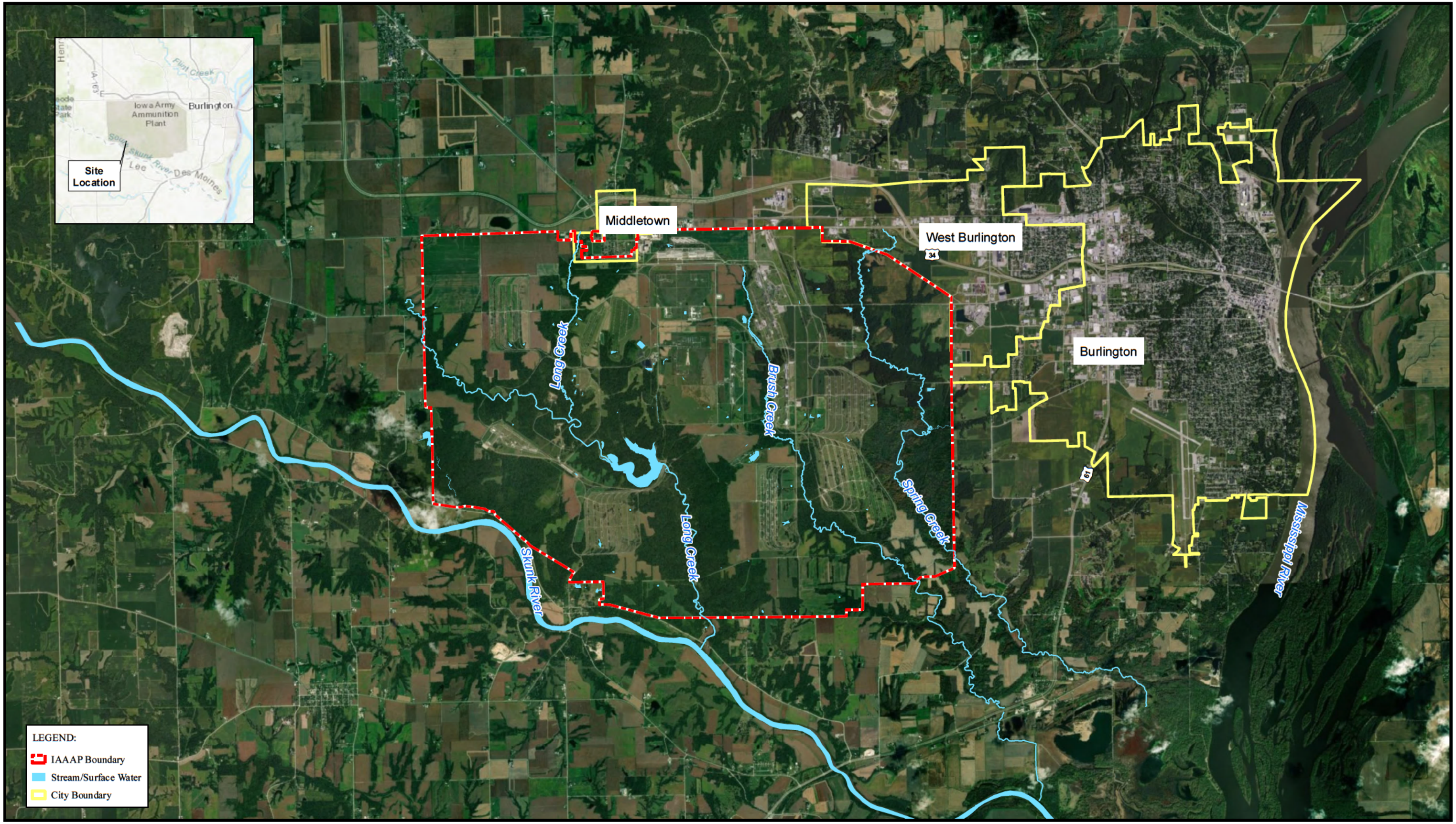


Figure 1. Location of the Iowa Army Ammunition Plant
Iowa Army Ammunition Plant
Middletown, Iowa

