

WORK PLAN AND SAMPLING AND ANALYSIS PLAN ADDENDUM

AOC-59



Prepared for:

Camp Stanley Storage Activity Boerne, Texas

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ADDENDUM TO WORK PLAN AND SAMPLING AND ANALYSIS PLAN SITE CLOSURE INVESTIGATION FOR AOC-59

Parsons is currently under contract to provide an investigation at Area of Concern - 59 (AOC-59), Camp Stanley Storage Activity (CSSA), Boerne, Texas. This document serves as both an addendum to the existing CSSA *Work Plan*, February, 1996 (see CSSA Environmental Encyclopedia (www.stanley.army.mil), Volume 1-1) and Work Plan Addenda and an addendum to the existing CSSA *Field Sampling Plan*, February, 1996 (see CSSA Environmental Encyclopedia, Volume 1-4) and Sampling and Analysis Plan Addenda contained therein.

Previous investigations show that metals concentrations in soils at AOC-59 are in excess of identified Texas Risk Reduction Program (TRRP) protective concentration limits (PCLs) (see Section 2.3). The goal of the investigation is the removal of all soils that exceed those criteria. It is expected that upon completion of this investigation, a Release Investigation Report (RIR) will be prepared. Both the identified PCLs and the type of closure report may be modified based on the investigation findings.

This Addendum describes additional activities to be conducted as part of this investigation, and addresses specific SAP items related to those activities. Work will be performed in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA) 3008(h) Order in effect for CSSA and in accordance with 30 Texas Administrative Code (TAC) §350, the TRRP administered by the Texas Commission on Environmental Quality (TCEQ).

Additional specific activities associated with this investigation are described in the *RCRA Facility Investigation Interim Measures Waste Management Plan (RFI/IM WMP) Addendum for AOC-59*, February, 2011.

SITE DESCRIPTION AND BACKGROUND

1.1 Description

AOC-59 is a 0.2- acre site located in the southern portion of CSSA's East Pasture (Figure 1.) There are no records or visible evidence of past military practices, waste handling, or disposal activities at the site. The site was identified as a potential AOC based on review of a 1966 aerial photograph indicating the location of a trench type anomaly/soil mound area. Additional background information on AOC-59 can be found in CSSA Environmental Encyclopedia, Volume 3-2.

1.2 Previous Investigations

Previous investigations at AOC-59 include a geophysical survey, exploratory excavations and soil sampling, field testing of surface soils, and confirmation surface soil sampling. The geophysical survey and exploratory excavations conducted in 2006

showed two small areas of metal debris and one small area containing a piece of copper tubing. The small areas of metal and copper debris were determined to be safe by unexploded ordnance (UXO) technicians. The soil samples collected from the exploratory excavations (AOC59-BOT01 through AOC59-BOT04) were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. All results were below TRRP Tier 1 PCLs.

In November 2010, surface samples from across the site were tested with an x-ray fluorescence (XRF) analyzer to estimate metals concentrations present. The contoured results of the XRF sampling are provided on Figure 2. In January, 2011, four surface soil samples (AOC59-SS01 through AOC59-SS04) were collected for laboratory analysis of CSSA 9 metals and explosives. No explosives were detected, however the lead results for AOC59-SS03 and AOC59-SS04 both exceeded the Tier 1 PCL (Figure 2).

2.0 INVESTIGATION PROCEDURES

This investigation will include: the excavation of contaminated soils, and the collection of confirmation samples for laboratory analysis to verify the successful removal of all contaminated soils from the site. All removal work will be performed in Level D personal protective equipment and under the health and safety protocol outlined in the *Health and Safety Plan*, December, 2010.

2.1 Excavation Effort

Soils identified as contaminated (criteria described in Section 2.3) through the field screening effort and confirmation sampling will be excavated and managed accordingly. An estimated 1,000 cubic yards (CY) of contaminated soils may be excavated from an area of approximately 0.2 acre. The excavated soil material may be either stockpiled along and adjacent to the excavation to allow for inspection, or moved directly to the respective staging area (Figure 4) and placed into 500 cubic yard (CY) piles.

