FINAL

AFFECTED PROPERTY ASSESSMENT REPORT
SOLID WASTE MANAGEMENT UNIT B-4
CAMP STANLEY STORAGE ACTIVITY
BOERNE, TEXAS

United States Army Corp of Engineers
Fort Worth District
Contract No. W912BV-04-2026
Delivery Order DY04

Prepared by:
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October 2012

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Other ID Nos.: United States Environmental Protection Agency (USEPA) Facility Identification No. TX2210020739

Reason for submittal (check all that apply):

- ☐ Notice of Deficiency Letter
- ☐ Enforcement/Agreed order
- ☒ Initial submittal
- ☐ Permit/Compliance Plan
- ☐ Directive/NOV letter
- ☐ Revision
- ☐ Voluntary response
- ☐ Other

On-Site Property Information

On-Site Property (Facility) Name: Camp Stanley Storage Activity (CSSA): Solid Waste Management Unit (SWMU) B-4

Street No.	Pre-dir	Street name	Street type	Post Dir
25800		Ralph Fair	Road	

City	County	Country Code	Zip
Boerne	Bexar	15	78015

Nearest street intersection and location description: CSSA main entrance located ½ mile east of intersection of Ralph Fair Road and Interstate Highway 10.

Latitude: Decimal Degrees (indicate one) North Degrees: 29.707132

Longitude: Decimal Degrees (indicate one) West Degrees: -98.612877

Contact Person for On-Site Property Information and Acknowledgment

Company Name or Person: U.S. Army Camp Stanley Storage Activity

Contact Name: Gabriel Moreno-Fergusson Title: Environmental Manager

Mailing Address: 25800 Ralph Fair Road

City: Boerne **State:** Texas **Zip:** 78015 **Phone:** (210) 295-7453

Email: morenog@cssamma.com **Fax:** (210) 295-7386

Person is: ☐ property owner ☐ property manager ☐ potential purchaser ☐ tenant ☐ operator ☐ Other Manager, CSSA Environmental Programs

By my signature below, I acknowledge the requirement of §350.2(a) that no person shall submit information to the executive director or to parties who are required to be provided information under this chapter which they know or reasonably should have known to be false or intentionally misleading, or fail to submit available information which is critical to the understanding of the matter at hand or to the basis of critical decisions which reasonably would have been influenced by that information. Violation of this rule may subject a person to the imposition of administrative, civil, or criminal penalties.

Signature of Person: Gabriel Moreno-Fergusson **Name (print):** Gabriel Moreno-Fergusson **Date:** 10/29/12

Consultant Contact Person

Consultant Company Name: Weston Solutions, Inc.

Contact Person: Russell Cason, P.G. **Title:** Project Manager

Mailing Address: 70 NE Loop 410, Suite 600

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Professional Signatures and Seals

Professional Geoscientist

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Signature	**Date**	
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Professional Engineer

N/A

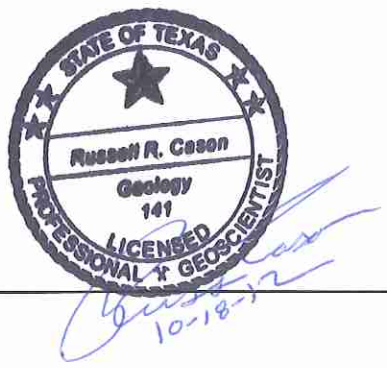
Professional Engineer	**P.E. License number**	**Expiration date**
Signature	**Date**	
Telephone number	**FAX number**	**E-mail**

Registered Corrective Action Specialists (RCASs) and Corrective Action Project Managers (CAPMs)
For LPST sites only.

N/A

Registered Corrective Action Specialist	RCAS Registration number	Expiration date
Signature	Date	
Corrective Action Project Manager	CAPM Registration number	Expiration date
Signature	Date	
Telephone number	FAX number	E-mail

Seals, as applicable:



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EXECUTIVE SUMMARY

Weston Solutions, Inc. (WESTON®) performed an Affected Property Assessment (APA) for Solid Waste Management Unit (SWMU) B-4, located at Camp Stanley Storage Activity (CSSA), Bexar County, Texas (TX). The APA was performed in response to the detection of chemicals of concern (COCs) during a previous Remedial Investigation (RI) and historical knowledge of the burial of munitions related materials and other debris in trenches at the site. Assessment activities evaluated the potential extent of the trenches, contents of the trenches, COCs in the trench soil and waste debris, and two areas of surface soil impacted by metals based on the previous RIs (Parsons, 1995, 2002). The APA also addresses the execution of an Interim Removal Action (IRA) to remove impacted soil and debris from the trenches and documents the residual conditions at the completion of the IRA. The United States Army Corps of Engineers (USACE), Fort Worth District (CESWF), contracted WESTON to perform the site activities for SWMU B-4 under the Comprehensive Environmental Contract (CEC) No. W912BV-04-2026, Delivery Order (DO) DY04. The APA was conducted in accordance with requirements of Title 30 of the Texas Administrative Code (TAC), Chapter 350, and the Texas Risk Reduction Program (TRRP). All evaluations of potential risk to human health and the environment were based on an assumption of future unrestricted (i.e., residential) land use.

Initial site assessment activities during the RI at SWMU B-4 have included soil vapor surveys, geophysical surveys, and the collection of soil samples from soil borings placed in areas of interest at the site (Parsons, 1995, 2002). For the APA, surface soil assessment events were performed by WESTON in March 2010, August 2010, and May 2011. These surface soil assessment activities resulted in the identification of a new area of concern (AOC 75) north and northeast of the SWMU B-4 operational area that will be addressed separately.

Pre-IRA assessment of the SWMU B-4 trenches A, B, C, and D was performed by WESTON in April 2010 and included the characterization of affected soil and trench debris for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), explosives, and metals. The results of the pre-IRA assessment indicated that the metals barium, cadmium, copper, lead, mercury, nickel, and zinc were the only COCs that exceeded TRRP Tier 1 residential assessment levels (RALs) within the trench debris. The results of the pre-IRA assessment were used to

develop the final list of COCs for confirmation sampling during the IRA and for assessment during the APA.

IRA activities performed by WESTON occurred in January 2011 through February 2011 removed affected soil and debris from trenches A, B, C, and D. Confirmation sampling during after the removal indicated that residual COCs in native soil after removal of the trench debris were less than the critical PCL, background, or ecological screening benchmarks.

In August 2011, an additional trench at SWMU B-4 was discovered by Parsons Government Services (Parsons) during re-dressing of the site access road. During February and March of 2012, debris were removed from the trench and confirmation samples were collected and analyzed for VOCs, SVOCs, explosives, and metals. Confirmation sampling at the final limits of excavation indicated that residual COCs in native soil were less than the critical PCLs, background, or ecological screening benchmarks.

The following tables summarize results of APA/post-IRA conditions at the site.

Environmental Media	Actual or Probable Exposures On-Site?		Actual or Probable Exposures Off-Site?		Have notifications for actual or probable exposures been completed? (§350.55(e))		
	Yes	No	Yes	No	Yes	No	N/A
Soil		✓		✓			✓
Groundwater		✓		✓			✓
Sediment		✓		✓			✓
Surface Water		✓		✓			✓

Is there, or has there been, an affected or potentially affected water well? ___ Yes ✓ No

If yes, what is the well used for? Not applicable.

Actual land use: On-site: ___ Res ✓ C/I Off-site affected property: ___ Res ___ C/I ✓ N/A

Land use for critical PCL determination: On-site: ✓ Res ___ C/I Off-site affected property: ___ Res ___ C/I ✓ N/A

Did the affected property pass the Tier 1 ecological exclusion criteria checklist? ✓ Yes ___ No

Affected groundwater-bearing unit(s) (in order from depth below ground surface), or uppermost groundwater-bearing unit if none affected

Unit No.	Name	Depth below ground surface (ft)	Resource Classification (1, 2, or 3)
1	Upper Trinity Aquifer (not affected by site COCs)	Not observed at maximum depth investigated – 23 feet below ground surface (bgs)	1
2	N/A		
3	N/A		

Assessment

Environmental Media		Assessment Levels Exceeded?						Affected property defined to RAL?			Is COC extent stable or expanding?	General classes of COCs (VOCs, SVOCs, metals, etc.)
		On-Site?			Off-Site?							
		Yes	No	Not sampled	Yes	No	Not sampled	Yes	No	N/A		
Soil	Surface		✓				✓	✓			Stable	Metals
	Subsurface		✓				✓	✓			Stable	Metals
Groundwater				✓			✓			✓	N/A	N/A
Sediment				✓			✓			✓	N/A	N/A
Surface Water				✓			✓			✓	N/A	N/A

NAPL Occurrence Matrix

	NAPL Occurrence		*Description*
NAPL in vadose zone	✓	No NAPL in vadose zone	There is no direct or indirect evidence of NAPL in the vadose zone
		NAPL in/on soil	NAPL detected in or on unsaturated, unconsolidated clay-, silt-, sand-, and/or gravel-dominated soils
		NAPL in fractured clay	NAPL detected in fractures of unsaturated fine-grained soils
		NAPL in fractured or porous rock	NAPL detected in unsaturated lithologic material
		NAPL in karst	NAPL detected in karst environment
NAPL at capillary fringe	✓	No NAPL at capillary fringe	There is no direct or indirect evidence of NAPL at the capillary fringe
		NAPL at capillary fringe	NAPL detected at vadose-saturated zone transition, capillary fringe (in contact with water table)
NAPL in saturated zone	✓	No NAPL in saturated zone	There is no direct or indirect evidence of NAPL in the saturated zone
		NAPL in soil	NAPL detected in saturated unconsolidated clay-, silt-, sand-, and/or gravel-dominated soils
		NAPL in fractured clay	NAPL detected in fractures of saturated fine-grained soil or other double-porosity sediments
		NAPL in saturated fractured or porous rock	NAPL detected in saturated lithologic material
		NAPL in saturated karst	NAPL detected in karst environment within the saturated zone
NAPL in surface water or sediment	✓	No NAPL in surface water or sediment	There is no direct or indirect evidence of NAPL in surface water or sediments
		NAPL in surface water	NAPL detected in surface water at exceedance concentration levels or visual observation
		NAPL in sediments	NAPL detected in sediments at exceedance concentration levels or visual observation via migration pathway or a direct release

NAPL Triggers

NAPL Response Action Triggers		Description of Triggers
✓	No NAPL response action triggers	No NAPL triggers have been observed in any assessment zones (vadose, capillary fringe and saturated), nor in surface water or sediments
	NAPL vapor accumulation is explosive	NAPL vapors accumulate in buildings, utility and other conduits, other existing structures, or within anticipated construction areas at levels that are potentially explosive (≥ 25% LEL)
	NAPL zone expanding	NAPL zone is observed to be expanding using time-series data
	Mobile NAPL in vadose zone	NAPL zone is observably mobile, or is theoretically mobile based on COC concentrations and residual saturation
	NAPL creating an aesthetic impact or causing nuisance condition	NAPL is responsible for objectionable characteristics (e.g., taste, odor, color, etc.) resulting in making a natural resource or soil unfit for intended use
	NAPL in contact with Class 1 groundwater	NAPL has come in actual contact with saturated zone or capillary fringe of a Class 1 GWBU
	NAPL in contact with Class 2 or 3 groundwater	NAPL has come in actual contact with saturated zone or capillary fringe of a Class 2 or Class 3 GWBU
	NAPL in contact with surface water	Liquid containing COC concentrations that exceed the aqueous solubility in contact with surface water via various migration pathways or direct release to surface water
	NAPL in or on sediments	Liquid containing COC concentrations that exceed the aqueous solubility impact surface water sediments via migration pathway or a direct release

Remedy Decision

Environmental Media		Critical PCL exceeded on-site?			Critical PCL exceeded off-site?			PCLE zones defined?			General class (VOCs, SVOCs, metals, etc.) of COCs requiring remedy
		Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	
Soil	Surface		✓			✓				✓	None
	Subsurface		✓			✓				✓	None
Groundwater				✓			✓			✓	N/A
Sediment				✓			✓			✓	N/A
Surface Water				✓			✓			✓	N/A

CONCLUSIONS AND RECOMMENDATIONS

The APA confirmed that the IRA removed all affected media from the former disposal trenches and soil within the SWMU B-4 operational area. Lateral delineation of COCs was accomplished to RALs, ecological screening benchmarks, or background. Vertical delineation of COCs was accomplished to background.

All COCs other than those listed in the following tables were either not detected, detected at concentrations below their respective RAL or background during the APA or previous phases of site assessment, or were screened and eventually eliminated from being site COCs by applicable TRRP criteria. Tier 2 PCLs for the soil-to-groundwater exposure pathway ($^{GW}Soil_{Ing}$) were derived for COCs with concentrations exceeding the Tier 1 $^{GW}Soil_{Ing}$ PCL. Residual COC concentrations at SWMU B-4 do not exceed critical human health Tier 1 or 2 PCLs or ecological screening benchmarks and so no PCL exceedance zone exists at the site. Maximum COC concentrations remaining in place at SWMU B-4 (i.e., post-IRA) are summarized in the tables that follow.

Maximum Residual COC Concentrations in Surface Soil
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, TX

COC	Maximum Concentration (mg/kg)	Background	Critical Human Health PCL (mg/kg)	Ecological Screening Benchmark (mg/kg)
Barium	116	300[a]	300[a]	330
Cadmium	0.894	3.0[b]	3.0[b]	32
Copper	15.8	23.2[b]	520[c]	61
Lead	23.1	84.5[b]	84.5[b]	120
Mercury	0.569	0.77[b]	2.1[d]	0.77[b]
Nickel	14.8	35.5[b]	79[c]	35.5[b]
Zinc	21.6	73.2[b]	1200[c]	120

Notes:
a - Texas-Specific Background Concentration
b - Camp Stanley Site-Specific Background Concentration
c - Tier 1 $^{GW}Soil_{Ing}$ PCL
d - Tier 1 $^{Total}Soil_{Comb}$ PCL
mg/kg - milligrams per kilogram

Maximum Residual COC Concentrations in Subsurface Soil SWMU B-4 Affected Property Assessment Camp Stanley Storage Activity Boerne, TX				
COC	**Maximum Concentration (mg/kg)**	**Background**	**Critical Human Health PCL (mg/kg)**	**Ecological Screening Benchmark (mg/kg**
Barium	52.2	300[a]	300[a]	N/A
Cadmium	4.78	3.0[b]	296[d]	N/A
Copper	296	23.2[b]	520[c]	N/A
Lead	15.7	84.5[b]	84.5[b]	N/A
Mercury	2.53	0.77[b]	4.6[e]	N/A
Nickel	26.9	35.5[b]	79[c]	N/A
Zinc	133	73.2[b]	1200[c]	N/A

Notes:
a - Texas-Specific Background Concentration
b - Camp Stanley Site-Specific Background Concentration
c - Tier 1 $^{GW}Soil_{Ing}$ PCL 30 acre source area
d - Tier 2 $^{GW}Soil_{Ing}$ PCL 30 acre source area
e - Tier 1 $^{Air}Soil_{Inh\text{-}V}$ PCL 0.5 acre source area
mg/kg - milligrams per kilogram
N/A - No applicable value

The results of the APA indentified an area of affected surface soil north and northeast of SWMU B-4 operational area that exceeds the CSSA site-specific background, residential assessment level, and ecological benchmark values for mercury. Additionally, lead was detected at one sample location in that area exceeding the ecological screening benchmark and barium was detected at one sample location in the area exceeding RAL and ecological screening benchmark. The metals were delineated to RALs however; the affected area is outside the SWMU B-4 operational area and will be addressed separately by future actions as AOC 75.

NAPL DISCUSSION

No non-aqueous phase liquid (NAPL) was encountered during the APA or previous assessments.

RESPONSE ACTIONS AND RECOMMENDATIONS

All residual COC concentrations were reported within CSSA background levels, or below Tier 1 PCLs, calculated Tier 2 PCLs, and ecological screening benchmarks following completion of the IRA; therefore an affected property does not exist at SWMU B-4 and no additional remedial response is necessary.

FIGURE A - AFFECTED PROPERTY AND PCLE ZONE MAP

Figure A shows sampling locations at SWMU B-4. No post-IRA affected media remain and so no affected property exists at SWMU B-4.

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Legend

- Soil Confirmation Sample
- Vertical Delineation Soil Boring
- RI Soil Boring (2000)
- Areas excavated greater than 1 foot below ground surface
- Areas excavated 1 foot below ground surface
- Surface water drainage flow direction

SS, US - Surface Soil Sample
COC – Chemical of Concern
PCL – Protective Concentration Level

Notes:
1. Target COCs (barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc) remaining in surface and subsurface soil at final limits of excavation are less than Tier 1 and/or Tier 2 PCLs, ecological screening benchmarks, or background as applicable. Therefore, no affected property exists.
2. The vertical extent of all COCs is delineated to background concentrations.

Source: Camp Stanley aerial imagery
This figure is prepared for reference only and is not intended for survey of engineering purposes.

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Figure - A
Affected Property Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
JUNE, 2012	03886.529.005.0007.00	AS SHOWN

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CHRONOLOGY

February - November 1995. Parsons conducted various RI assessments at SWMU B-4 during this period. Electromagnetometer and ground-penetrating radar geophysical surveys identified three geophysical anomalies and a soil vapor on survey was concluded. Samples from six soil borings were analyzed for VOCs, SVOCs and metals. Cadmium, copper and lead concentrations that exceeded the CSSA background and RRS 2 levels were detected in borings SB1 and SB1A that appeared to have penetrated disposal trenches.

A screening level groundwater sample collected directly from boring B4-SB5 did not detect metals concentrations exceeding TRRP RALs; however mercury was not included as an analyte. VOCs and SVOCs were not detected in the sample. This sample was collected from a depth of 25 feet from a likely perched zone approximately one foot thick. The geophysical maps and results of this assessment are summarized in Appendix 11.

April 2000. As part of the continuing SWMU B-4 RI, 12 borings were drilled in the area of the geophysical anomalies identified during the 1995 RI activities. None of the borings appeared to have penetrated a trench. Samples were analyzed for VOCs, metals, and explosives. Mercury concentrations in five of the borings collected from 0 to 0.5 feet bgs exceeded RALs in the area north of Trench C and one area located off the west edge of Trench A. All other COCs detected were at concentrations less than Tier 1 RALs. The results of this assessment are presented in Appendix 11.

January 2001. Twenty soil gas survey samples were collected and analyzed for chlorinated and aromatic volatile organics by Parsons. No target compounds were detected.

March 2010. WESTON collected surface soil samples at 21 locations from two areas identified in the 1995 and 2002 RIs where metals concentrations exceeded background or the Texas Risk Reduction Standard 2 (RRS2). Mercury, barium, and lead were detected at concentrations exceeding RALs and ecologic screening benchmarks in various samples collected north and northeast of the SWMU B-4 operational area.

April 2010. Pre-IRA assessment of affected soil and debris within disposal trenches was conducted by WESTON. Transects were excavated across the axes of anomalies identified by the 1995 geophysical survey conducted by Parsons to identify the sides of the disposal trenches. Where each transect identified a trench, test pits were excavated to pre-characterize soil and debris for waste disposal per CSSA requirements, and to identify the bottom of the trenches. A total of 23 test pits were sampled in the four trenches identified. At each test pit, samples were collected from the upper and lower trench material and from the bottom of the test pit where competent bedrock was not present. Sample analytes included VOCs, SVOCs, explosives, SWMU B-4 target metals and total petroleum hydrocarbons (TPH). Barium, cadmium, copper, lead, mercury, nickel, and zinc were the only COCs detected at concentrations exceeding RALs in various samples.

July 2010. Additional assessment of mercury in surface soil north and northeast of SWMU B-4 was performed by WESTON. The results of the assessment indicated higher concentrations of mercury were present in surface soil at distance north and northeast from the site's operational area. Lateral delineation of the affected area was not accomplished.

January-February 2011. SWMU B-4 IRA was initiated and completed to remove affected soil and debris from the four waste disposal trenches identified at the site. The disposal trenches were over-excavated into native soil to insure complete removal of affected media within the trenches. Confirmation samples were collected from the final extent of sidewalls, ends, and floors of the trenches. The confirmation results showed that all COCs were removed to residual concentrations less than Tier 1 or Tier 2 PCLs or ecological screening benchmarks.

April 2011. Four borings were cored at locations within trenches B, Cb, and D where final IRA confirmation samples indicated that COC concentrations significantly exceeded CSSA background levels but were less than RALs or the critical PCLs. COCs were delineated to background levels within 5 feet beneath the excavation floors (sample depths, 17.5 to 19 feet bgs). No groundwater was encountered at the maximum depth of boring (23 feet).

May 2011. Additional delineation of mercury identified during a July 2010 sampling event in surface soil north and northeast of the SWMU B-4 operational area was performed. Parsons collected five surface soil samples from 0 to 0.5 feet below ground surface (bgs) to supplement

previous data obtained by WESTON. Delineation of mercury to the CSSA background level was achieved with the new data in combination with previous sampling data from AOC 64. Based on the location of the affected area outside of the known operational area of SWMU B-4 the area of affected soil was designated as AOC 75 and will be addressed in future actions separately from SWMU B-4.

August 2011. An additional disposal trench was discovered by Parsons while re-dressing the site access road. The trench was located beneath the road between trenches D and Cb. The trench was designated as Trench NT1. Munitions debris and other non-soil debris removed during the January-February 2011 removal were also separated and classified.

February-March 2012. The IRA was continued to remove affected soil and debris from the Trench NT1 (Parsons, 2012a, b). The trench was over-excavated into native soil. Confirmation samples collected from the final extent of sidewalls, ends, and floors of the trench indicated that residual COC concentrations in native soil are less than Tier 1 or Tier 2 PCLs or ecological screening benchmarks.

SPECIALIZED SUBMITTALS CHECKLIST

____ Check here if no specialized submittals in this report

	If included, specify section or appendix
Ecological Risk Assessment	
Reasoned justification, expedited stream evaluation, Section 9 ecological risk assessment, and/or proposal for ecological services analysis	Section 9
Statistics	
Calculated site-specific background concentrations	Appendix 8
Used alternate statistical methods to determine proxy values for non-detected results (§350.51(n))	
Calculated representative concentrations (§350.79(2)) for remedy decision	
Analytical Issues	
Used SQL for assessment or critical PCL instead of the MQL (§350.51(d)(1)) or PCL (§350.79)	Section 10
The MQL of the analytical method exceeds assessment levels/critical PCLs (§350.54(e)(3))	Section 10
Human Health/Toxicology	
Variance to exposure factors approved by TCEQ Executive Director[1] (§350.74(j)(2))	
Developed PCLs based on alternate exposure areas	
Evaluated non-standard exposure pathway (e.g., agricultural, contact recreation, etc)	
Combined exposure pathways across media for simultaneously exposed populations (§350.71(j))	
Adjusted PCLs due to residual saturation, cumulative risk, hazard index, aesthetic concerns, or theoretical soil vapor	
Utilized non-default human health RBELs to calculate PCLs (includes use of non-default parameters, toxicity factors not published in rule, etc.) (§350.51(l), §350.73, §350.74)	
Calculated Tier 2 or 3 RBELs/PCLs or TSCA levels for polychlorinated biphenyls, or calculated Tier 2 or 3 RBELS/PCLs for cadmium, lead, dibenzo-p-dioxins, dibenzofurans, and/or polycyclic aromatic hydrocarbons	Section 11 , Appendix 9 (Tier 2 PCL for cadmium)
Calculated Tier 1, 2, or 3 total petroleum hydrocarbon (TPH) PCLs	
Developed sediment/surface water human health RBELs and PCLs	
Fate and Transport	
Used or developed groundwater to surface water dilution factors	
Calculated Tier 2 PCL	Section 11, Appendix 9 for cadmium and mercury
Calculated Tier 3 PCL	
Groundwater Issues	
Conducted aquifer test, classified Class 3 groundwater, or determined non-groundwater bearing unit (soil)	

[1] saturated Prior approval by Executive Director is required.

1. PROPERTY INFORMATION

1.1 PHYSICAL LOCATION

Property Location and Land Use

CSSA is located approximately 19 miles northwest of downtown San Antonio in northwest Bexar County, in south central Texas. The installation consists of 4,008 acres that borders the east side of Ralph Fair Road (State Farm-to-Market [FM] Road 3351), approximately 0.5 miles east of Interstate Highway 10. The CSSA eastern boundary and parts of its northern and southern boundaries are contiguous with the Camp Bullis Military Training Reservation. The northern boundary is along by Dietz Elkhorn/Old County Road and the western boundary is along by Ralph Fair Road (Figure 1A-1).

The primary mission of CSSA is receipt, storage, and issue of ordnance material, as well as quality assurance testing and maintenance of military weapons and ammunition. CSSA is a conditionally exempt, small quantity generator (USEPA Identification Number TX22100120739).

SWMU B-4 is located in an undeveloped area within the CSSA inner cantonment area and within the general area of CSSA known as the "SWMU Highway", a broad linear area within the installation known for the historical disposal of munitions debris (MD) and mission related wastes. The location of SWMU B-4 within CSSA is presented on Figure 1A-1. Figure 1A-2 presents an aerial photo-based map of the site and immediately surrounding area.

CSSA records describe that SWMU B-4 was utilized for the subsurface disposal of classified documents, trash, general debris, and munitions debris for an indeterminate period prior to the 1990s. The site was identified by Parsons during a 1992 records review of CSSA disposal sites and areas of concern (AOCs). No other detailed historical information was available at the time of assessment. The site is an open field, approximately 2 acres in area. Prior to the 2011 IRA, the area was vegetated by native grasses and a few small hackberry trees that apparently took root in some of the trench backfill.

Other known and suspected disposal areas are located in the vicinity of SWMU B-4. AOC 64 is is a former explosive ordnance burn and disposal area up-slope from SWMU B-4 and bordering

its eastern perimeter. An IRA was performed at AOC 64 during November 2008 through February 2009 which removed affected soil and debris from the site.

SWMU O-1 is a former evapotranspiration pond reportedly constructed in 1975. The site borders the northwest corner of SWMU B-4 and is a rectangular area with a slight positive relief. The pond reportedly measured approximately 42 feet by 60 feet by 2.5 feet in depth and was lined with vinyl plastic. Bluing wastes from Building 90-1 (spillage, change-out, etc.) were disposed at the oxidation pond (CSSA, 1996). Wastes of concern identified within the unit included tetrachlorethene (PCE), cadmium, and chromium. A partial closure of SWMU O-1 was requested in October 2000 for the surface soil zone located within the boundaries of the unit but did not include the underlying limestone or groundwater bearing zones at depth beneath the site (CSSA, 2000).

AOC-52 is an approximate 0.1 acre site located approximately 85 feet west-southwest of SWMU B-4in 1995 where linear anomalies were identified during a geophysical survey at SWMU B-4 (CSSA, 1999). Due to its proximity to SWMU B-4, the AOC was originally designated as "B-4A." Regulatory closure was obtained for AOC 52 in December 2011.

An area upslope north and northeast of the SWMU B-4 operational area was identified during the SWMU B-4 APA with surface soil impacted primarily by mercury exceeding TRRP Tier 1 RALs and ecological screening benchmarks. Review of historical aerial photographs did not indicate trenching or other overt areas of surface disturbance in this area. The area has been designated as AOC 75 and will be assessed separately from SWMU B-4.

Topography

SWMU B-4 is located within a slightly sloping, well drained open area bounded by low vegetated (oak-juniper) hills to the east and northeast and a gently sloping vegetated (oak-juniper and grass meadow) area to the southwest. The average elevation at the site is approximately 1,238 feet above mean sea level (msl). The relief across the site varies from 4 to 8 feet generally sloping to the south and southwest. Surface water flows onto SWBU B-4 from areas upslope to the north and east. In the northern portion of the site, surface runoff flows southeasterly towards a low-grade swale near the south end of the site, and then southwesterly towards Salado Creek, approximately 500 feet southwest of the site. Surface water from up-slope AOC 64 enters the

site from the northeast and ultimately channels through the swale area towards Salado Creek. General surface water run-off directions are shown on Figure 1-A2.

The site is not located within the 100-year floodplain (FEMA 2010).

Weather

CSSA receives an estimated average of approximately 36 inches of rain per year (CSSA, 2006a). Drought conditions from May 2010 until January 2011 preceding the IRA initiated in January 2011. High stands of grass and dense oak-juniper stands surrounding the site generally mitigate stormwater transport of sediment at the site, however, a small sediment fan, approximately 6 feet long by 3 feet wide was observed along the northeastern up-slope boundary of SWMU B-4 with AOC 64 indicating that localized sediment transport onto the site occurs.

1.2 AFFECTED PROPERTY AND SOURCES OF RELEASE

History and Operations

There are no detailed records that were available indicating the amounts and types of materials that were deposited in the SWMU B-4 disposal trenches. Aerial photographs dated 1934, 1962, 1966, 1973, 1978, 1985, 1991, and 1996 were reviewed for visual indications of activity at the site associated with a potential for hazardous waste generation, storage, or disposal (e.g., disposal trenches, evaporation ponds, etc.). Evidence of trenching activities in the defined area of SWMU B-4 could be discerned on the 1978 and 1985 aerials that appear to correspond with the now known locations of Trench A and Trench C. There were no discernable indications or evidence that could be associated with the presence of Trenches B, D, or NT1. Geophysical surveys conducted in 1995 identified three anomalies consistent with the locations of apparent activity identified on the historical areas. Figures presenting the anomaly areas identified during geophysical survey work, are provided in Appendix 11.

Project Overview

A Section 3008(h) Administrative Order on Consent (Order) was issued to CSSA by the USEPA in May 1999. The Order required CSSA to address several issues related to the generation, storage, and transport of hazardous waste. The Order included requirements to develop a comprehensive response to chlorinated solvent contamination identified in water supply wells at

the installation. In addition, the Order required CSSA to conduct a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) to evaluate all potential historical sources of contaminant releases at the installation. Facility-wide surveys of known or suspected waste disposal sites identified SWMU B-4 for additional investigation based on the potential for buried general wastes and MD.

The SWMU B-4 disposal trenches were mechanically excavated through 3 to 6 feet of loose native soil into weathered, marly limestone bedrock until an competent limestone was encountered. The depth of the trenches ranged from depths of 9 to 16 feet. Waste consisting of munitions debris, unexpended small arms ammunition (SAA) (one section of Trench D only), military equipment (radios and batteries, field gear, decommissioned small arms, etc.), miscellaneous metal, papers, and municipal debris was placed into the various trenches and top-covered with a layer of native soil. There was evidence of waste burning (charred material, wood and stone) in some areas of the trenches.

Assessment for the presence of buried waste and site contamination at SWMU B-4 has included electrical conductivity and ground-penetrating geophysical surveys and initial round of soil borings (Parsons, 1995), additional soil borings (Parsons, 2002), soil gas surveys (Parsons, 1995, 2002), and a trenching investigation (WESTON, 2010) to assess the three anomalies identified by the 1995 geophysical surveys. The cumulative results of these pre-IRA activities indicated that various metals were present in the trench debris and two areas of surface soil at concentrations exceeding the TRRP RALs.

An IRA was conducted January through February 2011 to remove affected soil, munitions debris, and other general debris from the trenches A, B, Ca, Cb, and D. Trench NT1 was discovered in August 2011 during re-dressing of the site access road between Trench Cb and D. Debris from trench NT1 was removed in February and March 2012. Confirmation soil samples collected from limits of the all the excavated trenches indicate that the remaining COCs are at concentrations within CSSA background levels or less than critical Tier 1, site-specific Tier 2 PCLs and ecological screening benchmarks.

1.3 GEOLOGY/HYDROGEOLOGY

Regional Geology/Hydrogeology

According to the Final Hydrogeologic Conceptual Site Model (HCSM) for CSSA, dated January 2006, the principal water-bearing units at the CSSA are the Upper Trinity and Middle Trinity Aquifers; these units associated with the upper and lower limestone members of the Glen Rose Formation, respectively. The Glen Rose Formation is the upper-most member of the Trinity Aquifer, which also includes the Bexar Shale and Cow Creek Limestone formations in the area of CSSA. Of the Upper and Middle Trinity Aquifers, the Middle Trinity is the more prolific groundwater-producing body and is utilized as a drinking water source at CSSA and in the area surrounding the installation. Based on historical groundwater measurements collected as part of the CSSA environmental restoration program the depth to usable drinking water in the Middle Trinity Aquifer is estimated to vary from 50 to as much as 250 feet bgs (CSSA, 2006a).

The LGR unit of the Middle Trinity Aquifer present at CSSA is apparently unconfined and receives recharge from direct precipitation and stream flow infiltration at outcrops, and infiltration from of the overlying Upper Trinity Aquifer. Structural geologic features within the CSSA regional area are influenced by the Balcones Fault Zone (BFZ) escarpment. The occurrence and movement of groundwater at CSSA is significantly influenced by fractures and karst limestone features occurring throughout the BFZ region (CSSA, 2006a). A map of the surface outcrop lithology and a cross section of the regional geology underlying CSSA are presented on Figure 1C and Figure 1D, respectively.

Although locally variable, regional groundwater movement for both the Upper and Middle Trinity Aquifers is generally to the south or southeast. Middle Trinity aquifer groundwater elevations observed during an installation-wide monitoring event conducted in September 2006 ranged from 874.32 feet msl to 1,027.96 feet above msl with an averaged gradient of 0.009 feet per foot (ft/ft) (CSSA, 2006a). Depths to groundwater can vary significantly in response to seasonal precipitation.

The Upper Glen Rose (UGR) member is approximately 450-feet thick regionally. The UGR is about 50-feet thick at CSSA and is the most prevalent geologic formation cropping out across the

installation. The underlying LGR crops out mainly along the stream course of Salado Creek at CSSA. The HCSM indicates that,

> *"movement of groundwater in the [Upper Glen Rose formation] Upper Trinity aquifer is restricted to lateral flow along bedding planes between marl and limestone, where solution has enhanced permeability […] Static water levels in adjacent wells completed in different beds are often different, demonstrating the possibility that beds are not hydraulically connected by avenues of vertical permeability […] Upper Trinity water is generally of poor quality and most wells achieve only low production."*

Based on the stratigraphic unit descriptions and maps provided in CSSA HCSM (CSSA, 2006a) and site observations, SWMU B-4 is situated on member D the UGR Formation (Figure 1C). Outcrops of the UGR(D) are evident along the northwestern, northern, and southeastern edges of SWMU B-4. The CSSA HCSM describes in general the hydrogeologic intervals present at ground surface and stratigraphically underlying the area were SWMU B-4 as:

> The UGR(D) interval is defined by alternating bedding planes of limestone and marl with a described total thickness ranging from 130 and 180 feet. Groundwater, where it occurs in the UGR, is laterally discontinuous and generally follows preferential pathways along the top of less permeable bedding planes. Recharge to lower units (i.e., the LGR member of the Middle Trinity Aquifer) is assumed to occur in areas where the outcrop is bisected by faults and fractures. The closest fault line to SWMU B-4 is a normal fault that strikes northwesterly through in the vicinity of SWMU B-3, approximately 700 feet north of the site. Fault lines identified at CSSA are shown on Figure 1C.
>
> The UGR(E) interval is characterized by a 7- to 10-foot thick calcareous mud with abundant fossils. In outcrop, UGR(E) appears as a yellow carbonate-rich mud that typically forms broad, gentle valley-like slopes. The interval appears to act as an aquitard to downward water seepage, influencing lateral flow along the upper surface of a basal Corbula bed. Significant recharge to lower units (i.e., the LGR member of the Middle Trinity Aquifer) is assumed to occur in areas where the outcrop is bisected by faults and fractures.
>
> The LGR(A) interval is characterized by alternating layers of pale yellow limestone with an estimated thickness of 50 feet. The upper portion of the interval is a grain-supported limestone exhibiting a distinct foraminifera hash just below the UGR/LGR contact.

Thin-to-medium-bedded mudstones and wackestones comprise the basal 30 feet of LGR(A). The unit is characterized by low porosity and permeability without known cavern development.

Site-Specific Geology/Hyrdogeology

The LGR(A) interval crops out along Salado Creek approximately 500 feet southwest of SWMU B-4 at an elevation of approximately 1,210 feet above msl. Estimates using simple topographic relief from SWMU B-4 to Salado Creek indicate that the site is situated on the UGR(D) unit approximately 25 feet above the contact with the LGR. This is consistent with geophysical logging data from nearby environmental well B3-EX02 that indicates the UGR(D) unit extends from surface to a depth of 17 feet and the contact for the LGR(A) at an approximate depth of 27 feet.

