

ADDENDUM TO WORK PLAN
CSSA SITE INVESTIGATIONS DO50
SITE INVESTIGATIONS FOR SWMUs B-2 AND B-8

Parsons is currently under contract to provide investigations at former solid waste management units (SWMU) B-2 and B-8 at Camp Stanley Storage Activity (CSSA), Boerne, Texas. A Work Plan has been prepared for similar activities under the scope of work in effect for DY01 (Work Plan, Contract No. DACA87-02-D-0005, Task Order (TO) DY01, Parsons 2007). This work plan addendum provides description of additional activities to be conducted under Contract W912G-07-D-0028, delivery order (DO) 50 SWMUs B-2 and B-8. Both SWMUs are addressed under this Work Plan because of their close proximity to each other and the similar nature of the Contaminates of Concern (COCs). Activities to be conducted under DO50 will follow the provisions of prior work plans in effect and available for review in the CSSA Environmental Encyclopedia, [Volume 1, Work Plans](#).

Site Investigations will be performed to confirm that the lateral and vertical extent of contamination located at SWMUs B-2 and B-8 has been delineated and remediated. (Figure 1). Background information on the sites referenced can be found in [Volume 3-1](#) of the CSSA Environmental Encyclopedia. Additional specific activities associated with these Site Investigations are described in the Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFI) Interim Measures Waste Management Plan (Parsons 2006).

DESCRIPTION

Previous work at SWMUs B-2 and B-8 include geophysical surveys, soil gas surveys, surface and subsurface sampling, and removal of buried waste material and affected soils. Additional data are required to confirm the lateral extent of contamination has been delineated. Prior vertical delineation of SWMUs B-2 and B-8 was completed to a differing closure standard (the outdated Risk Reduction Standard). Because this investigation may expand the lateral extent of contamination, the vertical extent of contamination, may require further investigation.

The lateral extent of metals in the surface soils at SWMU B-2 and B-8 will be characterized in the field by an X-Ray Fluorescence (XRF) survey. XRF samples will be obtained in a gridded pattern that encompasses both sites. To verify the findings of the field survey, confirmation samples will be submitted to the analytical laboratory at a rate of 10 percent. These samples will be tested for sites COCs consisting of Barium, Copper, Lead and Zinc.