A UXO technician will be present during the excavation effort to provide UXO support, if necessary. Passenger vehicles and equipment trailers will not enter the excavated area. Excavating equipment will be parked on a trailer prior to leaving CSSA.

2.2 Waste Management

Contaminated soils will be managed in accordance with CSSA's *RFI Interim Measures Waste Management Plan*, Parsons, 2006 and the *RFI/IM Addendum for AOC-59*, February, 2011.

For excavated soils, waste characterization sampling will occur at a frequency of 1 sample per 500 CY. Waste characterization samples will be analyzed by the toxicity characteristic leaching procedure (TCLP) for RCRA 8 metals. All impacted soils that meets non-hazardous criteria and CSSA standards for berm reuse will be transported to

the East Pasture berm. Impacted soil media which is believed to contain potential contaminants of concern (COCs) greater than 20 times the regulated TCLP criteria (*i.e.*, 20 times rule) will undergo waste characterization sampling at a frequency of 1 sample per 200 CY.

Any soil media identified above characteristic hazardous criteria (40 Code of Federal Regulations [CFR] 261.24) will be treated in accordance with the *RFI/Interim Measures Waste Management Plan* (*i.e.* with use of PIMS, etc.) to non-hazardous levels and managed at the East Pasture berm or off-post as appropriate. All impacted soil media that meets non-hazardous criteria, and CSSA standards for berm reuse (*e.g.* no pieces of metal greater than six inches, no materials identified as MEC items, etc.), will be transported to the East Pasture berm for reuse. Parsons will coordinate the transportation of soils to the East Pasture berm with CSSA personnel.

Stockpiles of soil identified containing concentrations of contaminants greater than hazardous toxicity criteria within the excavated area will be covered with plastic until the removal process begins. Excavated non-hazardous soils will remain uncovered.

2.3 Soil Sampling

The TRRP Tier 1 PCL identified for this investigation is defined as the lowest value among the following: 1) the TRRP Tier 1 Residential 0.5-acre PCL for total soil combined ($^{Tot}Soil_{Comb}$); and 2) the TRRP Tier 1 Residential 0.5-acre PCL for groundwater protection ($^{GW}Soil_{Ing}$). If the lowest value is less than the CSSA soil background value, the soil background value becomes the Tier 1 PCL. Table 1 outlines these values and identifies the PCLs for the CSSA 9 metal analytes. The identified PCLs may be modified based on investigation findings, if necessary.

Soil samples for laboratory analysis will be collected during and post-excavation, as necessary, to confirm the successful removal of contaminated soils. Soil samples with results lower than the identified PCLs will be used to confirm contamination removal at a rate of approximately 1 sample per 50 feet along the horizontal excavation boundary, and 1 sample per 10,000 square feet to confirm the vertical excavation boundary. If any results indicate contamination above the identified PCLs, the excavation of soils will be expanded in that direction until confirmation samples show no indication of metal contamination above PCLs. The number and location of confirmation samples will be dependent on the extent of excavation.

Confirmation soil samples will be collected and analyzed for CSSA 9 metals and explosives. Soil samples will be discrete grab samples and will be collected as described in the *CSSA SAP*, February, 1996. The collection and analysis of quality assurance/quality control (QA/QC) samples is described in the *CSSA Base-wide Quality Assurance Project Plan, Version 1.0*, January, 2003 (see [CSSA Environmental Encyclopedia, Volume 1-4](#)). The QA/QC samples and their collection frequency are as follows:

- One Field Duplicate (FD) per 10 samples

- One Matrix Spike (MS) and one Matrix Spike Duplicate (MSD) per 20 samples
- One Equipment Blank (EB) per site.

Full QA/QC will be performed on these samples and 100% of the results will be validated/verified by a chemist.