Groundwater was not observed in any of the SWMU B-4 trenches during the 2010 pre-IRA assessment of the trenches or in the excavated trenches during the 2011or 2012 IRA activities. During the 1995 RI field activities (Parsons, 2002), a sample was collected of groundwater from a 1-foot thick marly limestone bed (possibly the UGR(E) unit) encountered between 26 to 27 feet bgs in boring B4-SB5 located on the western edge of Trench A at SWMU B-4 The limestone bed immediately below thin marl bed was dry. The groundwater sample was analyzed for VOCs, SVOC and metals. No VOCs or SVOCs were detected in the sample. SWMU B-4 target metals cadmium, chromium, lead, magnesium, manganese, and nickel were detected at concentrations less than Risk Reduction Standard 2 (RRS2) and TRRP RALs. However, SWMU B-4 target metals barium and mercury were not analyzed.

No UGR monitoring wells are located in the immediate vicinity of SWMU B-4, but several UGR monitoring wells are used to monitor in-situ bioreactor performance at SWMU B-3 located approximately 700 feet north of SWMU B-4. Monitoring of these wells indicates that after significant rainfall events a perched water table can be present in the UGR for a short period of time at depths ranging from 10 to 20 feet bgs below SWMU B-3. After rainfall stops, the perched water table gradually recedes (Beal, 2008).

The CSSA HCSM describes the surface soil type at SWMU B-4 as being of the Tarrant B (TaB) soils group, characterized by thin, dark grayish-brown, calcareous, clay loam with scattered gravel and cobblestones (CSSA, 2006a).

The near-surface stratigraphic profile observed during the IRA excavation activities consisted of 3 to 6 feet of grayish-brown to dark reddish-brown, silty clay loam soil. The thickness of the soil generally increased towards the southern end of the site. The soil layer is underlain by a competent yellowish-white to orangish-white weathered limestone with marl and clayey layers ranging from 6 to 12 feet in thickness. Unweathered white to yellowish-white, hard, limestone with a platy to blocky structure is encountered beneath the weathered limestone unit. General cross-sections of subsurface conditions observed at the final limits of IRA excavations are presented on Figures 4C-1 through 4C-6.

Table 1A - Sources of Release

The following sources were identified as potentially contributing to COCs observed at SWMU B-4.

Affected property name/number1	Name of potential source[2] (supplied by the person)	Type of potential source (select from Column 1 on Inputs list)	NOR unit or SWMU number, if applicable	Substances of potential concern (select from Column 2 on Inputs list)	Size of source (capacity, area, or volume)	Status of source (select from Column 3 on Inputs list)		Was a release from this source confirmed? (if yes, indicate the discovery method from Column 4 on Inputs list, and date release was discovered)			
						Status[3]:	If closed or other, list date closed or explain:	No	Yes	Discovery method	Date
SWMU B-4	Munitions debris, small arms ammo, military mission debris, scrap metal	Legacy disposal site	SWMU B-4	Metals, VOCs, SVOCs	~8,500 cubic yards in trenches	Inactive			✓	Site assessment	March 1995

[1] The name or number is an identification of the affected property assigned by the person. Continue using the name or number identification throughout this report and all other correspondence on the affected property.
[2] The potential source is the source of the release. The person determines the name given to the potential source. Examples: northwest tank farm, Main Street landfill, etc.
[3] Specify whether the source status is active, inactive, abandoned, closed, or specify another status as appropriate.

Table 1B - Potential Off-Site Sources

Surface soil erosion from AOC 64 adjoining immediately along eastern site perimeter prior to the 2008 to 2009 AOC 64 IRA may have impacted eastern fringe of SWMU B-4. A small erosion fan was observed at the eastern boundary of SWMU B-4 apparently minor soil run-off from AOC 64 adjoining the site up-slope of the site boundary. This area of affected soil was removed during the SWMU B-4 IRA.

An area upslope north and northeast of the SWMU B-4 operational area was identified during the SWMU B-4 APA as having surface soil impacted primarily by mercury exceeding TRRP Tier 1 RALs and ecological screening benchmarks. Review of historical aerial photographs did not indicate trenching or other overt areas of surface disturbance in this area. The area has been designated as AOC 75 and will be assessed separately from SWMU B-4.

Table 1B. Potential Off-Site Sources

Affected property name/number	Off-site facility/ site name	Physical Address	Regulatory ID number	Type of operation/ business	Years of operation (if known)	COCs
AOC 64	N/A	CSSA Inner Cantonment	SW69026	Former Ordnance Disposal	Unknown	Metals
AOC 75	N/A	CSSA Inner Cantonment	SW69026	Unknown	Unknown	Metals

Figures 1A-1 and 1A-2: On-Site Property Maps

Figures 1A-1 and 1A-2 show the location of SWMU B-4 at CSSA, relevant physical features at the site, and immediately adjoining areas.

Figure 1B - Affected Property Map

Figure 1B presents sample locations which characterize current COC conditions (i.e., post-IRA) at SWMU B-4. Affected soil and debris were removed from SWMU B-4 during IRA activities conducted in January to February 2011 and February to March 2012. No COCs remain at SWMU B-4 that exceed critical PCLs therefore, no affected property exists.

Figure 1C - Regional Geologic Map

Figure 1C is a regional geologic map obtained from the CSSA HCSM. The approximate location of SWMU B-4 at CSSA is shown on the map.

Figure 1D - Regional Geologic Cross Section

Figure 1D is a geologic cross section obtained from the CSSA HCSM that illustrates the regional stratigraphy of the area from the surface to the base of the principal regional water supply aquifers. The cross section includes formation names, aquitards, and minor and major aquifers.

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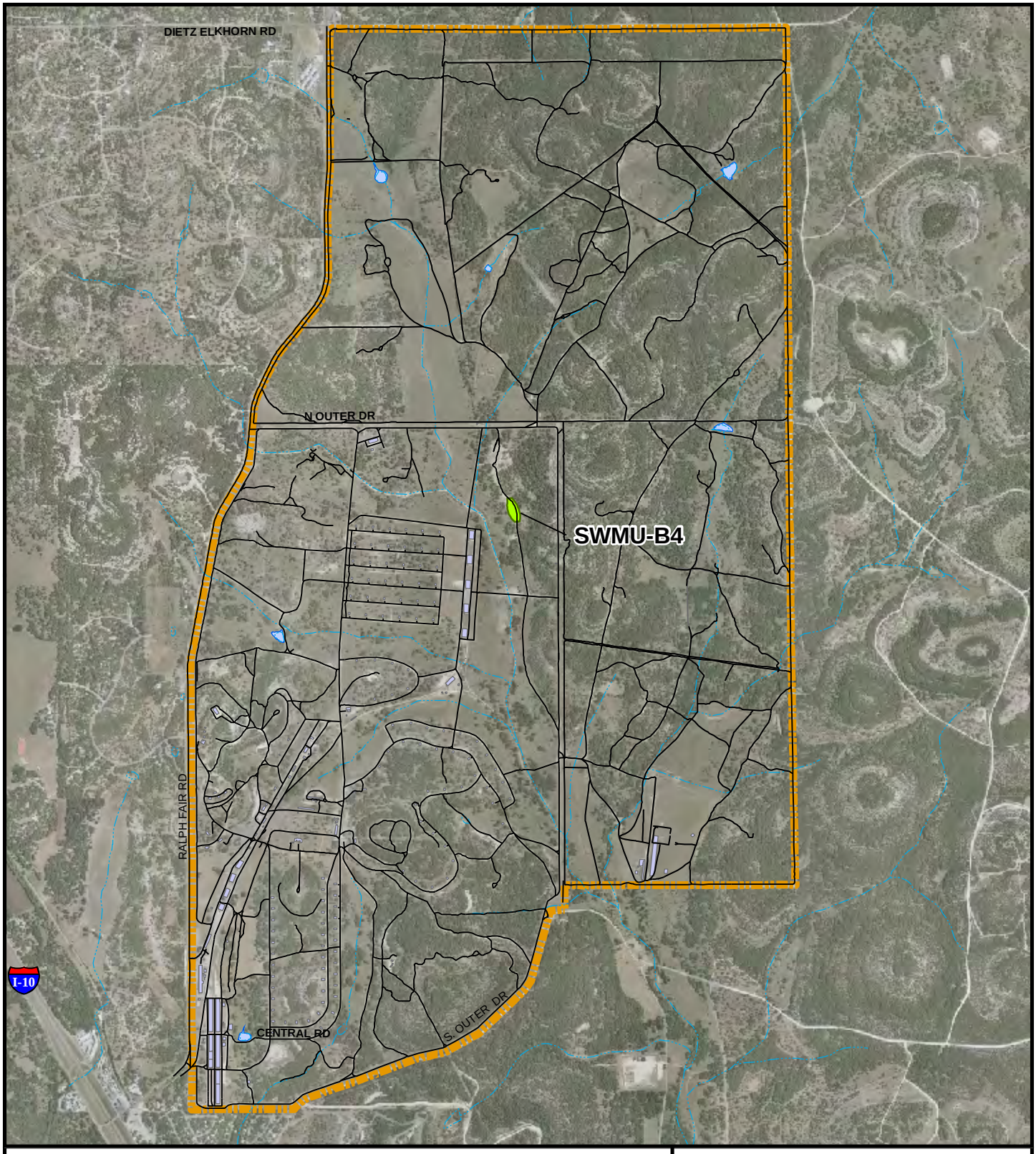

Legend

- Streets
- Installation Boundary
- Site Investigation Area

0 1,250 2,500 5,000

SCALE IN FEET

N

SOURCE: Camp Stanley Aerial Imagery

This figure is prepared for reference puposes only and should not be used, and is not intended for survey or engineering purposes.

WESTON SOLUTIONS

Figure 1A-1
Installation Boundary and Site Location Map
SWMU-B4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO	SCALE
August, 2011	03886.529.005	AS SHOWN

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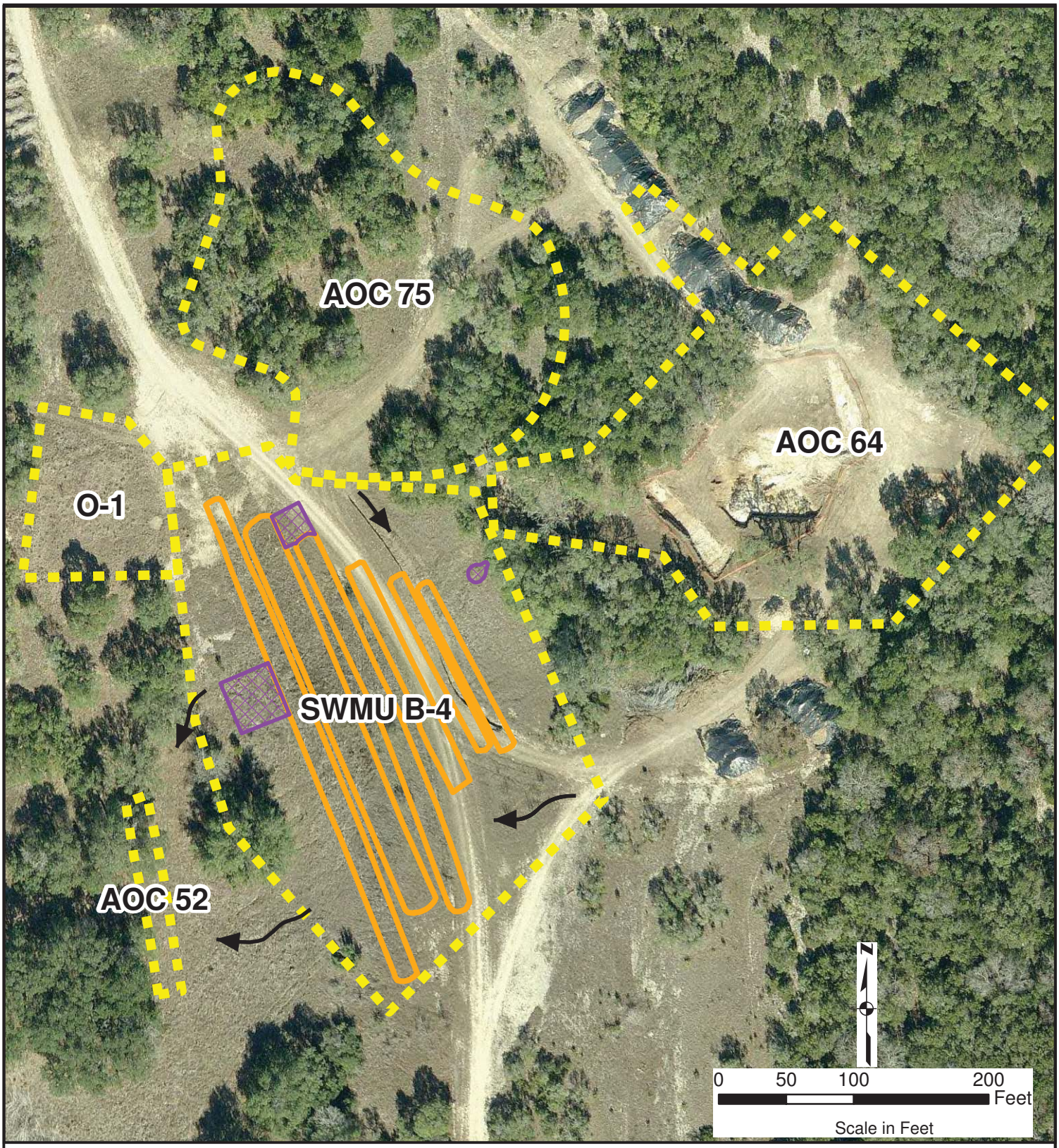

Legend

- Areas addressed during IRA and excavated > 1 ft below ground surface
- Areas addressed during IRA and excavated 1 ft below ground surface
- Site Boundary
- Surface water drainage flow direction

IRA - Interim Removal Action

Source: Camp Stanley aerial imagery

This figure is prepared for reference only and is not intended for survey of engineering purposes.

WESTON SOLUTIONS

Figure - 1A-2
On Site Property Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
JUNE, 2012	03886.529.005.0007.00	AS SHOWN

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Legend

- Soil Confirmation Sample
- Vertical Delineation Soil Boring
- RI Soil Boring (2000)
- Areas excavated greater than 1 foot below ground surface
- Areas excavated 1 foot below ground surface
- Surface water drainage flow direction

SS, US - Surface Soil Sample
COC – Chemical of Concern
PCL – Protective Concentration Level

Notes:
1. Target COCs (barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc) remaining in surface and subsurface soil at final limits of excavation are less than Tier 1 and/or Tier 2 PCLs, ecological screening benchmarks, or background as applicable. Therefore, no affected property exists.
2. The vertical extent of all COCs is delineated to background concentrations.

Source: Camp Stanley aerial imagery
This figure is prepared for reference only and is not intended for survey of engineering purposes.

WESTON SOLUTIONS

Figure - 1B
Affected Property Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
JUNE, 2012	03886.529.005.0007.00	AS SHOWN

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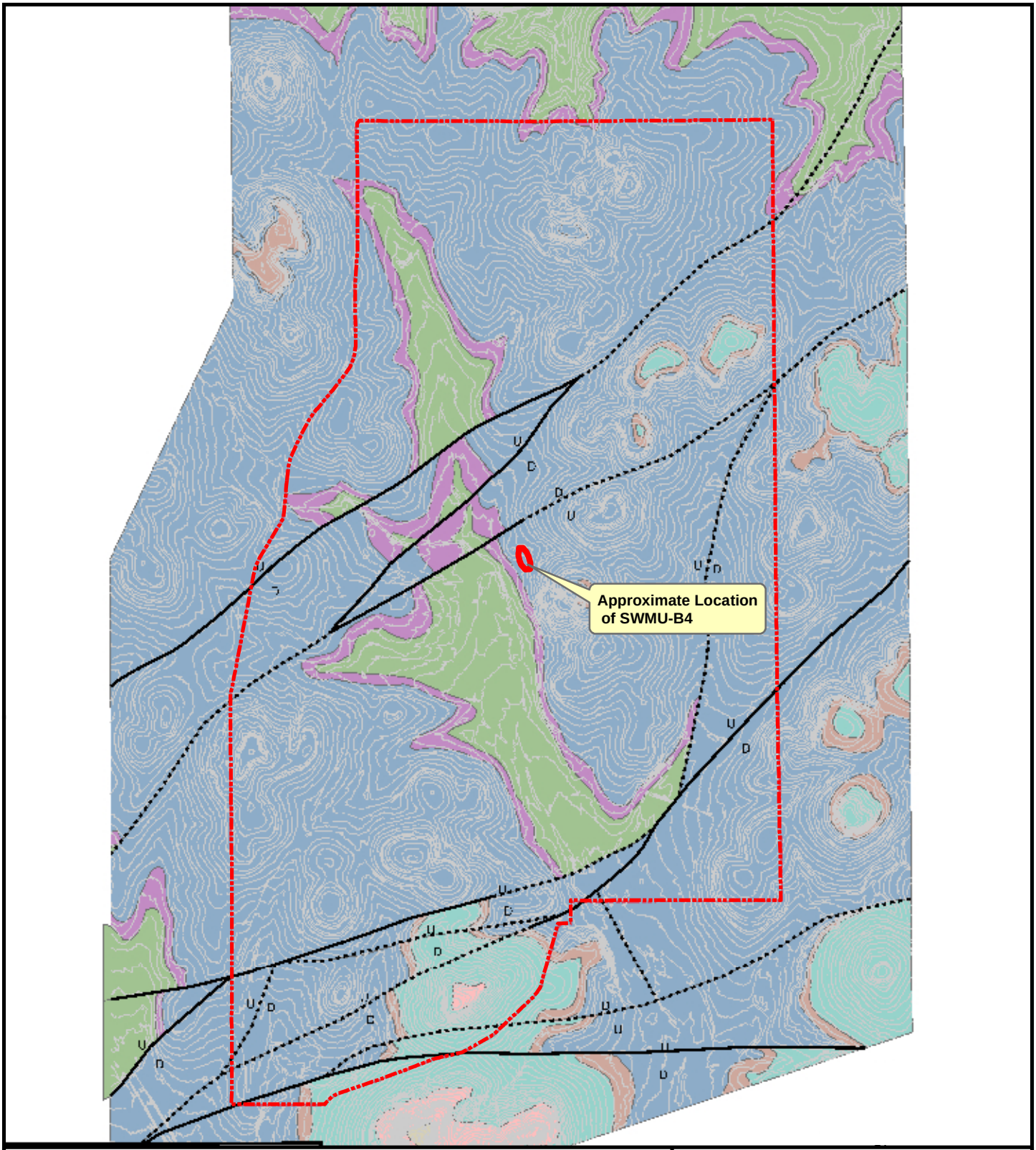

Legend

- Topography (2m contour interval)
- CSSA Boundary

Geology (USGS, 2003)

- Edwards Group (basal nodular member)
- Upper Glen Rose Limestone member (interval A)
- Upper Glen Rose Limestone member (interval B)
- Upper Glen Rose Limestone member (interval C)
- Upper Glen Rose Limestone member (interval D)
- Upper Glen Rose Limestone member (interval E)
- Lower Glen Rose Limestone member
- Inferred Fault
- Mapped Fault

0 2,800 5,600

Feet

N

SOURCE: Regional geology map graphic obtained from the CSSA Hydrogeologic Conceptual Site Model (CSSA, 2006a)
This figure is prepared for reference puposes only and should not be used, and is not intended for survey or engineering purposes.

Figure 1C
Regional Geologic Map
SWMU B-4 Affected Property Assessment

Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO	SCALE
August, 2011	03886.529.005	AS SHOWN

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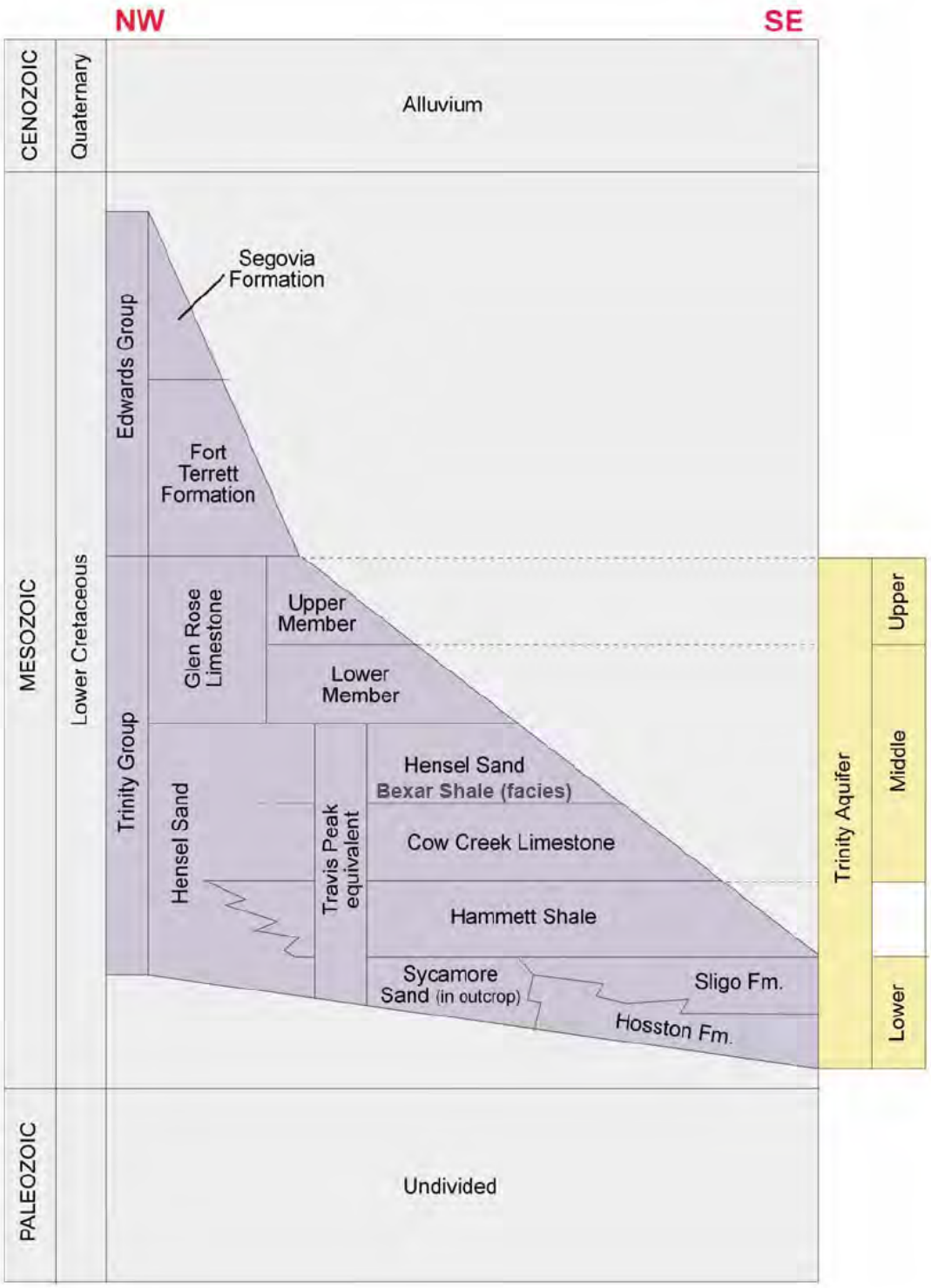

Note: Cross section graphic obtained from the CSSA Hydrogeologic Conceptual Site Model (CSSA, 2006a)
The cross section represents an idealized version of the regional geologic conditions present at CSSA.
The indicated stratigraphic layers are not to scale.

WESTON SOLUTIONS

Figure 1D
Regional Geologic Cross Section
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO	SCALE
AUG 2011	03886.529.005	N/A

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2. EXPOSURE PATHWAYS AND GROUNDWATER RESOURCE CLASSIFICATION

The following section discusses potential exposure pathways and the results of the receptor surveys conducted during the SWMU B-4 APA. The site lies well within the boundaries of CSSA. Because of this, the research for the receptor survey was limited to review of TCEQ- and EPA-approved documents prepared in response to the CSSA Order. These documents which are available on the installation's administrative record website (www.stanley.army.mil) included review of records for drinking water, agricultural supply, and monitoring wells and hydrogeologic data for CSSA. References used in this research are listed in Appendix 16.

2.1 SOURCE(S) OF POTABLE WATER FOR ON-SITE PROPERTY AND AFFECTED OFF-SITE PROPERTIES

CSSA obtains its potable drinking water supply from wells located on the installation and completed within the LGR member of the Middle Trinity Aquifer (CSSA, 2002a). The nearest water supply well to SWMU B-4 is CSSA Well CS-12, located outside the required receptor water well search radius, approximately 4,900 feet north of SWMU B-4. Based on the distance of drinking water supply wells from the site, delineation of COCs to RALs or background levels, and no documented groundwater impact at the site exceeding RALs, there is no reasonable potential for site COCs to impact these wells.

2.2 FIELD RECEPTOR SURVEY

A 500-foot field receptor survey was conducted in March 2011 by WESTON. The survey included field observations to look for physical, geologic, and other features that could facilitate COC transport or exposure to receptors. A search for drinking water wells within the search radius, and photo documentation of pertinent site features including ecological habitat in the site vicinity was performed. An aerial photographic map of the areas covered by the receptor survey is on Figure 2A. Photos obtained during the receptor survey are presented on Figures 2B-1 through 2B-8.

2.3 RECORDS SURVEY

Documents reviewed were obtained from the on-line CSSA Environmental Encyclopedia or directly from the CSSA Environmental Office and included the following:

- Final Hydrogeologic Conceptual Site Model for CSSA (CSSA, 2006a).
- Current CSSA water well and monitoring well data.
- Species and Habitat Distributions of Black-Capped Vireos and Golden-Cheeked Warblers, 2011 Breeding/Nesting Season (CSSA, 2011).

2.4 RECEPTOR SURVEY RESULTS

SWMU B-4 is located in an undeveloped portion of CSSA known as SWMU Highway due to its historical use for the disposal of munitions debris and other mission-related waste materials. No current or historical property uses other than these disposal activities are known or suspected within the receptor survey radius of 500 feet. The area consists of low hills wooded with mixed Ashe juniper (Juniperus ashei) and live oak (Quercus virginiana) stands and is typically bisected by shallow rocky ravines incised into the shallow underlying marly limestone units. Soil development is typically thin (less than 1 foot to 6 inches) on hills and their slopes. Deeper soil horizons (2 to 6 feet thick) develop from weathered limestone parent material in slightly sloping meadow-like areas at the base and between hills. Weathered bedrock is encountered at a depth of 3 to 6 feet in the east and central portion of SWMU-B4. The weathered bedrock can be excavated using mechanical earthmoving equipment or drilled using air-rotary drill rigs but cannot be excavated manually. Therefore, surface soil at SWMU B-4, as defined by TRRP for residential assessment purposes consists of the developed loose soil profile that overlies the bedrock parent material down to depths of approximately 6 feet.

The site is slightly sloped towards the south to natural grassy swale that drains towards Salado Creek about 500 feet towards the southwest. Salado Creek is an intermittent stream that is dry except during periods of high rainfall. The presence of thick stands of native grasses in the swale significantly mitigates the potential for migration of sediment in stormwater flow to impact the creek.

SWMU B-4 is centered on one of the meadow-like areas previously described. IRA activities conducted in January and February 2011 prepared the site by removing the vegetation and

grading and removing the upper 3 to 4 inches of surface soil. Affected soil and debris were removed from the trenches. Trenches A, B, C, and D were backfilled with clean fill from a CSSA borrow pit, and the site was re-graded to approximate the original slope (Figure 2B-1). All affected soil and debris was removed from Trench NT1 in March 2012. The trench was backfilled to a depth 6 feet bgs with debris-free soil returned to the excavation that had COC concentrations less than Tier 1 RALs. The remaining portion of NT1 was backfilled with borrow from the CSSA borrow pit. The area will be allowed to re-vegetate naturally after these activities are completed.

No drinking water wells are located within 500 feet of the site (Figure 2A and 2C). Environmental monitoring wells CS-MW2-LGR and CS-MW2-CC are located approximately 275 feet south of the site. Groundwater extraction well B3-EX02-LGR is located approximately 85 feet from the northwestern edge of SWMU B-4. The purpose of this well is to extract groundwater from the LGR already impacted by chlorinated solvents from other sites at CSSA for treatment at the B-3 bioreactor located approximately 650 feet north of SWMU B-4. Monitoring well CS-MW30-UGR is located approximately 300 feet north of the SWMU B-4. These wells were constructed specifically as environmental monitoring and remediation wells and there is no reasonable potential for these wells to serve as conduits for COCs from SWMU B-4 to impact groundwater.

The walking receptor survey identified abundant wooded, shrubbed, and grass meadow habit attractive to wildlife bordering the fringes of SWMU B-4. Photographs of these habitat types are included in Figure 2B. Information regarding the distribution of endangered bird habitat at CSSA was obtained during the course of this APA (CSSA, 2011). Based on the CSSA 2011 nesting/breeding season survey the nearest confirmed nesting habitat for the Golden Cheeked Warbler is approximately 320 feet east of SWMU B-4. The relationship of the habitat to the site is shown on Figure 2A.

Visitors that may access SWMU B-4 are limited to CSSA operations and grounds-keeping personnel, seasonal hunters, and other transient personnel. Since affected media were removed from the site during the IRA, there is no reasonable potential for adverse future exposure to human or ecological receptors to site COCs.

Based on information obtained during the records review and site reconnaissance, there is no reasonable potential for future adverse exposure to receptors from COC concentrations remaining at SWMU B-4 after the IRA because:

- IRA activities at the site removed COCs to background levels or Tier 1/Tier 2 RALs in the former disposal trenches and delineated COCs vertically to background or MQLs. The potential for adverse exposure to human receptors at the site has been eliminated.
- Habitat attractive to wildlife exists along the fringes of SWMU B-4 which includes habitat for the Golden Cheek Warbler, a federal endangered species. Native vegetation is expected to re-generate across the remediated area at SWMU B-4. The potential for future adverse exposure to ecological receptors has been mitigated by removal of COCs in surface soil to CSSA background levels or to concentrations less than ecological screening benchmarks.
- No drinking water supply wells are located within ½-mile of the site. Former water supply wells within ½-mile of the sites are used as part of the installation's contaminated groundwater monitoring program and would, therefore, not be a potential exposure source. The nearest water supply well, CSSA CS-12, is located approximately 4,900 north of the site.
- There are no non-potable or environmental water wells within the SWMU B-4 operational area and those identified within 500 feet of the affected property are properly constructed in a manner which would preclude them as a potential COC migration pathway.

2.5 GROUNDWATER RESOURCE CLASSIFICATION

Groundwater at CSSA is identified as a Class 1 resource. The installation overlies and obtains its potable water from the Middle Trinity Aquifer, a regional drinking water resource. The Upper Trinity Aquifer at CSSA is by default presumed to be hydraulically connected to the Middle Trinity Aquifer. Shallow groundwater may be potentially encountered in limited marly units present within the UGR (Upper Trinity Aquifer) beneath SWMU B-4 but screening level sampling conducted during the 1995 RI did not COCs exceeding RALS.

2.6 EXPOSURE PATHWAYS

Prior to the implementation of the IRA potentially complete exposure pathways at SWMU B-4 included soil-to-groundwater ($^{GW}Soil_{Ing}$) for various metals, the $^{Air}Soil_{Inh\text{-}V}$ pathway for mercury in subsurface soil within the disposal trenches, direct exposure ($^{Tot}Soil_{Comb}$) for human, and ecological receptors. The APA and IRA were focused on assessing, eliminating or mitigating these exposure pathways. Removal and vertical delineation of COCs to Tier 1/Tier 2 RALs or to background was accomplished in these areas. No groundwater was encountered in the trenches during the April 2010 pre-assessment excavation phase or the IRA activities in 2011 and 2012. Vertical delineation of COCs that exceeded RALs has been accomplished to background or the MQL within 17 to 19 feet bgs.

Salado Creek is not expected to have been impacted in the past from affected sediment runoff from SWMU B-4 due to the distance from the creek of the affected surface soil (drainage path of approximately 500 feet), low ground surface gradient (0.04) along the drainage pathway, and abundant ground vegetation between the affected area and the creek. Therefore the surface water/sediment exposure pathway is not complete at SWMU B-4.

Table 2A - Water Well Summary

Table 2A is not applicable. There are no water supply wells at CSSA within 500 feet or 1/2 – mile of Site SWMU B-4.

Table 2B - Affected Water Well Summary

Table 2B is not applicable. No water wells at CSSA are affected or threatened by conditions at SWMU B-4.

Table 2C - Complete or Reasonably Anticipated to be Complete Exposure Pathways

Post IRA (after removal of the affected media) and development of Tier 2 PCLs, there are no receptor exposure pathways reasonably anticipated to be complete (see Section 2.6).

2.6.1.1 Table 2C. Complete or Reasonably Anticipated to be Complete Exposure Pathways

Exposure pathway	Surface soil[1]	Subsurface soil[2]	Groundwater	Surface water/ sediment
$^{Tot}Soil_{Comb}$[3]	NA	NA	NA	NA
$^{Air}Soil_{Inh\text{-}V}$	NA	NA		
$^{GW}Soil_{Ing}$ or $^{GW}Soil_{Class3}$	NA	NA		
$^{GW}GW_{Ing}$ or $^{GW}GW_{Class3}$	NA	NA	NA	
$^{Air}GW_{Inh\text{-}V}$			NA	
^{SW}GW			NA	
^{Sed}GW			NA	
^{SW}SW or ^{Sed}Sed			NA	NA
Other (specify)[4]	NA	NA	NA	NA

Figure 2A - Potential Receptors Map

Figure 2A presents an aerial view of the vicinity and the locations of photographs taken during the receptor survey.

[1] Residential: soils from 0-15 feet deep, or to bedrock or groundwater-bearing unit if shallower.
Commercial/industrial: soils from 0-5 feet deep, or to bedrock or groundwater-bearing unit if shallower.

[2] The vadose zone beneath the surface soil extending to the groundwater-bearing unit, and including unsaturated zones between stratified groundwater-bearing units.

[3] Residential: $^{Air}Soil_{Inh\text{-}VP} + {}^{Soil}Soil_{Ing} + {}^{Soil}Soil_{Derm} + {}^{Veg}Soil_{Ing}$
Commercial/industrial: $^{Air}Soil_{Inh\text{-}VP} + {}^{Soil}Soil_{Ing} + {}^{Soil}Soil_{Derm}$

[4] If other exposure pathways are identified here, include those pathways in the derivation of assessment levels and evaluation of critical PCLs.

Figure 2B - Field Survey Photographs

Copies of photographs depicting observations made during the 500-ft field survey conducted for both sites are presented on Figures 2B-1 through 2B-8.

Figure 2C - Water Well Map

No water supply wells were identified with the required ½-mile water well search radius. Figure 2C includes an aerial photograph map depicting the search radius around SWMU B-4.

Attachment 2A - Tier 1 Ecological Exclusion Criteria Checklist

Residual COCs at SWMU B-4 in surface soil from surface to a depth of 5 feet are less than background, Tier 1 PCLs, and ecological risk screening benchmarks. No affected property exists at SWMU B-4, however a Tier 1 Ecological Exclusion Criteria Checklist was prepared based on post-response action conditions.

Attachment 2B - Tier 1 Ecological Exclusion Criteria Supporting Documentation

Part III attachment included.