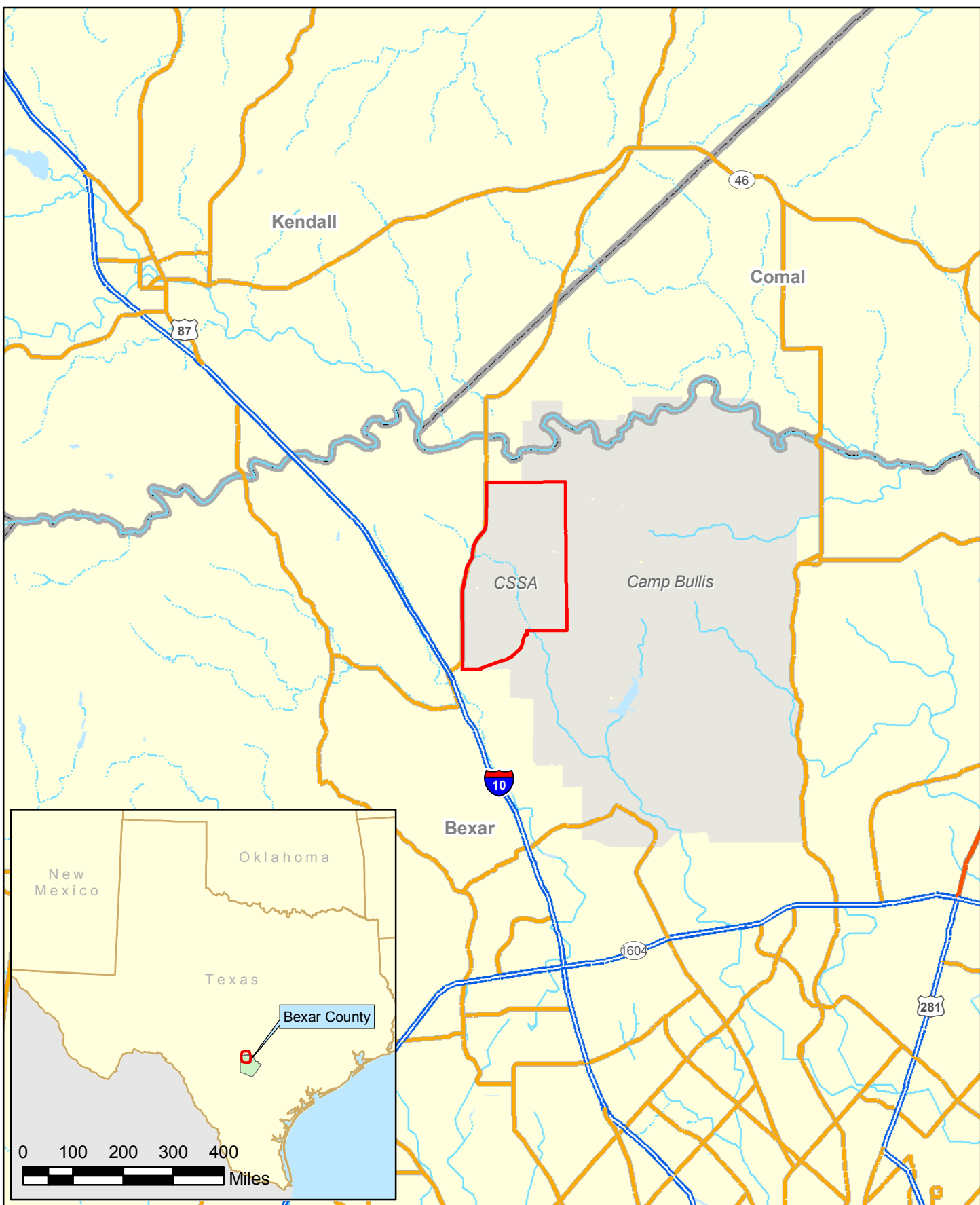
LATERAL SURFACE SOILS CHARACTERIZATION

To determine the lateral extent and concentration of target COCs in the surface soils near B-2 and B-8, the field team will employ a field portable XRF instrument. This instrument is capable of providing screening level metals concentration data from either collected or in-situ soil samples. This hand held unit generates an x-ray beam that is emitted from the instrument through the x-ray source window. These x-rays are in turn absorbed by target constituents (chemical element), and at the atomic level, an electron is ejected from an inner orbit of the chemical element in question. Subsequently, an outer orbital electron collapses back to fill the inner orbital vacancy. Energy is released (fluorescence) in this process. The wavelength (color) of the released energy is characteristic of the specific electronic transition, and this wavelength may be used to identify the element involved. The XRF instrument detects this energy and uses the intensity and spectral location of the energy peak to calculate a chemical concentration. The XRF method is primarily used for metals identification and quantification.

The XRF samples will be collected from a predetermined 50' foot grid that encompasses both SWMUs and the surrounding area (Figure 2). Approximately Five hundred grid cells covering an area of 28.9 acres will be analyzed using the XRF. To help calibrate the XRF findings, additional XRF samples will be collected from areas of known, laboratory verified, metal concentrations. These samples will help confirm the XRF generated values are reasonably close to actual contamination levels in previously investigated areas. Ten percent of the field grid samples will be collected as duplicates and sent to an analytical laboratory for confirmation of the XRF results. The location of the samples collected for laboratory analysis will be chosen based on results of the XRF survey. The laboratory samples collected will be used to provide definitive data regarding the lateral extent of target COCs.

VERTICAL EXTENT CHARACTERIZATION

In addition to the lateral delineation sampling, data may be required to confirm that the vertical extent of contamination has also been delineated as necessary for closure requirements. The vertical extent of contamination may be assessed by sampling the soil at depth or at the soil-rock interface. These samples will be submitted for CSSA COC metals. The sample locations and the sample collection intervals for vertical delineation will be determined after the lateral extent of contamination has been defined. Upon completion of the field surveys and data collection, Parsons will prepare a RIR or APAR to document the condition of the sites, and submit a report to the TCEQ.