The necessary turnaround time (TAT) for the samples will be based on the current timeframe of the excavation and may range from expedited (3-day) to the standard TAT (21-day).

2.4 Erosion Control Measures and Site Rehabilitation

The area to be disturbed during the excavation effort is less than 1 acre so coverage under the TPDES General Permit TXR150000 is not required. In addition, a Notice of Intent is not required for construction sites less than 5 acres.

There will be no permanent storm water controls. Once the excavation is complete, the site will be restored in coordination with CSSA's future plans for the area. If the area is to remain free of construction, native grasses will be planted to help control erosion.

3.0 SCHEDULE

This investigation may take place at any time and is anticipated to take approximately one to two weeks. All excavation work will be coordinated and scheduled in advance with CSSA.

Upon completion of the field effort, a Release Investigation Report (RIR) will be completed for AOC-59. As discussed previously, if the investigation results warrant, another type of closure report may be completed instead.

Table 1. Assessment Levels for Chemicals of Potential Concern
 CSSA 9 Metals
 AOC-59

Chemical of Potential Concern	Residential Tier 1 ^{Tot} Soil _{Comb} (mg/kg) ¹	Residential Tier 1 ^{GW} Soil _{Ing} (mg/kg) ²	CSSA Soil Background (mg/kg) ³
Arsenic	24.2	2.02	19.6
Barium	7,962.3	443.8	186
Cadmium	52.4	1.5	3.0
Chromium	3,2607	2,400	40.2
Copper	547.6	1,042.49	23.2
Lead	500	3.03	84.5
Mercury	3.65	0.0078	0.77
Nickel	839.68	157.37	35.5
Zinc	9,921.5	2,360.48	73.2
1) Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) ^{Tot} Soil _{Comb} , for 0.5 acre source area, March 31, 2010 (http://www.tceq.state.tx.us/remediation/trrp/trppcls.html). 2) Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) ^{GW} Soil _{Ing} , for 0.5 acre source area, March 31, 2010 (http://www.tceq.state.tx.us/remediation/trrp/trppcls.html). 3) Second Revision to Evaluation of Background Metals Concentrations in Soils and Bedrock, February 2002. Identified PCLs are shown in bold .			