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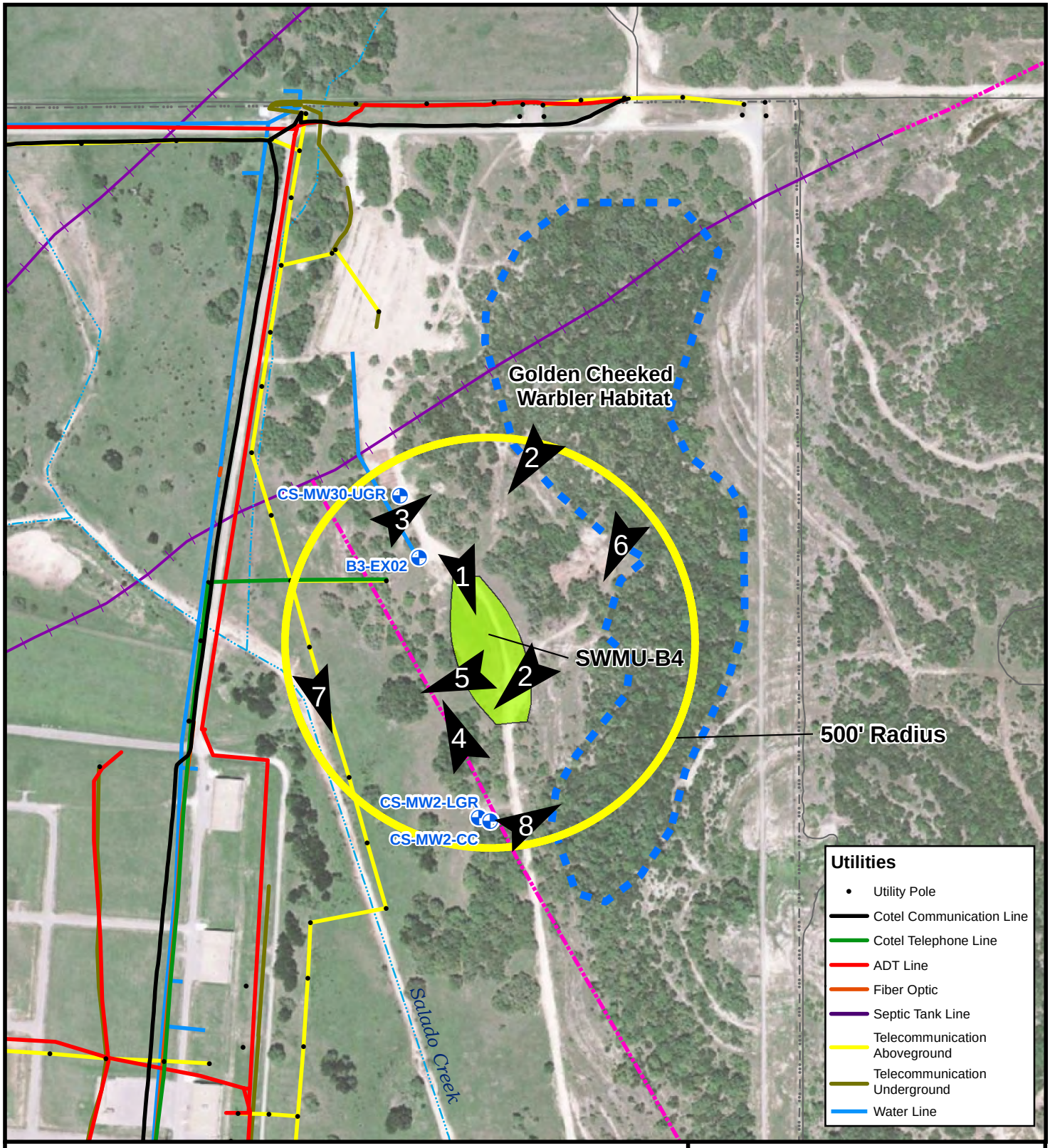

0 400 800

SCALE IN FEET

Legend

- Environmental Wells
- Facility Roadways
- Unpaved Roads
- Site Investigation Area
- 500 Foot Radius
- Surface Water Course
- Inferred Fault Line
- Mapped Fault Line
- Photo Location Spot
- Potential Golden Cheeked Warbler Habitat

N

Figure 2A
Potential Receptor Map
SWMU-B4 Affected Property Assessment

Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO	SCALE
October, 2012	03886.529.005	AS SHOWN

Path: I:\GIS Project Files\03886_Corps of Engineers\529_CAMPSTANLEY\001_TCEQAPAR\B4_Fig2A-1_Receptor Survey July2011.mxd, Date: 10/17/2012, User: perrint

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Figure 2B-1: Post-removal view of former disposal trench area at SWMU B-4. View from north end of site towards the south, 30 March 2011.

Figure 2B-2: View of typical clearing in surrounding area. Area north of SWMU B-4 and northwest of AOC 64. View to southwest. Prior to the January-February removal action, similar vegetation was found at the SWMU B-4 operational area.

Figure 2B-3: View of mixed oak-cedar vegetation on northern perimeter of SWMU B-4. Northeasterly view from road.

Figure 2B-4: View of roads cleared through mixed oak-cedar vegetation along western perimeter of SWMU B-4. View towards northwest.

Figure 2B-5: View of clearing adjoining southwest perimeter of SWMU B-4 (silt fence in foreground). View to southwest towards on-going removal action at AOC 63. Salado Creek lies beyond AOC 63 about 500 feet from where photograph was taken.

Figure 2B-6: View of mixed oak-cedar vegetation on eastern perimeter of SWMU B-4. View towards southwest from AOC 64. SWMU B-4 is located beyond the tree line.

Figure 2B-7: Salado Creek approximately 500 feet southwest of SWMU B-4 perimeter and immediately down-slope from AOC63 (on left). View towards the south (downstream).

Figure 2B-8: View of oak-cedar vegetation south of SWMU B-4. View towards east-northeast from SWMU B-4 access road.

0 1,400

SCALE IN FEET

Legend

- Interior Fence
- Installation Boundaries
- Facility Roadways
- Unpaved Roads
- Site Investigation Area

Note: No water wells listed in search radius

N

Figure 2C
Water Well Map
SWMU-B4 Affected Property Assessment

Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO	SCALE
AUG 2011	03886.529.005	AS SHOWN

Path: I:\GIS Project Files\03886_CAMPSTANLEY\529001_TCEQAPAR\B4_Fig2C_WaterWellSummary_July2011.mxd, Date: 8/22/2011, User: perrint

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Attachment 2A. Tier 1 Exclusion Criteria Checklist
SWMU B-4

PART I. Affected Property Identification and Background Information

1) Provide a description of the specific area of the response action and the nature of the release. Include estimated acreage of the affected property and the facility property, and a description of the type of facility and/or operation associated with the affected property. Also describe the location of the affected property with respect to the facility property boundaries and public roadways.

SWMU B-4 consists of approximately two acres of undeveloped land in the CSSA Inner Cantonment. The site is situated on either side of a tertiary single-lane gravel road known by CSSA personnel as "SWMU Highway". The site is approximately 850 feet due east of the low water crossing of CSSA Moyer Road at Salado Creek. The surrounding area is comprised on dense stands of mixed ashe juniper and live oak trees and interspersed open meadows of native grasses. There are no buildings or structures at the site other than an environmental groundwater extraction well (not associated with the site) and its small covered instrument station located near the northwest site perimeter. The site was identified for environmental investigation due to the historical knowledge of disposal of CSSA mission-related waste, potential munitions debris, and general debris in trenches at the site. Six disposal trenches at the site were excavated into the underlying soil and rock to depths ranging from 12 to 16 feet below ground surface (bgs). Surface soil consisting of approximately 3 to 6 feet of grayish-brown to dark reddish-brown, silty clay loam. The surface soil layer is underlain by a competent yellowish-white to orangish-white weathered limestone with marl and clayey layers ranging from 6 to 12 feet in thickness. Unweathered white to yellowish-white, hard, limestone with a platy to blocky structure is encountered beneath the weathered limestone unit. The weathered limestone underlying surface soil cannot be manually excavated but is capable of being machine excavated and so meets the criteria as bedrock and subsurface soil in definition with TRRP. Waste and debris were placed into the trenches up to a level of about 4 to 2 feet below grade and then covered with the loose native soil overburden. Removal actions conducted in January-February 2011 and in March 2012 removed all munitions debris, waste, and affected soil in the trenched areas exceeding human health PCLs and ecological risk screening benchmark values. Therefore, the former trench area at SWMU B-4 is currently not an affected property. The remainder of this checklist is completed based on post-remediation conditions at SWMU B-4.

Attach available USGS topographic maps and/or aerial or other affected property photographs to this form to depict the affected property and surrounding area. Indicate attachments:

n/a Topo map n/a Aerial photo X Other (specify) See Figure 2A and 2C in APAR, Section 2

2) Identify environmental media known or suspected to contain chemicals of concern (COCs) at the present time. Check all that apply:

Known/Suspected COC Location		Based on sampling data?	
X	Soil <5 ft below ground surface	X Yes	___ No
X	Soil >5 ft below ground surface	X Yes	___ No
___	Groundwater	___ Yes	___ No
___	Surface Water/Sediments	___ Yes	___ No

Explain (previously submitted information may be referenced):

Not applicable - All affected media removed from the site in January-February 2011 and March 2012. No affected property exists at the site. COCs remaining in soil are at background levels or do not exceed human health or ecological PCLs.

3) Provide the information below for the nearest surface water body which has become or has the potential to become impacted from migrating COCs via surface water runoff, air deposition, groundwater seepage, etc. Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities that are:

a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; and
b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

The nearest surface water body is 520 (feet)/miles from the affected property and is Salado Creek.

The water body is best described as a:

X freshwater stream:
- ___ perennial (has water all year)
- X intermittent (dries up completely for at least 1 week a year)
- ___ intermittent with perennial pools

___ freshwater swamp/marsh/wetland
___ saltwater or brackish marsh/swamp/wetland
___ reservoir, lake, or pond; approximate surface acres _____
___ drainage ditch
___ tidal stream ___ bay ___ estuary
___ other; specify

Is the water body listed as a State classified segment in Appendix C of the current Texas Surface Water Quality Standards; §§307.1 - 307.10?

X Yes Segment # 1910 Use Classification: Contact recreation, public water supply, high aquatic life use.

___ No

If the water body is not a State classified segment, identify the first downstream classified segment.

Name: _____
Segment #: _____
Use Classification: _____

As necessary, provide further description of surface waters in the vicinity of the affected property:

CSSA is located in the watershed headwaters area of Salado Creek. Stream flow and the occurrence of pooled water in the area is generally associated with recent precipitation events.

PART II. Exclusion Criteria and Supportive Information

Subpart A. Surface Water/Sediment Exposure

1) Regarding the affected property where a response action is being pursued under the TRRP, have COCs migrated and resulted in a release or imminent threat of release to either surface waters or to their associated sediments via surface water runoff, air deposition, groundwater seepage, etc.? Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities which are:

a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; and

b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

____ Yes _X_ No

Explain:

All affected media have been removed from the site and no PCLE zone exists. The straight-line distance to the closest surface water body Salado Creek is approximately 520 feet west of the site. The drainage path is over soil vegetated with thick stands of natural tall grasses and other ground vegetation which would effectively mitigate transport of site previously present COCs (metals) over the drainage route. The surface water body is an intermittent flow branch of Salado Creek that is generally dry except after recent or extended rain events.

If the answer is yes to Subpart A above, the affected property does not meet the exclusion criteria. However, complete the remainder of Part II to determine if there is a complete and/or significant soil exposure pathway, then complete PART III - Qualitative Summary and Certification. If the answer is No, go to Subpart B.

Subpart B. Affected Property Setting

In answering "Yes" to the following question, it is understood that the affected property is not attractive to wildlife or livestock, including threatened or endangered species (i.e., the affected property does not serve as valuable habitat, foraging area, or refuge for ecological communities). (May require consultation with wildlife management agencies.)

1) Is the affected property wholly contained within contiguous land characterized by: pavement, buildings, landscaped area, functioning cap, roadways, equipment storage area, manufacturing or process area, other surface cover or structure, or otherwise disturbed ground?

____ Yes _X_ No

Explain:

Not applicable - no affected property exists at the site.

If the answer to Subpart B above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subparts C and D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart B above is No, go to Subpart C.

Subpart C. Soil Exposure

1) Are COCs which are in the soil of the affected property solely below the first 5 feet beneath ground surface **or** does the affected property have a physical barrier present to prevent exposure of receptors to COCs in surface soil?

____ Yes ____ No

Explain:

Not applicable - no affected property exists at the site.

If the answer to Subpart C above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subpart D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart C above is No, proceed to Subpart D.

Subpart D. *De Minimus* Land Area

In answering "Yes" to the question below, it is understood that all of the following conditions apply:

- The affected property is not known to serve as habitat, foraging area, or refuge to threatened/endangered or otherwise protected species. (Will likely require consultation with wildlife management agencies.)
- Similar but unimpacted habitat exists within a half-mile radius.
- The affected property is not known to be located within one-quarter mile of sensitive environmental areas (e.g., rookeries, wildlife management areas, preserves). (Will likely require consultation with wildlife management agencies.)
- There is no reason to suspect that the COCs associated with the affected property will migrate such that the affected property will become larger than one acre.

1) Using human health protective concentration levels as a basis to determine the extent of the COCs, does the affected property consist of one acre or less and does it meet all of the conditions above?

____ Yes ____ No

Explain how conditions are met/not met:

Not applicable - no affected property exists at the site.

If the answer to Subpart D above is Yes, then no further ecological evaluation is needed at this affected property, assuming the answer to Subpart A was No. Complete PART III - Qualitative

Summary and Certification. If the answer to Subpart D above is No, proceed to Tier 2 or 3 or comparable ERA.

PART III. Qualitative Summary and Certification (complete in all cases.)

Attach a brief statement (not to exceed 1 page) summarizing the information you have provided in this form. This summary should include sufficient information to verify that the affected property meets or does not meet the exclusion criteria. The person should make the initial decision regarding the need for further ecological evaluation (i.e., Tier 2 or 3) based upon the results of this checklist. After review, TCEQ will make a final determination on the need for further assessment. **Note that the person has the continuing obligation to re-enter the ERA process if changing circumstances result in the affected property not meeting the Tier 1 exclusion criteria.**

Completed by	Russell Cason, P.G.	(Typed/Printed Name)
	Project Manager, Weston Solutions, Inc.	(Title)
	10-18-12	(Date)

I believe that the information submitted is true, accurate, and complete, to the best of my knowledge.

Gabriel Moreno-Fergusson	(Typed/Printed Name of Person)
Environmental Manager – U.S. Army Camp Stanley Storage Activity	(Title of Person)
Gabriel Moreno-Fergusson	(Signature of Person)
10/29/12	(Date Signed)

PART III - ATTACHMENT
SUMMARY STATEMENT TIER 1 ECOLOGICAL EXCLUSION CRITERIA FOR AFFECTED AREA AT SWMU B-4

All previously affected media at site SWMU B-4 has been removed during the January-February 2011 and March 2012 interim remedial action (IRA). All residual COC concentrations are less than background, Tier 1 or 2 PCLs, or ecological benchmarks. Therefore, no affected property exists at the site.

3. ASSESSMENT STRATEGY

3.1 GENERAL ASSESSMENT ISSUES

Environmental Media Assessed

Media assessed at SWMU B-4 during the APA included surface and subsurface soil associated with the former disposal trenches and areas of surface soil impact outside the trench areas identified by the 1995 and 2002 RI (Parsons, 2002). To meet CSSA objectives for site closure for unrestricted use (residential), the initial level of assessment for soil was to RALs assuming a 30-acre (i.e. greater than 0.5 acre) source area. TRRP Tier 1 RALs updated as of 24 May 2011 were used for SWMU B-4 media assessment. The final data evaluated and considered for the APA consists of the cumulative results of surface soil sampling March 2010 through May 2011 and the excavation confirmation sampling performed during the January-February 2011 and February–March 2012 removals.

Based on receptor and site conditions, air, groundwater, and surface water were not media of concern for further assessment. Groundwater did not require assessment as all COCs that exceeded RALs were delineated at the site vertically to background or the sample MQL and groundwater was not encountered prior to the maximum depth of investigation, approximately 23 feet bgs. Assessment of surface water was not required due to the absence of surface water at the site, and lateral delineation of COCs to RALs on-site. The nearest surface water body, Salado Creek is approximately 500 feet west of SWMU B-4. Salado Creek is an intermittent stream that is typically dry except during stormwater events. An air assessment was not necessary because VOCs and mercury detected in soil after the IRA and APA confirmation sampling did not exceed RALs.

Environmental media and relevant exposure pathways assessed during the APA are summarized as follows:

> **Surface Soil.** The potential exposure pathways evaluated for surface soil included direct ingestion/inhalation ($^{Tot}Soil_{Comb}$) for site visitors, soil-to-groundwater cross-media contamination ($^{GW}Soil_{Ing}$), and ecological risk. Surface soil at SWMU B-4 is defined in accordance with TRRP for human health exposure pathways for residential land use as:

the soil zone extending from ground surface to 15 feet in depth or to the top of the groundwater-bearing unit or bedrock, whichever is less in depth. Bedrock is defined under TRRP as solid rock (i.e., consolidated, coherent, and relatively hard naturally formed material that cannot normally be excavated by manual methods alone) that underlies soil or other surficial material. Across SWMU B-4 surface soil ranges from 0.5 to 6 feet deep before bedrock is encountered. For ecological exposure pathways in surface soil, the soil zone extending from ground surface to 5 feet in depth or to bedrock if shallower was assessed.

Subsurface Soil. The potential exposure pathways evaluated for subsurface soil (bedrock) include ${}^{GW}Soil_{Ing}$ and the subsurface soil to air volatilization (${}^{Air}Soil_{Inh\text{-}V}$).

Target COCs

The selected analytical suite to initially evaluate SWMU B-4 was based on the known use of the site for the subsurface disposal of undetermined material, potentially including MEC, the sampling results of previous RI activities, disposed items observed in the field during the 2010 pre-IRA assessments, and the analytical results of the 2010 pre-IRA assessments.

1995 and 2000 RI Field Data for Target COC Determination

Surface and subsurface soil samples collected during the 1995 and 2000 RI field assessments at SWMU B-4 were analyzed for VOCs (EPA Method SW846-8260B), SVOCs (EPA Method SW846-8270C), explosives (EPA method SW846-3330), and for a CSSA-specific list of metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, zinc) (EPA Method 6000/7000 series). RI data indicated that barium, cadmium, lead, mercury and zinc were detected at concentrations exceeding Tier 1 RALs in various surface and subsurface soil samples. Arsenic was not detected at concentrations exceeding background concentrations in the RI samples and was screened out from further assessment during the pre-IRA assessment conducted by WESTON. Additionally, arsenic was not detected above CSSA background in samples collected during the APA for adjacent site AOC 64 which had a similar use history as SWMU B-4. VOCs and SVOCs were detected at concentrations less than TRRP Tier 1 RALs. The explosive tetryl was detected at 0.19 mg/kg in one soil sample out of 52 samples collected during the 2000 RI assessment. The TRRP Tier 1 RAL for tetryl is 0.55 mg/kg.

2010 Pre-IRA Data for Target COC Determination

Because most of the 1995 and 2000 RI borings were drilled immediately outside the suspected trench boundaries due to unexploded ordnance (UXO) concerns, the 2010 pre-IRA assessment focused on determining representative COC concentrations present in soil and debris within SWMU B-4 trenches A, B, C, and D by excavation to directly observe trench debris, and sampling the mixed soil and debris.

Field observations obtained during the April 2010 pre-IRA trenching assessment indicated the presence of affected soil, munitions debris, small arms ammunition (SAA), demilitarized small arms, radio batteries, plastic sheeting, wood and paper products, metal banding, and other scrap metal items. No liquid-filled containers or drums were noted during the pre-IRA assessment. Field screening indicated maximum organic vapors of 0.2 part per million (ppm) in one test pit completed in Trench A (sample LFM02). A total of 45 samples of the mixed soil and debris collected from the trenches were analyzed for VOCs, SVOCs, explosives, and SWMU B-4 target metals (barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc) by the previously listed EPA methods. The results of the April 2010 pre-IRA assessment indicated that barium, cadmium, copper, lead, mercury, nickel and zinc were the only COCs detected at concentrations exceeding TRRP Tier 1 RALs. Tables summarizing the analytical results of the pre-IRA assessment are included in Section 10.

The analytical results of the pre-IRA assessments were used to screen and determine the final list of COCs to be analyzed during the IRA confirmation sampling and to be used as the basis for the APA determination. Based on the cumulative results of these assessments, the SWMU target COCs carried forward for confirmation sampling and the APA were barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc. Although chromium was not detected at concentrations exceeding Tier 1 RALs during the pre-IRA assessment, it was retained during the APA confirmation sampling due to the large amount of ferrous metals known to have been in the trenches. The final proposed COC list for the IRA confirmation sampling and the APA evaluation was presented to representatives of the TCEQ on 6 June 2010 during a scheduled regulatory meeting at the post. The COC screening results for site COCs are documented in Section 10.

Additionally, samples of the mixed affected soil and debris from the trenches were tested for TPH by TCEQ Method TX1005 and the Toxicity Characteristic Leaching Procedure (TCLP) (for total metal COC concentrations that exceeded 18 times the federal TCLP limit) to determine in-situ waste characterization and disposal requirements in accordance with the CSSA RI and Interim Measures Waste Management Plan (CSSA, 2006b). The results of the waste characterization results are presented in Appendix 12.

Background COC Concentrations

A background metals concentration evaluation was previously conducted for CSSA that determined the 95 percent upper confidence limit (95% UCL) of the range of naturally occurring metals concentrations in earth materials at CSSA (CSSA, 2002b). As allowed by TRRP, the higher value of either the CSSA site-specific background or the Texas-Specific Background Concentration (30 TAC 350.51(m)) was used during the APA to screen COCs in surface and subsurface soil and compare their concentrations to TRRP RALs and ecological screening benchmarks. The statistical results summary for background levels of COCs at CSSA is included in Appendix 8.

Earth material for backfilling the disposal trenches excavated during the IRA was obtained from a borrow site at CSSA located on the southwestern portion of the installation. Materials from the borrow site included in-place native material and soil and rock excavated from clean construction areas at CSSA. A composite sample from the borrow site consisting of eight grab samples from various locations at the site were collected and analyzed for VOCs, SVOCs, explosives, and metals. Metals concentrations detected in the borrow site sample were within CSSA site-specific background levels. No organic COCs were detected in the samples. A description of the borrow area sampling and analytical report is included in Appendix 11.

3.2 ASSESSMENT STRATEGY

General Assessment Approach

Affected surface soil in two areas at the site identified by the 2000 RI was re-assessed in March 2010 to determine current conditions. Since SWMU B-4 target COCs are metals which typically have limited vertical extent in soil, surface soil samples were collected from surface to a depth of 0.5 feet to determine the likely maximum concentrations at the uppermost point of human and

ecological receptor exposure. Additionally a sample at each location was collected from and interval of 1 to 1.5 feet to evaluate the vertical extent of affected surface soil and to provide information on excavation requirements for surface soil removal if needed during the IRA.

The pre-IRA subsurface exploratory trenching and sampling program was implemented in April 2010 to access trench soil and debris using the information provided by the electrical conductance and GPR geophysical surveys conducted at the site in 1995 (Parsons, 1995) and on review of historical aerial photos of the site. A copy of the 1995 Parsons geophysical survey report and inferred trench outlines is included in Appendix 11. A series of lateral trenches were excavated using a trackhoe to define the lateral and longitudinal extent of the trenches. Shallow "pot-holing" was performed to more closely define the north and south termini of the trenches. At the center of each intersect with a trench, a test pit (TP) was excavated to the bottom of the soil and debris found in the trench to evaluate the types of materials found and to collect samples from the affected soil. The results of the April 2010 pre-IRA sampling program indicated that barium, cadmium, lead, nickel, and zinc were the only COCs at SWMU B-4 that exceeded TRRP Tier 1 RALs in the disposal trench materials. VOCs and SVOCs were detected sporadically at concentrations substantially below RALs. Explosives were not detected. No pre-removal sampling for trench NTI was conducted prior to the 2012 IRA.

Assessment of the extent and concentrations of COCs remaining after conducting the 2011 and 2012 IRAs was accomplished by collecting confirmation samples of surface and subsurface soil from the limits of the excavated trenches. To assure vertical delineation of residual COCs to the CSSA background, four borings were cored into the bedrock trench floors and samples were collected at depths of 5 and 10 feet below the trench floors. The results of the IRA confirmation samples were used as the basis for the APA to document final site conditions and to evaluate if additional assessment or remedy was required to attain a Remedy A standard closure for the site.

Sampling Approach

The 1995-2000 RIs provided limited information on COC concentrations within the disposal trenches. Based on a review of the 17 RI boring logs, possibly two borings penetrated the trenches and sampled trench soil and debris. Due to the potential presence of UXO in the trench materials the remainder of the RI borings were placed just outside the apparent edges of the trenches. The 1995-2000 RI did provide information on affected surface soil areas at SWMU B-4 and indicated that the potential was low for significant impact to subsurface soil outside the limits of the trenches.

The April 2010 pre-IRA assessment was effective in determining the physical extent of the disposal trenches within the area of geophysical anomaly, and characterizing the debris types and COCs within the buried source materials using physical inspection, field screening with PID, and laboratory analyses. Samples of the trench materials were sampled at shallow and deeper intervals within the trenches and also from soft native material below the debris. This approach resulted in a high confidence that the source material for the COCs was identified, adequately sampled and analyzed to assess representative COC concentrations at the site. The execution of over 23 sampled test pits and several other non-sampled shallow test pits to define the ends of the trenches provided an effective means to determine waste content, analytical requirements, and COC screening (based on direct sampling of the source area) to be used during the post IRA APA and for waste disposal. During the pre-IRA assessment, samples of the mixed soil debris ("LFM" samples) were collected near the interface of the waste material and cover soil (about 3 to 5 feet bgs) and deeper within the affected soil/debris (about 8 to 12 feet bgs). Upper LFM samples were designated using odd numbers; samples collected deeper into the lower LFM were designated with even numbers. At some locations where the native material below the debris was soft and could be excavated with the equipment used, samples from the bottom of the trench ("TP" samples). A total of 45 LFM samples and six TP samples were collected during the pre-IRA assessment.

Pre-characterization of COCs of debris and soil in Trench NT1 was not performed. Therefore, confirmation samples from the limits of the excavated trench were analyzed for CSSA default target analytes.

To accomplish surface soil assessment at SWMU B-4, an initial sampling grid was established on approximate 50-by 50- foot grid spacing in the northeastern portion of the site where the 2000 RI identified barium, cadmium, and mercury at concentrations exceeding RALs in soil from 0 to 0.5 feet. At each grid sample point a soil sample was collected from 0 to 0.5 feet and from 1 to 1.5 feet bgs. At locations were shallow bedrock was encountered; only the 0 to 0.5 feet sample was collected. All samples were field screened with a PID for organic vapors. PID readings did not indicate the presence of organic vapors. In accordance with the approved Work Plan for SWMU B-4, all surface soil samples were analyzed for SWMU B-4 target metals. Additionally four surface soil samples were analyzed for explosives. At one location on the west side of SWMU B-4 where mercury had been detected exceeding the RAL, delineation point SS17 was used to re-confirm the 2000 data and vertically delineate impact. Two new sample locations SS15 and SS16 and data from two previous RI borings (SB15 and SB17) were used to define mercury in that area to concentrations less than RALs. Figure 10A shows the location of the pre-IRA surface soil sampling locations.

The final limits of excavation during the IRA indicated trench lengths ranging from 135 to 400 feet in length, from 11 to 25 feet in width, and from 11 to 17 feet maximum depth. Confirmation sampling of the trenches during the IRA was conducted at sampling stations spaced on average 50 feet apart. For the January–February 2011 removal, each sidewall/floor sampling station was assigned an alpha-numeric designated with reference to its relative position from the northern extent of each trench (i.e. A1, A2, A3, etc.). At each sampling station, samples from the excavated bedrock of the trench floor (F) and sidewall (S) were collected. Sidewall samples were further identified as collected from the west or east sidewalls (i.e. A1-SW or A1-SE) or north or south endwall (i.e. A-SN, A-SS). A final numerical indicator of "1" was used to designate the sample location at the initial extent of excavation (i.e. A1-F1) and "2" (i.e. A1-F2) for a subsequently over-excavated location. Where the endwalls of the trenches sloped at low degrees, the endwall samples were collected approximately halfway between the floor of the excavation and grade. To assure that all media (soil and bedrock) in the trench profiles were assessed, a sidewall sample was collected from the loose upper native soil in the upper 3 feet of the trench sidewall (i.e. A1-US). "US" samples were not collected from the west sidewall of trench Cb due to the presence of highly compacted road material.

Samples collected from Trench NT1 during the February–March 2012 removal were designated as "BOT" if collected from the excavation floor, "SW" from trench sidewalls, and "US" from the surface soil layer. Numerical suffixes were used to designate the sequential order of sample collection.

To accomplish vertical delineation of certain residual metals to TRRP requirements, four borings were cored at locations within trenches B, Cb, and D where final IRA confirmation samples indicated that COC concentrations significantly exceeded CSSA background levels but were less than RALs. At each location, bedrock was continually cored from the bottom of the trench to a maximum depth of 10 feet below the trench (approximately 21.5 to 23 feet bgs). The cores were field screened with a PID for organic vapors; no detections were registered. Core samples were collected from depths of 5 and 8 feet below the bottom of the trenches. The "5-foot" sample was analyzed for the metal COC of interest and the deeper sample was held pending the results of the shallower sample.

To support calculation of a site-specific Tier 2 $^{GW}Soil_{Ing}$ PCL for metal COCs, four samples were collected from subsurface soil and analyzed for pH by EPA Method SW9045B.

Surface Water and Sediment Assessment

No surface water exists at the site. The nearest surface water body is an intermittent stream, Salado Creek located approximately 500 feet west of SWMU B-4. Down-slope delineation of surface soil impact was defined on-site to residential assessment levels/ecological screening benchmark values at SWMU B-4 prior to encountering surface water bodies. Therefore, no surface water or associated sediment assessment at SWMU B-4 is necessary.

Miscellaneous Assessments

Previous assessment data from the 1995 and 2000 RI field activities including geophysical and soil vapor surveys are included in Appendix 11. Miscellaneous assessments performed during the APA included characterization of fill borrow source material used for backfilling the excavations created during the IRA, and waste characterization of trench soil and debris. A post-IRA screening level magnetometer survey was conducted across the site in May 2012 to confirm the removal of trench material during the IRA. The results of these miscellaneous assessments

are also included in Appendix 11. Waste characterization methods and results are described in Appendix 12.

Utilities

SWMU B-4 is located in an undeveloped area of CSSA. There were no underground utilities present at the site prior or during operational activities at the site. In 2010, Bioreactor B-3 extraction well B3-EX02 was installed near the northwestern corner of SWMU B-4 and a groundwater transfer line was routed northwards to the bioreactor in a shallow trench. The utility is not within an affected property and there is no reasonable potential for residual COCs (metals in surface soil) at SWMU B-4 to impact the utility and migrate off-site.

Assessment Methods

Surface soil samples collected for metals and explosives analyses during the APA were collected using a hand auger. Prior to each sample collection, the hand auger was decontaminated by scrubbing entrained soil from the augur with a brush and a solution of laboratory detergent and potable water, an initial rinse of potable water and a final rinse with de-ionized water. The hand auger was advanced through the soil profile to collect a sample from the desired interval (0 to 0.5 feet or 1.0 to 1.5 feet bgs). The samples were field screened for organic vapors using a Mini-RAE PID unit calibrated to 100 ppm isobutylene calibration gas. The sample was then placed immediately into a labeled laboratory-supplied container of appropriate volume for the analysis requested, placed in an iced cooler and logged onto the chain of custody. A laboratory-supplied temperature blank accompanied the cooler.

Samples collected during the April 2010 pre-IRA assessment and the 2011 and 2012 IRAs were obtained by hand directly from the open excavation at depths less than 3 feet in depth ("US" samples). For samples from greater depths a trackhoe bucket was used to collect the samples. When collecting soil samples from a trackhoe bucket, the equipment operator was directed to remove a volume of soil clear of any sloughed material and at the specific depth interval to be sampled. Samples were then collected from soils that had not come into contact with the backhoe bucket walls. All excavation samples collected were field screened with a PID and then transferred directly into the sampling container by hand using disposable nitrile gloves and/or

disposable scoops and managed for transport in the same manner as previously described for surface soil samples.

Blind field duplicate samples and samples for matrix spike (MS) and matrix spike duplicate (MSD) Quality Assurance (QA) samples were collected at an approximate rate of one per 20 investigation samples. A laboratory-prepared trip blank accompanied all coolers containing samples for VOC analyses. Equipment blanks were prepared at a rate of one per 20 samples for surface soil samples collected by hand auger. Equipment blanks were prepared by pouring de-ionized water over a decontaminated hand auger and collecting the rinsate directly into the sample container for analysis of the COCs of interest.

Data Quality

Laboratory analytical and field methods used for the evaluation of COCs at SWMU B-4 were based on historical release determination activities previously conducted at the site and are in accordance with the CSSA Quality Assurance Project Plan (QAPP) and pursuant to the requirements of the USEPA Order.

Although laboratory method detection limits (MDLs), MQLs, or adjusted sample detection limits (SDLs) exceeded Tier 1 PCLs for a limited number of explosives, VOC, and SVOC constituents, SDLs were considered appropriate for evaluating site conditions based on adherence to data quality objectives of the TCEQ approved Camp Stanley QAPP and follow up correspondence from the analytical laboratory indicating all SDLs represent method detection limits adjusted for moisture content or, in limited instances, dilution factors. Additional information on the specific compounds with laboratory SQLs exceeding Tier 1 PCLs is presented in Section 4. Data Usability Summary (DUS) Reports for all laboratory analytical results for the 2010 pre-IRA assessment and the 2011-2012 APA performed by ALS Group (ALS) for WESTON and by Agriculture and Priority Pollutants Laboratories (APPL) for Parsons are provided in Appendix 10.

Data qualifiers applied per the requirements of the CSSA QAPP; to laboratory analytical results for the 2011 APA sampling included sixteen R-flagged values for the copper in analyses from ALS Laboratory sample data groups (SDG) 1101810 and 1102047 indicating the data points failed specific quality control criteria. The reason for the data quality failures for copper were

varied (e.g. MS/MSD recoveries were low, laboratory RPD exceeded, high ICS recovery). The affected samples were collected from various locations in Trench B and Trench D on 28 January and 1 February 2011, respectively and represent consecutive sample shipments to the laboratory. The R-flagged values for copper occurred at a low frequency relative to the total amount of data collected so any impact to the evaluation of overall site conditions is judged to be minimal.

In general, with the exception of rejected data results for the COC copper as previously described, the data collected during the 2010 pre-IRA assessment and 2011-2012 APA are useable as qualified as a representation of previous and post-IRA soil COC conditions at site SWMU B-4.

Table 3A - Underground Utilities

Table 3A presents underground utilities within or immediately adjacent to SWMU B-4. Based on the location of the utilities with respect to the affected property at SWMU B-4, and on the nature of residual COCs (metals), no subsurface utilities are threatened, affected or suspected to be preferential migration pathways of site contaminants. Utilities within 500 feet of SWMU B-4 are presented on Figure 2A.

Table 3A. Underground Utilities: SWMU B-4

Utility type	Construction material	Backfill material	Approx. depth (ft)	Utility company name	Potential migration pathway?		Affected?	
					Yes	No	Yes	No
Groundwater remediation transfer line	Polyvinyl chloride (PVC)	Native Soil	1-2	CSSA		✓		✓

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4. SOIL ASSESSMENT

Activities performed during the pre-IRA assessment conducted in April 2010 accomplished the characterization of the maximum COC concentrations present in soil and debris within SWMU B-4 disposal trenches A, B, C, and D. The information from the pre-IRA assessment was used to evaluate the potential COCs present in the source material, screen those COCs that were found not to exceed RALs, develop a final list of target COCs for SWMU B-4, and provide the basis for waste management of the soil and debris upon completion of the IRA. Information from pre-IRA assessment and the COC screening process is provided on tables and figures in Section 10. Pre-IRA COC characterization was not performed prior to the 2012 excavation of Trench NT1. Therefore, soil samples from that trench were analyzed for CSSA target VOCs, SVOCs, explosives, and metals.

Soil assessment activities conducted during the APA include the delineation of affected surface soil conducted during February, March, and August 2010 and removal of affected soil and debris from Trenches A, B, C, and D during the January-February 2011 IRA. Vertical delineation of certain metals below the final limits of the excavated trenches was conducted in April 2011. Delineation of mercury impacted surface soil north of the SWMU B-4 operational area for the definition of new AOC 75 was conducted in May 2011. Debris removal from Trench NT1 and confirmation sampling was performed in February-March 2012.

A summary of the assessment activities conducted during the IRA and final soil conditions after performance of the IRA (i.e. current conditions circa 2012) is provided in this section.

4.1 DERIVATION OF ASSESSMENT LEVELS

SWMU B-4 is wholly contained within the boundaries of the CSSA and is by definition under TRRP, a commercial/industrial (C/I) site. However, CSSA has determined that the remediation goal for SWMU B-4 is residential use (un-restricted use). Because the operational area of SWMU B-4 encompasses an area of approximately 2 acres, RALs for a 30 acre site were assumed for all COCs at the initiation of the APA and IRA activities. The site is undeveloped and is within an area considered to be attractive to wildlife.

Surface Soil Assessment Levels

Exposure pathways for affected surface soil assumed to be complete or potentially complete at the site prior to the IRA included the $^{Total}Soil_{Comb}$ and $^{GW}Soil_{Ing}$ pathways for human receptors and direct contact exposure by ecological receptors. Soil at SWMU B-4 meeting the TRRP definition of surface soil consists of a layer of loose well-developed soil material ranging in thickness across the site from approximately 0.5 feet to 6 feet. The soil overlies a unit of weathered limestone and marl that cannot be manually excavated (bedrock). No groundwater was encountered in the surface soil zone.

The points of exposure (POE) for human receptors to affected surface soil via the $^{Total}Soil_{Comb}$ pathway were assumed to extend from ground surface down to bedrock (typically 3 to 6 feet bgs). The most likely exposure to casual visitors would occur at the surface and within the soil profile to the extent it could be manually excavated (i.e. bedrock). The POE for humans via the $^{GW}Soil_{Ing}$ pathway would only occur if a future drinking water well were installed into a shallow water bearing unit of the UGR. Based on the absence of groundwater at the maximum depth investigated during the APA and the vertical delineation of COCs to background at SWMU B-4, human exposure via the $^{GW}Soil_{Ing}$ pathway is unlikely. This evaluation is supported by data that shows that COC concentrations that exceed Tier 1 PCLs are less than calculated Tier 2 $^{GW}Soil_{Ing}$ PCLs. Calculations and supporting data for development of Tier 2 PCLs is included in Section 11 and Appendix 9.

