

WORK PLAN AND SAMPLING AND ANALYSIS PLAN ADDENDUM

SWMU B-27



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 SWMU B-27

Parsons is currently under contract to provide a Site Closure Investigation at solid waste management unit (SWMU) B-27, 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 \(www.stanley.army.mil\)](http://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.

An investigation will be performed to remove impacted media and waste located at SWMU B-27 (Figure 1). The investigation will remove potential sources of contamination including metal and assorted debris and all soils with contamination levels that exceed the identified Texas Risk Reduction Program (TRRP) protective concentration limits (PCLs) (see Section 2.3). It is expected that upon completion of this investigation, a Release Investigation Report (RIR) will be completed for SWMU B-27. Both the identified PCLs and the type of closure report may be modified based on the results of the investigation.

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 Texas Risk Reduction Program (TRRP) administered by the Texas Commission on Environmental Quality (TCEQ).

Additional specific activities associated with this investigation are described in the *Storm Water Pollution Prevention Plan for SWMU B-27*, February, 2011, the *RCRA Facility Investigation Intermim Measures Waste Management Plan (RFI/IM WMP) Addendum for SWMU B-27*, February, 2011, and an *Explosives Safety Submission (ESS)* that includes SWMU B-27, *March (tentative)*, 2011.

1.0 SITE DESCRIPTION AND BACKGROUND

1.1 Description

SWMU B-27 was reportedly used as a sanitary landfill. The dates of its usage are unknown and it is presently inactive. Additional background information on SWMU B-27 can be found in [CSSA Environmental Encyclopedia, Volume 3-1](#).

1.2 Previous Investigations

Previous investigations at the site included the following: a geophysical survey, surface and subsurface soil sampling, and exploratory trenching. The geophysical survey

conducted at the site in 1996 identified five different anomalous areas (identified as A through E on Figure 2). Based on the configuration and size of the areas, three of those areas (A, B, and C) are presumed to be buried trenches.

In March 2000, three surface soil samples (RW-B27-SS01, RW-B27-SS02, and RW-B27-SS03) were collected to replace samples collected in 1996 that were determined unusable by the Environmental Protection Agency (EPA). These rework samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and CSSA 9 metals. The sample locations are shown in Figure 2. The results, as outlined in the SWMU B-27 RCRA Facility Investigation (RFI), July 2002 (CSSA Environmental Encyclopedia, Volume 3-1) were all below the identified Tier 1 PCLs (as described in Section 2.3).

Three soil borings (RW-B27-SB01, RW-B27-SB02, and RW-B27-SB03) were also drilled in 2000 to replace previously drilled but unusable samples. These were drilled to refusal at the locations identified in Figure 2 at depths ranging from 10.5 to 13.7 feet below ground surface (bgs). These samples were also analyzed for CSSA 9 metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). Waste material was observed at a depth of two to six feet at RW-B27-SB03. The concentration of lead in the sample collected from RW-B27-SB03 (4-4.5 feet bgs), as reported in the SWMU B-27 RFI, exceeded the identified Tier 1 PCLs. Bis(2-ethylhexyl)phthalate was the only SVOC reported and no VOCs were reported above the reporting limit (RL). Since no other VOCs or SVOCs were detected, the detection of bis(2-ethylhexyl)phthalate in 4 of 6 subsurface samples was considered to be associated with laboratory contamination. Based on the results as documented in the *RCRA Facility Investigation Report*, July, 2002 (CSSA Environmental Encyclopedia, Volume 3-1), VOCs and SVOCs were removed from the list of contaminants of potential concern.

Lastly, in 2004, a series of exploratory excavations were dug across the site to help delineate the existing trench locations and composition. In addition to misc. debris such as railroad ties, banding material, and 5 gallon empty cans, unexploded ordnance (UXO) was encountered in two locations. The locations of the exploratory excavations and the UXO items encountered, which included 37mm projectiles, 75m fuses, and 20mm or 37 mm casings, are shown on Figure 2.

2.0 INVESTIGATION PROCEDURES

This investigation involves the excavation of the five anomalous areas as shown in Figure 3, appropriate management of all associated debris and soils, and confirmation soil sampling to ensure the success of the excavation.

All removal work will be performed in Level D personal protective equipment and under the health and safety protocol included in the *Health and Safety Plan*, December, 2010. Because UXO was encountered during the series of exploratory trench excavations, excavation activities will be supervised by UXO technicians. The technicians will provide an ESS (see Section 2.1.4) that delineates munitions and

explosives of concern (MEC) avoidance, identification, clearance certification of the excavated media, and will be on site to address any MEC safety issues associated with the excavation process.