leidos

IAAAP Land Use Control Sites OU1

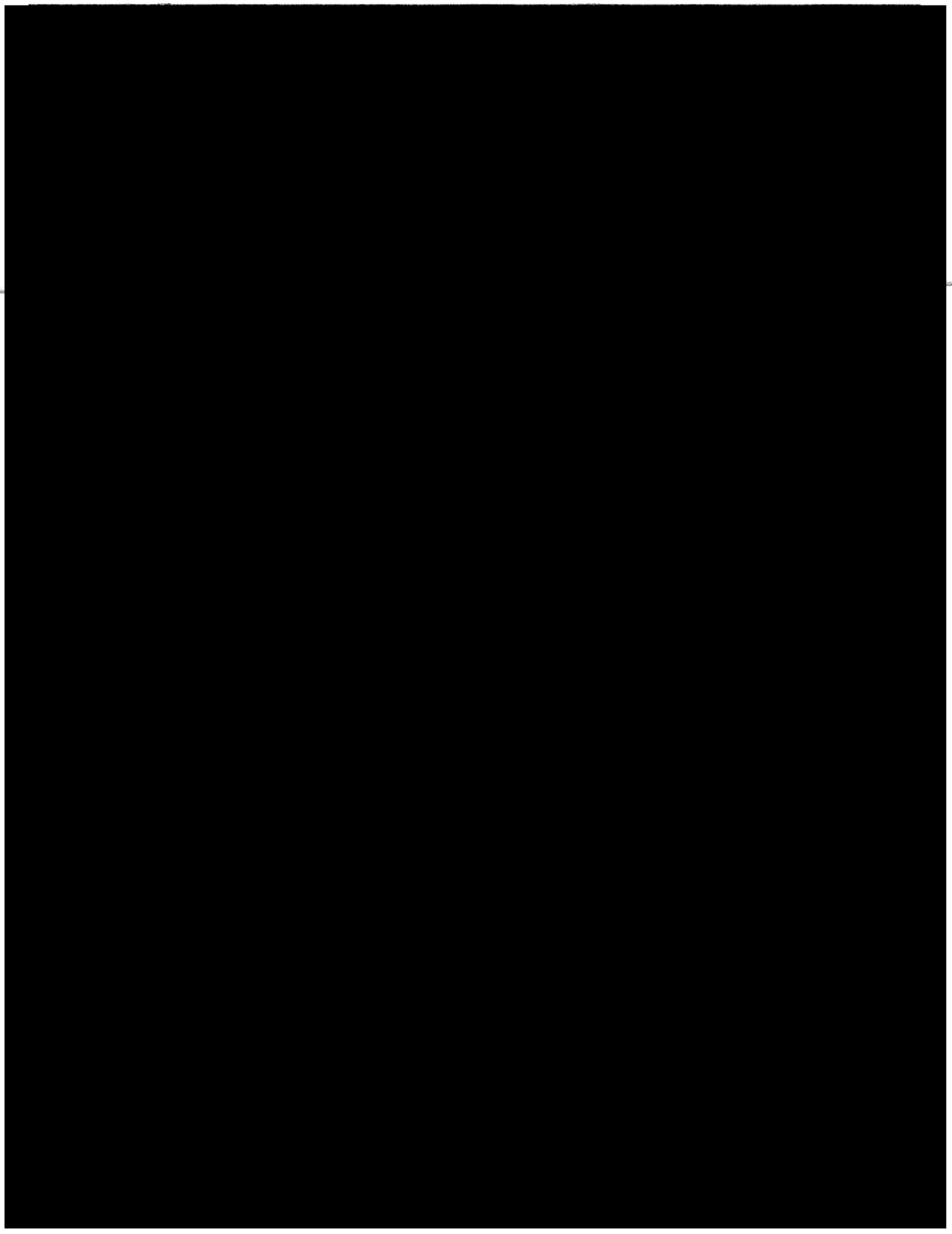
OU1 SIGN AT LINE 1 NORTH ENTRANCE

OU1 SIGN AT LINE 1 EAST ENTRANCE

OU1 SIGN AT LINE 800 LAGOON

AMERICAN ORDNANCE ANNUAL LUC VERIFICATION APPROVAL FORM

Engineering Controls – Inspection Year 2020



AMERICAN ORDNANCE ANNUAL LUC VERIFICATION APPROVAL FORM

Engineering Controls – Inspection Year 2020

ANY RECREATIONAL USE VIOLATIONS? YES/NO (If yes, describe violation)

[redacted]