The POE for ecological receptors in affected surface soil would occur at and just below the surface for browsing fauna and through the affected soil to bedrock for burrowing fauna. Because of the location of SWMU B-4 in an undeveloped area attractive to wildlife, there was a reasonable potential for exposure of ecological receptors to affected surface soil prior to the IRA.

Surface soil RALs used for human health protection and maximum residual COC concentrations at SWMU B-4 are summarized in Table 4A. Surface soil assessment levels used to evaluate risk to ecological components at SWMU B-4 and maximum residual COC concentrations are summarized in Table 4B.

Subsurface Soil Assessment Levels

Prior to the IRA, exposure pathways potentially complete to subsurface soil at SWMU B-4 included human exposure via the $^{GW}Soil_{Ing}$ pathway and inhalation of mercury via the subsurface soil volatilization pathway ($^{Air}Soil_{Inh\text{-}V}$). At SWMU B-4, subsurface soil is defined as weathered and competent bedrock that underlies surface soil and extends to the groundwater table. The extent of COCs exceeding RALs was delineated vertically to background or the MQL. Groundwater was not encountered at the maximum depth of investigation during the APA (approximately 23 feet bgs).

Implementation of the IRA resulted in the removal and delineation of affected subsurface soil and media within the trenches to levels less than RALs, effectively eliminating the $^{GW}Soil_{Ing}$ exposure pathway. Calculations and supporting data for development of Tier 2 PCLs used as RALs is included in Section 11 and Appendix 9. Vertical delineation accomplished by borings drilled though the bottom of various disposal trenches confirmed delineation of COCs to background concentrations further validating that the $^{GW}Soil_{Ing}$ exposure pathway is incomplete and that no POE exists for the pathway.

The IRA resulted in the removal of mercury-affected subsurface soil exceeding the 30-acre Tier 1 $^{Air}Soil_{Inh\text{-}V}$ RAL with the exception of one sample location in bedrock from the final over-excavated floor of trench Cb (sample location Cb2-F2). Since the mercury concentration at that location does not exceed the 0.5 acre Tier 1 $^{Air}Soil_{Inh\text{-}V}$ RAL and the sample is considered to be representative of an area of approximately 550 square feet, the Tier 1 RAL for a 0.5 acre site is the appropriate assessment level for the $^{Air}Soil_{Inh\text{-}V}$ exposure pathway. The representative residual concentration of mercury for that area is less than the Tier 1 $^{Air}Soil_{Inh\text{-}V}$ PCL.

The assessment levels used and critical PCLs for COCs for assessment of subsurface soil at SWMWU B-4 are summarized with maximum residual COC concentrations in Table 4C.

4.2 NATURE AND EXTENT OF COCS IN SOIL

The current nature and extent of COCs in surface soil and subsurface soil after the IRA is described in this section. RALs and ecological screening levels for surface and subsurface soil are summarized with COC maximum concentrations and sample locations in Table 4A and 4B.

The assessment levels used to determine the pre-IRA and post IRA nature and extent of soil COCs and discussed in the following subsections are:

- Surface Soil:
    - For RALs, the greater value of either background or the critical residential Tier 1 or Tier 2 PCLs ($^{Total}Soil_{Comb}$ and $^{GW}Soil_{Ing}$); or
    - For ecological risk assessment the greater value of either background or the critical Ecological PCL.
- Subsurface Soil RALs: the greater value of either background or the critical residential Tier 1 or Tier 2 PCL ($^{GW}Soil_{Ing}$, or $^{Air}Soil_{Inh\text{-}V}$);

Surface Soil

2000 RI surface soil data collected by Parsons (Parsons, 2002) was used as an aid in determining initial sampling points for the APA and is used to supplement APA delineation data. The 2001 RI identified two affected areas where mercury or cadmium exceeded assessment levels (RALs and ecological screening levels in surface soil); an area situated generally in northeastern quadrant of the site in a slightly sloping and natural drainage path just north of trenches C and NT1; and a western area approximately 30 feet west of Trench A (refer to Figure B4-4 and associated tables in Appendix 11-A).

Re-sampling of the northeast affected area during the APA in March 2010 indicated barium exceeding the assessment level from surface to 0.5 feet interval (interval A of SS01) in a small erosion fan, approximately 6 feet by 3 feet at the eastern perimeter of AOC 64 and SWMU B-4 (Figure 10A). The 1.0 to 1.5 foot sample interval (SS01B) exhibited a barium concentration less than the assessment level. The entire sediment fan and underlying native soil to a depth of 1 foot was removed during the IRA (Figure 4A).

Mercury concentrations in soil collected in March 2010 from the northeast affected area exceeded the CSSA background and RAL in soil from the 0 to 0.5 foot interval at sample locations SS08A, SS10A, SS11A, and SS13A (Figure 10A). The 1.0 to 1.5 foot sample intervals

(B) at these locations exhibited COC concentrations less than assessment levels. All of these locations were within the excavation footprints of the trenches and the affected surface soil removed at the time of excavation (Figure 4A).

In the western affected area, mercury concentrations in surface soil exceeded assessment levels in the surface to 0.5 foot interval at 2000 RI sample location SB16 (Figure B4-4, Appendix 11-A), but not in the 5.0 to 5.5 interval. Results of re-sampling this location in March 2010 (SS17A) confirmed that mercury exceeded the assessment level in the 0 to 0.5 foot interval but was defined vertically by the 1.0 to 1.5 foot sample (SS17B) (Figure 10A). Lateral delineation was accomplished using data from 2000 RI sample location SB17, March 2010 locations SS15AB and SS16AB, and the excavated limit of Trench A (Figure 4A and 10A). Surface soil within this delineated area was removed to a depth of 1 foot during the 2011 IRA.

The northeast and west areas of affected surface soil at SWMU B-4 were specifically excavated during the IRA during the January-February 2011 IRA (Figure 4A) and so no affected property or PCL exceedance zone (PCLE) for surface soil exists at SWMU B-4.

Surface Soil in Trench Sidewalls

The disposal trenches at SWMU B-4 were typically filled with debris to within about 2 to 4 feet below natural grade and so debris was potentially in contact with native surface soil of the trench sidewalls in the interval overlying bedrock. To assess the potential for the upper layer of debris to have impacted surface soil in the upper sidewalls of the trenches, samples were collected from the sidewalls at approximately 3 feet below grade (Figure 4A) and analyzed for SWMU B-4 target metal COCs. Figures 4C-2 through 4C-6 show cross-section profiles of the trenches and the stratigraphic relationship between surface soil and bedrock. Sidewall sample analyses from trenches A, B, C, and D confirmed that COC concentrations in native surface soil were less than assessment levels.

Mercury was detected greater than the RAL in NT1 sidewall sample NT-US01 collected from the initial limit of excavation at the northwest corner of the trench. The affected area was over-excavated and sample NT-US10 was collected. The analytical results of NT-US10 confirmed

residual mercury concentrations in surface soil less than the assessment level (Table 4D1 (b) and Figure 4A).

Surface Soil Outside of SWMU B-4 Operational Area

During the February-March 2010 surface soil assessment, mercury was detected at increasingly greater concentrations that exceeded human health and ecological assessment levels in a mixed wooded and open areas located upslope and north-northeast of the SWMU B-4 operational area. Two sample locations with elevated barium (SS04A) and lead (SS05A) were also found to exceed assessment levels. Review of historical aerial photographs did not show discernible indications of previous operations in the area.

Additional sampling performed in May 2011 by Parsons, and historical sampling data from adjacent AOC 64 were used to delineate the lateral extent of affected surface soil. The affected property outside the SWMU B-4 operational area was designated as AOC 75 for further assessment separately from SWMU B-4. The results of the sampling and the proposed creation of AOC 75 were presented to the TCEQ at a scheduled technical information meeting held at CSSA on 13 June 2011. For informational purposes, the analytical results for surface soil samples collected within AOC 75 are presented in Table 4D and the defined affected area at AOC 75 is presented on Figure 4A.

Subsurface Soil

Subsurface soil at SWMU B-4 consists of limestone bedrock that underlies the surface soil from a few inches below grade in the northern half of the site to as deep as 6 feet in the center of the site. The bedrock crops out in the northern and southeastern portions of the site. The uppermost portion of the bedrock is weathered and can be excavated using mechanical equipment down to a depths ranging from 10 to 17 feet until harder layers are encountered.

January-February 2011 Removal

All affected soil and debris were removed from the trenches A, B, C and D during the January-February 2011 IRA. The sidewalls and floors of the excavations were initially over-excavated approximately 0.5 to 1.0 feet beyond the trench soil/debris and confirmation samples were

collected as described in Section 3.2. Initial confirmation samples were analyzed for the SWMU B-4 target COCs (barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc). After review of the initial confirmation sample results, additional over-excavation and analysis for specific COCs was performed where needed to insure that residual COC concentrations in the trenches were less than CSSA background and/or the critical PCL.

At the final limits of the excavated trenches, residual mercury concentrations exceeded both the CSSA background concentration (0.77 mg/kg) and the Tier 1 $^{GW}Soil_{Ing}$ PCL (0.00039 mg/kg) at seven locations in sidewall and floor sample locations. At one location in Trench B (B5-F1), cadmium exceeded both the CSSA background concentration (3.0 mg/kg) and the Tier 1 $^{GW}Soil_{Ing}$ PCL (0.75 mg/kg); this area was overexcavated and resampled (B5-F2) for mercury, verifying that the remaining concentration was within background. Inadvertently, the sample was not analyzed for cadmium. Cadmium was delineated vertically below the excavation floor at that location area to background by boring SB-B5 (Table 4D-1 and Figure 4C-3).

Tier 2 $^{GW}Soil_{Ing}$ PCLs were calculated for mercury (5.5 mg/kg) and cadmium (296 mg/kg) using site specific parameters (Section 11 and Appendix 9). Comparison of the mercury and cadmium concentrations to the calculated Tier 2 PCLs indicate that residual concentrations of these COCs at the site are protective of groundwater and that lateral delineation has been accomplished to TRRP requirements.

At the final limits of excavation, residual COC concentrations were less than critical PCLs. Comparison of target COC concentrations remaining at the site with subsurface soil RALs are summarized in Table 4C. The results of all subsurface soil analyses performed during the IRA are summarized in Table 4D.

Concentrations of mercury, cadmium, copper, and zinc exceeded background levels in samples collected from several locations in the excavation floors and required additional vertical delineation to evaluate the $^{GW}Soil_{Ing}$ exposure pathway (Figure 4B). On 27 and 28 April 2011, four borings were sampled at selected locations in trenches B (SB-B5), Cb (SB-Cb2), and D (SB-D3 and SB-D5) where elevated concentrations of one or more of the COCs exceeded background. The total depths of the borings ranged from 21.5 to 23 feet bgs. The results of the boring sample analyses indicated that these COCs were delineated vertically to background

levels within 5 feet beneath the excavation floors (17.5 to 19 feet bgs). No groundwater was encountered in the borings. Based on the combined results of the excavation floor samples and the boring samples, vertical delineation of COCs to background and TRRP requirements was accomplished. The concentrations detected in the floor samples are shown on cross-sections in Figures 4C-2, 4C-3 and 4C-4, and 4C-5.

Although VOCs and SVOCs were not detected at concentrations exceeding Tier 1 RALs during the 2010 pre-IRA assessment of trench soil and debris and were screened out as target COCs for the APA, samples were collected from five key locations in the trenches based on the results of the pre-IRA assessment for additional confirmation of the assessment of organic compounds:

- Floor and sidewall samples from Trench A (A4-SW1, A4-F1, and A4-SE1), were collected in an area noted during the 2010 pre-IRA assessment (sample locations LFM01 and LFM02, Figure 10A) where trench soil and debris exhibited faint hydrocarbon odor and trace concentrations of several VOCs and SVOCs less than Tier 1 RALs. The 2011 IRA confirmation samples exhibited 2-methylnaphthalene (0.031 mg/kg), phenanthrene (0.006J mg/kg), and bis(2-ethylhexyl)phthalate (0.089 mg/kg) at concentrations significantly less than RALs.

- A floor sample from Trench D (D3-F1) was selected for additional confirmation of vertical delineation into bedrock in an area where trace concentrations of benzene, ethylbenzene, toluene, naphthalene, and other SVOCs were detected in native clay (TP03) below trench debris during the 2010 pre-IRA assessment. N-butylbenzene (0.0028J mg/kg) and bis(2-ethylhexyl)phthalate (0.46 mg/kg) were detected in the 2011 IRA confirmation sample at concentrations less than RALs.

- Floor sample (B3-F1) was selected for additional confirmation of vertical delineation into bedrock in an area where during the 2010 pre-IRA assessment, trace concentrations of benzene, ethylbenzene, toluene, naphthalene, and styrene were detected in native clay (TP02) underlying trench debris (no SVOCs were detected). Methylene chloride (0.0012J mg/kg) was detected in the 2011 IRA confirmation sample at a concentration less than the RAL.

February-March 2012 Removal – Trench NT1

All affected soil and debris were removed from the trench NT1 during the February-March 2011 removal. Residual concentrations of VOCs, SVOCs, explosives, and metals detected in samples from the trench floor and sidewalls were less than RALs or background.

Copper, mercury, and zinc were detected various excavation floor samples at concentrations exceeding background. The trench was over-excavated approximately 0.5 feet further in these areas and re-sampled too confirm vertical delineation to background levels. Mercury and zinc concentrations were less than background in all samples from the final limit of excavation. However, copper (33 mg/kg) was detected at the final excavation limit in floor sample (NT1-BOT06) slightly above the background level of 23.3 mg/kg; the previous sample collected at that location had exhibited 110 mg/kg of copper.

Vertical delineation of copper beneath adjacent Trench Cb was performed during the 2011 removal where copper was detected at a concentration of 296 mg/kg in the excavation floor (Cb-F1). Copper was detected at a concentration of 1.81 mg/kg in vertical delineation boring sample SB-Cb2 collected from a depth interval of 10 to 18 feet; groundwater was not encountered in the boring. The vertical definition of copper in Trench NT1is considered to be sufficient based on the small difference (less than 10 mg/kg) in concentration between NT1-BOT06 and CSSA background and the results of vertical delineation boring SB-Cb2 (Figure 4B).

Summary Assessment of Receptor Protectiveness

The results of the APA indicate that affected media at SWMU B-4 were removed during the IRA and that no affected property or PCLE zone exists. Residual COC concentrations in surface soil are less than the PCL for the $^{Total}Soil_{Comb}$ and $^{GW}Soil_{Ing}$ human health exposure pathways and ecological screening benchmarks (Tables 4A and 4B) and meet requirements for delineation to background levels in accordance with TRRP.

Residual COC concentrations in subsurface soil after the IRA are less than Tier 1 PCLs for the $^{Air}Soil_{Inh\text{-}V}$ and Tier 1 or Tier 2 PCLs for the $^{GW}Soil_{Ing}$ human health exposure pathways (Table 4C). Lateral delineation of all COCs has been achieved to background or applicable RALs. Vertical delineation of all COCs to background levels has been accomplished.

The following factors support the conclusion that a groundwater assessment at SWMU B-4 is not necessary:

- COC concentrations in remaining in surface and subsurface soil at the site do not exceed Tier 1 or Tier 2 $^{GW}Soil_{Ing}$ PCLs for a 30-acre site.

- The APA defined the vertical extent of COCs that had exceeded RALs prior to the IRA to background concentrations within approximately 5 feet below the SWMU B-4 trench floors. Borings used during the APA delineation were drilled to depths ranging from 21.5 to 23 feet and no groundwater was encountered.

Maximum COC concentrations remaining at the site and their location are summarized in Tables 4A, 4B, and 4C. Comprehensive analytical results for APA and IRA confirmation samples are summarized on Table 4D along with corresponding Tier 1 PCLs, soil attenuation model (SAM) derived Tier 2 $^{GW}Soil_{Ing}$ PCLs, and background concentrations utilized for determining the lateral and vertical of COCs. The conceptual basis, site-specific parameters, and SAM equations utilized for derivation of the Tier 2 $^{GW}Soil_{Ing}$ PCL are provided in Section 11 and Appendix 9. Table 4E summarizes the site-specific soil geochemical data used as input to the SAM.

Table 4A Surface Soil Residential Assessment Levels for Human Health Exposure Pathways Site SWMU B-4

COC	Source area size (acres)	$^{Tot}Soil_{Comb}$ PCL (mg/kg)	^{GW}Soil PCL		MQL (mg/kg)	Back-ground[1] (mg/kg)	Maximum concentration Left in Place			
			(mg/kg)	Tier			Sample ID	Sample Depth	Sample Date	Conc. (mg/kg)
Barium	30	8100	220	1	6.16	**300**[a]	SWMUB4-D2-US1	3.0-3.5 feet	2/01/2011	116
Cadmium	30	**52**	296	2	0.616	3.0[b]	SWMUB4-B4-US1	3.0-3.5 feet	1/27/2010	0.894
Copper	30	550	**520**	1	1.07	23.2[b]	SWMUB4-D6-US1 (Dup)	3.0-3.5 feet	2/08/2011	15.8M
Lead	30	500	1.5	1	1.07	**84.5**[b]	SWMUB4-SS10B	0.0-0.5 feet	3/04/2010	23.1
Mercury	30	**2.1**	5.5	2	0.0937	0.77[b]	SWMUB4-SS17B	1.0-1.5 feet	3/04/2010	0.569
Nickel	30	830	**79**	1	0.621	35.5[b]	SWMUB4-SS7B	1.0-1.5 feet	3/03/2010	14.8
Zinc	30	9900	**1200**	1	0.616	73.2[b]	SWMUB4-SS7B	1.0-1.5 feet	3/03/2010	21.6J

a - Texas State Median Background Concentration.
b- CSSA site-specific background concentration for surface soil.
J – Estimated value.
M – Matrix effect in sample
Dup – Field duplicate sample
Critical PCL for each COC is bolded.

Table 4B. Surface Soil Residential Assessment Levels with Ecological Component

COC	Human health PCL[1] (mg/kg)	Ecological PCL (0 to 0.5 ft)		Ecological PCL (0.5 to 5 ft)		MQL (mg/kg)	Back-ground (mg/kg)	Maximum concentration in areas of ecological concern			
		(mg/kg)	Basis[2]	(mg/kg)	Basis[2]			Sample ID	Sample depth	Sample date	Conc. (mg/kg)
Barium	220	330	ESB	330	ESB	6.16	**300**[a]	SWMUB4-D2-US1	3.0-3.5 feet	2/01/2011	116
Cadmium	52	**32**	ESB	**32**	ESB	0.616	3.0[b]	SWMUB4-B4-US1	3.0-3.5 feet	1/27/2010	0.89
Copper	520	**61**	ESB	**61**	ESB	1.07	23.2[b]	SWMUB4-D6-US1	3.0-3.5 feet	2/08/2011	15.8
Lead	1.5	120	ESB	120	ESB	1.07	**84.5**[b]	SWMUB4-SS10B	0.0-0.5 feet	3/04/2010	23.1
Mercury	2.1	0.1	ESB	0.1	ESB	0.0937	**0.77**[b]	SWMUB4-SS17B	1.0-1.5 feet	3/04/2010	0.569
Nickel	79	30	ESB	30	ESB	0.621	**35.5**[b]	SWMUB4-SS07B	1.0-1.6 feet	3/03/2010	14.8
Zinc	1200	**120**	ESB	**120**	ESB	0.616	73.2[b]	SWMUB4-SS07B	1.0-1.5 feet	3/03/2010	21.6

ESB – Texas Risk Reduction Program Ecological Risk Screening Benchmark
a - Texas State Median Background Concentration.
b- CSSA site-specific background concentration for surface soil.
Critical PCL for each COC is bolded.

[1] List the lower of $^{Tot}Soil_{Comb}$ and $^{GW}Soil$ values from Table 4A.
[2] Specify the basis of the ecological PCL (benchmark, MQL, background, Tier 2 PCL, or Tier 3 PCL).

Table 4C. Subsurface Soil Residential Assessment Levels

COC	Source area size (acres)	$^{Air}Soil_{Inh-V}$ PCL (mg/kg)	^{GW}Soil PCL		MQL	Back-ground	Maximum concentration			
			(mg/kg)	Tier	(mg/kg)	(mg/kg)	Sample ID	Sample depth	Sample date	Conc. (mg/kg)
Barium	30	N/A	220	1	0.521	**300**[a]	Ca2-SW1	7-7.5 feet	1/06/2011	52.2
Cadmium	30	N/A	**296**	2	0.470	3.0[b]	B5-F1	11-11.5 feet	1/27/2011	4.78
Copper	30	N/A	**520**	1	51.2	23.2[b]	Cb2-F1	10-10.5 feet	1/10/2011	296
Lead	30	N/A	1.5	1	0.512	**84.5**[b]	Cb2-F1	10-10.5 feet	1/10/2011	15.7
Mercury	0.5	**4.6**	N/A	1	0.0181	0.77[b]	Cb2-F2	12-12.5 feet	1/19/2011	2.53M
Mercury	30	N/A	**5.5**	2	0.0181	0.77[b]	Cb2-F2	12-12.5 feet	1/19/2011	2.53M
Nickel	30	N/A	**79**	1	0.596	35.5[b]	Ca3-SW1	7-7.5 feet	1/06/2011	26.9J
Zinc	30	N/A	**1200**	1	0.512	73.2[b]	Ca-SS1	7-7.5 feet	1/06/2011	133M

Notes:
a - Texas State Median Background Concentration.
b- CSSA site-specific background concentration for surface soil.
M – Matrix effect in sample
J – Estimated value.
Critical PCL for each COC is bolded.

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Table 4D-1
Soil Data Summary - Metals
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-A1-F1 6.0-6.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A1-SE1 4.0-4.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A1-SW1 4.0-4.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A1-US1 2.0-3.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A2-F1 6.0-6.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A2-SE1 5.0-5.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A2-SW1 5.0-5.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A2-US1 2.0-2.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A3-F1 9.0-9.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A3-SE1 7.0-7.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A3-SW1 7.0-7.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A3-US1 3.0-3.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-F1 12.0-12.5 01/13/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	5.73 (M)	5.14 (M)	8.74 (M)	14.5 (M)	10.6 (M)	19.3 (M)	13 (M)	19 (M)	23.8 (M)	13.3 (M)	6.03 (M)	58.7 (M)	10.8 (M)
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.079 U (M)	0.22 U (M)	0.0563 J (M)	0.23 U	0.233 J (M)	0.087 U (M)	0.079 J (M)	0.403 J	0.547 J (M)	0.21 U (M)	0.041 U (M)	0.24 U	0.22 U
Chromium	40.2 [b]	27000	1200	~	~	1200	4.92	2.65 J	3.32	3.81 (M)	4.32	4.8	2.08	3.44 (M)	5.59	3.77	3.09	11.3 (M)	4.98 (M)
Copper	23.2 [b]	550	520	~	~	520	2.8	1.76 J	3.11	7.4	9.2	5.49	2.8	6.03	114	1.15 J	1.92	7.39	7.8
Lead	84.5 [b]	500	1.5	~	~	84.5	2.97	1.78 J	3.18	6.13	6.33	5.66	2.35	6.27	11.2	1.85 J	1.5	7.51	4.9
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00169 J	0.0155	0.00655	0.116	0.111	0.0267	0.00957	0.0536	0.172	0.00024 U	0.00854	0.015	0.0594
Nickel	35.5 [b]	830	79	~	~	79	4.19 (M)	3.82 (M)	6.58 (M)	3.92	7.41 (M)	11.9 (M)	4.12 (M)	5.13	7.76 (M)	2.36 J (M)	3.67 (M)	8.89	3.63
Zinc	73.2 [b]	9900	1200	~	~	1200	3.87 (J)	3.3 (J)	5.74 (J)	11.2 (J)	17.8 (J)	5.12 (J)	3.59 (J)	11.4 (J)	118 (J)	3.48 (J)	3.8 (J)	13.2 (J)	22.6 (J)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-A4-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-US1 3.0-3.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A5-F1 12.5-13.0' 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A5-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A5-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A5-US1 3.0-3.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A6-F1 13.0-13.5 01/13/2011 Normal Sample (Excavated) (mg/kg)	SWMUB4-A6-F2 14.0-14.5 01/20/2011 Normal Sample (mg/kg)	SWMUB4-A6-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A6-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A6-US1 3.0-3.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A7-F1 14.0-14.5 01/14/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	37.3 (M)	47.4 (M)	65.9 (M)	8.66 (M)	19 (M)	26 (M)	62.1 (M)	19.3 (M)	---	19.9 (M)	14.7 (M)	23.5 (M)	6.61
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.21 U	0.21 U	0.22 U	0.2 U	0.21 U	0.2 U	0.362 J	0.962 J	0.361 J	0.21 U	0.22 U	0.21 U	0.21 U
Chromium	40.2 [b]	27000	1200	~	~	1200	5.83 (M)	8.72 (M)	12.8 (M)	4.49 (M)	2.84 (M)	5.84 (M)	9.99 (M)	5.61 (M)	---	4.59 (M)	3.16 (M)	5.62 (M)	3.9 (J)
Copper	23.2 [b]	550	520	~	~	520	2.17 J	4.89	7.33	3.7	1.86 J	3.59	8.8	26	---	2.22 J	3.91	8.86	4.4
Lead	84.5 [b]	500	1.5	~	~	84.5	3.09	6.77	9.21	2.62	1.23 J	3.64	10.7	18.2	5.51	2.28 J	3.73	3.69	3.45
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00133 J	0.0365	0.00965	0.0316	0.00594	0.0687	0.303	0.1	---	0.00426	0.0134	0.183	0.0342
Nickel	35.5 [b]	830	79	~	~	79	3.74	7.34	11.7	3.13	2.67	4.16	8.48	7.13	---	3.93	3.25	4.21	3.95
Zinc	73.2 [b]	9900	1200	~	~	1200	6.44 (J)	10.6 (J)	13.9 (J)	8.79 (J)	3.77 (J)	7.31 (J)	18 (J)	97.7 (J)	---	3.24 (J)	4.95 (J)	8.86 (J)	10.4 (M)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-A7-SE1 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-A7-SW1 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-A7-SW1 7.0-7.5 01/14/2011 Field Dup002 (mg/kg)	SWMUB4-A7-US1 3.0-3.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-A-SN1 3.0-3.5 01/11/2011 Normal Sample (mg/kg)	SWMUB4-A-SS1 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-B1-F1 10.0-10.5 01/24/2011 Normal Sample (mg/kg)	SWMUB4-B1-SE1 7.0-7.5 01/24/2011 Normal Sample (mg/kg)	SWMUB4-B1-SW1 7.0-7.5 01/24/2011 Normal Sample (mg/kg)	SWMUB4-B1-US1 3.0-3.5 01/24/2011 Normal Sample (mg/kg)	SWMUB4-B2-F1 13.0-13.5 01/25/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-B2-F2 14.0-14.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-B2-SE1 8.0-8.5 01/25/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	6.3	13.8	11.3	11.3	10.3 (M)	5.07	6.83	16.4	9.68	9.97	8.01	---	42.8
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.22 U	0.22 U	0.23 U	0.22 U	0.21 U (M)	0.22 U	0.121 J	0.0793 J	0.0503 J	0.0687 J	1.19 J	0.2 U	0.0837 J
Chromium	40.2 [b]	27000	1200	~	~	1200	3.6 (J)	3.96 (J)	3.64 (J)	3.06 (J)	2.91	1.97 J (J)	2.7 (J)	4.74 (J)	3.44 (J)	2.21 J (J)	3.54	---	8.01
Copper	23.2 [b]	550	520	~	~	520	2.51 J	3.22	3.02	6.07	3.42	0.792 J	3.46 (J)	7.37 (J)	3.45 (J)	2.09 J (J)	38.3 (M)	4.64 (R)	3.29 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	2.2 J	2.65 J	2.39 J	2.12 J	2.28 J	1.23 J	1.93 (J)	6.51 (J)	3.32 (J)	1.72 (J)	10.6	---	4.5
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00714	0.0148	0.00664	0.0112	0.00251 J	0.000846 J	0.42 (M)	0.0464 (M)	0.135 (M)	0.103 (M)	**6.19 (M)**	0.595 (M)	0.0157 (M)
Nickel	35.5 [b]	830	79	~	~	79	4.71	5.35	4.68	6.03	4.46 (M)	2.18 J	4.58 (J)	11.4 (J)	8.3 (J)	4.88 (J)	3.59	---	7.76
Zinc	73.2 [b]	9900	1200	~	~	1200	2.33 J (M)	6.87 (M)	4.47 (M)	5.59 (M)	6 (J)	4.95 (M)	6.78 (J)	8.62 (J)	3.38 (J)	3.06 (J)	42.3 (M)	8.18 (M)	8.59 (M)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-B2-SW1 8.0-8.5 01/25/2011 Normal Sample (mg/kg)	SWMUB4-B2-US1 3.0-3.5 01/25/2011 Normal Sample (mg/kg)	SWMUB4-B3-F1 16.0-16.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-B3-SE1 8.0-8.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-B3-SW1 8.0-8.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-B3-US1 3.0-3.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-B4-F1 12.5-13.0 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B4-SE1 8.0-8.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B4-SW1 8.0-8.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B4-US1 3.0-3.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B5-F1 11.0-11.5 01/27/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-B5-F2 12.0-12.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-SB-B5 16.5-17.5 04/27/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	12.6	50.7	9.9	12.7	14.4	94.2	11.5	47.8	51.4	57.3	14.4	---	NT
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.041 U	0.225 J	0.394 J	0.0547 J	0.0679 J	0.181 J	0.232 J	0.155 J	0.171 J	0.894	4.78	---	0.138 J (M)
Chromium	40.2 [b]	27000	1200	~	~	1200	3.05	9.09	4.28	2.44	2.37 J	14.6	4.88	7.39	8.32	9.31	3.96	---	NT
Copper	23.2 [b]	550	520	~	~	520	1.54 (M)	6.35 (M)	24.9 (M)	1.94 (M)	1.85 J (M)	5.55 (M)	30.8 (M)	4.13 (M)	5.14 (M)	7.91 (M)	46.7 (M)	---	14 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	1.65	7.19	8.53 (M)	1.32 (M)	1.31 (M)	12 (M)	7.81 (J)	5.83 (J)	6.68 (J)	9.72 (J)	14.5 (J)	---	NT
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.292 (M)	0.188 (M)	0.493 (M)	0.00253 J	0.00866	0.0155	0.317	0.00718	0.0163	0.0265	**8.49**	0.73	0.0294
Nickel	35.5 [b]	830	79	~	~	79	3.42	7.7	4.24 (M)	2.89 (M)	2.4 (M)	11.2 (M)	4.75 (M)	6.87 (M)	7.63 (M)	8.25 (M)	4.35 (M)	---	NT
Zinc	73.2 [b]	9900	1200	~	~	1200	3.31 (M)	12.2 (M)	24.2	2.43	1.85	15.4	19.8 (M)	9.33 (M)	9.79 (M)	19.8 (M)	56.3 (M)	---	14 (M)

Note: Abreviations and notations listed on page 4 of 4.

Table 4D-1
Soil Data Summary - Metals
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-SB-B5 19.5-20.5 04/27/2011 Normal Sample (mg/kg)	SWMUB4-B5-SE1 8.0-8.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B5-SW1 8.0-8.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B5-US1 3.0-3.5 01/27/2011 Normal Sample (mg/kg)	SWMUB4-B6-F1 10.0-10.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-B6-SE1 8.0-8.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-B6-SE1 8.0-8.5 01/28/2011 Field Dup003 (mg/kg)	SWMUB4-B6-SW1 8.0-8.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-B6-US1 3.0-3.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-B-SN1 7.0-7.5 01/24/2011 Normal Sample (mg/kg)	SWMUB4-B-SS1 8.0-8.5 01/28/2011 Normal Sample (mg/kg)	SWMUB4-Ca1-F1 12.0-12.5 01/06/2011 Normal Sample (mg/kg)	SWMUB4-Ca1-SE1 7.0-7.5 01/06/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	NT	8.53	15.6	19.7	8.45	8.8	6.2	29.4	21.5	5.1	8.19	12.8	28.7
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.0421 J (M)	0.0478 J	0.0579 J	0.0815 J	0.442 J	0.111 J	0.043 U	0.23 U	0.21 U	0.139 J	0.22 U	0.041 U	0.044 U
Chromium	40.2 [b]	27000	1200	~	~	1200	NT	1.67	3.49	5.46	3.37	4.65	4.3	5.84	2.62 J	2.49 (J)	4.75	3.39	9.08
Copper	23.2 [b]	550	520	~	~	520	NT	1.83 (M)	2.14 (M)	5.5 (M)	25.4 (R)	3.71 (R)	2.68 (R)	10 (R)	2.5 J (R)	2.45 (J)	3.51 (R)	2.48 (M)	13.3 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	NT	1.04 (J)	1.51 (J)	4.34 (J)	4.65	2.83	2.35	6.6	1.75	2.32 (J)	3.14	1.87 (J)	10.3 (J)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	NT	0.0387	0.0532	0.0877	0.933 (M)	0.0653 (M)	0.21 (M)	0.393 (M)	0.00465 (M)	0.00517 (M)	0.0825 (M)	0.0142	0.0146
Nickel	35.5 [b]	830	79	~	~	79	NT	3.11 (M)	3.57 (M)	8.09 (M)	4.89	4.76	4.9	13.8	5.32	4.88 (J)	4.93	3.95 (J)	21 (J)
Zinc	73.2 [b]	9900	1200	~	~	1200	NT	2.76 (M)	3.46 (M)	7.34 (M)	31.2 (M)	7.91 (M)	4.31 (M)	8.28 (M)	3.68 (M)	3.1 (J)	4.34 (M)	4.87 (M)	12.2 (M)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-Ca1-SW1 7.0-7.5 01/06/2011 Normal Sample (mg/kg)	SWMUB4-Ca1-US1 3.0-3.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Ca2-F1 13.0-13.5 01/06/2011 Normal Sample (mg/kg)	SWMUB4-Ca2-SE1 7.0-7.5 01/06/2011 Normal Sample (mg/kg)	SWMUB4-Ca2-SW1 7.0-7.5 01/06/2011 Normal Sample (mg/kg)	SWMUB4-Ca3-F1 12.0-12.5 01/06/2011 (Excavaated) Normal Sample (mg/kg)	SWMUB4-Ca3-F2 13.0-13.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Ca3-SE1 7.0-7.5 01/06/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Ca3-SE2 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Ca3-SW1 7.0-7.5 01/06/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Ca3-SW2 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Ca3-US1 3.0-3.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Ca-SN1 7.0-7.5 01/06/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	13	59.1	22.8	23.6	52.2	11.3	---	12.4	---	30.1	---	25.4	26.1
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.042 U	0.23 U	0.125 J (J)	0.0591 J (J)	0.128 J (J)	0.997 (J)	0.21 U	0.305 J (J)	---	0.11 J (J)	---	0.2 U	0.082 J (J)
Chromium	40.2 [b]	27000	1200	~	~	1200	2.37	11 (J)	6.05	5.56	9.12	6.29	---	3.72	---	8.55	---	4.7 (J)	4.76
Copper	23.2 [b]	550	520	~	~	520	2.63 (M)	6.04	13.6 (M)	5.52 (M)	4.16 (M)	14 (M)	---	4.45 (M)	---	15.3 (M)	---	3.63	3.4 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	1.88 (J)	8.71	6.73 (J)	4.7 (J)	6.49 (J)	5.85 (J)	---	4.67 (J)	---	12.7 (J)	---	3.3	4.43 (J)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00447	0.00728	0.259	0.0248	0.0766	**6.24**	0.0109	**102**	0.0347	0.206	0.638	0.0102	0.0769
Nickel	35.5 [b]	830	79	~	~	79	4.56 (J)	9.34	6.55 (J)	8.32 (J)	9.44 (J)	6.08 (J)	---	5.82 (J)	---	26.9 (J)	---	5.05	7 (J)
Zinc	73.2 [b]	9900	1200	~	~	1200	5.87 (M)	13.1 (M)	81.7 (M)	6.54 (M)	23.2 (M)	27.4 (M)	---	23.4 (M)	---	14.4 (M)	---	6.1 (M)	9.89 (M)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-Ca-SS1 7.0-7.5 01/06/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Ca-SS2 7.0-7.5 01/14/2011 Normal Sample (mg/kg)	SWMUB4-Cb1-F1 10.0-10.5 01/10/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Cb1-F2 11.0-11.5 01/19/2011 Normal Sample (mg/kg)	SWMUB4-Cb1-SE1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb1-SW1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb2-F1 10.5-10.5 01/10/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Cb2-F2 11.0-11.5 01/19/2011 Normal Sample (mg/kg)	SWMUB4-SB-Cb2 17.0-18.0 04/26/2011 Normal Sample (mg/kg)	SWMUB4-Cb2-SE1 7.0-7.5 01/19/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Cb2-SE2 6.0-6.5 01/19/2011 Normal Sample (mg/kg)	SWMUB4-Cb2-SW1 7.0-7.5 01/10/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-Cb2-SW2 5.0-5.5 01/19/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	15.9	---	16.9	---	45.7	39.9	13.1	---	NT	11.5	---	20.7	---
Cadmium	3.0 [b]	52	0.75	~	296	52.0	**4.3 (J)**	0.2 U	0.0879 J	---	0.0713 J	0.162 J	**8.28**	0.18 U	0.0968 J	0.0444 J	---	0.147 J	---
Chromium	40.2 [b]	27000	1200	~	~	1200	7.51	---	4.28	---	9.84	6.88	10.1	---	NT	3.69	---	3.95	---
Copper	23.2 [b]	550	520	~	~	520	53.8 (M)	---	5.39	---	5.4	3.62	296	---	2.05	3.39 (M)	---	2.61	---
Lead	84.5 [b]	500	1.5	~	~	84.5	11.8 (J)	---	7.55	---	6.51	4.61	15.7	---	NT	4.42 (J)	---	3.12	---
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	**18.2**	0.0135	1.52	0.792 (M)	0.00724	0.00851	1.6	2.53 (M)	0.00136 J	0.261	0.145 (M)	0.218	0.263 (M)
Nickel	35.5 [b]	830	79	~	~	79	8.38 (J)	---	4.88	---	9.35	6.74	5.45	---	NT	5.37 (J)	---	4.45	---
Zinc	73.2 [b]	9900	1200	~	~	1200	133 (M)	---	21.2	---	11.3	8.86	3450	11.2	4.66	4.64	---	27	---

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-Cb3-F1 13.0-13.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb3-SE1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb3-SW1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb3-SW1 7.0-7.5 01/10/2011 Field Dup001 (mg/kg)	SWMUB4-Cb-SN1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-Cb-SS1 7.0-7.5 01/10/2011 Normal Sample (mg/kg)	SWMUB4-D1-F1 8.0-8.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D1-SE1 6.0-6.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D1-SW1 6.0-6.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D1-US1 3.0-3.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D2-F1 9.0-9.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D2-SE1 6.0-6.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D2-SW1 6.0-6.5 02/01/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	5.67	10.9	8	6.76	26.1	7.38	12	37.7	51.1	101	13.2	25.8	21.2
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.041 U	0.104 J	0.0554 J	0.042 U	0.046 U	0.045 U	0.23 U	0.21 U	0.22 U	0.245 J	0.343 J	0.22 U	0.2 U
Chromium	40.2 [b]	27000	1200	~	~	1200	4.41	4.53	3.07	3	4.02	4.89	3.59 (M)	5.91 (M)	10.4 (M)	17.3 (M)	4.1 (M)	3.96 (M)	3.9 (M)
Copper	23.2 [b]	550	520	~	~	520	2.5	13.4	5.17	4.45	3.41	4.29	7.28 (R)	2.54 J (R)	10.5 (R)	5.91 (R)	17.4 (R)	2.31 J (R)	4.54 (R)
Lead	84.5 [b]	500	1.5	~	~	84.5	2.08	4.22	3.38	2.81	3.23	9.69	1.83 J (M)	4.05 (M)	7.17 (M)	12 (M)	4.54 (M)	2.72 (M)	3.41 (M)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00947	0.0592	0.0359 (J)	0.00461 (J)	0.00503	0.00284 J	0.00666	0.00769	0.208	0.00974	0.12	0.00422	0.0817
Nickel	35.5 [b]	830	79	~	~	79	4.73	9.23	4.89	4	4.93	4.76	4.22	5.65	8.83	11.8	5.37	5.15	5.74
Zinc	73.2 [b]	9900	1200	~	~	1200	4.06	10.6	13.1 (J)	6.15 (J)	4.68	35.6	11.2 (M)	6.24 (M)	12 (M)	17.2 (M)	32.3 (M)	4.37 (M)	5.51 (M)

Note: Abreviations and notations listed on page 4 of 4.