2.1 Excavation Effort

The identified anomaly areas shown in Figure 3 will be excavated to a depth where confirmation samples indicate the concentrations of contaminants of concern are below the criteria described in Section 2.3. Note that previous soil borings at the site have been drilled to refusal which occurred at depths ranging from 11 to 14 feet.

The excavated soil material will be stockpiled along and adjacent to the excavation to allow for UXO Technicians to inspect and manually sift through the excavated material. Once the UXO technician has completed their inspection of the excavated material, the material will then be moved to the staging area shown in Figure 3 and placed into 500 cubic yard (CY) piles. During the sifting operations, all foreign material that is not native soil/rock, will be sorted and managed as appropriate in coordination with CSSA. Munitions, gun and gun related items will be segregated for demilitarization. The remaining excavated soil media will be characterized for management as described below.

2.2 Waste Management

It is anticipated that as much as 15,000 CY of excavated materials will require some form of management. All contaminated soils will be managed in accordance with CSSA's *RFI Interim Measures Waste Management Plan*, Parsons, 2006 and the *RFI/IM Addendum for SWMU B-27*, Parsons, 2011.

For presumed impacted soil media, waste characterization sampling will occur at a frequency rate of 1 sample per 500 CY. Waste characterization samples will be analyzed by the toxicity characteristic leaching procedure (TCLP) for RCRA 8 metals, total analysis for CSSA 9 metals, in addition to other analysis, as appropriate. All non-impacted soil, as per the results of the total analysis for CSSA 9 metals and other analysis conducted, will be reused on site. 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, materials identified as MEC items, etc.), will be transported to the East Pasture berm for reuse.

Any soil media identified above characteristic hazardous criteria (40 Code of Federal Regulations [CFR] 261.24) may be treated (i.e. with use of PIMS, etc.) in accordance with the *RFI/Interim Measures Waste Management Plan* to non-hazardous levels and managed at the East Pasture berm or off-post as appropriate.

Parsons will coordinate the transportation of the soils to the East Pasture berm with CSSA personnel. Erosion control will follow the *Storm Water Pollution Prevention Plan for SWMU B-27 Investigation*, February, 2011.

2.3 Soil Sampling

The TRRP Tier 1 PCL identified for this investigation is defined as the lowest value among following: 1) the TRRP Tier 1 Residential 30-acre PCL for total soil combined ($^{Tot}Soil_{Comb}$); 2) the TRRP Tier 1 Residential 30-acre PCL for groundwater protection ($^{GW}Soil_{Ing}$); and 3) the TCEQ Ecological Benchmark for Soil. If the lowest of these three values is less than the CSSA soil background value, the soil background value becomes the Tier 1 PCL. Table 1 outlines these values and the identifies PCLs for the CSSA 9 metal analytes. The TRRP Human Health PCLs for VOCs and SVOCs can be found at <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>. 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 the contaminated soils. Based on previous findings and results from the investigation, confirmation samples may be collected analyzed for CSSA 9 metals, VOCs, SVOCs, and/or explosives. 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.

Soil samples will be discrete grab samples and will be collected as prescribed 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 Site-Specific Explosive Safety Submission

An ESS annex for this site will be developed in accordance with Department of Defense Instruction 6055.9F. The UXO technician on site will coordinate the ESS with CSSA's Safety and Environmental Office. The ESS will outline site-specific

requirements and will incorporate all health and safety protocol included in the *Health and Safety Plan*, December, 2010. All personnel entering the site will sign an entry log every day that they work on the site and routine safety briefings will be conducted. In the event that an UXO is encountered, the call down tree found in the ESS will be activated and all operations will halt until the UXO technician or the supporting Explosive Ordinance Disposal (EOD) team gives a green light for the project to continue.

3.0 SCHEDULE

The investigation is proposed to begin April 4, 2011, but may start at an earlier date. It is projected to take approximately 35 weeks. Confirmation and waste characterization sampling will be conducted, as appropriate, throughout the excavation procedure.

Upon completion of the field effort, it is expected that a Release Investigation Report (RIR) will be completed for SWMU B-27. 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
 SWMU B-27

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	EcoBenchmark (mg/kg) ⁴
Arsenic	24.2	2.5	19.6	18
Barium	7,840.5	221.9	186	330
Cadmium	52.4	0.75	3.0	32
Chromium	26,569.6	1200.1	40.2	0.4
Copper	547.6	521.2	23.2	61
Lead	500	1.5	84.5	120
Mercury	2.1	0.0039	0.77	0.1
Nickel	832.1	78.7	35.5	30
Zinc	9,921.5	1,180.2	73.2	120

1) Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) ^{Tot}Soil_{Comb}, March 31, 2010 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

2) Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) ^{GW}Soil_{Ing}, March 31, 2010 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

3) Second Revision to Evaluation of Background Metals Concentrations in Soils and Bedrock, February 2002.