Aerial Photo Date: 2008



--- CSSA Boundary

□ AOC-59 Location

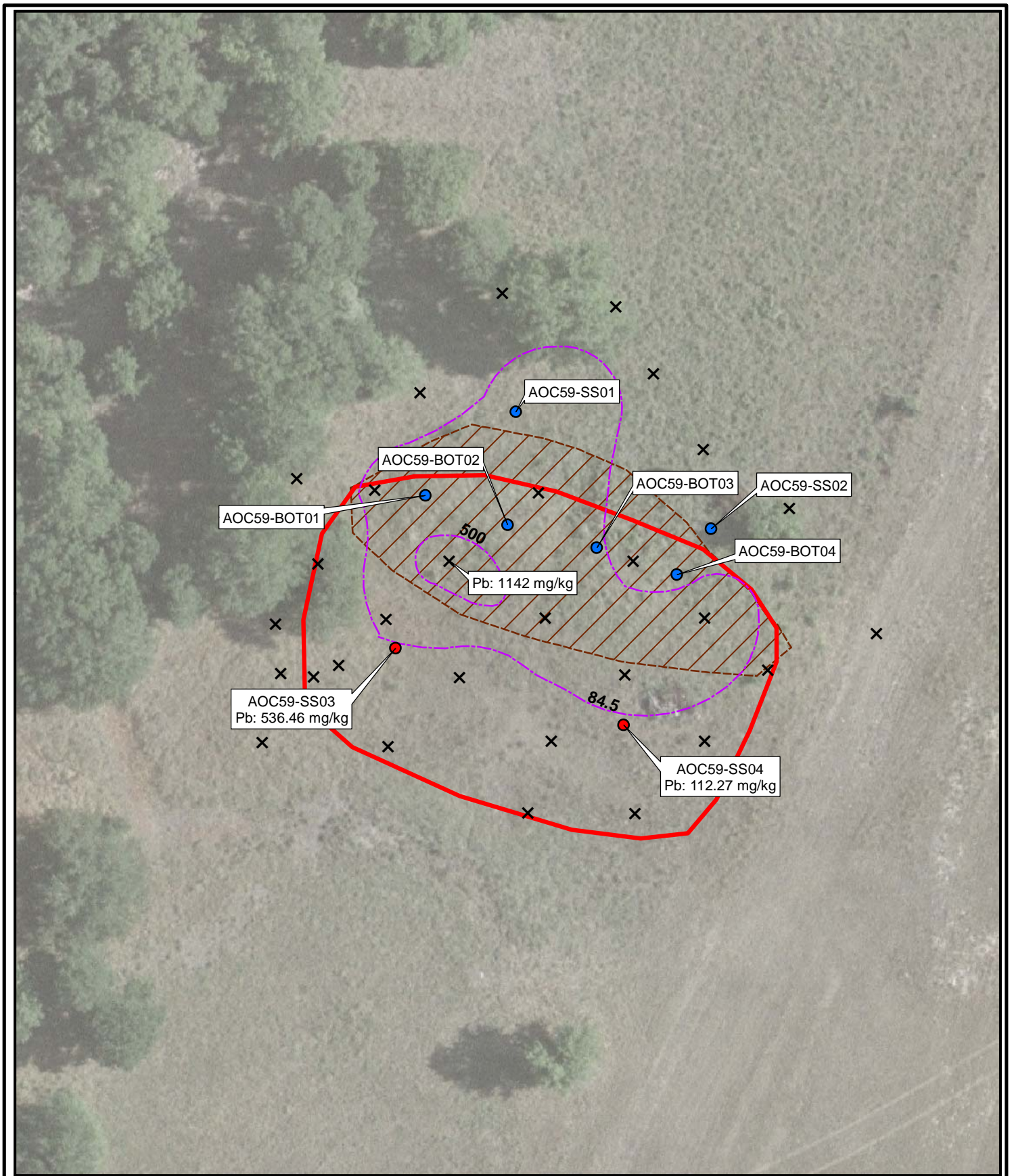
2,500 1,250 0 2,500 Feet



Figure 1

Site Location Map
AOC-59
Camp Stanley Storage Activity

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AOC59-SS01

AOC59-BOT02

AOC59-BOT03

AOC59-SS02

AOC59-BOT04

Pb: 1142 mg/kg

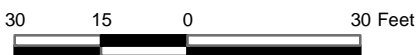
500

84.5

AOC59-SS03
Pb: 536.46 mg/kg

AOC59-SS04
Pb: 112.27 mg/kg

AOC59-BOT01



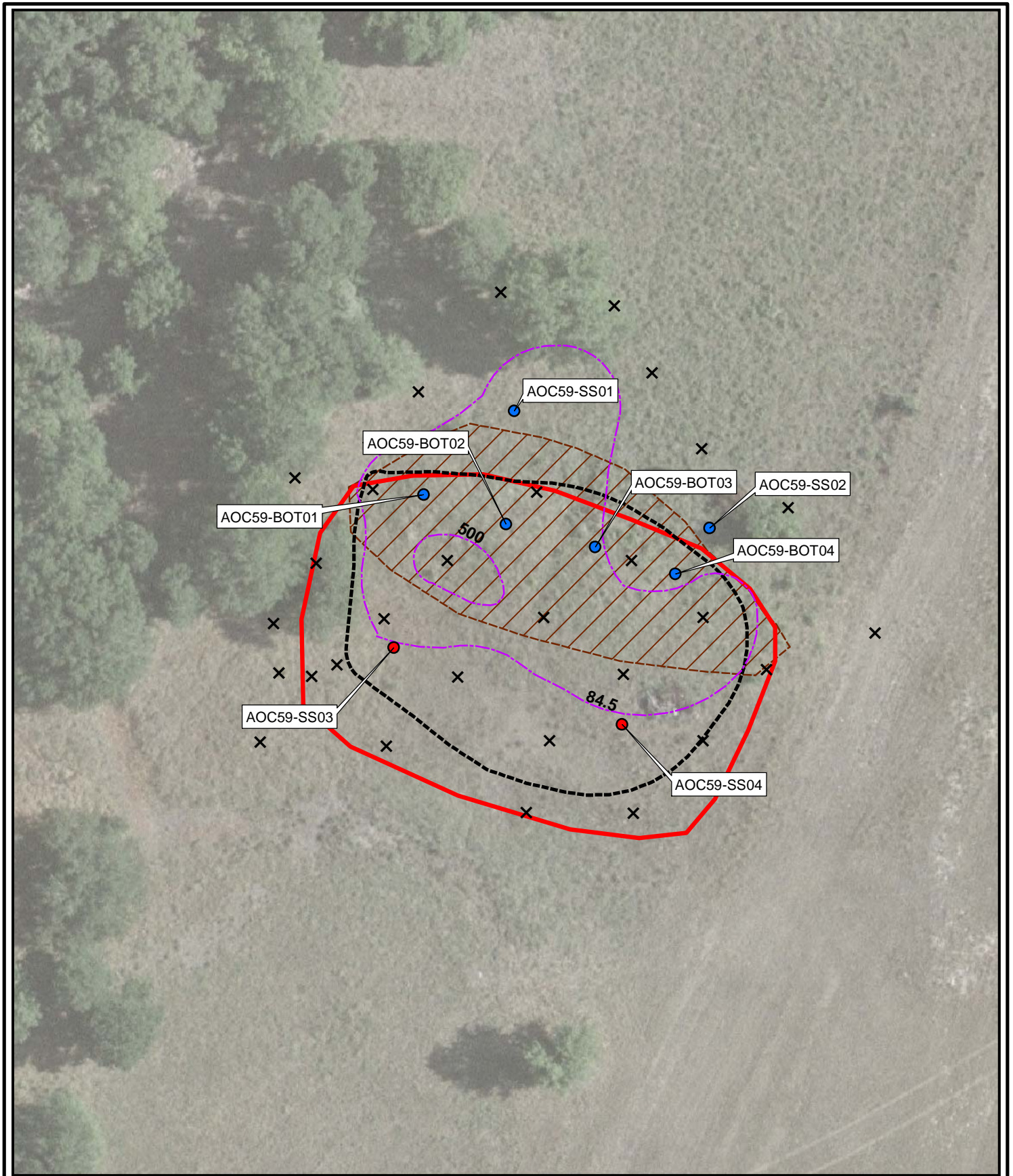
Legend

- ✕ XRF Sample Location
- Soil Sample with Result Below Tier 1 PCL
- Soil Sample with Result Above Tier 1 PCL
- Lead Contour (XRF Result in mg/kg)
- ▨ Approximate Location of Soil Mound
- ▭ AOC-59 Boundary

Figure 2

AOC-59 Previous Investigations
Camp Stanley Storage Activity

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AOC59-SS01
 AOC59-BOT02
 AOC59-BOT01
 AOC59-SS03
 AOC59-BOT03
 AOC59-SS02
 AOC59-BOT04
 AOC59-SS04

Legend

- ✕ XRF Sample Location
- Soil Sample with Result Below Tier 1 PCL
- Soil Sample with Result Above Tier 1 PCL
- Lead Contour (XRF Result in mg/kg)
- ▨ Approximate Location of Soil Mound
- - - Proposed Excavation Area
- ▭ AOC-59 Boundary

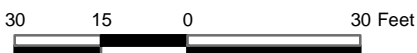


Figure 3

AOC-59 Proposed Excavation
 Camp Stanley Storage Activity

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