Table 4D-1
Soil Data Summary - Metals
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-D2-US1 3.0-3.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D3-F1 11.0-11.5 02/02/2011 (Excavated) Normal Sample (mg/kg)	SWMUB4-D3-F2 12.0-12.5 02/07/2011 Normal Sample (mg/kg)	SWMUB4-SB-D3 17.0-18.0 04/26/2011 Normal Sample (mg/kg)	SWMUB4-D3-SE1 8.0-8.5 02/02/2011 Normal Sample (mg/kg)	SWMUB4-D3-SW1 8.0-8.5 02/02/2011 Normal Sample (mg/kg)	SWMUB4-D3-US1 3.0-3.5 02/02/2011 Normal Sample (mg/kg)	SWMUB4-D4-F1 11.0-11.5 02/03/2011 Normal Sample (mg/kg)	SWMUB4-D4-SE1 8.0-8.5 02/03/2011 Normal Sample (mg/kg)	SWMUB4-D4-SW1 8.0-8.5 02/03/2011 Normal Sample (mg/kg)	SWMUB4-D4-US1 3.0-3.5 02/03/2011 Normal Sample (mg/kg)	SWMUB4-D5-F1 11.0-11.5 02/07/2011 Normal Sample (mg/kg)	SWMUB4-SB-D5 18.0-19.0 04/26/2011 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	116	14	---	---	14.6	13	40.4	6.43 (M)	5.37 (M)	12.3 (M)	30 (M)	10.5	---
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.344 J	0.788 J	0.464 J (B)	0.0486 J (M)	0.2 U	0.22 U	0.21 U	0.2 U	0.22 U	0.24 U	0.22 U	0.57 J (B)	0.042 U (M)
Chromium	40.2 [b]	27000	1200	~	~	1200	17.5 (M)	4.19	---	---	2.27 J	2.91	7.93	3.4	1.97 J	2.52 J	6.48	4.32	---
Copper	23.2 [b]	550	520	~	~	520	6.37 (R)	7.76	---	9.38 (M)	1.38 J	1.47 J	3.8	2.79	1.34 J	0.959 J	3.54	14.4 (M)	7.33 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	14 (M)	6.17	---	---	1.15 J	1.41 J	6.08	3.39	1.11 J	1.33 J	4.54	8.52	---
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.16	1.35	0.581	0.00401 J (M)	0.129	0.154	0.0141	0.0104	0.0147	0.0374	0.0127	0.414	0.00939
Nickel	35.5 [b]	830	79	~	~	79	12.9	5.41	---	---	3.5	3.9	7.72	4.69	3.81	3.08	6.59	3.11	---
Zinc	73.2 [b]	9900	1200	~	~	1200	17.9 (M)	23	---	7.94 (M)	1.89 J	3.36	9.73	29.6	2.49 J	2.66 J	8.69	113	5.85 (M)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-SB-D5 18.0-19.0 04/26/2011 Field Dup008 (mg/kg)	SWMUB4-D5-SE1 8.0-8.5 02/07/2011 Normal Sample (mg/kg)	SWMUB4-D5-SW1 8.0-8.5 02/07/2011 Normal Sample (mg/kg)	SWMUB4-D5-US1 3.0-3.5 02/07/2011 Normal Sample (mg/kg)	SWMUB4-D6-F1 12.0-12.5 02/08/2011 Normal Sample (mg/kg)	SWMUB4-D6-SE1 8.0-8.5 02/08/2011 Normal Sample (mg/kg)	SWMUB4-D6-SE1 8.0-8.5 02/08/2011 Field Dup004 (mg/kg)	SWMUB4-D6-SW1 8.0-8.5 02/08/2011 Normal Sample (mg/kg)	SWMUB4-D6-US1 3.0-3.5 02/08/2011 Normal Sample (mg/kg)	SWMUB4-D6-US1 3.0-3.5 02/08/2011 Field Dup006 (mg/kg)	SWMUB4-D-SN1 5.0-5.5 02/01/2011 Normal Sample (mg/kg)	SWMUB4-D-SS1 8.0-8.5 02/08/2011 Normal Sample (mg/kg)	SWMUB4-D-SS1 8.0-8.5 02/08/2011 Field Dup005 (mg/kg)
Barium	300 [a]	8100	220	~	~	300	---	8.64	14.1	34.5	6.56 (M)	8.44 (M)	7.47 (M)	28.5 (M)	12.7 (M)	11.6 (M)	9.35	14.3 (M)	17.3 (M)
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.0514 J (M)	0.27 J (B)	0.274 J (B)	0.453 J (B)	0.19 U	0.21 U	0.21 U	0.254 J	0.22 U	0.22 U	0.22 U	0.24 U	0.24 U
Chromium	40.2 [b]	27000	1200	~	~	1200	---	3.27	4.32	9.56	3.62 (M)	2.74 (M)	2.18 J (M)	8.03 (M)	2.51 J (M)	2.54 J (M)	5.05 (M)	5.82 (M)	7.33 (M)
Copper	23.2 [b]	550	520	~	~	520	2.93 (M)	2.29 J (M)	2.16 J (M)	8.9 (M)	4.79 (M)	1.85 J (M)	2.3 J (M)	10.5 (M)	2.02 J (M)	15.8 (M)	3.75 (R)	7.62 (M)	8.93 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	---	1.89 J	1.8 J	7.61	3.54 (M)	2.37 J (M)	1.7 J (M)	9.58 (M)	1.56 J (M)	2.01 J (M)	3.05 (M)	6.31 (M)	7.38 (M)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.00507 (M)	0.0142	0.00685	0.175	0.223	0.00575	0.0106	0.513	0.157 (J)	0.309 (J)	0.0279	0.159	0.192
Nickel	35.5 [b]	830	79	~	~	79	---	3.79	4.66	6.4	2.62	2.53 J	2.8	13.5	3.4	4.11	5.05	10.3	11.2
Zinc	73.2 [b]	9900	1200	~	~	1200	3.19 (M)	3.33	3.91	17.3	108	2.7	2.85	62.8	3.5	5.66	3.94 (M)	8.35	10

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-SS1A 0.0-0.5 03/03/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS1B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS2A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS2B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS3A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS3B 0.0-0.0 03/04/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS4A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS4B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS5A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS5B 0.8-1.0 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS6A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS6B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS7A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	**417 (M)**	55 (M)	77.1	54.1 (M)	83	75.7	**358 (M)**	82.9 (M)	55.2 (M)	27.9 (M)	104 (M)	108 (M)	56.7 (M)
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.566 J (M)	0.133 J (M)	0.337 J	0.15 J (M)	0.29 J (M)	0.216 J (M)	1.05 (M)	0.224 J (M)	0.208 J (M)	0.136 J (M)	0.331 J (M)	0.266 J (M)	0.226 J (M)
Chromium	40.2 [b]	27000	1200	~	~	1200	17.5	11.7	17.5	12.7	18.8	17	19	9.4	12.3	6.68	21	21.1	8.76
Copper	23.2 [b]	550	520	~	~	520	10.6 (M)	5.39 (M)	8.79	4.75 (M)	8.35 (M)	6.67 (M)	13.2 (M)	4.35 (M)	16.7 (M)	3.72 (M)	10.2 (M)	6.31 (M)	4.85 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	16.5 (M)	8.1 (M)	12.5	7.03 (M)	13.8	11.9	25.1 (M)	8.59 (M)	**260 (M)**	4.77 (M)	12.6 (M)	10.9 (M)	7.62 (M)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.0287	0.035	0.483	0.0271	**0.938**	**2.05**	**4.8**	0.506	0.136	0.109	0.0136	0.00762	0.148
Nickel	35.5 [b]	830	79	~	~	79	10.7	10.3	12.3	8.91	13.8	12.3	13.4	7.4	10.1	6.39	14.1	13	8.8
Zinc	73.2 [b]	9900	1200	~	~	1200	50.2 (J)	14 (J)	21.4	12.2 (J)	20.8 (M)	19.4 (M)	44.2 (J)	13.7 (J)	28.9 (J)	8.94 (J)	21.3 (J)	19.8 (J)	20.6 (J)

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-V}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-SS7B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS8A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS8A 0.0-0.5 03/04/2010 (Excavated) Field Dup01A (mg/kg)	SWMUB4-SS8B 1.0-1.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS8B 1.0-1.5 03/04/2010 (Excavated) Field Dup01B (mg/kg)	SWMUB4-SS9A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS9B 0.8-1.0 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS10A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS10B 1.0-1.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS11A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS11B 0.8-1.0 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS12A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS12B 1.0-1.5 03/04/2010 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	101 (M)	181	141	93.5	83.9	21.7	8.53	32.2	28.9	44.8	22.4	82.6	88.8
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.264 J (M)	0.472 J (M)	0.375 J	0.199 J (M)	0.154 J	0.0974 J (M)	0.046 U (M)	0.201 J (M)	0.0868 J (M)	0.854 J (M)	0.0986 J (M)	0.273	0.207 J (M)
Chromium	40.2 [b]	27000	1200	~	~	1200	21.2	11.1	11.2	14.7	16.1	6.75	3.75	6.61	6.57	7.92	5.2	16.8	16
Copper	23.2 [b]	550	520	~	~	520	8.89 (M)	9.29 (M)	6.88	6.68 (M)	7.08	3.81 (M)	2.64 (M)	4 (M)	3.83 (M)	10.5 (M)	3.09 (M)	8.22	5.75 (M)
Lead	84.5 [b]	500	1.5	~	~	84.5	12.2 (M)	12.7	10.1	10.9	9.19	4.12	2.28	4.86	23.1	9.42 (J)	3.36 (J)	12.6	9.87 (J)
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	0.0083	**1.33**	**0.921**	0.0714 (J)	0.0309	0.163	0.00326 J (F)	**0.915**	0.36	**1.14**	0.107	0.0174	0.005
Nickel	35.5 [b]	830	79	~	~	79	14.8	8.77	8.9	11.3	11.8	6.14	5.75	5.71	6.28	7.12	5.08	12.9	11.6
Zinc	73.2 [b]	9900	1200	~	~	1200	21.6 (J)	24.8 (M)	16.6	15.1 (M)	15.6	7.21 (M)	4.22 (M)	9.3 (M)	7.55 (M)	19.8 (J)	6.63 (J)	18.3	14.5 (J)

Note: Abreviations and notations listed on page 4 of 4.

Table 4D-1
Soil Data Summary - Metals
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-Y}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	SWMUB4-SS13A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS13B 1.0-1.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS14A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS14B 1.0-1.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS15A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS15A 0.0-0.5 03/04/2010 Field Dup02A (mg/kg)	SWMUB4-SS15B 1.0-1.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS15B 1.0-1.5 03/04/2010 Field Dup02B (mg/kg)	SWMUB4-SS16A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS16B 0.8-1.0 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS17A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS17B 1.0-1.5 03/04/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS18A 0.0-0.5 04/09/2010 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	235	72.9	83.4	97	69.6	72.6	69.6	78	22.7	14.1	44.6	50	---
Cadmium	3.0 [b]	52	0.75	~	296	52.0	0.672 (M)	0.159 J (M)	0.183 J	0.182 J	0.319 J (M)	0.225 J	0.209 J (M)	0.164 J	0.109 J	0.091 U	0.445 J (M)	0.161 J (M)	---
Chromium	40.2 [b]	27000	1200	~	~	1200	12.4	16.6	15.6	15.7	14.2	18.8	13.4	16.4	9.31	6.55	8.25	12	---
Copper	23.2 [b]	550	520	~	~	520	12.8 (M)	7.94 (M)	6.94	5.97	9.17 (M)	10.2	6.55 (M)	7.62	4.5	3.55	8.08 (M)	7.98 (M)	---
Lead	84.5 [b]	500	1.5	~	~	84.5	22	9.35	9.83	10	12 (J)	11.3	8.97 (J)	9.85	5.17	3.84	11.4 (J)	8.38	5.77
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	**5.76**	0.134	0.0109	0.00275 J	0.26	0.216	0.00945	0.00726	0.243	0.0394	**1.26**	0.569	---
Nickel	35.5 [b]	830	79	~	~	79	9.92	12.2	11.9	11.8	12.6	13.8	11.2	12.3	5.48	5.28	7.19	9.13	---
Zinc	73.2 [b]	9900	1200	~	~	1200	47.7 (M)	16.2 (M)	15.5	15.6	18.5 (J)	20.5	14.2 (J)	15.4	8.57	4.71	20.1 (J)	14.7 (M)	---

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tst}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ingt}$	TRRP Residential Tier 1 PCL[2] 0.5-Acre Source $AirSoil_{Inh-Y}$	TRRP Residential Tier 2 PCL[3] 30-Acre Source $^{GW}Soil_{Ingt}$	Critical PCL[4] (mg/kg)	(AOC75) SWMUB4-SS19A 0.0-0.5 04/09/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS20A 0.0-0.5 04/09/2010 Normal Sample (mg/kg)	SWMUB4-SS21A 0.0-0.5 04/09/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS22A 0.0-0.5 08/12/2010 2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS23 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS24 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS25 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS25 0.0-0.5 08/12/2010 Field Duplicate	(AOC75) SWMUB4-SS26 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS27 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS28 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS29 0.0-0.5 08/12/2010 Normal Sample (mg/kg)	(AOC75) SWMUB4-SS30 0.0-0.5 08/12/2010 Normal Sample (mg/kg)
Barium	300 [a]	8100	220	~	~	300	101	80.2	50.3	---	---	---	---	---	---	---	---	---	---
Cadmium	3.0 [b]	52	0.75	~	296	52.0	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	40.2 [b]	27000	1200	~	~	1200	---	---	---	---	---	---	---	---	---	---	---	---	---
Copper	23.2 [b]	550	520	~	~	520	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	84.5 [b]	500	1.5	~	~	84.5	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	0.77 [b]	2.1	0.0039	4.6	5.5	2.1	**10.3**	**1.0 (M)**	---	0.223	**6.23**	**5.28**	**4.04**	**5.18**	**5.17**	**3.21**	**0.939**	0.329	0.141
Nickel	35.5 [b]	830	79	~	~	79	---	---	---	---	---	---	---	---	---	---	---	---	---
Zinc	73.2 [b]	9900	1200	~	~	1200	---	---	---	---	---	---	---	---	---	---	---	---	---

Legend:
mg/kg - milligrams per kilogram
--- - Sample not analyzed for constituent
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program
~ - Value not applicable or not calculated
U - Constituent not detected at or above sample detection limit (SDL)
B - Constituent detected in laboratory method blank
R - Rejected value; result failed CSSA QA/QC Quality Assurance Project Plan (QAPP) standards
J - Estimated value
M - Matrix effect indicated
( ) - Indicates manually flagged result by WESTON data validator

Notes:
1. Background is the greater value of the Texas Specific Background Concentration (a) or Camp Stanley Storage Activity (CSSA) site-specific background value (b).
2. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
3. Tier 2 PCLs calculated using site specific data described in APAR Section 11.
4. The Critical PCL is the lower value of the TRRP Tier 1 or Tier 2 PCL. If the TRRP PCL is less than background, then background is the Critical PCL.
5. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
6. Bolded values exceed the Critical PCL.
7. Shaded cells inidcate sample quantitation limit (SQL) exceeds the Critical PCL.
8. Cells with dashed outline represent samples from associated areas that were subsequently removed by excavation.
9. Metals analysis by EPA Method SW846-6010B and 7471 (mercury).

Table 4D-1(b)
Soil Data Summary - Metals 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

			Metals																			
			Arsenic CAS: 7440-38-2	Qualifier	Barium CAS: 7440-39-3	Qualifier	Cadmium CAS: 7440-43-9	Qualifier	Chromium CAS: 7440-47-3	Qualifier	Copper CAS: 7440-50-8	Qualifier	Lead CAS: 7439-92-1	Qualifier	Mercury CAS: 7439-97-6	Qualifier	Nickel CAS: 7440-02-0	Qualifier	Zinc CAS: 7440-66-6	Qualifier
Soil Residential Assessment Levels †																						
Tier 1 Residential ^{Tota}lSoil$_{Comb}$ - 30 Acre Site			2.40E+01		8.10E+03		5.20E+01		2.70E+04		5.50E+02		5.00E+02		2.10E+00		8.30E+02		9.90E+03	
Tier 1 Residential ^{Air}Soil$_{Inh\text{-}V}$ - 30 Acre Site			na		na		na		na		na		na		na		na		na	
Tier 1 Residential ^{Soil}GW$_{Ing\ PCL}$ - 30 Acre Site			2.50E+00		2.20E+02		7.50E-01		**1.20E+03**		5.20E+02		1.50E+00		3.90E-03		**7.90E+01**		1.20E+03	
Tier 2 Residential ^{Soil}GW$_{Ing}$ - 30 Acre Site																				
TCEQ Ecological Benchmark			1.80E+01		3.30E+02		3.20E+01		4.00E-01		**6.10E+01**		1.20E+02		1.00E-01		3.00E+01		**1.20E+02**	
TCEQ-Approved Background Values																				
Soil Background Concentration			**19.6**	††	**300**	†††	**3**	††	40.2	††	23.2	††	**84.5**	††	**0.77**	††	35.5	††	73.2	††
Sample Locations	**Depth (ft bgs)**	**Sample Date**																		
NT1-US01 **(Excavated)**	3-3.5	3/8/2012	6.7	F	62		0.030	U	18	F	8.9		7.6	F	**1.3**		9.8		23	
NT1-US03	3-3.5	3/8/2012	12	F	150		0.030	U	34		11		15		0.040	F	17		32	
NT1-US05	3-3.5	3/8/2012	4.9	F	34		0.030	U	12	F	6.0		4.9	F	0.080	F	5.2		6.2	
NT1-US06	3-3.5	3/8/2012	3.5	F	25		0.030	U	7.8	F	5.8		3.0	F	0.050	F	2.6		0.70	F
NT1-US08	3-3.5	3/8/2012	7.4	F	63		0.030	U	20	F	8.3		9.0	F	0.30		9.6		19	
NT1-US10	3-3.5	3/19/2012	--		--		--		--		--		--		0.040	F	--		--	
NT1-US10-DUP	3-3.5	3/19/2012	--		--		--		--		--		--		0.040	F	--		--	

NOTES:

† TCEQ, TRRP Tier 1 Soil PCLs (Last Revised: May 24, 2011).

†† CSSA Soil Background Concentrations. Second Revision, Evaluation of Background Metals Concentrations in Soils and Bedrock at CSSA. February 2002. Values from Table 3.3.

††† Texas-Specific median background concentration.

^{Tot}Soil$_{Comb}$ - PCL for COPC in soil for a 30 acre source area and a potential future resident (combined exposure for ingestion, dermal contact, inhalation of volatiles and particulates, and ingestion of above-ground and below-ground vegetables).

^{GW}Soil$_{Ing}$ = PCL for COPC in soil for a 30 acre source area and a potential future resident (soil-to-groundwater leaching of COPC to Class 1 and 2 groundwater).

ft bgs = Sample depth in feet below ground surface.

Data from Parsons Engineering Science, 2012.

QA NOTES AND DATA QUALIFIERS:

na = not applicable.

U - Analyte was not detected above the indicated Method Detection Limit (MDL).

F - Analyte was positively identified, but the quantitation is an estimation above the MDL and below the Reporting Limit (RL).

All values are presented in milligrams per kilogram (mg/Kg) unless otherwise noted.

Critical PCLs and exceedances are shown in **Bold Blue** font.

Prepared by Weston Solutions, Inc.
CEC Contract No. W912BV-04-D-2026/DY04

Table 4D-1(b)
Soil Data Summary - Metals 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

			Metals																			
			Arsenic CAS: 7440-38-2	Qualifier	Barium CAS: 7440-39-3	Qualifier	Cadmium CAS: 7440-43-9	Qualifier	Chromium CAS: 7440-47-3	Qualifier	Copper CAS: 7440-50-8	Qualifier	Lead CAS: 7439-92-1	Qualifier	Mercury CAS: 7439-97-6	Qualifier	Nickel CAS: 7440-02-0	Qualifier	Zinc CAS: 7440-66-6	Qualifier
Soil Residential Assessment Levels†																				
Tier 1 Residential $^{Total}Soil_{Comb}$ - 30 Acre Site			2.40E+01	n	8.10E+03		5.20E+01		2.70E+04		5.50E+02		5.00E+02		2.10E+00		8.30E+02		9.90E+03	
Tier 1 Residential $AirSoil_{Inh-V}$ - 0.5 Acre Site			N/A		N/A		N/A		N/A		N/A		N/A		4.60E+00		N/A		N/A	
Tier 1 Residential $^{Soil}GW_{Ing}$ - 30 Acre Site			2.50E+00	m	2.20E+02		7.50E-01		**1.20E+03**		**5.20E+02**		1.50E+00		3.90E-03		**7.90E+01**		**1.20E+03**	
Tier 2 Residential $^{Soil}GW_{Ing}$ - 30 Acre Site			na		na		2.96E+02		na		na		na		**5.50E+00**		na		na	
Ecological Screening Benchmarks			na		na		na		na		na		na		na		na		na	
TCEQ-Approved Background Values																				
CSSA Metals Background Concentration			**19.6**	††	**300**	†††	**3**	††	40.2	††	23.2	††	**84.5**	††	0.77	††	35.5	††	73.2	††
Sample Locations (Date Collected)	**Depth (ft. bgs)**	**Sample Date**																		
B4-NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	3.9	M	42	M	0.030	M	9.5	M	140	M	12	M	0.30		5.6	M	55	M
B4-NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	2.2	F	25	J	2.1		6.5	F	34	J	11		0.34		3.5	J	43	J
B4-NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	2.1	F	57	J	2.3		5.5	F	110	J	41		1.5		19	J	180	J
B4-NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	2.7	F	35	J	0.030	U	8.6	F	11	J	34		0.53		5.3	J	130	J
B4-NT1-BOT04	16.0-16.5	3/12/2012	0.50	F	4.1	J	0.030	UJ	1.8	F	3.6		0.66	F	0.020	F	0.12	UJ	1.0	F
B4-NT1-BOT05	16.0-16.5	3/12/2012	0.80	F	9.6	J	0.030	UJ	3.5	F	4.5		1.8	F	0.10		3.0	J	5.9	J
B4-NT1-BOT06	16.0-16.5	3/12/2012	3.2	F	25	J	0.030	UJ	8.9	F	33		4.5	F	0.13		7.0	J	30	J
B4-NT1-SW1	11.0-11.5	2/29/2012	5.3	F	54	J	0.030	UJ	17	F	5.2		5.2	F	0.070	F	8.0		14	
B4-NT1-SW3	11.0-11.5	2/27/2012	2.5	F	28	J	0.030	U	4.2	F	3.0	J	2.3	F	0.030	F	2.6	J	16	J
B4-NT1-SW4	11.0-11.5	2/27/2012	3.6	F	32	J	0.030	U	8.4	F	7.4	J	3.8	F	0.090	F	5.8	J	10	J
B4-NT1-SW5	11.0-11.5	2/27/2012	5.3	F	48	J	0.030	U	12	F	6.7	J	5.1	F	0.93		7.1	J	18	J
B4-NT1-SW6	11.0-11.5	2/27/2012	1.8	F	8.5	J	0.030	U	1.5	F	3.3	J	1.4	F	0.050	F	1.5	F	14	J
B4-NT1-SW6-DUP	11.0-11.5	2/27/2012	1.7	F	10	J	0.030	U	2.7	F	4.0	J	1.5	F	0.080	F	2.0	J	5.2	J
B4-NT1-SW7	11.0-11.5	2/27/2012	5.2	F	52	J	0.030	U	14	F	7.5	J	5.2	F	0.070	F	6.9	J	16	J
B4-NT1-SW8	11.0-11.5	2/27/2012	2.0	F	28	J	0.030	U	5.3	F	3.0	J	2.0	F	0.24		2.0	J	14	J
B4-NT1-SW9	11.0-11.5	2/27/2012	2.1	F	24	J	0.030	U	4.4	F	2.9	J	1.7	F	0.030	F	2.0	F	5.4	J

NOTES:

† TCEQ, TRRP Tier 1 Soil PCLs (Last Revised: May 24, 2011).

†† CSSA Soil Background Concentrations. Second Revision, Evaluation of Background Metals Concentrations in Soils and Bedrock at CSSA. February 2002. Values from Table 3.3.

††† Texas-Specific median background concentration.

PCLs and CSSA background values coded in this table as [1, 2, 3].

$^{Tot}Soil_{Comb}$ - Surface soil PCL for residential receptor combined exposure for ingestion, dermal contact, and inhalation of volatiles and particulates. and ingestion of above-ground and below-ground vegetables).

$^{GW}Soil_{Ing}$ - PCL for soil to groundwater leaching and residential receptor ingestion (Class 1 and 2 groundwater).

$^{Air}Soil_{Inh-V}$ - Susurface soil PCL for residential inhalation of volatiles.

QA NOTES AND DATA QUALIFIERS:

na = not applicable.

U - Analyte was not detected above the indicated Method Detection Limit (MDL).

F - Analyte was positively identified, but the quantitation is an estimation above the MDL and below the Reporting Limit (RL).

J - Analyte was positively identified, but the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

M = Concentration is estimated due to a matrix effect.

All values are measured in milligrams per kilogram (mg/Kg) unless otherwise noted.

Critical PCLs and exceedances are shown in **Bold Blue** font.

Data from Parsons Engineering Science, 2012.

Prepared by Weston Solutions, Inc.
CEC Contract No. W912BV-04-D-2026/DY04

Table 4D-2
Soil Data Summary - VOCs and SVOCs
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[5] (mg/kg)	SWMUB4-A4-F1 12.0-12.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-B3-F1 16.0-16.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-D3-F1 11.0-11.5 02/02/2011 Normal Sample (mg/kg)
VOCs									
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.71	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.81	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.012	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.2	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.00027	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.4	0.00067 U	0.0007 U	0.00067 U	0.00064 U	0.00064 U
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.9	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.00087	0.001 U	0.0011 U	0.001 U	0.00097 U	0.00097 U
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.00010	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.9	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.0069	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.011	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	27	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.4	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.1	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
1-Chlorohexane	~	2.3E+03	2.0E+01	20	0.00067 U	0.0007 U	0.00067 U	0.00064 U	0.00064 U
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.5	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.50	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Benzene	~	4.8E+01	1.3E-02	0.013	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Bromobenzene	~	2.8E+02	1.2E+00	1.2	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Bromochloromethane	~	3.5E+02	1.5E+00	1.5	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Bromodichloromethane	~	9.8E+01	3.3E-02	0.033	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Bromoform	~	2.8E+02	3.2E-01	0.32	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.031	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Chlorobenzene	~	3.2E+02	5.5E-01	0.55	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Chloroethane	~	2.3E+04	1.5E+01	15	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Chloroform	~	8.0E+00	5.1E-01	0.51	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.12	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U

Note: Abbreviations and notes for table on Page 4 of 4.

Table 4D-2
Soil Data Summary - VOCs and SVOCs
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[5] (mg/kg)	SWMUB4-A4-F1 12.0-12.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-B3-F1 16.0-16.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-D3-F1 11.0-11.5 02/02/2011 Normal Sample (mg/kg)
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Dibromochloromethane	~	7.2E+01	2.5E-02	0.025	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Dibromomethane	~	1.4E+02	5.6E-01	0.56	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	120	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Ethylbenzene	~	4.0E+03	3.8E+00	3.8	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.6	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Isopropylbenzene	~	3.0E+03	1.7E+02	170	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
m,p-Xylene	~	4.7E+03	5.3E+01	53	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Methyl Bromide	~	2.9E+01	6.5E-02	0.065	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Methyl Chloride	~	8.4E+01	2.0E-01	0.20	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Methylene chloride	~	2.6E+02	6.5E-03	0.0065	0.0011 U	0.0012 U	0.0011 U	0.0012 J	0.0011 U
Naphthalene	~	1.2E+02	1.6E+01	16	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
n-Butylbenzene	~	1.5E+03	6.1E+01	61	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.0028 J
n-Propylbenzene	~	1.6E+03	2.2E+01	22	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
o-Xylene	~	2.9E+04	3.5E+01	35	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
p-Isopropyltoluene	~	2.5E+03	1.2E+02	120	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
sec-Butylbenzene	~	1.6E+03	4.2E+01	42	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Styrene	~	4.3E+03	1.6E+00	1.6	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
tert-Butylbenzene	~	1.4E+03	5.0E+01	50	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025	0.00067 U	0.0007 U	0.00067 U	0.00064 U	0.00064 U
Toluene	~	5.4E+03	4.1E+00	4.1	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.25	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.018	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Trichloroethene	~	6.8E+01	1.7E-02	0.017	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Trichlorofluoromethane	~	1.2E+04	6.4E+01	64	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011	0.00056 U	0.00059 U	0.00056 U	0.00054 U	0.00054 U
SVOCs									
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.4	0.0043 U	0.0046 U	0.0044 U	---	0.0042 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.9	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.4	0.0041 U	0.0043 U	0.0041 U	---	0.004 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.1	0.004 U	0.0042 U	0.004 U	---	0.0039 U
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.016	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	17	0.0031 U	0.0033 U	0.0031 U	---	0.003 U
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.18	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U

Note: Abbreviations and notes for table on Page 4 of 4.

Table 4D-2
Soil Data Summary - VOCs and SVOCs
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[5] (mg/kg)	SWMUB4-A4-F1 12.0-12.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-B3-F1 16.0-16.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-D3-F1 11.0-11.5 02/02/2011 Normal Sample (mg/kg)
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.6	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.047	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.0027	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.0024	0.0036 U	0.0038 U	0.0036 U	---	0.0034 U
2-Chloronaphthalene	~	5.0E+03	3.3E+02	330	0.0046 U	0.0048 U	0.0046 U	---	0.0044 U
2-Chlorophenol	~	3.6E+02	8.2E-01	0.82	0.0036 U	0.0038 U	0.0036 U	---	0.0034 U
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.5	0.031	0.0032 U	0.003 U	---	0.0029 U
2-Methylphenol	~	1.0E+03	3.6E+00	3.6	0.0032 U	0.0034 U	0.0032 U	---	0.0031 U
2-Nitroaniline	~	1.1E+01	1.1E-02	0.011	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067	0.0051 U	0.0054 U	0.0051 U	---	0.0049 U
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.031	0.0034 U	0.0036 U	0.0035 U	---	0.0033 U
3-Nitroaniline	~	1.9E+01	1.3E-02	0.013	0.0029 U	0.003 U	0.0029 U	---	0.0028 U
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.0023	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.18	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.3	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
4-Methylphenol	~	2.7E+02	3.2E-01	0.32	0.0031 U	0.0033 U	0.0031 U	---	0.003 U
4-Nitroaniline	~	1.9E+02	5.4E-02	0.054	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
4-Nitrophenol	~	5.1E+01	5.0E-02	0.050	0.0042 U	0.0045 U	0.0043 U	---	0.0041 U
Acenaphthene	~	3.0E+03	1.2E+02	120	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Acenaphthylene	~	3.8E+03	2.0E+02	200	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Anthracene	~	1.8E+04	3.4E+03	3400	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.6	0.0031 U	0.0033 U	0.0031 U	---	0.003 U
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56	0.0026 U	0.0027 U	0.0026 U	---	0.0025 U
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.7	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1800	0.0032 U	0.0034 U	0.0032 U	---	0.0031 U
Benzoic acid	~	3.5E+02	9.5E+01	95	0.0073 U	0.0077 U	0.0074 U	---	0.0071 U
Benzyl alcohol	~	6.7E+03	2.9E+00	29.0	0.0034 U	0.0036 U	0.0035 U	---	0.0033 U
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.0059	0.0027 U	0.0028 U	0.0027 U	---	0.0026 U
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.0011	0.0031 U	0.0033 U	0.0031 U	---	0.003 U
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095	0.003 U	0.0032 U	0.003 U	---	0.0029 U
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43	0.089	0.008	0.012	---	0.46
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132	0.0028 U	0.0029 U	0.0028 U	---	0.0027 U
Chrysene	~	5.6E+02	7.7E+02	560	0.0032 U	0.0034 U	0.0032 U	---	0.0031 U
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.55	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U

Note: Abbreviations and notes for table on Page 4 of 4.