4) TCEQ Ecological Benchmark for Soil as stated in Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas, Regulatory Guidance (RG)-263, Revised (January 2006) (<http://www.tceq.state.tx.us/assets/public/remediation/eco/0106eragupdate.pdf>).

Identified PCLs are shown in **bold**.



Aerial Photo Date: 2008



-  CSSA Boundary
-  SWMU B-27 Location

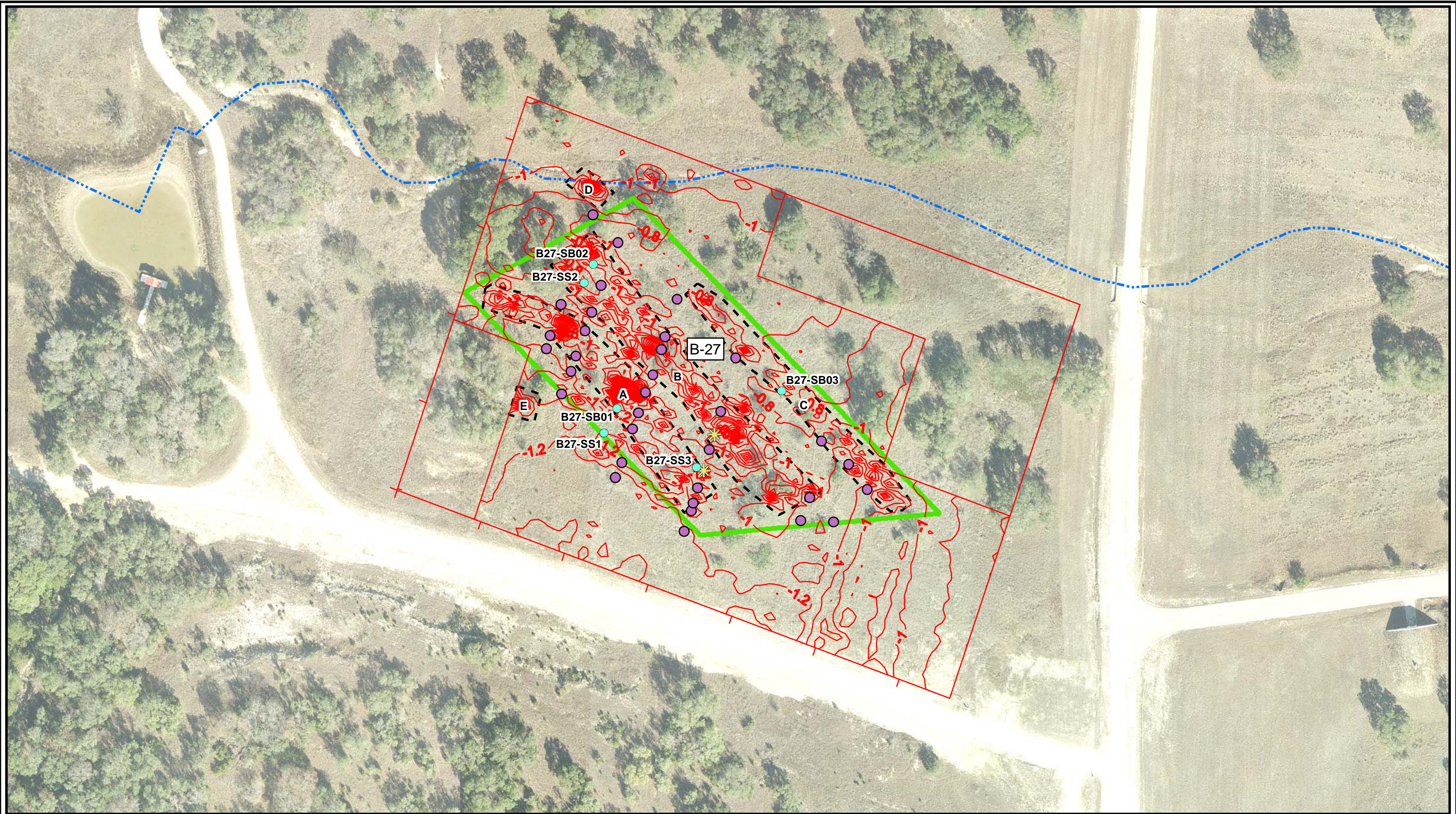
2,500 1,250 0 2,500 Feet



Figure 1

Site Location Map
SWMU B-27
Camp Stanley Storage Activity

PARSONS



Aerial Photo Date: 2009



0 125 250 500 Feet

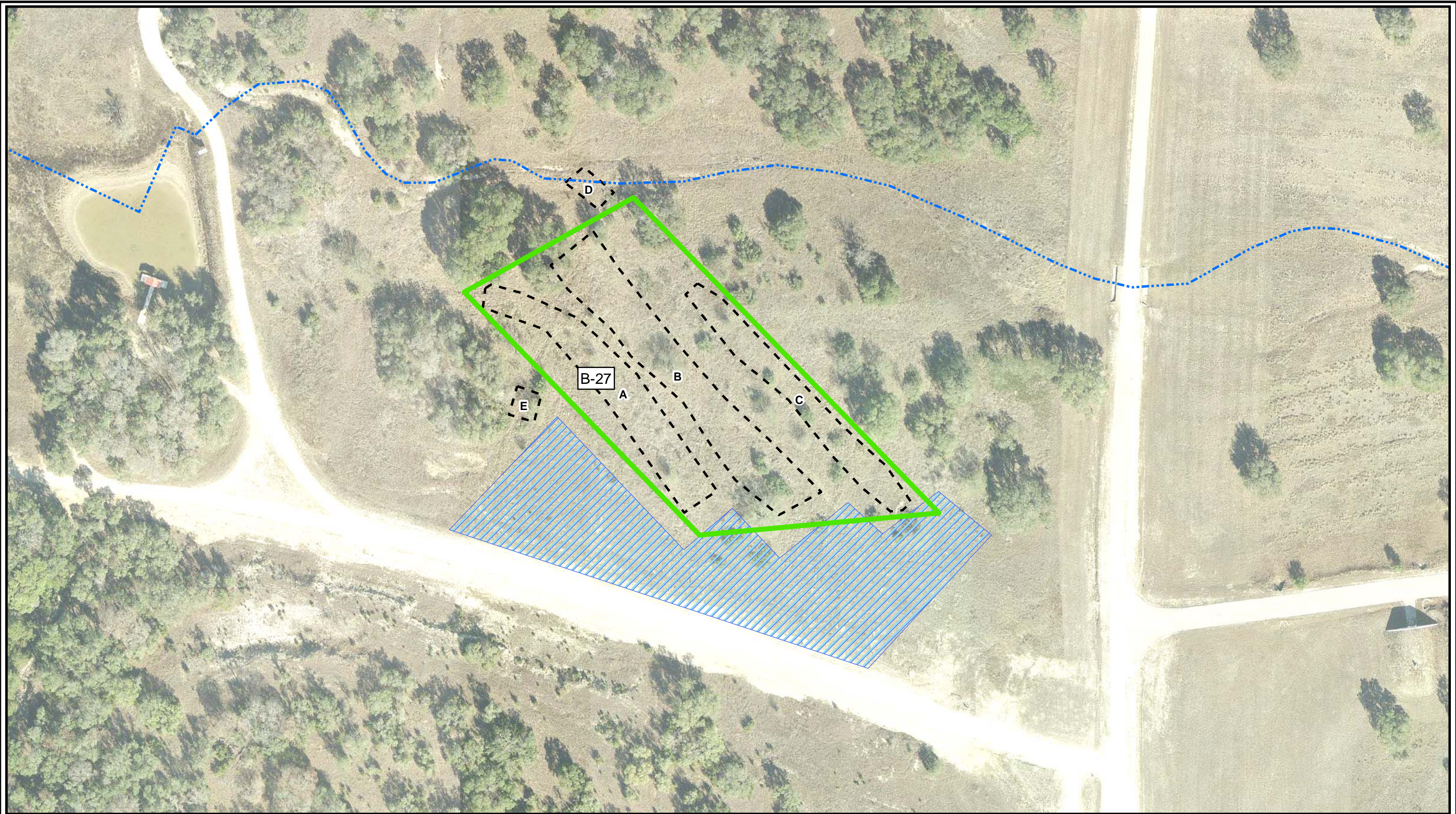
- Previous Sample Locations
- Exploratory Excavations
- ★ UXO Locations Identified in 2004 Excavation Effort
- - - Intermittent Stream
- Conductivity in milli-Siemens per meter (mS/m) contour lines; EM-31 survey, 1996
- Geophysical Anomaly Area
- SWMU Boundary

Figure 2

SWMU B-27 Site Map

Camp Stanley Storage Activity

PARSONS



Aerial Photo Date: 2009



0 125 250 500 Feet

- ⋯ Intermittent Stream
- Geophysical Anomaly Area
- SWMU Boundary
- Staging Area

Figure 3

SWMU B-27
Proposed Excavation Effort
Camp Stanley Storage Activity

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