- CSSA
- Freeway
- Highway
- Major Road
- County Boundary
- Military Installation

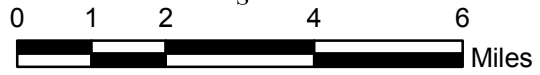
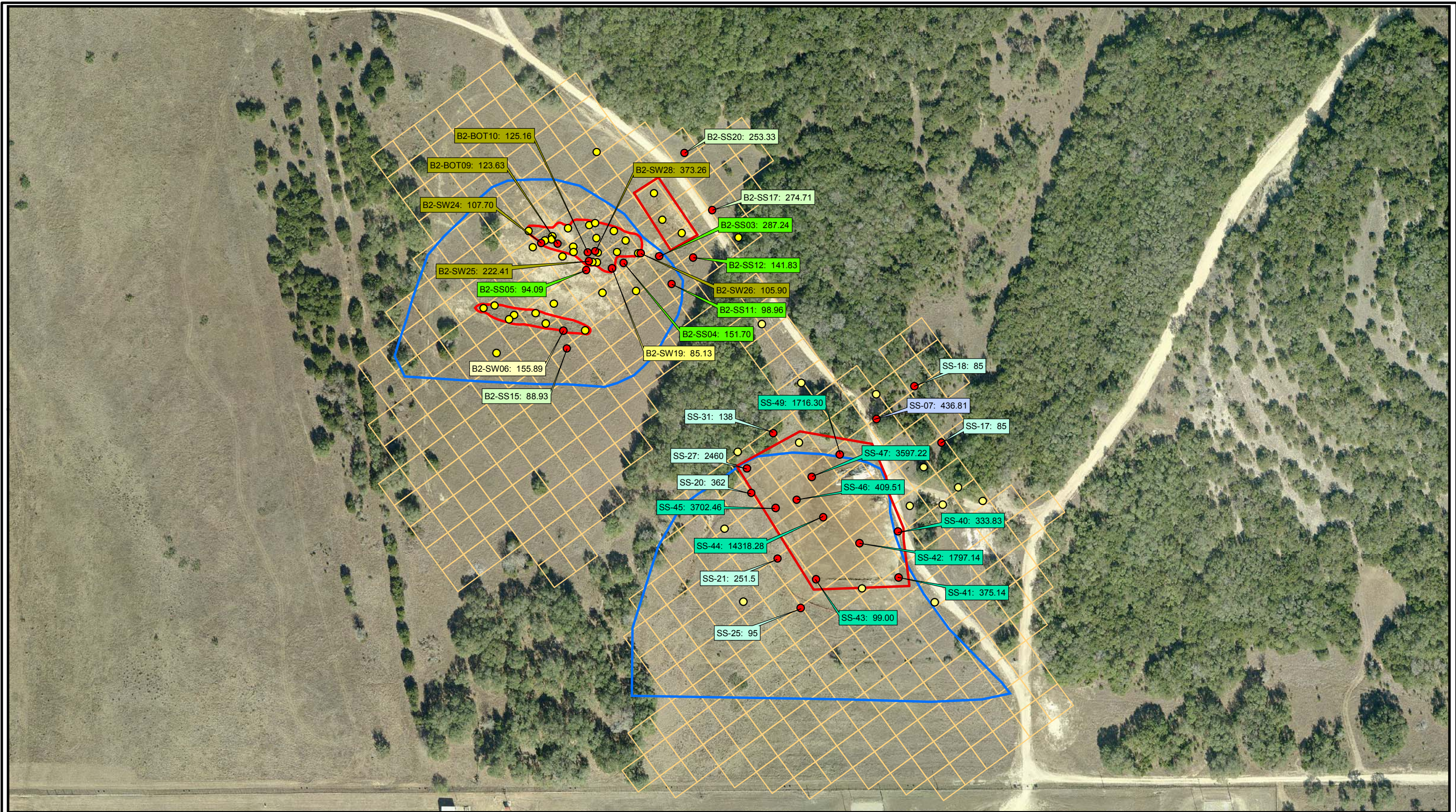
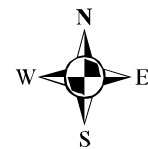


Figure 1
CSSA Location Map
Camp Stanley Storage Activity

PARSONS



Aerial Photo Date: 2009



200 100 0 200 Feet



Lead Samples

- ≤ 84.50
- > 84.50
- Excavation Area
- SWMU Boundary
- 50' x 50' Grid*

- 1/06/04
- 12/20/04 - 2/2/05
- 3/03
- 5/11/04
- 5/31/05
- 5/03
- 11/08/04
- 3/04/08
- 6/08

*503 grid cells with total area of 28.87 acres.

Figure 2

B-2 & B-8 Sample Locations with
Lead Results (2003 - 2008) and 50' Grid
Camp Stanley Storage Activity

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