Table 4D-2
Soil Data Summary - VOCs and SVOCs
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[4] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[5] (mg/kg)	SWMUB4-A4-F1 12.0-12.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SE1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-A4-SW1 7.0-7.5 01/13/2011 Normal Sample (mg/kg)	SWMUB4-B3-F1 16.0-16.5 01/26/2011 Normal Sample (mg/kg)	SWMUB4-D3-F1 11.0-11.5 02/02/2011 Normal Sample (mg/kg)
Dibenzofuran	~	2.7E+02	1.7E+01	17	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Diethyl phthalate	~	1.4E+03	7.8E+01	78	0.0037 U	0.0039 U	0.0046 J	---	0.0035 U
Dimethyl phthalate	~	6.6E+02	3.1E+01	31	0.0027 U	0.0028 U	0.0027 U	---	0.0026 U
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1700	0.0056 J	0.0045 J	0.0075	---	0.0027 U
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1300	0.0032 U	0.0034 U	0.0032 U	---	0.0031 U
Fluoranthene	~	2.3E+03	9.6E+02	960	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Fluorene	~	2.3E+03	1.5E+02	150	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.56	0.0029 U	0.003 U	0.0029 U	---	0.0028 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.6	0.0049 U	0.0052 U	0.0049 U	---	0.0047 U
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.2	0.004 U	0.0042 U	0.004 U	---	0.0039 U
Hexachloroethane	~	6.7E+01	9.2E-01	0.92	0.0043 U	0.0046 U	0.0044 U	---	0.0042 U
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.7	0.0039 U	0.0041 U	0.0039 U	---	0.0038 U
Isophorone	~	1.2E+03	1.5E+00	1.5	0.0033 U	0.0035 U	0.0034 U	---	0.0032 U
Naphthalene	~	1.2E+02	1.6E+01	16	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.18	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.00018	0.0044 U	0.0047 U	0.0045 U	---	0.0043 U
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.4	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U
Pentachlorophenol	~	2.4E+00	9.2E-03	0.0092	0.0031 U	0.0033 U	0.0031 U	---	0.003 U
Phenanthrene	~	1.7E+03	2.1E+02	210	0.006 J	0.0035 U	0.0034 U	---	0.0032 U
Phenol	~	1.6E+03	9.6E+00	9.6	0.0037 U	0.0039 U	0.0037 U	---	0.0035 U
Pyrene	~	1.7E+03	5.6E+02	560	0.0024 U	0.0026 U	0.0025 U	---	0.0024 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at or above method detection limit
J - Estimated value
CSSA - Camp Stanley Storage Activity
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample quantitation limit (SQL) exceeds the critical PCL.
5. Cells with dashed outline represent samples from associated areas that were subsequently removed by excavation.
6. Volatile organic compound analysis by EPA Method SW846-8260B.
7. Semivolatile organic compound analysis by EPA Method SW846-8270C.

Table 4D-2
Soil Data Summary - Explosives
Affected Property Assessment SWMU B-4
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-SS2A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS2B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS6A 0.0-0.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS6B 1.0-1.5 03/03/2010 Normal Sample (mg/kg)	SWMUB4-SS8A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS8A 0.0-0.5 03/04/2010 (Excavated) Field Dup01A (mg/kg)
Explosives										
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.91	0.1 U	0.097 U	0.1 U	0.099 U	0.097 U	0.0937 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.0038	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.086	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.0027	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.0024	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.016	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.92	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
4-Nitrotoluene (para)	~	1.7E+02	2.2E-01	0.22	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
HMX	~	1.6E+03	1.2E+00	1.2	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.18	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
RDX	~	4.3E+01	1.8E-02	0.018	0.052 U	0.049 U	0.052 U	0.05 U	0.049 U	0.0469 U
Tetryl	~	3.4E+01	5.5E-01	0.55	0.096 U	0.09 U	0.096 U	0.092 U	0.09 U	0.0867 U
VOCs	~	~	~	~	---	---	---	---	---	---
SVOCs	~	~	~	~	---	---	---	---	---	---

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical PCL[4] (mg/kg)	SWMUB4-SS8B 1.0-1.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS8B 1.0-1.5 03/04/2010 (Excavated) Field Dup01B (mg/kg)	SWMUB4-SS11A 0.0-0.5 03/04/2010 (Excavated) Normal Sample (mg/kg)	SWMUB4-SS11B 0.8-1.0 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS16A 0.0-0.5 03/04/2010 Normal Sample (mg/kg)	SWMUB4-SS16B 0.8-1.0 03/04/2010 Normal Sample (mg/kg)
Explosives										
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.91	0.096 U	0.0937 U	0.09 U	0.088 U	0.093 U	0.09 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.0038	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.086	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.0027	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.0024	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.016	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.92	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
4-Nitrotoluene (para)	~	1.7E+02	2.2E-01	0.22	0.048 U	0.0468 U	0.045 U	0.18 J	0.047 U	0.045 U
HMX	~	1.6E+03	1.2E+00	1.2	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.18	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
RDX	~	4.3E+01	1.8E-02	0.018	0.048 U	0.0468 U	0.045 U	0.044 U	0.047 U	0.045 U
Tetryl	~	3.4E+01	5.5E-01	0.55	0.089 U	0.0867 U	0.084 U	0.081 U	0.086 U	0.083 U
VOCs	~	~	~	~	---	---	---	---	---	---
SVOCs	~	~	~	~	---	---	---	---	---	---

Note: Abbreviations and notes for table on Page 2 of 2.

Table 4D-2
Explosives: Legend and Notes
Affected Property Assessment SWMU B-4
Camp Stanley Storage Activity Boerne, Texas

Legend
mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample quantitation limit (SQL) exceeds the critical PCL.
5. Cells with dashed outline represent samples from associated areas that were subsequently removed by excavation.
6. Explosives analysis by EPA Method SW846-8330.

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Volatile Organics

			1,1,1,2-Tetrachloroethane CAS: 630-20-6	Qualifier	Dilution	1,1,1-Trichloroethane CAS: 71-55-6	Qualifier	Dilution	1,1,2,2-Tetrachloroethane CAS: 79-34-5	Qualifier	Dilution	1,1,2-Trichloroethane CAS: 79-00-5	Qualifier	Dilution	1,1-Dichloroethane CAS: 75-34-3	Qualifier	Dilution	1,1-Dichloroethene CAS: 75-35-4	Qualifier	Dilution	1,1-Dichloropropene CAS: 563-58-6	Qualifier	Dilution	1,2,3-Trichlorobenzene CAS: 87-61-6	Qualifier	Dilution	1,2,3-Trichloropropane CAS: 96-18-4	Qualifier	Dilution	1,2,4-Trichlorobenzene CAS: 120-82-1	Qualifier	Dilution	1,2,4-Trimethylbenzene CAS: 95-63-6	Qualifier	Dilution	1,2-Dibromo-3-chloropropane CAS: 96-12-8	Qualifier	Dilution
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			3.90E+01			3.20E+04			3.00E+01			1.00E+01			8.80E+03			1.60E+03			2.60E+01			8.70E+01			2.00E-01			7.00E+01			7.90E+01			8.00E-02		
Tier 1 Residential SoilGWIng - 30 Acre Site			**7.10E-01**			**8.10E-01**			**1.20E-02**			**1.00E-02**			**9.20E+00**			**2.50E-02**			**6.70E-02**			**1.30E+01**			**2.70E-04**			**2.40E+00**			**2.40E+01**			**8.70E-04**		
Ecological Screening Benchmarks						na			na			na			na			na			na			na			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00080	U	1	0.00090	M	1	0.00090	U	1	0.00090	U	1	0.0010	M	1	0.0011	M	1	0.0012	M	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	M	1	0.0020	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.00080	U	1	0.00090	U	1	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0011	U	1	0.0012	U	1	0.0010	U	1	0.0010	U	1	0.0010	U	1	0.0011	U	1	0.0020	U	1

Volatile Organics

			1,2-Dibromoethane (EDB) CAS: 106-93-4	Qualifier	Dilution	1,2-Dichlorobenzene CAS: 95-50-1	Qualifier	Dilution	1,2-Dichloroethane CAS: 107-06-2	Qualifier	Dilution	1,2-Dichloropropane CAS: 78-87-5	Qualifier	Dilution	1,3,5-Trimethylbenzene (Mesitylene) CAS: 108-67-8	Qualifier	Dilution	1,3-Dichlorobenzene CAS: 541-73-1	Qualifier	Dilution	1,3-Dichloropropane CAS: 142-28-9	Qualifier	Dilution	1,4-Dichlorobenzene CAS: 106-46-7	Qualifier	Dilution	1-Chlorohexane CAS: 544-10-5	Qualifier	Dilution	2,2-Dichloropropane CAS: 594-20-7	Qualifier	Dilution	2-Chlorotoluene CAS: 95-49-8	Qualifier	Dilution	4-Chlorotoluene CAS: 106-43-4	Qualifier	Dilution
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			4.30E-01			3.90E+02			6.40E+00			3.10E+01			5.90E+01			6.20E+01	n		2.60E+01			2.50E+02			2.30E+03			3.10E+01			1.10E+03			1.60E+03		
Tier 1 Residential SoilGWIng - 30 Acre Site			**1.00E-04**			**8.90E+00**			**6.90E-03**			**1.10E-02**			**2.70E+01**			**3.40E+00**	n		**3.20E-02**			**1.10E+00**			**2.00E+01**			**6.00E-02**			**4.50E+00**			**5.40E+00**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	M	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	M	1	0.0010	M	1	0.0013	U	1	0.0011	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.00070	U	1	0.0011	U	1	0.0011	U	1	0.00070	U	1	0.00080	U	1	0.00090	U	1	0.0010	U	1	0.0013	U	1	0.0011	U	1

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Volatile Organics			Benzene CAS: 71-43-2	Qualifier	Dilution	Bromobenzene CAS: 108-86-1	Qualifier	Dilution	Bromochloromethane CAS: 74-97-5	Qualifier	Dilution	Bromodichloromethane CAS: 75-27-4	Qualifier	Dilution	Bromoform CAS: 75-25-2	Qualifier	Dilution	Bromomethane CAS: 74-83-9	Qualifier	Dilution	Carbon tetrachloride CAS: 56-23-5	Qualifier	Dilution	Chlorobenzene CAS: 108-90-7	Qualifier	Dilution	Chloroethane CAS: 75-00-3	Qualifier	Dilution	Chloroform CAS: 67-66-3	Qualifier	Dilution	Chloromethane CAS: 74-87-3	Qualifier	Dilution	cis-1,2-Dichloroethene CAS: 156-59-2	Qualifier	Dilution
Soil Residential Assessment Levels†																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			6.90E+01	c		2.80E+02			3.30E+03			9.80E+01	c		2.80E+02			2.90E+01			2.30E+01			3.20E+02			2.30E+04			8.00E+00			8.40E+01			1.20E+02		
Tier 1 Residential SoilGWIng - 30 Acre Site			**1.30E-02**	m		**1.20E+00**			**1.50E+00**			**3.30E-02**	c		**3.20E-01**			**6.50E-02**			**3.10E-02**			**5.50E-01**			**1.50E+01**			**5.10E-01**			**2.00E-01**			**1.20E-01**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	M	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	M	1	0.00070	U	1	**0.0022**	M	1	0.00070	U	1	0.0015	M	1	0.00080	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.00080	U	1	0.00090	U	1	0.0011	U	1	0.00070	U	1	0.0010	U	1	0.00070	U	1	0.0015	U	1	0.00070	U	1	0.0015	U	1	0.00080	U	1

Volatile Organics			cis-1,3-Dichloropropene CAS: 10061-01-5	Qualifier	Dilution	Dibromochloromethane CAS: 124-48-1	Qualifier	Dilution	Dibromomethane CAS: 74-95-3	Qualifier	Dilution	Dichlorodifluoromethane CAS: 75-71-8	Qualifier	Dilution	Ethylbenzene CAS: 100-41-4	Qualifier	Dilution	Hexachlorobutadiene CAS: 87-68-3	Qualifier	Dilution	Isopropylbenzene CAS: 98-82-8	Qualifier	Dilution	m,p-Xylene CAS: 179601-23-1	Qualifier	Dilution	Methylene chloride CAS: 75-09-2	Qualifier	Dilution	Naphthalene CAS: 91-20-3	Qualifier	Dilution	n-Butylbenzene CAS: 104-51-8	Qualifier	Dilution	n-Propylbenzene CAS: 103-65-1	Qualifier	Dilution
Soil Residential Assessment Levels†																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			7.80E+00			7.20E+01			4.20E+01			7.50E+02			5.30E+03			1.20E+01			3.00E+03			na			2.60E+02			1.20E+02			3.30E+03			1.60E+03		
Tier 1 Residential SoilGWIng - 30 Acre Site			**3.30E-03**			**2.50E-02**			**5.60E-01**			**1.20E+02**			**3.80E+00**			**1.60E+00**			**1.70E+02**			na			**6.50E-03**			**1.60E+01**			**7.60E+01**			**2.20E+01**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
Sample Locations (Date Collected)	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	M	1	0.0010	M	1	0.0011	U	1	0.0010	M	1	0.0018	M	1	0.0013	U	1	0.0010	M	1	0.0010	M	1	0.0012	M	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0026	F	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.00090	U	1	0.00090	U	1	0.0010	U	1	0.0018	U	1	0.0010	U	1	0.0011	U	1	0.0010	U	1	0.0018	U	1	0.0013	U	1	0.0010	U	1	0.0010	U	1	0.0012	U	1

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Volatile Organics

Sample Locations	Depth (ft bgs)	Sample Date	p-Xylene CAS: 95-47-6	Q	D	p-Cymene (p-Isopropyltoluene) CAS: 99-87-6	Q	D	sec-Butylbenzene CAS: 135-98-8	Q	D	Styrene CAS: 100-42-5	Q	D	tert-Butylbenzene CAS: 98-06-6	Q	D	Tetrachloroethene (PCE) CAS: 127-18-4	Q	D	Toluene CAS: 108-88-3	Q	D	trans-1,2-Dichloroethene CAS: 156-60-5	Q	D	trans-1,3-Dichloropropene CAS: 10061-02-6	Q	D	Trichloroethene (TCE) CAS: 79-01-6	Q	D	Trichlorofluoromethane CAS: 75-69-4	Q	D	Vinyl chloride CAS: 75-01-4	Q	D
Soil Residential Assessment Levels†																																								
Tier 1 Residential TotalSoilComb - 30 Acre Site			2.90E+04			8.20E+03			3.30E+03			4.30E+03			3.30E+03			9.40E+01			5.40E+03			3.70E+02			2.60E+01			6.80E+01			2.50E+04			3.40E+00		
Tier 1 Residential SoilGWIng - 30 Acre Site			**3.50E+01**			**1.20E+02**			**4.20E+01**			**1.60E+00**			**5.00E+01**			**2.50E-02**			**4.10E+00**			**2.50E-01**			**1.80E-02**			**1.70E-02**			**6.40E+01**			**1.10E-02**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00070	U	1	0.0012	M	1	0.0011	M	1	0.00090	U	1	0.0012	M	1	0.00080	M	1	0.0010	M	1	0.00080	M	1	0.00090	U	1	0.0012	M	1	0.0013	M	1	0.0013	M	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	**0.00090**	F	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	0.00080	U	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.00070	U	1	0.0012	U	1	0.0011	U	1	0.00090	U	1	0.0012	U	1	**0.0013**	F	1	0.0010	U	1	0.00080	U	1	0.00090	U	1	0.0012	U	1	0.0013	U	1	0.0013	U	1

Semi-Volatile Organics

Sample Locations	Depth (ft bgs)	Sample Date	1,2,4-Trichlorobenzene CAS: 120-82-1	Q	D	1,2-Dichlorobenzene CAS: 95-50-1	Q	D	1,3-Dichlorobenzene CAS: 541-73-1	Q	D	1,4-Dichlorobenzene CAS: 106-46-7	Q	D	2,4,5-Trichlorophenol CAS: 95-95-4	Q	D	2,4,6-Trichlorophenol CAS: 88-06-2	Q	D	2,4-Dichlorophenol CAS: 120-83-2	Q	D	2,4-Dimethylphenol CAS: 105-67-9	Q	D	2,4-Dinitrophenol CAS: 51-28-5	Q	D	2,4-Dinitrotoluene CAS: 121-14-2	Q	D	2,6-Dinitrotoluene CAS: 606-20-2	Q	D	2-Chloronaphthalene CAS: 91-58-7	Q	D
Soil Residential Assessment Levels†																																							
Tier 1 Residential TotalSoilComb - 30 Acre Site			7.00E+01			3.90E+02			6.20E+01			2.50E+02			6.70E+03			6.70E+01			2.00E+02			1.30E+03			1.30E+02			6.90E+00			6.90E+00			5.00E+03		
Tier 1 Residential SoilGWIng - 30 Acre Site			**2.40E+00**			**8.90E+00**			**3.40E+00**			**1.10E+00**			**1.70E+01**			**8.70E-02**			**1.80E-01**			**1.60E+00**			**4.70E-02**			**2.70E-03**			**2.40E-03**			**3.30E+02**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.080	U	1	0.030	U	1	0.050	U	1	0.040	U	1	0.040	U	1

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Semi-Volatile Organics

Sample Locations	Depth (ft bgs)	Sample Date	2-Chlorophenol CAS: 95-57-8	Qualifier	Dilution	2-Methyl-4,6-dinitrophenol CAS: 534-52-1	Qualifier	Dilution	2-Methylnaphthalene CAS: 91-57-6	Qualifier	Dilution	2-Methylphenol CAS: 95-48-7	Qualifier	Dilution	2-Nitroaniline CAS: 88-74-4	Qualifier	Dilution	2-Nitrophenol CAS: 88-75-5	Qualifier	Dilution	3,3'-Dichlorobenzidine CAS: 91-94-1	Qualifier	Dilution	3-Nitroaniline CAS: 99-09-2	Qualifier	Dilution	4-Bromophenyl phenyl ether CAS: 101-55-3	Qualifier	Dilution	4-Chloro-3-methyl phenol CAS: 59-50-7	Qualifier	Dilution	4-Chloroaniline CAS: 106-47-8	Qualifier	Dilution	4-Chlorophenyl phenyl ether CAS: 7005-72-3	Qualifier	Dilution
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			4.10E+02			6.70E+00			2.50E+02			3.30E+03			1.10E+01			1.30E+02			1.00E+01			1.20E+01			2.70E-01			3.30E+02			2.30E+01			1.50E-01		
Tier 1 Residential SoilGWIng - 30 Acre Site			**8.20E-01**			**2.30E-03**			**8.50E+00**			**3.60E+00**			**1.10E-02**			**6.70E-02**			**3.10E-02**			**1.30E-02**			**1.80E-01**			**2.30E+00**			**1.00E-02**			**1.60E-02**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.030	U	1	0.030	U	1	0.050	U	1	0.020	U	1	0.040	U	1	0.040	U	1	0.020	U	1	0.010	U	1	0.050	U	1	0.040	U	1	0.040	U	1	0.040	U	1

Semi-Volatile Organics

Sample Locations	Depth (ft bgs)	Sample Date	4-Methylphenol (p-cresol) CAS: 106-44-5	Qualifier	Dilution	4-Nitroaniline CAS: 100-01-6	Qualifier	Dilution	4-Nitrophenol CAS: 100-02-7	Qualifier	Dilution	Acenaphthene CAS: 83-32-9	Qualifier	Dilution	Acenaphthylene CAS: 208-96-8	Qualifier	Dilution	Anthracene CAS: 120-12-7	Qualifier	Dilution	Benzo(a)anthracene CAS: 56-55-3	Qualifier	Dilution	Benzo(a)pyrene CAS: 50-32-8	Qualifier	Dilution	Benzo(b)fluoranthene CAS: 205-99-2	Qualifier	Dilution	Benzo(g,h,i)perylene CAS: 191-24-2	Qualifier	Dilution	Benzoic acid CAS: 65-85-0	Qualifier	Dilution	Benzyl alcohol CAS: 100-51-6	Qualifier	Dilution
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			3.30E+02	n		1.90E+02			1.30E+02			3.00E+03			3.80E+03			1.80E+04			**5.60E+00**			**5.60E-01**			**5.70E+00**			**1.80E+03**			2.70E+05			6.70E+03		
Tier 1 Residential SoilGWIng - 30 Acre Site			**3.20E-01**	n		**5.40E-02**			**5.00E-02**			**1.20E+02**			**2.00E+02**			**3.40E+03**			8.90E+00			3.80E+00			3.00E+01			2.30E+04			**9.50E+01**			**2.90E+00**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	M	1	0.12	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.040	U	1	0.020	U	1	0.12	U	1

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Semi-Volatile Organics

			Benzyl butyl phthalate CAS: 85-68-7	*Qualifier*	*Dilution*	*bis(2-Chloroethoxy)methane CAS: 111-91-1*	*Qualifier*	*Dilution*	*bis(2-Chloroethyl)ether CAS: 111-44-4*	*Qualifier*	*Dilution*	*bis(2-Chloroisopropyl)ether CAS: 108-60-1*	*Qualifier*	*Dilution*	*bis(2-Ethylhexyl) phthalate CAS: 117-81-7*	*Qualifier*	*Dilution*	*Chrysene CAS: 218-01-9*	*Qualifier*	*Dilution*	*Dibenzo(a,h)anthracene CAS: 53-70-3*	*Qualifier*	*Dilution*	*Dibenzofuran CAS: 132-64-9*	*Qualifier*	*Dilution*	*Diethyl phthalate CAS: 84-66-2*	*Qualifier*	*Dilution*	*Dimethyl phthalate CAS: 131-11-3*	*Qualifier*	*Dilution*	*Di-n-butyl phthalate CAS: 84-74-2*	*Qualifier*	*Dilution*	*Di-n-octyl phthalate CAS: 117-84-0*	*Qualifier*	*Dilution*
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			1.60E+03			2.50E+00			1.40E+00			4.10E+01			**4.30E+01**			**5.60E+02**			**5.50E-01**			2.70E+02			5.30E+04			5.30E+04			6.20E+03			**2.60E+03**		
Tier 1 Residential SoilGWIng - 30 Acre Site			**1.30E+02**			**5.90E-03**			**1.10E-03**			**9.50E-02**			8.20E+01			7.70E+02			7.60E+00			**1.70E+01**			**7.80E+01**			**3.10E+01**			**1.70E+03**			1.00E+06		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.040	U	1	0.060	U	1	0.040	U	1	0.050	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.030	U	1

Semi-Volatile Organics

			Fluoranthene CAS: 206-44-0	*Qualifier*	*Dilution*	*Fluorene CAS: 86-73-7*	*Qualifier*	*Dilution*	*Hexachlorobenzene CAS: 118-74-1*	*Qualifier*	*Dilution*	*Hexachlorobutadiene CAS: 87-68-3*	*Qualifier*	*Dilution*	*Hexachlorocyclopentadiene CAS: 77-47-4*	*Qualifier*	*Dilution*	*Hexachloroethane CAS: 67-72-1*	*Qualifier*	*Dilution*	*Indeno(1,2,3-cd)pyrene CAS: 193-39-5*	*Qualifier*	*Dilution*	*Isophorone CAS: 78-59-1*	*Qualifier*	*Dilution*	*Naphthalene CAS: 91-20-3*	*Qualifier*	*Dilution*	*Nitrobenzene CAS: 98-95-3*	*Qualifier*	*Dilution*	*n-Nitrosodi-n-propylamine CAS: 621-64-7*	*Qualifier*	*Dilution*	*n-Nitrosodiphenylamine CAS: 86-30-6*	*Qualifier*	*Dilution*
Soil Residential Assessment Levels[†]																																						
Tier 1 Residential TotalSoilComb - 30 Acre Site			2.30E+03			2.30E+03			1.00E+00			1.20E+01			**7.20E+00**			6.70E+01			**5.70E+00**			4.90E+03			1.20E+02			3.40E+01			4.00E-01			5.70E+02		
Tier 1 Residential SoilGWIng - 30 Acre Site			**9.60E+02**		>S	**1.50E+02**			**5.60E-01**			**1.60E+00**			9.60E+00			**9.20E-01**			8.70E+01			**1.50E+00**			**1.60E+01**			**1.80E-01**			**1.80E-04**			**1.40E+00**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na			na			na			na			na		
Sample Locations (Date Collected)	**Depth (ft bgs)**	**Sample Date**																																				
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.040	U	1	0.040	U	1	0.050	U	1	0.060	U	1	0.030	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.040	U	1	0.050	U	1	0.040	U	1	0.050	U	1

Table 4D-2(b)
Soil Data Summary - VOCs, SVOCs, and Explosives - 2012 Removal
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Semi-Volatile Organics

			Pentachlorophenol CAS: 87-86-5	Qualifier	Dilution	Phenanthrene CAS: 85-01-8	Qualifier	Dilution	Phenol CAS: 108-95-2	Qualifier	Dilution	Pyrene CAS: 129-00-0	Qualifier	Dilution
Soil Residential Assessment Levels†														
Tier 1 Residential TotalSoilComb - 30 Acre Site			7.30E-01			1.70E+03			2.00E+04			1.70E+03		
Tier 1 Residential SoilGWIng - 30 Acre Site			**9.20E-03**			**2.10E+02**			**9.60E+00**			**5.60E+02**		>S
Ecological Screening Benchmarks			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**												
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.030	U	1	0.040	U	1	0.040	U	1	0.050	U	1

Explosives

			1,3,5-Trinitrobenzene CAS: 99-35-4	Qualifier	Dilution	1,3-Dinitrobenzene CAS: 99-65-0	Qualifier	Dilution	2,4,6-Trinitrotoluene (TNT) CAS: 118-96-7	Qualifier	Dilution	2,4-Dinitrotoluene CAS: 121-14-2	Qualifier	Dilution	2,6-Dinitrotoluene CAS: 606-20-2	Qualifier	Dilution	2-Nitrotoluene CAS: 88-72-2	Qualifier	Dilution	3-Nitrotoluene CAS: 99-08-1	Qualifier	Dilution	4-Nitrotoluene CAS: 99-99-0	Qualifier	Dilution
Soil Residential Assessment Levels†																										
Tier 1 Residential TotalSoilComb - 30 Acre Site			2.00E+03			6.70E+00			3.30E+01			6.90E+00			6.90E+00			2.10E+01			6.70E+02			2.70E+02		
Tier 1 Residential SoilGWIng - 30 Acre Site			**9.10E-01**			**3.80E-03**			**8.60E-02**			**2.70E-03**			**2.40E-03**			**1.60E-02**			**9.20E-01**			**2.20E-01**		
Ecological Screening Benchmarks			na			na			na			na			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**																								
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--			--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.075	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.075	U	1	0.075	U	1	0.080	U	1	0.080	U	1

Explosives

			HMX CAS: 2691-41-0	Qualifier	Dilution	Nitrobenzene CAS: 98-95-3	Qualifier	Dilution	RDX CAS: 121-82-4	Qualifier	Dilution	Tetryl CAS: 479-45-8	Qualifier	Dilution
Soil Residential Assessment Levels†														
Tier 1 Residential TotalSoilComb - 30 Acre Site			1.60E+03			3.40E+01			4.30E+01			2.70E+02		
Tier 1 Residential SoilGWIng - 30 Acre Site			**1.20E+00**			**1.80E-01**			**1.80E-02**			**5.50E-01**		
Ecological Screening Benchmarks			na			na			na			na		
Sample Locations	**Depth (ft bgs)**	**Sample Date**												
NT1-BOT01 **(Excavated)**	15.0 - 15.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-BOT01-DUP **(Excavated)**	15.0 - 15.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-BOT02 **(Excavated)**	15.0 - 15.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-BOT03 **(Excavated)**	15.0 - 15.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-BOT04	16.0-16.5	3/12/2012	--			--			--			--		
NT1-BOT05	16.0-16.5	3/12/2012	--			--			--			--		
NT1-BOT06	16.0-16.5	3/12/2012	--			--			--			--		
NT1-SW1	11.0-11.5	2/29/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW3	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW4	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW5	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW6	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW6-DUP	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW7	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW8	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1
NT1-SW9	11.0-11.5	2/27/2012	0.080	U	1	0.075	U	1	0.080	U	1	0.075	U	1

NOTES:

Data from Parsons, 2012.

† TCEQ, TRRP Tier 1 Soil PCLs (Last Revised: May 24, 2011).

[1] $^{Tot}Soil_{Comb}$ = PCL for COPC in soil for a 30 acre source area and a potential future resident (combined exposure for ingestion, dermal contact, inhalation of volatiles and particulates, and ingestion of above-ground and below-ground vegetables).

[2] $^{GW}Soil_{Ing}$ = PCL for COPC in soil for a 30 acre source area and a potential future resident (soil-to-groundwater leaching of COPC to Class 1 and 2 groundwater).

[3] TCEQ Ecological Benchmark for Soil.

[4] ft bgs = Sample depth in feet below ground surface.

QA NOTES AND DATA QUALIFIERS:

U - Analyte was not detected above the indicated Method Detection Limit (MDL).

F - Analyte was positively identified, but the quantitation is an estimation above the MDL and below the Reporting Limit (RL).

J - Analyte was positively identified, but the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

M = Concentration is estimated due to a matrix effect.

na = not applicable.

Critcal PCLs are shown in **blue** font.

Bolded values exceed the Critical PCL

Highlighted values denote that sample detection limit exceeds Critical PCL.

All values are measured in milligrams per kilogram (mg/Kg) unless otherwise noted.

Table 4E – Soil Geochemical/Geotechnical Data Summary

Sample ID/Type	Sample Date/Reference	pH (Standard Units)
SWMUB4-Ca1-SE1/Subsurface Soil	1/06/2011	8.14
SWMUB4-Ca1-F1/Subsurface Soil	1/06/2011	8.23
SWMUB4-B1-F1/Subsurface Soil	1/24/2011	9.07
SWMUB4-B5-F2/Subsurface Soil	2/01/2011	9.31
SWMU B-4 Surface Soil – Tarrant Undulating Series	CSSA Soil Background Metals Study (Parsons, 2002)	8.08
SWMU B-4 Soil Average pH		**8.56**

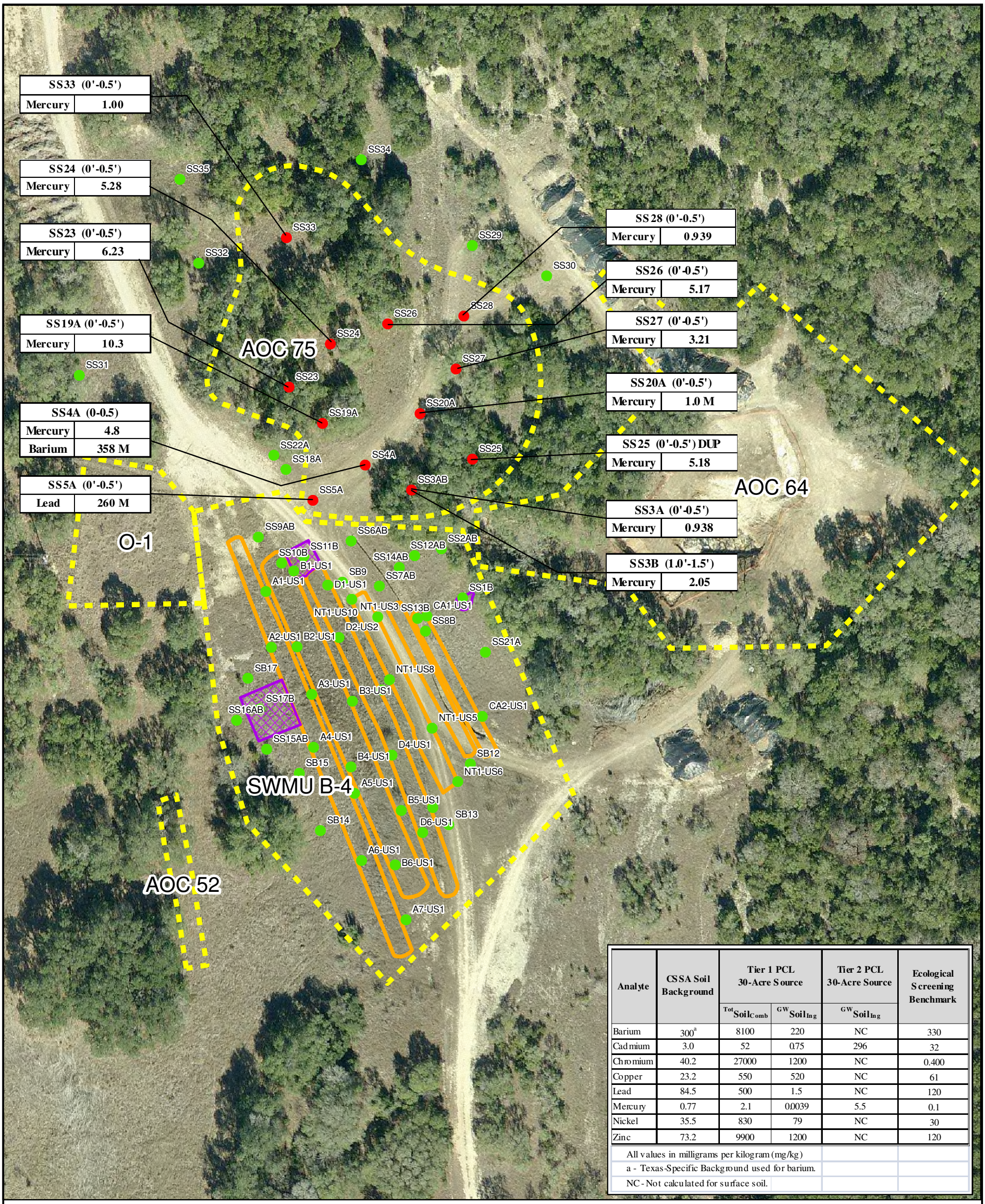
pH analysis by EPA Method SW 9045.

Figures 4A and 4B – Soil COC Concentration Maps

Figures 4A and 4B show the location of APA surface and subsurface soil sample locations, respectively. A comparative table is provided on each map listing the applicable PCLs and background concentrations for each SWMU B-4 target COC. Additionally, for informational purposes, Figure 4A shows the sample locations and results for the affected property designated for AOC 75 which will be assessed separately from SWMU B-4.

Figures 4C-1 through 4C-6 – Remedial Excavation Cross Sections

Figures 4C-1 through 4C-6 present stratigraphic cross sections representing the final limits of trench excavation and sampling results from critical sidewall, floor and vertical delineation borings.



Analyte	CSSA Soil Background	Tier 1 PCL 30-Acre Source		Tier 2 PCL 30-Acre Source	Ecological Screening Benchmark
		$^{Tot}Soil_{Comb}$	$^{GW}Soil_{Ing}$	$^{GW}Soil_{Ing}$	
Barium	300[a]	8100	220	NC	330
Cadmium	3.0	52	0.75	296	32
Chromium	40.2	27000	1200	NC	0.400
Copper	23.2	550	520	NC	61
Lead	84.5	500	1.5	NC	120
Mercury	0.77	2.1	0.0039	5.5	0.1
Nickel	35.5	830	79	NC	30
Zinc	73.2	9900	1200	NC	120

All values in milligrams per kilogram (mg/kg)
a - Texas-Specific Background used for barium.
NC - Not calculated for surface soil.

Legend

Soil confirmation sample with COC concentrations below TRRP Tier 1 or Tier 2 PCLs protective of human health and the environment and below TCEQ ecological risk screening benchmark values.

Soil confirmation sample (AOC 75) with COC concentrations above TRRP human health PCLs and TCEQ Ecological Screening Benchmark values.

Areas excavated greater than 1 foot below ground surface

Areas excavated 1 foot below ground surface

COC - Chemical of concern
DUP - Duplicate sample
PCL - Protective concentration level
M - Matrix effect exhibited in sample
SB - Surface soil sample (Parsons, April 2000)
SS - Surface soil sample (A: 0-0.5', B: 1.0-1.5') (WESTON, April/July 2010 and May 2011)
US - Surface soil sample collected at limits of excavation (WESTON, January/February 2011 and parsons March 2012)

This figure is prepared for reference only and is not intended for survey or engineering purposes.

SOURCE: Camp Stanley Aerial Imagery

N

0 40 80 160

Scale in Feet

WESTON SOLUTIONS

Figure 4A
Surface Soil COC Concentration Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
JUNE, 2012	03886.529.005.0007.00	AS SHOWN

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Analyte	CSSA Soil Background	Tier 1 PCL 0.5-Acre Source	Tier 1 PCL 30-Acre Source	Tier 2 PCL 30-Acre Source
		$^{Air}Soil_{Ing-V}$	$^{GW}Soil_{Ing}$	$^{GW}Soil_{Ing}$
Barium	300[a]	N/A	220	NC
Cadmium	3.0	N/A	0.75	296
Chromium	40.2	N/A	1200	NC
Copper	23.2	N/A	520	NC
Lead	84.5	N/A	1.50	NC
Mercury	0.77	4.6	0.0039	5.5
Nickel	35.5	N/A	79	NC
Zinc	73.2	N/A	1200	NC

All values in milligrams per kilogram (mg/kg)
a - Texas-Specific Background used for barium.
N/A - Not applicable.
NC - Not calculated for subsurface soil.

Legend

Excavation confirmation sample concentrations less than Tier 1 and Tier 2 critical PCLs

Vertical delineation boring sample concentrations less than Camp Stanley background

Excavation Limits

COC – Chemical of Concern
PCL – Protective Concentration Level
VOC – Volatile Organic Compound
SVOC –Semi Volatile Organic Compound

Notes:
1. All samples were analyzed for SWMU B-4 target metals shown on insert table. Samples from locations A4-SW1, A4-F1, A4-SE1, B3-F1, and D3-F1 were also analyzed for VOCs and SVOCs.
2. Samples NT1-BOT1, NT1-BOT2, NT1-BOT3 and NT1-SW1 through NT1-SW9 also analyzed for VOCs, SVOCs, and Explosives.
3. All COC concentrations at limits of excavation are less than Tier 1 PCLs, Tier 2 PCLs, or Camp Stanley site specific back ground concentrations. Therefore No PCL exceedance zone exits.
   Source: Camp Stanley Aerial Imagery
   This figure is prepared for reference only and is not intended for survey of engineering purposes.