AMERICAN ORDNANCE ANNUAL LUC VERIFICATION APPROVAL FORM

Engineering Controls – Inspection Year 2020

AO Environmental Approval Signature: _____ Date: 12 NOVEMBER 2020

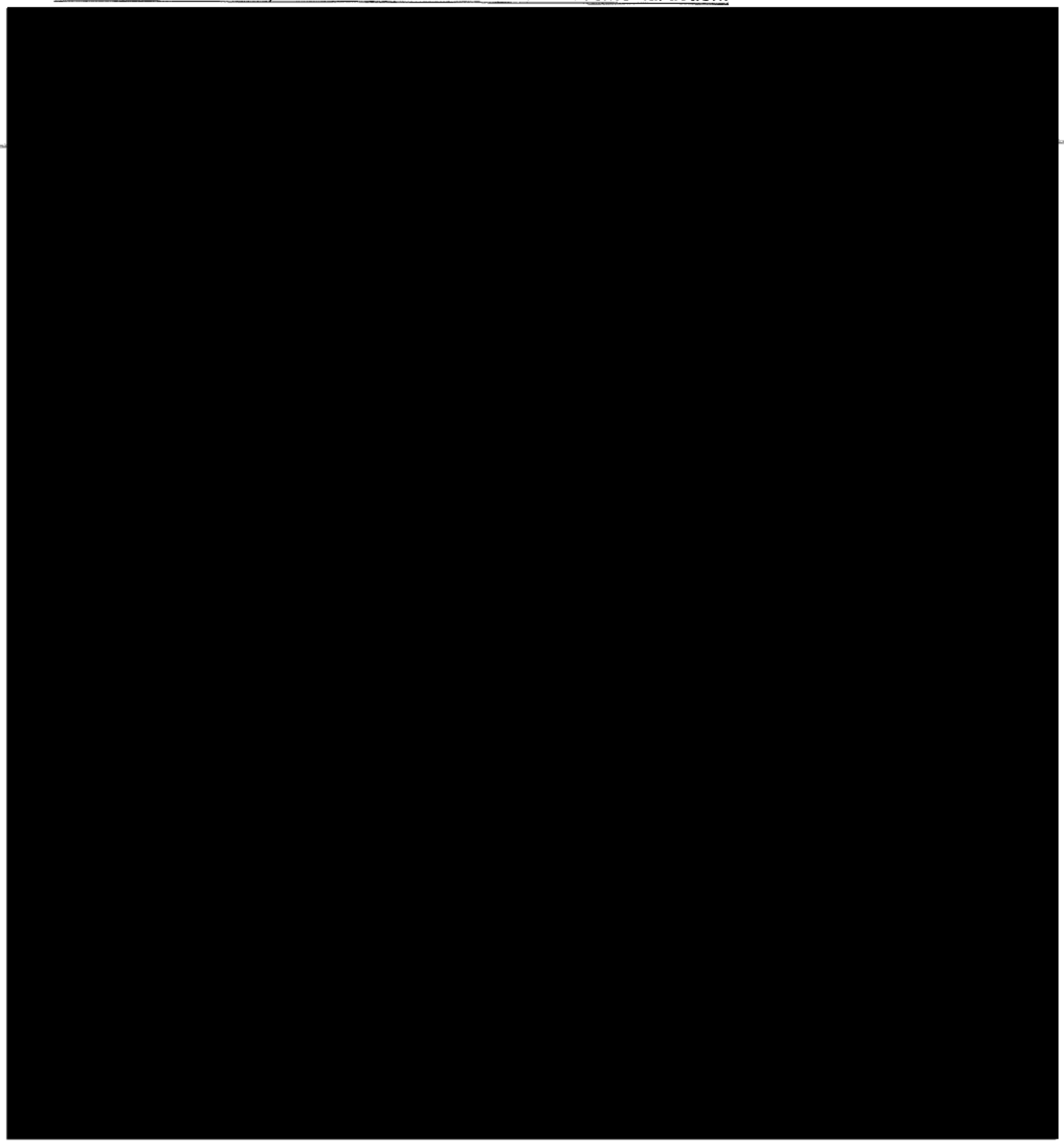
Army Approval Signature: _____ Date: 19 NOV 2020

American Ordnance Annual LUC Verification Approval Form

Engineering Controls – Inspection year 2020

Fencing Inspected/Maintained Any Issues? (trees down/damage)

This documents lists only those sites found to be in need of remedial action:



2020 LUC Site Inspection Checklist

[redacted]