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Figure 4B
Subsurface Soil COC Concentration Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
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Legend

- Excavation confirmation sample concentrations less than Camp Stanley back ground ESVs and Tier 1 and Tier 2 critical PCLs
- Vertical delineation boring sample concentrations less than Camp Stanley background
- Areas excavated 1 foot below ground surface
- Excavation limits
- A — A' Line of cross-section
- Surface water drainage flow direction

COC – Chemical of Concern
PCL – Protective Concentration Level
ESV - Ecological Screening value

Notes:
1. All COC concentrations at limits of excavation are less than ESVs Tier 1 PCLs, Tier 2 PCLs, or Camp Stanley site specific background. Therefore No PCL exceedance zone exits.

Source: Camp Stanley Aerial Imagery
This figure is prepared for reference only and is not intended for survey of engineering purposes.

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Figure 4C-1
Cross - Section Index Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

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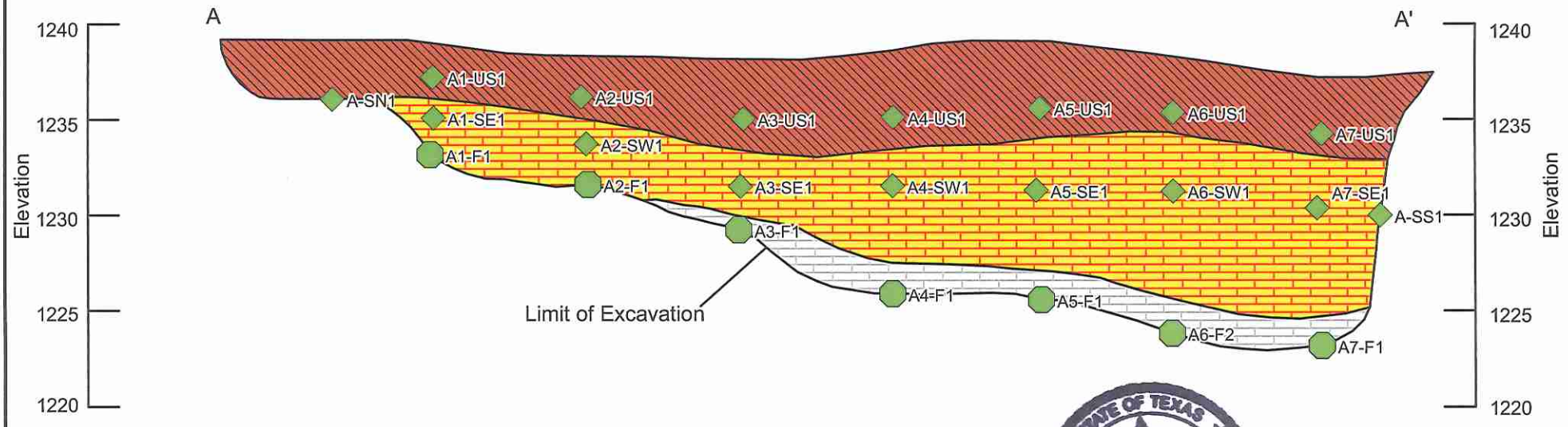
Trench A



COC	CSSA Background Concentration	A1-F1 6.0-6.5' 01/11/2011	A2-F1 6.0-6.5 01/11/2011	A3-F1 9.0-9.5 01/11/2011	A4-F1 12.0-12.5 01/13/2011	A5-F1 12.5-13.0 01/13/2011	A6-F1 (Excavated) 13.0-13.5 01/13/2011	A7-F1 14.0-14.5 01/14/2011
Copper	23.2	2.8	9.2	**114**	7.8	3.7	**26**	4.4
Zinc	73.2	3.87 (J)	17.8 (J)	**118 (J)**	22.6 (J)	8.79 (J)	**97.7 (J)**	10.4 (M)

All concentration values in mg/kg.
Only COC's exceeding background in excavation floor shown in table.
Bolded concentration values are greater than background.
J - Estimated value.
M - Matrix inteference in sample.

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1 inch = 50 feet HORZ
1 inch = 8 feet VERT

Elevations in Feet Relative to Mean Sea Level

Notes:

1. Line of cross-section presented on Figure 4C-1.
2. All COC concentrations at limits of excavation were equal to or less than the critical Tier 1 or calculated Tier 2 protective concentration level (PCL) and ecological screening benchmarks (i.e. no PCL exceedence (PCLE) zone exists).
3. All samples analyzed for SWMU B-4 target metals barium, cadmium, chromium, copper, lead, mercury, nickel and zinc.
4. No groundwater was encountered in the excavation.
5. Sample locations and depths are approximate and based on tape and/or grade survey relative to ground surface.
6. This figure is for reference only and is not intended for survey or engineering purposes.

Legend

- Excavation sidewall confirmation sample
- Excavation floor confirmation sample
- Dark brown silty/sandy clay soil, loose with roots and organic matter (Surface Soil)
- Orange-brown limestone and inter-bedded marl, irregularly bedded, moderately to slightly weathered (Subsurface Soil)
- White to yellow-white limestone, hard, platy to massive (Subsurface Soil)
- A – A' Line of cross-section
- COC Chemical of concern

WESTON SOLUTIONS

Figure 4C-2
Remedial Excavation Cross-Section A – A'

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
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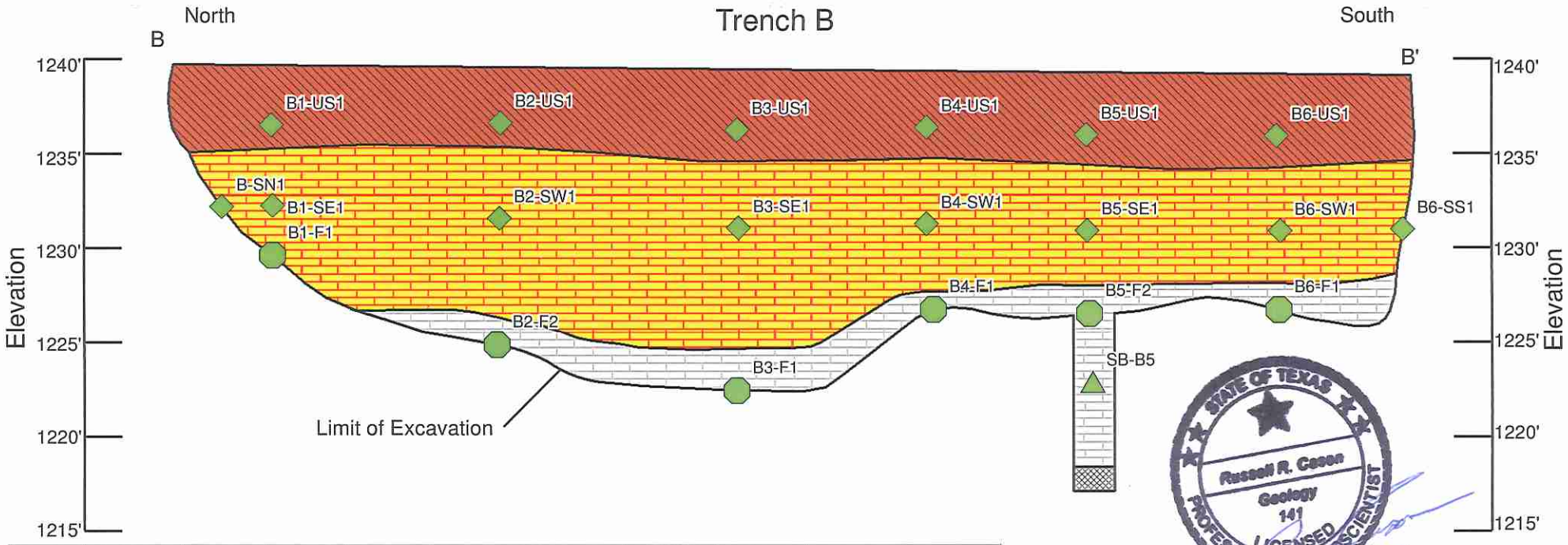

COC	CSSA Background Concentration	B1-F1 10.0-10.5 01/24/2011	B2-F1 13.0-13.5 01/25/2011	B2-F2 14.0-14.5 01/28/2011	B3-F1 16.0-16.5 01/26/2011	B4-F1 12.5-13.0 01/27/2011	B5-F1 (Excavated) 11.0-11.5 01/27/2011	B5-F2 12.0-12.5 02/01/2011	SB-B5 16.5-17.5 4/27/2011	B6-F1 12.5-13.0 01/28/2011
Cadmium	3	0.121 (J)	1.19 (J)	0.2 (U)	0.394 (J)	0.232 (J)	**4.78**	---	0.0241 (J) (M)	0.442 (J)
Copper	2.32	3.46 (J)	**38.3 (M)**	4.64 (R)	**24.9 (M)**	**30.8 (M)**	**46.7 (M)**	---	10.9	**25.4 (R)**
Mercury	0.77	0.42 (M)	**6.19 (M)**	0.595 (M)	0.493 (M)	0.317	**8.49**	0.73	0.0294	**0.933 (M)**

All concentration values in mg/kg.
Bolded concentration values are greater than background.
Only COC's exceeding background in excavation floor shown in table.
J - Estimated value.
M - Matrix inteference in sample.
R - Rejected value.
U - Not detected.

1 inch = 40 feet HORZ
1 inch = 8 feet VERT

Elevations in Feet Relative to Mean Sea Level

Notes:

1. Line of cross-section presented on Figure 4C-1.
2. All COC concentrations at final limits of excavation were equal to or less than the critical Tier 1 or calculated Tier 2 protective concentration level (PCL) and ecological screening benchmarks (i.e. no PCL exceedence (PCLE) zone exists).
3. All samples analyzed for SWMU B-4 target metals barium, cadmium, chromium, copper, lead, mercury, nickel and zinc.
4. No groundwater was encountered in the excavation.
5. Sample locations and depths are approximate and relative to ground surface.
6. This figure is for reference only and is not intended for survey or engineering purposes.

Legend

- Excavation sidewall confirmation sample
- Excavation floor confirmation sample
- Vertical delineation boring confirmation sample
- Dark brown silty/sandy clay soil, loose with roots and organic matter (Surface Soil)
- Orange-brown limestone and inter-bedded marl, irregularly bedded, moderately to slightly weathered (Subsurface Soil)
- White to yellow-white limestone, hard, platy to massive (Subsurface Soil)
- Claystone, gray, hard
- B – B' Line of cross-section
- COC Chemical of concern

WESTON SOLUTIONS

Figure 4C-3
Remedial Excavation Cross-Section B – B'

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
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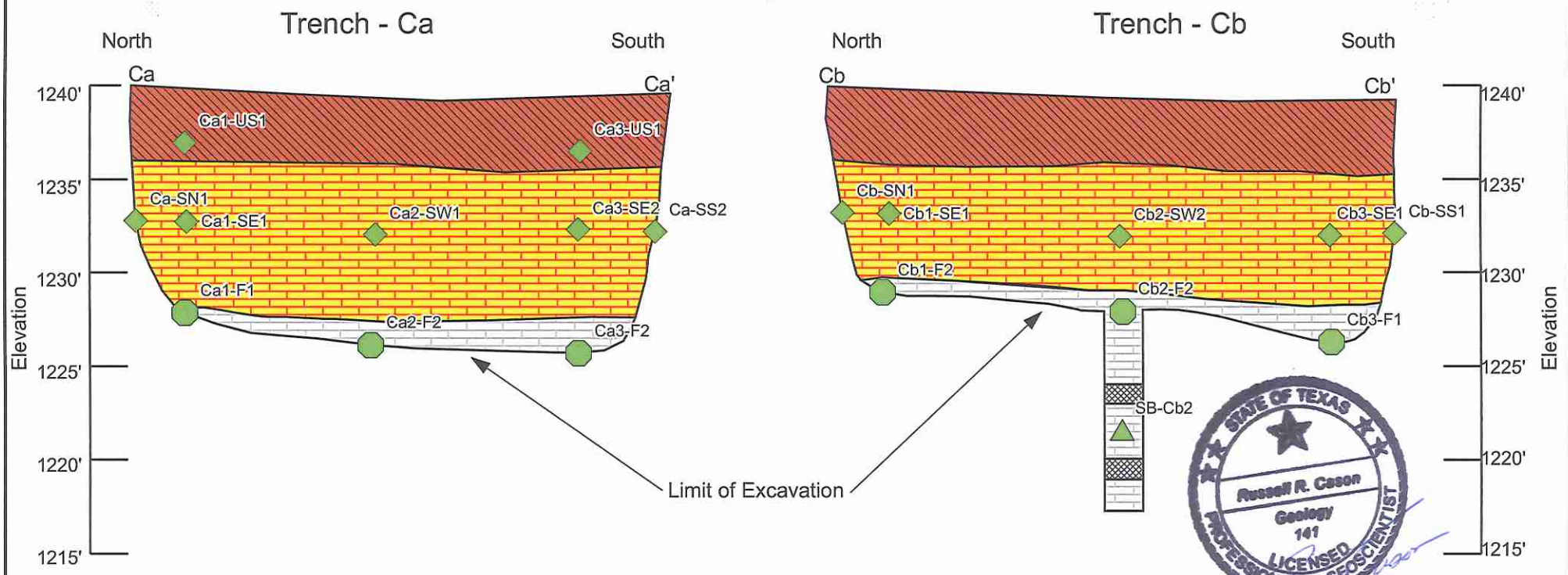

COC	CSSA Background Concentration	Ca1-F1 12.0-12.5 01/06/2011	Ca2-F1 13.0-13.5 01/06/2011	Ca3-F1 (Excavated) 12.0-12.5 01/06/2011	Ca3-F2 13.0-13.5 01/14/2011	Cb1-F1 (Excavated) 10-10.5 01/10/2011	Cb1-F2 11.0-11.5 01/19/2011	Cb2-F1 (Excavated) 10-10.5 01/10/2011	Cb2-F2 11.0-11.5 01/19/2011	SB-Cb2 17.0-18.0 04/27/2011	Cb3-F1 13.0-13.5 01/10/2011
Cadmium	3.0	0.041 U	0.125 J	0.997 (J)	0.21 U	0.0879 J	---	**8.28**	0.18 U	0.0854 J	0.041 U
Copper	23.2	2.48 (M)	13.6 (M)	14 (M)	---	5.39	---	**296**	---	1.81	2.5
Mercury	0.77	0.0142	0.259	**6.24**	0.0109	**1.52**	**0.792 (M)**	**1.6**	**2.53 (M)**	0.00120 J	0.00947
Zinc	73.2	4.87 (M)	**81.7 (M)**	27.4 (M)	---	21.2	---	**3450**	11.2	4.11	4.06

All concentration values in mg/kg.
Bolded concentration values are greater than background.
Only COC's exceeding background in excavation floor shown in table.
J - Estimated value.
M - Matrix inteference in sample.

1 inch = 40 feet HORZ
1 inch = 8 feet VERT

Elevations in Feet Relative to Mean Sea Level

Notes:

1. Line of cross-section key presented on Figure 4C-1.
2. All COC concentrations at final limits of excavation were equal to or less than the critical Tier 1 or calculated Tier 2 protective concentration level (PCL) and ecological screening benchmarks (i.e. no PCL exceedence (PCLE) zone exists).
3. All samples analyzed for SWMU B-4 target metals barium, cadmium, chromium, copper, lead, mercury, nickel and zinc.
4. No groundwater was encountered in the excavation.
5. Sample locations and depths are approximate and based on tape and/or grade survey or boring sample depth relative to ground surface.
6. This figure is for reference only and is not intended for survey or engineering purposes.

Legend

- Excavation sidewall confirmation sample
- Excavation floor confirmation sample
- Vertical delineation boring confirmation sample
- Dark brown silty/sandy clay soil, loose with roots and organic matter (Surface Soil)
- Orange-brown limestone and inter-bedded marl, irregularly bedded, moderately to slightly weathered (Subsurface Soil)
- White to yellow-white limestone, hard, platy to massive (Subsurface Soil)
- Claystone, gray, hard
- Ca – Ca' Line of cross-section
- COC Chemical of concern

WESTON SOLUTIONS

Figure 4C-4
Remedial Excavation Cross-Sections Ca–Ca' and Cb-Cb'

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

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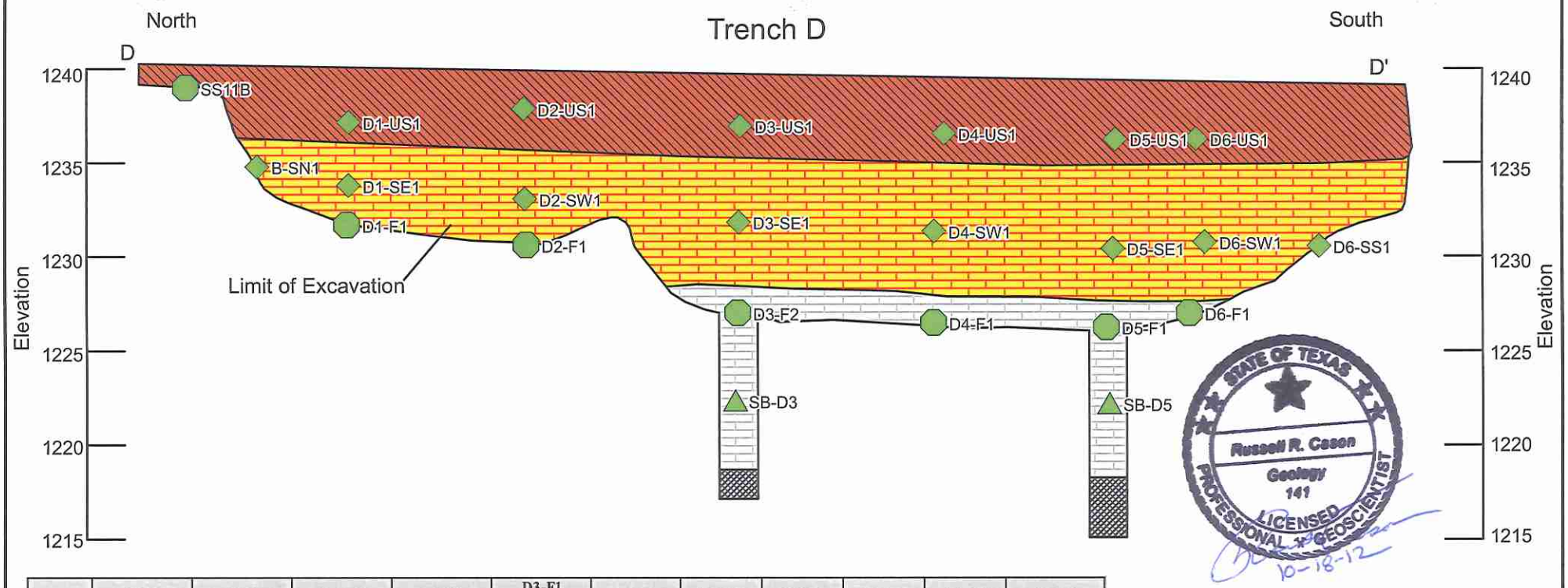

COC	CSSA Background Concentration	S11B 1.0-1.5' 03/04/2010	D1-F1 8.0-8.5' 02/01/2011	D2-F1 9.0-9.5 02/01/2011	D3-F1 (Excavated) 11.0-11.5 02/02/2011	D3-F2 12.0-12.5 02/07/2011	SB-D3 17.0-18.0 04/27/2011	D4-F1 13.0-13.5 02/03/2011	D5-F1 11.0-11.5 02/07/2011	SB-D5 17.0-18.0 04/27/2011	D6-F1 11.0-11.5 02/08/2011
Mercury	0.77	0.107	0.00666	0.12	**1.35**	0.581	0.00318 (J)	0.0104	0.414	0.00779	0.223
Zinc	73.2	6.63J	11.2 (M)	**32.3 (M)**	23	---	6.3	29.6	**113**	4.85	**108**

All concentration values in mg/kg.
Bolded concentration values are greater than background.
Only COC's exceeding background in excavation floor shown in table.
J - Estimated value.
M - Matrix inteference in sample.

1 inch = 40 feet HORZ
1 inch = 8 feet VERT

Elevations in Feet Relative to MSL
Mean Sea Level

Notes:

1. Line of cross-section presented on Figure 4C-1.
2. All COC concentrations at final limits of excavation were equal to or less than the critical Tier 1 or calculated Tier 2 protective concentration level (PCL) and ecological screening benchmarks (i.e. no PCL exceedence (PCLE) zone exists).
3. All samples analyzed for SWMU B-4 target metals barium, cadmium, chromium, copper, lead, mercury, nickel and zinc.
4. No groundwater was encountered in the excavation.
5. Sample locations and depths are approximate and relative to ground surface.
6. This figure is for reference only and is not intended for survey or engineering purposes.

Legend

- Excavation sidewall confirmation sample
- Excavation floor confirmation sample
- Vertical delineation boring confirmation sample
- Dark brown silty/sandy clay soil, loose with roots and organic matter (Surface Soil)
- Orange-brown limestone and inter-bedded marl, irregularly bedded, moderately to slightly weathered (Subsurface Soil)
- White to yellow-white limestone, hard, platy to massive (Subsurface Soil)
- Claystone, gray, hard
- D – D' Line of cross-section
- COC Chemical of concern

WESTON SOLUTIONS

Figure 4C-5
Remedial Excavation Cross-Section D – D'

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
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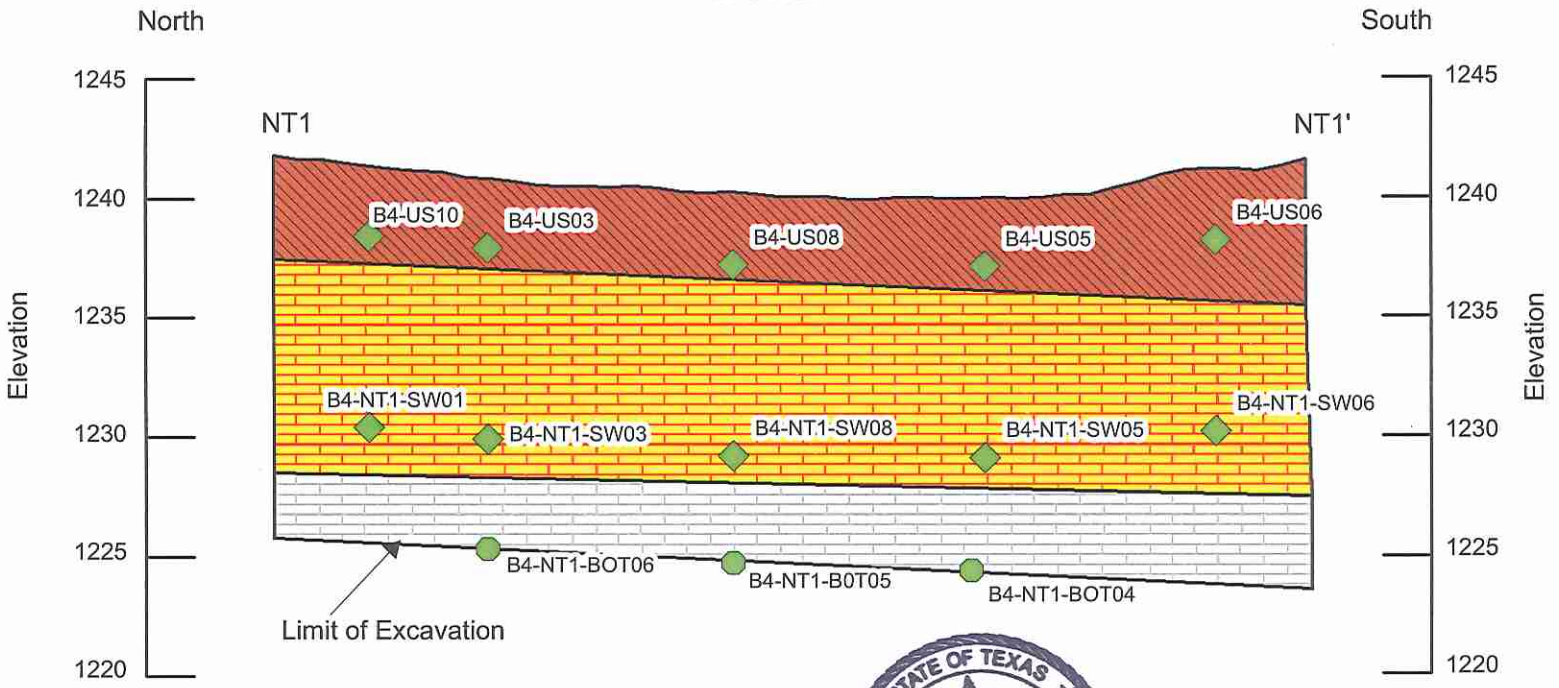
Trench NT1



Analyte	CSSA Background Concentration	B4-NT1-BOT04 16.0-16.5 03/12/2012	B4-NT1-BOT05 16.0-16.5 03/12/2012	B4-NT1-BOT06 16.0-16.5 03/12/2012
Copper	23.3	3.6	4.5	33

All concentration values in mg/kg.
Only COC's exceeding background in excavation floor shown in table.
Bolded concentration values are greater than background.

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1 inch = 40 feet HORZ
1 inch = 8 feet VERT

Elevations in Feet Relative to Mean Sea Level

Notes:

1. Line of cross-section presented on Figure 4C-1.
2. All COC concentrations at limits of excavation were equal to or less than the critical Tier 1 or calculated Tier 2 protective concentration level (PCL) and ecological screening benchmarks (i.e. no PCL exceedence (PCLE) zone exists).
3. All samples analyzed for SWMU B-4 target metals arsenic barium, cadmium, chromium, copper, lead, mercury, nickel and zinc.
4. No groundwater was encountered in the excavation.
5. Sample locations and depths are approximate and based on tape and/or grade survey relative to ground surface.
6. This figure is for reference only and is not intended for survey or engineering purposes.
7. Lithoiogy and dimensions by Parsons, 2012.

- Excavation sidewall confirmation sample
- Excavation floor confirmation sample
- Dark brown silty/sandy clay soil, loose with roots and organic matter (Surface Soil)
- Orange-brown limestone and inter-bedded marl, irregularly bedded, moderately to slightly weathered (Subsurface Soil)
- White to yellow-white limestone, hard, platy to massive (Subsurface Soil)
- NT – NT' Line of cross-section
- COC Chemical of concern

WESTON SOLUTIONS

Figure 4C-6
Remedial Excavation Cross-Section NT1 – NT1'

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

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9. ECOLOGICAL RISK ASSESSMENT

Residual COCs in surface soil at SWMU B-4 do not exceed Tier 1 PCLs, or ecological screening benchmarks. Therefore, no affected property exists and an ecological risk assessment is not required.

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10. COC SCREENING

The purpose of this section is to describe the COCs detected at SWMU B-4 and the rationale for screening certain COCs from further assessment and PCL development. The COC assessment strategy for the APA utilized primarily the results of the April 2010 pre-IRA sampling at SWMU B-4 that focused on characterizing source area maximum COC concentrations (i.e. disposal trench soil and debris). Samples were collected from soils interbedded with buried debris and at a few locations at the bottoms of the trenches where debris-free and un-consolidated native soil was found directly atop bedrock. Samples were analyzed for VOCs, SVOCs, TPH, explosives, and SWMU B-4 target metals. No bedrock samples from the sides or floors of the excavations were collected during the pre-IRA assessment.

The results of the April 2010 pre-IRA assessment indicated that the metals barium, cadmium, copper, lead, mercury, nickel, and zinc exceeded RALs (30-acre source area). All VOCs, SVOCs, TPH, and explosives constituent concentrations were either less than RALs or not detected. All metals COCs detected above RALs during the pre-IRA assessment and chromium were carried forward as the primary target COCs for the APA (Section 3). Although VOCs, SVOCs, and explosives were screened out as COCs going forward in the APA, these analytical suites were analyzed at a few of the 2011 APA sampling locations in trenches A, B, C, and D (VOCs, and SVOCs), and surface soil assessment (explosives) as additional confirmation data (see Section 3 and 4).

Since pre-removal characterization was not performed in 2012 during the prior to the removal of soil and debris from Trench NT1, initial sidewall and floor samples were analyzed for VOCs, SVOCs, explosives in addition to the full nine CSSA target analyte list metals. All organic compounds, explosives, and metals with the exception of copper, mercury, and zinc were detected at concentrations less than RALs.

Table 10A-1 summarizes the COC screening rationale based on evaluation results of the pre-IRA and APA (including Trench NT1 data) for screening COCs from further PCL development. APA assessment results for the SWMU B-4 target COCs are summarized in Table 4A, 4B, and 4D. Source area characterization results from the April 2010 pre-IRA assessment are provided

in Table 10A-2, and Figure 10A shows sample locations where COC concentrations exceeded RALs in the pre-IRA samples.

10.1 FREQUENCY OF DETECTION

There were no COCs screened from PCL development resulting from frequency of detection as per 30 TAC 350.71(k)(2)(A).

10.2 LAB CONTAMINANT OR BLANK CONTAMINANT

There were no COCs screened from PCL development resulting from frequency of detection as per 30 TAC 350.71(k)(2)(A).

10.3 COCS NOT SOURCED ON-SITE

No detected COCs were screened from PCL development based on the assumption that the COC was related to an off-site source.

10.4 APPROPRIATE SAMPLE DETECTION LIMITS

All COCs screened from PCL development had individual sample SDLs below applicable Tier I PCLs and ecological risk screening benchmark values, except for the following constituents:

- VOCs: 1,2,3-trichloropropane; 1,2-dibromo-3-chloropropane; and 1,2-dibromomethane.
- SVOCs: 2,4-dinitrotoluene; 2,6-dinitrotoluene; 4,6-dinitro-2-methylphenol; bis(2-chloroethyl)ether, bis(2-chloroehoxy)methane, 4-chloroanaline, 4-chloromethylether; n-nitroso-di-n-propylamine, and pentachlorophenol.
- Explosives: 1,3-dinitrobenzene; 2,4-dinitrotoluene; 2,6-dinitrotoluene; 2-nitrotoluene, and RDX.

None of these COCs were detected in any sample at the SDLs technically practical for the laboratory analytical methods available for analysis. Additionally, all VOC, SVOC, and explosives constituent SDLs provided by the analytical laboratory at a minimum, meet the reporting requirements of the TCEQ approved Camp Stanley QAPP, dated June 2002.

Based on the low percentage of these sample SDLs that exceeded TRRP RALs, (<5% of all samples analyzed) and the lack of detections for any of these constituents, the SQL exceedences

are not considered to significantly impact the quality of the existing data set with respect to characterizing site conditions. A copy of correspondence from the subcontracted laboratory (ALS) explaining EPA methodologies utilized for determination of SVOC, and explosives and the technical limitations on attaining SDLs at or less than TRRP RALs for the compounds screened under 30 TAC 350.71(k)(3)(B) is provided in Appendix 10.

10.5 SCREENED COCS EXPECTED TO BE PRESENT DROPPED FROM FUTURE SAMPLING

On the basis of the pre-IRA assessment and the results of the 2011 and 2012 IRA confirmation sampling, chromium, VOCs, SVOCs, explosives, and TPH are not carried forward as target COCs for further assessment or PCL development in environmental media at SWMU B-4.

Post IRA conditions as confirmed by the APA, show that concentrations of all COCs remaining in soil at SWMU B-4 are less than critical Tier 1 or Tier 2 PCLs and have been delineated horizontally and vertically to TRRP requirements in all media assessed. Therefore an affected property does not exist and no further assessment is planned.

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Table 10A-1
COC Screening Summary Table
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

1	2	3	4	5	6	7	8	SQL Justifications	
								9	10
COC	**All Detected Concentrations and SDLs < residential assessment level in all sampled media §350.71(k)(1)**	**COC not detected in any sample in the medium §350.71(k)((3)**	**Frequency of detects < 5% of the ≥ 20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii)**	**Common lab contaminant[2] §350.71(k)(2)(B)**	**Blank Contaminant[2] §350.71(k)(2)(C)**	**Max conc < background §350.71(k)(2)(D)**	**COC not sourced on-site[3] §350.71(k)(2)(E)**	**All SDLs < RAL §350.71(k)(3)(A)**	**SDLs > RAL but justified[4] §350.71(k)(3)(B)**
Explosives									
1,3,5-Trinitrobenzene		yes/all soil media						yes	
1,3-Dinitrobenzene		yes/all soil media							yes
2,4,6-Trinitrotoluene		yes/all soil media						yes	
2,4-Dinitrotoluene		yes/all soil media							yes
2,6-Dinitrotoluene		yes/all soil media							yes
2-Nitrotoluene		yes/all soil media							yes
3-Nitrotoluene		yes/all soil media						yes	
4-Nitrotoluene	yes/surface soil	yes/subsurface soil	Yes					yes	
HMX		yes/all soil media						yes	
Nitrobenzene		yes/all soil media						yes	
RDX		yes/all soil media							yes
Tetryl		yes/all soil media						yes	
Metals									
Arsenic	yes/all soil media							**yes**	
Chromium	yes/all soil media							yes	
SVOCs									
1,2,4-Trichlorobenzene		yes/all soil media						yes	
1,2-Dichlorobenzene		yes/all soil media						yes	
1,3-Dichlorobenzene		yes/all soil media						yes	
1,4-Dichlorobenzene		yes/all soil media						yes	
2,4,5-Trichlorophenol		yes/all soil media						yes	
2,4,6-Trichlorophenol		yes/all soil media						yes	
2,4-Dichlorophenol		yes/all soil media						yes	
2,4-Dimethylphenol	yes/surface soil	yes/subsurface soil						yes	
2,4-Dinitrophenol		yes/all soil media						yes	
2,4-Dinitrotoluene		yes/all soil media							yes
2,6-Dinitrotoluene		yes/all soil media							yes
2-Chloronaphthalene		yes/all soil media						yes	
2-Chlorophenol		yes/all soil media						yes	
2-Methylnaphthalene	yes/all soil media							yes	
2-Methylphenol	yes/surface soil	yes/subsurface soil						yes	
2-Nitroaniline		yes/all soil media						yes	
2-Nitrophenol		yes/all soil media						yes	
3&4-Methylphenol		yes/all soil media						yes	
3,3´-Dichlorobenzidine		yes/all soil media						yes	
3-Nitroaniline		yes/all soil media						yes	
4,6-Dinitro-2-methylphenol		yes/all soil media							yes
4-Bromophenyl phenyl ether		yes/surface soil						yes	
4-Chloro-3-methylphenol		yes/all soil media						yes	
4-Chloroaniline		yes/suface soil	Yes						yes

Table 10A-1
COC Screening Summary Table
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

1	2	3	4	5	6	7	8	SQL Justifications	
								9	10
COC	**All Detected Concentrations and SDLs < residential assessment level in all sampled media §350.71(k)(1)**	**COC not detected in any sample in the medium §350.71(k)((3)**	**Frequency of detects < 5% of the ≥ 20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii)**	**Common lab contaminant[2] §350.71(k)(2)(B)**	**Blank Contaminant[2] §350.71(k)(2)(C)**	**Max conc < background §350.71(k)(2)(D)**	**COC not sourced on-site[3] §350.71(k)(2)(E)**	**All SDLs < RAL §350.71(k)(3)(A)**	**SDLs > RAL but justified[4] §350.71(k)(3)(B)**
4-Chlorophenyl phenyl ether		yes/all soil media	Yes						yes
4-Nitroaniline		yes/all soil media						yes	
4-Nitrophenol		yes/all soil media						yes	
Acenaphthene	yes/surface soil	yes/subsurface soil						yes	
Acenaphthylene	yes/surface soil	yes/subsurface soil						yes	
Anthracene	yes/surface soil	yes/subsurface soil						yes	
Benz(a)anthracene	yes/surface soil	yes/subsurface soil						yes	
Benzo(a)pyrene	yes/surface soil	yes/subsurface soil						yes	
Benzo(b)fluoranthene	yes/surface soil	yes/subsurface soil						yes	
Benzo(g,h,i)perylene	yes/surface soil	yes/subsurface soil						yes	
Benzoic acid	yes/surface and subsurface soil							yes	
Benzyl alcohol	yes/surface soil	yes/subsurface soil						yes	
Bis(2-chloroethoxy)methane		yes/surface and subsurface soil							yes
Bis(2-chloroethyl)ether		yes/surface and subsurface soil							yes
Bis(2-chloroisopropyl)ether		yes/surface soil						yes	
Bis(2-ethylhexyl)phthalate	yes/all soil media							yes	
Butyl benzyl phthalate	yes/surface soil	yes/subsurface soil						yes	
Chrysene	yes/surface soil	yes/subsurface soil						yes	
Dibenz(a,h)anthracene	yes/surface soil	yes/subsurface soil						yes	
Dibenzofuran	yes/surface soil	yes/subsurface soil						yes	
Diethyl phthalate	yes/surface soil	yes/subsurface soil						yes	
Dimethyl phthalate	yes/surface soil	yes/subsurface soil						yes	
Di-n-butyl phthalate	yes/surface soil	yes/subsurface soil						yes	
Di-n-octyl phthalate		yes/all soil media						yes	

Table 10A-1
COC Screening Summary Table
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

1	2	3	4	5	6	7	8	SQL Justifications	
								9	10
COC	**All Detected Concentrations and SDLs < residential assessment level in all sampled media §350.71(k)(1)**	**COC not detected in any sample in the medium §350.71(k)((3)**	**Frequency of detects < 5% of the ≥ 20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii)**	**Common lab contaminant[2] §350.71(k)(2)(B)**	**Blank Contaminant[2] §350.71(k)(2)(C)**	**Max conc < background §350.71(k)(2)(D)**	**COC not sourced on-site[3] §350.71(k)(2)(E)**	**All SDLs < RAL §350.71(k)(3)(A)**	**SDLs > RAL but justified[4] §350.71(k)(3)(B)**
Fluoranthene	yes/surface soil	yes/subsurface soil						yes	
Fluorene	yes/surface soil	yes/subsurface soil						yes	
Hexachlorobenzene		yes/all soil media						yes	
Hexachlorobutadiene		yes/all soil media						yes	
Hexachlorocyclopentadiene		yes/all soil media						yes	
Hexachloroethane		yes/all soil media						yes	
Indeno(1,2,3-cd)pyrene	yes/surface soil	yes/subsurface soil						yes	
Isophorone		yes/all soil media						yes	
Naphthalene	yes/surface soil	yes/subsurface soil						yes	
Nitrobenzene		yes/all soil media						yes	
N-Nitrosodi-n-propylamine		yes/all soil media							yes
N-Nitrosodiphenylamine		yes/all soil media						yes	
Pentachlorophenol		yes/all soil media							yes
Phenanthrene	yes/all soil media							yes	
Phenol	yes/surface soil	yes/subsurface soil						yes	
Pyrene	yes/surface soil	yes/subsurface soil						yes	
VOCs									
1,1,1,2-Tetrachloroethane		yes/all soil media						yes	
1,1,1-Trichloroethane	yes/subsurface soil							yes	
1,1,2,2-Tetrachloroethane		yes/all soil media						yes	
1,1,2-Trichloroethane		yes/all soil media						yes	
1,1-Dichloroethane		yes/all soil media						yes	
1,1-Dichloroethene	yes/subsurface soil							yes	
1,1-Dichloropropene		yes/all soil media						yes	
1,2,3-Trichlorobenzene		yes/all soil media						yes	
1,2,3-Trichloropropane		yes/all soil media							yes
1,2,4-Trichlorobenzene		yes/all soil media						yes	
1,2,4-Trimethylbenzene	yes/surface soil	yes/subsurface soil						yes	
1,2-Dibromo-3-chloropropane		yes/all soil media							yes
1,2-Dibromoethane		yes/all soil media							yes
1,2-Dichlorobenzene		yes/all soil media						yes	
1,2-Dichloroethane		yes/all soil media						yes	
1,2-Dichloropropane		yes/all soil media						yes	
1,3,5-Trimethylbenzene	yes/subsurface soil							yes	
1,3-Dichlorobenzene		yes/all soil media						yes	
1,3-Dichloropropane		yes/all soil media						yes	

Table 10A-1
COC Screening Summary Table
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

1	2	3	4	5	6	7	8	SQL Justifications	
								9	10
COC	**All Detected Concentrations and SDLs < residential assessment level in all sampled media §350.71(k)(1)**	**COC not detected in any sample in the medium §350.71(k)((3)**	**Frequency of detects < 5% of the ≥ 20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii)**	**Common lab contaminant[2] §350.71(k)(2)(B)**	**Blank Contaminant[2] §350.71(k)(2)(C)**	**Max conc < background §350.71(k)(2)(D)**	**COC not sourced on-site[3] §350.71(k)(2)(E)**	**All SDLs < RAL §350.71(k)(3)(A)**	**SDLs > RAL but justified[4] §350.71(k)(3)(B)**
1,4-Dichlorobenzene		yes/all soil media						yes	
1-Chlorohexane		yes/all soil media						yes	
2,2-Dichloropropane		yes/all soil media						yes	
2-Chlorotoluene		yes/all soil media						yes	
4-Chlorotoluene		yes/all soil media						yes	
4-Isopropyltoluene	yes/surface soil	yes/subsurface soil						yes	
Benzene	yes/surface and subsurface soil							yes	
Bromobenzene		yes/all soil media						yes	
Bromochloromethane		yes/all soil media						yes	
Bromodichloromethane		yes/all soil media						yes	
Bromoform		yes/all soil media						yes	
Bromomethane		yes/all soil media						yes	
Carbon tetrachloride		yes/all soil media						yes	
Chlorobenzene		yes/all soil media						yes	
Chloroethane	yes/surface and subsurface soil							yes	
Chloroform		yes/all soil media						yes	
Chlorohexane	yes/subsurface soil							yes	
Chloromethane	yes/surface and subsurface soil							yes	
cis-1,2-Dichloroethene		yes/all soil media						yes	
cis-1,3-Dichloropropene		yes/all soil media						yes	
Dibromochloromethane		yes/all soil media						yes	
Dibromomethane		yes/all soil media						yes	
Dichlorodifluoromethane	yes/subsurface soil							yes	
Ethylbenzene	yes/surface soil	yes/subsurface soil						yes	
Hexachlorobutadiene		yes/all soil media						yes	
Isopropylbenzene	yes/surface and subsurface soil							yes	
m,p-Xylene	yes/subsurface soil	yes/surface soil						yes	
Methylene chloride	yes/surface & subsurface soil							yes	
Naphthalene	yes/surface soil	yes/subsurface soil						yes	
n-Butylbenzene	yes/subsurface soil	yes/surface soil						yes	
n-Propylbenzene	yes/surface and subsurface soil							yes	
o-Xylene		yes/all soil media						yes	

Table 10A-1
COC Screening Summary Table
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

1	2	3	4	5	6	7	8	SQL Justifications	
								9	10
COC	**All Detected Concentrations and SDLs < residential assessment level in all sampled media §350.71(k)(1)**	**COC not detected in any sample in the medium §350.71(k)((3)**	**Frequency of detects < 5% of the ≥ 20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii)**	**Common lab contaminant[2] §350.71(k)(2)(B)**	**Blank Contaminant[2] §350.71(k)(2)(C)**	**Max conc < background §350.71(k)(2)(D)**	**COC not sourced on-site[3] §350.71(k)(2)(E)**	**All SDLs < RAL §350.71(k)(3)(A)**	**SDLs > RAL but justified[4] §350.71(k)(3)(B)**
sec-Butylbenzene	yes/surface and subsurface soil							yes	
Styrene	yes/surface soil	yes/subsurface soil						yes	
tert-Butylbenzene	yes/surface and subsurface soil							yes	
Tetrachloroethene	yes/surface and subsurface soil							yes	
Toluene	yes/surface soil	yes/subsurface soil						yes	
trans-1,2-Dichloroethene	yes/subsurface soil	yes/surface soil						yes	
trans-1,3-Dichloropropene		yes/all soil media						yes	
Trichloroethene	yes/subsurface soil	yes/surface soil						yes	
Trichlorofluoromethane	yes/subsurface soil	yes/surface soil						yes	
Vinyl chloride	yes/subsurface soil	yes/surface soil						yes	

Notes: 1. Surface soil includes native soil from ground surface to bedrock and soil intermixed with debris in SWMU B-4 trenches at above bedrock.
2. Subsurface soil consists of limestone bedrock.

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Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM1 3.0-3.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM2 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM3 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM4 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM5 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM6 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM7 6.0-6.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM8 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM9 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM10 5.0-5.5 04/07/2010 Normal Sample (mg/kg)
Metals														
Barium	300[a]	7.8E+03	2.2E+02	300	62.6	140	41.1	62.1	66.5	**401**	69.8	61	37.2	45.6
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	1.02	2.85 (M)	0.248 J (M)	0.245 J	**3.66 (M)**	**373 (M)**	1.95 (M)	**3.13 (M)**	0.175 J (M)	0.092 U
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	11	28	7.76	12.3	12.1	31.3	10.1	9.95	7.5	7.07
Copper	23.2[b]	5.5E+02	5.2E+02	520	19.5	103 (M)	5.45 (M)	6.56 (M)	24 (M)	**42700 (M)**	79.4 (M)	117 (M)	9.7 (J)	5.75 (J)
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	17.5	**375**	10.2	9.05	42.1	**1570**	56.3	**96.9**	7.88 (M)	7.11
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	**3.86**	0.748 (M)	**0.571**	**1.37**	**14.6 (M)**	**21.4 (M)**	0.64 (M)	**3.81 (M)**	**3.04**	**0.904**
Nickel	35.5[b]	8.3E+02	7.9E+01	79	9.57	22.9	7.45	10.1	13	**80.1**	15.3	11.4	6.79	6.86 (J)
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	37.9	1050 (M)	13.0	22 (M)	83.8 (M)	**4860 (M)**	565 (M)	947 (M)	17.7 (J)	14.2
Explosives														
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	0.093 U	0.1 U (UJ)	0.095 U (UJ)	0.094 U (UJ)	0.092 U	0.1 U	0.09 U (UJ)	0.097 U (UJ)	0.094 U	0.092 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
HMX	~	2.0E+02	1.2E+00	1.171845555	0.046 U	0.052 U	0.047 U (UJ)	0.047 U	0.046 U	0.052 U	0.045 U	0.048 U	0.047 U	0.046 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.046 U	0.052 U (UJ)	0.047 U (UJ)	0.047 U (UJ)	0.046 U	0.052 U	0.045 U (UJ)	0.048 U (UJ)	0.047 U	0.046 U
RDX	~	2.5E+01	1.8E-02	0.018421099	0.046 U	0.052 U	0.047 U (UJ)	0.047 U	0.046 U	0.052 U	0.045 U	0.048 U	0.047 U	0.046 U
Tetryl	~	3.4E+01	5.5E-01	0.552050114	0.086 U	0.095 U (UJ)	0.088 U (UJ)	0.087 U (UJ)	0.085 U	0.095 U	0.083 U (UJ)	0.089 U (UJ)	0.087 U	0.085 U
VOCs														
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0007 U	0.00078 U	0.00073 U	0.00071 U	0.0007 U	0.00078 U	0.00069 U	0.00075 U	0.00071 U	0.00071 U
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.001 U	0.0011 U	0.0011 U	0.0011 U
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM1 3.0-3.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM2 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM3 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM4 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM5 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM6 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM7 6.0-6.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM8 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM9 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM10 5.0-5.5 04/07/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	0.0007 U	0.00078 U	0.00073 U	0.00071 U	0.0007 U	0.00078 U	0.00069 U	0.00075 U	0.00071 U	0.00071 U
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Benzene	~	4.8E+01	1.3E-02	0.018999999	0.0014 J (F)	0.0016 J (F)	0.001 J	0.001 J (F)	0.00059 U	0.001 J (F)	0.00058 U	0.00063 U	0.00059 U	0.00079 J (F)
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Bromoform	~	2.8E+02	3.2E-01	0.315581709	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Chloroform	~	8.0E+00	5.1E-01	0.509712338	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	0.075	0.07	0.051	0.051	0.01	0.055	0.011	0.0073	0.025	0.04
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.0025 J	0.00059 U	0.00059 U
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.0015 J (F)	0.024	0.0012 J (B)	0.0013 J (B)	0.0011 J (B)	0.0013 J (B)	0.0011 J (B)	0.0012 J (B)	0.0011 J (B)	0.0012 J (B)
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.0032 J
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Styrene	~	4.3E+03	1.6E+00	1.627339244	0.05	0.046	0.033	0.033	0.0068	0.035	0.0069	0.0048 J (F)	0.015	0.025
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	0.0007 U	0.00078 U	0.00073 U	0.00071 U	0.0007 U	0.00078 U	0.00069 U	0.00075 U	0.00071 U	0.00071 U
Toluene	~	5.4E+03	4.1E+00	4.105180264	0.0032 J (F)	0.0034 J (F)	0.0021 J	0.0024 J (F)	0.00065 J (F)	0.0023 J (F)	0.00084 J (F)	0.00063 U	0.001 J (F)	0.0016 J (F)
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM1 3.0-3.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM2 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM3 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM4 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM5 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM6 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM7 6.0-6.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM8 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM9 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM10 5.0-5.5 04/07/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	0.00059 U	0.00065 U	0.00061 U	0.00059 U	0.00059 U	0.00065 U	0.00058 U	0.00063 U	0.00059 U	0.00059 U
SVOCs														
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0046 U	0.005 U	0.0047 U	0.0046 U	0.0046 U	0.005 U	0.0045 U	0.0049 U	0.0046 U	0.0046 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.0043 U	0.0048 U	0.0045 U	0.0044 U	0.0043 U	0.0048 U	0.0042 U	0.0046 U	0.0043 U	0.0044 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.0042 U	0.0047 U	0.0044 U	0.0043 U	0.0042 U	0.0047 U	0.0041 U	0.0045 U	0.0042 U	0.0043 U
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	0.0033 U	0.0036 U	0.0034 U	0.0033 U	0.0033 U	0.0036 U	0.0032 U	0.0035 U	0.0033 U	0.0033 U
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	0.0039 U	0.0073 J (F)	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.0038 U	0.0041 U	0.0039 U	0.0038 U	0.0037 U	0.0041 U	0.0037 U	0.004 U	0.0038 U	0.0038 U
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	0.0048 U	0.0053 U	0.005 U	0.0049 U	0.0048 U	0.0053 U	0.0047 U	0.0051 U	0.0048 U	0.0049 U
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	0.0038 U	0.0041 U	0.0039 U	0.0038 U	0.0037 U	0.0041 U	0.0037 U	0.004 U	0.0038 U	0.0038 U
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	0.0032 U	1.2	0.0033 U	0.0032 U	0.0054 J (F)	0.0038 J (F)	0.0031 U	0.013	0.0032 U	0.0032 U
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	0.0034 U	0.0073 J	0.0035 U	0.0034 U	0.0034 U	0.0037 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	0.0054 U	0.0059 U	0.0056 U	0.0055 U	0.0054 U	0.0059 U	0.0053 U	0.0057 U	0.0054 U	0.0054 U
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	0.0036 U	0.004 U	0.0038 U (M)	0.0037 U	0.0036 U	0.004 U	0.0036 U	0.0039 U	0.0036 U	0.0037 U
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	0.003 U	0.0034 U	0.0031 U	0.0031 U	0.003 U	0.0034 U	0.003 U	0.0032 U	0.003 U	0.0031 U
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	0.0033 U	0.12	0.0034 U	0.0033 U	0.0033 U	0.0036 U	0.0032 U	0.0035 U	0.0033 U	0.0033 U
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	0.0045 U	0.0049 U	0.0046 U	0.0045 U	0.0045 U	0.0049 U	0.0044 U	0.0047 U	0.0045 U	0.0045 U
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	0.0026 U	0.033 (J)	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	0.0026 U	0.036 (J)	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Anthracene	~	1.8E+04	3.4E+03	3444.92041	0.0026 U	0.029 (J)	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	0.0033 U	0.0081 J	0.0034 U	0.0033 U	0.0033 U	0.0088	0.0032 U	0.0035 U	0.0033 U	0.0033 U
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	0.0035 J	0.0044 J (J)	0.0028 U	0.0027 U	0.0027 U	0.0078 J (F)	0.0026 U	0.0029 U	0.0027 U	0.0027 U
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	0.0048 J	0.0084 J (J)	0.004 U	0.0039 U	0.0039 U	0.014	0.0038 U	0.0041 U	0.0039 U	0.0039 U
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	0.0034 U	0.006 J (J)	0.0035 U	0.0034 U	0.0034 U	0.0071 J (F)	0.0033 U	0.0036 U	0.0034 U	0.0034 U
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	0.0079	0.0085 U	0.0086	0.0078 U	0.0077 U	0.0085 U	0.0076 U	0.058	0.0077 U	0.0078 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM1 3.0-3.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM2 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM3 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM4 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM5 4.0-4.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM6 8.0-8.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM7 6.0-6.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM8 11.0-11.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-LFM9 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM10 5.0-5.5 04/07/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	0.0036 U	0.0044 J (F)	0.0038 U	0.0037 U	0.0036 U	0.004 U	0.0036 U	0.0039 U	0.0036 U	0.0037 U
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	0.0028 U	0.0031 U	0.0029 U	0.0028 U	0.0028 U	0.0031 U	0.0028 U	0.003 U	0.0028 U	0.0028 U
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	0.0033 U	0.0036 U	0.0034 U	0.0033 U	0.0033 U	0.0036 U	0.0032 U	0.0035 U	0.0033 U	0.0033 U
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	0.0032 U	0.0035 U	0.0033 U	0.0032 U	0.0032 U	0.0035 U	0.0031 U	0.0034 U	0.0032 U	0.0032 U
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	0.0077 U	0.29	0.029	0.0078 U	0.022	0.13	0.0078	0.033	0.0077 U	0.044
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	0.0029 U	0.0032 U	0.0035 J	0.003 U	0.0036 J	0.0032 U	0.0029 U	0.0058 J	0.0029 U	0.003 U
Chrysene	~	5.6E+02	7.7E+02	560.1164551	0.0034 U	0.012 (J)	0.0035 U	0.0034 U	0.0034 U	0.012	0.0033 U	0.0036 U	0.0034 U	0.0034 U
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0043 J (F)	0.0025 U	0.0038 J (F)	0.0026 U	0.0026 U
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	0.0039 U	0.0043 U	0.0055 J	0.01 (J)	0.005 J (F)	0.0055 J (F)	0.0038 U	0.0082 J	0.0039 U	0.0039 U
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	0.0028 U	0.0031 U	0.0029 U	0.0028 U	0.0028 U	0.0031 U	0.0028 U	0.003 U	0.0028 U	0.0028 U
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	0.0035 J	0.0032 U	0.0097	0.003 U	0.011	0.014	0.0061 J (F)	0.019	0.0029 U	0.003 U
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	0.0034 U	0.0037 U	0.0035 U	0.0034 U	0.0034 U	0.0037 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	0.004 J	0.036 (J)	0.0027 U	0.0026 U	0.0026 U	0.015	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Fluorene	~	2.3E+03	1.5E+02	149.2689972	0.0026 U	0.29	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	0.003 U	0.0034 U	0.0031 U	0.0031 U	0.003 U	0.0034 U	0.003 U	0.0032 U	0.003 U	0.0031 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0052 U	0.0057 U	0.0053 U	0.0052 U	0.0052 U	0.0057 U	0.005 U	0.0055 U	0.0052 U	0.0052 U
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	0.0042 U	0.0047 U	0.0044 U	0.0043 U	0.0042 U	0.0047 U	0.0041 U	0.0045 U	0.0042 U	0.0043 U
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	0.0046 U	0.005 U	0.0047 U	0.0046 U	0.0046 U	0.005 U	0.0045 U	0.0049 U	0.0046 U	0.0046 U
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	0.0041 U	0.0045 U	0.0042 U	0.0042 U	0.0041 U	0.0076 J	0.004 U	0.0044 U	0.0041 U	0.0041 U
Isophorone	~	1.2E+03	1.5E+00	1.500724196	0.0035 U	0.0039 U	0.0036 U	0.0036 U	0.0035 U	0.0039 U	0.0034 U	0.0037 U	0.0035 U	0.0036 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.0039 U	0.11	0.004 U	0.0039 U	0.0039 U	0.012	0.0038 U	0.0084	0.0039 U	0.0039 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.0039 U	0.0043 U	0.004 U	0.0039 U	0.0039 U	0.0043 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	0.0047 U	0.0052 U	0.0048 U	0.0047 U	0.0047 U	0.0052 U	0.0046 U	0.005 U	0.0047 U	0.0047 U
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	0.0026 U	0.0028 U	0.0027 U	0.0026 U	0.0026 U	0.0028 U	0.0025 U	0.0027 U	0.0026 U	0.0026 U
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	0.0033 U	0.0036 U	0.0034 U	0.0033 U	0.0033 U	0.0036 U	0.0032 U	0.0035 U	0.0033 U	0.0033 U
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	0.0035 U	0.25 (J)	0.0036 U	0.0036 U	0.006 J (F)	0.014	0.0034 U	0.0092	0.0035 U	0.0036 U
Phenol	~	1.6E+03	9.6E+00	9.573979378	0.0039 U	0.022	0.0063 J	0.0039 U	0.0056 J (F)	0.0077 J (F)	0.0039 J (F)	0.01	0.0039 U	0.0039 U
Pyrene	~	1.7E+03	5.6E+02	558.2573853	0.0035 J	0.048 (J)	0.0027 U	0.0026 U	0.0026 U	0.013	0.0025 U	0.0027 U	0.0026 U	0.0026 U
TPH														
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	18 U	30 J	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	21 U	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	18 U	21 U	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	30 J	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM11 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM12 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM13 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM14 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM15 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM16 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM18 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM19 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM20 7.0-7.5 04/07/2010 Normal Sample (mg/kg)
Metals													
Barium	300[a]	7.8E+03	2.2E+02	300	63	164	60.5	74.4	28.9	66.2	45.1	67.1	292
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	1.04 J (M)	**110 (M)**	0.968 J (M)	0.461 J (M)	0.087 U (M)	**22.3 (M)**	0.423 J (M)	1.03 J (M)	**13.6 (M)**
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	11.3	46.5	11.8	9.83	5.5	76.2	7.69	16.8	64.2
Copper	23.2[b]	5.5E+02	5.2E+02	520	37.1 (J)	**1890 (J)**	10.5 (J)	10.1 (J)	5.85 (J)	**1820 (J)**	45.2 (J)	94.7 (J)	**1030 (J)**
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	14.2 (M)	**494 (M)**	11.9 (M)	10.3 (M)	4.95 (M)	**223 (M)**	31.2 (M)	23.9 (M)	**866 (M)**
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	**5.28**	**1120**	0.00025 U	0.00532	0.203	0.48	0.191	**2.73**	**1.19**
Nickel	35.5[b]	8.3E+02	7.9E+01	79	11.6	**626**	10.2	8.34	6.2	**98.3**	9.39	11.7	33.4
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	48 (J)	**3320 (J)**	68.8 (J)	53.9 (J)	9.02 (J)	**1280 (J)**	67.2 (J)	156 (J)	**2060 (J)**
Explosives													
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	0.092 U	0.098 U	0.094 U	0.094 U	0.092 U	0.096 U	0.091 U	0.094 U	0.096 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
HMX	~	2.0E+02	1.2E+00	1.171845555	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
RDX	~	2.5E+01	1.8E-02	0.018421099	0.046 U	0.049 U	0.047 U	0.047 U	0.046 U	0.048 U	0.046 U	0.047 U	0.048 U
Tetryl	~	3.4E+01	5.5E-01	0.552050114	0.085 U	0.091 U	0.087 U	0.087 U	0.085 U	0.089 U	0.084 U	0.087 U	0.089 U
VOCs													
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.00072 U	0.00075 U	0.00072 U	0.00071 U	0.0007 U	0.00074 U	0.00071 U	0.00072 U	0.00074 U
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.0018 J (F)	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM11 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM12 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM13 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM14 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM15 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM16 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM18 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM19 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM20 7.0-7.5 04/07/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	0.00072 U	0.00075 U	0.00072 U	0.00071 U	0.0007 U	0.00074 U	0.00071 U	0.00072 U	0.00074 U
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Benzene	~	4.8E+01	1.3E-02	0.018999999	0.00073 J (F)	0.0011 J (F)	0.00082 J (F)	0.00073 J (F)	0.00058 U	0.00062 U	0.00079 J (F)	0.0006 U	0.00062 U
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Bromoform	~	2.8E+02	3.2E-01	0.315581709	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Chloroform	~	8.0E+00	5.1E-01	0.509712338	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	0.038	0.047	0.043	0.038	0.023	0.026	0.036	0.029	0.022
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 J (F)	0.0013 J (F)	0.0012 U	0.0012 U	0.0014 J (F)
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.0012 J (B)	0.0058 J (B)	0.0012 J (B)	0.0012 J (B)	0.0011 J (B)	0.0011 J (B)	0.0012 J (B)	0.0011 J (B)	0.0011 J (B)
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	0.0006 U	0.0039 J	0.0006 U	0.00059 U	0.0032 J	0.00062 U	0.00059 U	0.0006 U	0.00062 U
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	0.0006 U	0.0043 J (F)	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Styrene	~	4.3E+03	1.6E+00	1.627339244	0.024	0.03	0.027	0.024	0.014	0.016	0.022	0.018	0.013
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0029 J	0.00062 U
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	0.00072 U	0.00075 U	0.00072 U	0.00071 U	0.0007 U	0.00074 U	0.00071 U	0.00072 U	0.00074 U
Toluene	~	5.4E+03	4.1E+00	4.105180264	0.0016 J (F)	0.0023 J (F)	0.0018 J (F)	0.0017 J (F)	0.00094 J (F)	0.0011 J (F)	0.0014 J (F)	0.0011 J (F)	0.00095 J (F)
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM11 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM12 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM13 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM14 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM15 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM16 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM18 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM19 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM20 7.0-7.5 04/07/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	0.0006 U	0.00062 U	0.0006 U	0.00059 U	0.00058 U	0.00062 U	0.00059 U	0.0006 U	0.00062 U
SVOCs													
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0046 U	0.0048 U	0.0046 U	0.0046 U	0.0045 U	0.0048 U	0.0046 U	0.0046 U	0.0048 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.0044 U	0.0046 U	0.0044 U	0.0043 U	0.0043 U	0.0046 U	0.0043 U	0.0044 U	0.0046 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.0043 U	0.0045 U	0.0043 U	0.0042 U	0.0042 U	0.0045 U	0.0042 U	0.0043 U	0.0044 U
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.0038 U	0.004 U	0.0038 U	0.0038 U	0.0037 U	0.004 U	0.0038 U	0.0038 U	0.0039 U
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	0.0049 U	0.0051 U	0.0049 U	0.0048 U	0.0048 U	0.0051 U	0.0048 U	0.0049 U	0.0051 U
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	0.0038 U	0.004 U	0.0038 U	0.0038 U	0.0037 U	0.004 U	0.0038 U	0.0038 U	0.0039 U
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	0.0032 U	0.14	0.0032 U	0.0032 U	0.0031 U	0.013 (J)	0.0032 U	0.0032 U	0.006 J (F)
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	0.0035 U	0.0036 J	0.0035 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U	0.0035 U	0.0036 U
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	0.0055 U	0.0057 U	0.0055 U	0.0054 U	0.0054 U	0.0057 U	0.0054 U	0.0055 U	0.0057 U
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	0.0037 U	0.0039 U	0.0037 U	0.0036 U	0.0036 U	0.0038 U	0.0036 U	0.0037 U	0.0038 U
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	0.0031 U	0.0032 U	0.0031 U	0.0031 U	0.003 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	0.0033 U	0.012	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	0.0045 U	0.0047 U	0.0045 U	0.0045 U	0.0044 U	0.0047 U	0.0045 U	0.0045 U	0.0047 U
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Anthracene	~	1.8E+04	3.4E+03	3444.92041	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	0.0033 U	0.0086	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	0.0027 U	0.021	0.0027 U	0.0027 U	0.0038 J (F)	0.0028 U	0.0027 U	0.0027 U	0.0039 J (F)
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	0.0039 U	0.0095	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0083
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	0.0035 U	0.049	0.0035 U	0.0034 U	0.0047 J (F)	0.0036 U	0.0034 U	0.0035 U	0.0069 J (F)
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	0.0079 U	0.0082 U	0.013	0.0078 U	0.0077 U	0.0082 U	0.0077 U	0.0079 U	0.0081 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM11 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM12 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM13 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM14 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM15 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM16 8.0-8.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM18 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM19 3.0-3.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM20 7.0-7.5 04/07/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	0.0037 U	0.0039 U	0.0037 U	0.0036 U	0.0036 U	0.0038 U	0.0036 U	0.0037 U	0.0038 U
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	0.0029 U	0.003 U	0.0029 U	0.0028 U	0.0028 U	0.003 U	0.0028 U	0.0029 U	0.003 U
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	0.0032 U	0.0034 U	0.0032 U	0.0032 U	0.0031 U	0.0033 U	0.0032 U	0.0032 U	0.0033 U
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	0.0085	0.95	0.0079 U	0.0078 U	0.0077 U	0.01	0.0077 U	0.011	0.033
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	0.003 U	0.0096	0.003 U	0.0029 U	0.0029 U	0.0031 U	0.0029 U	0.003 U	0.0031 U
Chrysene	~	5.6E+02	7.7E+02	560.1164551	0.0035 U	0.017	0.0035 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U	0.0035 U	0.0059 J (F)
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.005 J (F)	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0044 J (F)	0.0041 U	0.0039 U	0.0039 U	0.0041 U
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	0.0029 U	0.003 U	0.0029 U	0.0028 U	0.0028 U	0.003 U	0.0028 U	0.0029 U	0.003 U
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	0.004 J (F)	0.047	0.003 U	0.0032 J (F)	0.0029 U	0.0068 J (J)	0.0029 U	0.003 U	0.0045 J (F)
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	0.0035 U	0.0036 U	0.0035 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U	0.0035 U	0.0036 U
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	0.0026 U	0.0077 J (F)	0.0026 U	0.0044 J (F)	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0032 J (F)
Fluorene	~	2.3E+03	1.5E+02	149.2689972	0.0026 U	0.028	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	0.0031 U	0.0032 U	0.0031 U	0.0031 U	0.003 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0052 U	0.0055 U	0.0052 U	0.0052 U	0.0051 U	0.0054 U	0.0052 U	0.0052 U	0.0054 U
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	0.0043 U	0.0045 U	0.0043 U	0.0042 U	0.0042 U	0.0045 U	0.0042 U	0.0043 U	0.0044 U
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	0.0046 U	0.0048 U	0.0046 U	0.0046 U	0.0045 U	0.0048 U	0.0046 U	0.0046 U	0.0048 U
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	0.0042 U	0.011	0.0042 U	0.0041 U	0.0042 J	0.0043 U	0.0041 U	0.0042 U	0.0068 J
Isophorone	~	1.2E+03	1.5E+00	1.500724196	0.0036 U	0.0037 U	0.0036 U	0.0035 U	0.0035 U	0.0037 U	0.0035 U	0.0036 U	0.0037 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.0039 U	0.075	0.0039 U	0.0039 U	0.0038 U	0.0053 J (J)	0.0039 U	0.0039 U	0.0042 J (F)
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.0039 U	0.0041 U	0.0039 U	0.0039 U	0.0038 U	0.0041 U	0.0039 U	0.0039 U	0.0041 U
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	0.0048 U	0.005 U	0.0048 U	0.0047 U	0.0047 U	0.005 U	0.0047 U	0.0048 U	0.0049 U
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	0.0036 U	0.042	0.0036 U	0.0035 U	0.0035 U	0.0037 U	0.0035 U	0.0036 U	0.0045 J (F)
Phenol	~	1.6E+03	9.6E+00	9.573979378	0.0039 U	0.012	0.0039 U	0.0039 U	0.0038 U	0.0047 J (J)	0.0039 U	0.0039 U	0.0041 U
Pyrene	~	1.7E+03	5.6E+02	558.2573853	0.0026 U	0.017	0.0026 U	0.0041 J (F)	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0056 J (F)
TPH													
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	19 U	35 J	19 U	18 U	18 U	19 U	18 U	19 U	19 U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	19 U	19 U	18 U	18 U	19 U	18 U	19 U	19 U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	19 U	19 U	19 U	18 U	18 U	19 U	18 U	19 U	19 U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	35 J	19 U	18 U	18 U	19 U	18 U	19 U	19 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM21 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM22 9.0-9.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM23 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM24 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM25 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM26 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM27 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM28 10.0-10.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM29 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
Metals													
Barium	300[a]	7.8E+03	2.2E+02	300	38.7	187	48.8	56.9	39.1	48.2	58.3	197	71.3
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	0.136 J (M)	**18.3 (M)**	0.519 J (U)	1.24	0.431 J (F)	1.8	0.084 U	0.723 J (F)	0.645 J
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	6.5	17.9	8.06	10.2	10.1	54.4	7.63	46.6	10.8
Copper	23.2[b]	5.5E+02	5.2E+02	520	10.5 (J)	**2670 (J)**	15.3	16.1	46.3	97.3	4.14	75.8	10
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	7.7 (M)	**316 (M)**	12.4 (U)	12.1	69.5	52.2	5.84	61.7	13
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	0.715	**3.91**	**13.2**	**11**	0.187	0.176	0.0135	0.6	**1.81**
Nickel	35.5[b]	8.3E+02	7.9E+01	79	7.23	**243**	9.13	9.27	8.26	18.1	7.53	15.9	9.42
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	22.6 (J)	**1390 (J)**	84.9 (J)	55.3 (J)	269 (J)	101 (J)	10.3 (J)	989 (J)	25.5
Explosives													
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	0.091 U	0.094 U	0.089 U	0.093 U	0.092 U	0.094 U	0.09 U	0.091 U	0.094 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
HMX	~	2.0E+02	1.2E+00	1.171845555	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
RDX	~	2.5E+01	1.8E-02	0.018421099	0.046 U	0.047 U	0.044 U	0.046 U	0.046 U	0.047 U	0.045 U	0.046 U	0.047 U
Tetryl	~	3.4E+01	5.5E-01	0.552050114	0.084 U	0.087 U	0.082 U	0.086 U	0.085 U	0.087 U	0.083 U	0.085 U	0.087 U
VOCs													
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0007 U	0.00074 U	0.00069 U	0.00072 U	0.0007 U	0.00073 U	0.0007 U	0.0007 U	0.00073 U
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	0.00058 U	0.00062 U	0.0019 J (F)	0.0006 U	0.0018 J (F)	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	0.001 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM21 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM22 9.0-9.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM23 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM24 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM25 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM26 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM27 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM28 10.0-10.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM29 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	0.0007 U	0.00074 U	0.00069 U	0.00072 U	0.0007 U	0.00073 U	0.0007 U	0.0007 U	0.00073 U
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Benzene	~	4.8E+01	1.3E-02	0.018999999	0.00058 U	0.00068 J (F)	0.00057 U	0.0006 U	0.00058 U	0.003 J (F)	0.00058 U	0.00059 U	0.00061 U
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Bromoform	~	2.8E+02	3.2E-01	0.315581709	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Chloroform	~	8.0E+00	5.1E-01	0.509712338	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	0.021	0.021	0.0034 J (B)	0.0016 J (F)	0.0019 J (F)	0.00063 J (F)	0.0018 J (F)	0.00068 J (F)	0.00061 J (F)
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0019 J (F)	0.0012 U	0.0012 U	0.0012 U
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	0.0012 J (F)	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.001 J (B)	0.0011 J (B)	0.0012 J (F)	0.0012 J (B)	0.0011 J (B)	0.0012 J (F)	0.001 J (B)	0.0011 J (B)	0.00061 U
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	0.00058 U	0.00062 U	0.0024 J (F)	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	0.00058 U	0.0033 J	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Styrene	~	4.3E+03	1.6E+00	1.627339244	0.013	0.013	0.0015 J (F)	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	0.0007 U	0.00074 U	0.00069 U	0.00072 U	0.0007 U	0.0028 J	0.0007 U	0.003 J	0.00073 U
Toluene	~	5.4E+03	4.1E+00	4.105180264	0.00087 J (F)	0.001 J (F)	0.00057 U	0.0006 U	0.00058 U	0.00095 J (F)	0.00058 U	0.00059 U	0.00061 U
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM21 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM22 9.0-9.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM23 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM24 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM25 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM26 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM27 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM28 10.0-10.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM29 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	0.00058 U	0.00062 U	0.00057 U	0.0006 U	0.00058 U	0.00061 U	0.00058 U	0.00059 U	0.00061 U
SVOCs													
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0045 U	0.0048 U	0.0045 U	0.0047 U	0.0045 U	0.0047 U	0.0045 U	0.0046 U	0.0047 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.0043 U	0.0046 U	0.0042 U	0.0044 U	0.0043 U	0.0045 U	0.0043 U	0.0043 U	0.0045 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.0042 U	0.0044 U	0.0041 U	0.0043 U	0.0042 U	0.0044 U	0.0042 U	0.0042 U	0.0044 U
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	0.0032 U	0.0035 U	0.0032 U	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.0037 U	0.0039 U	0.0037 U	0.0038 U	0.0037 U	0.0039 U	0.0037 U	0.0037 U	0.0039 U
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	0.0048 U	0.0051 U	0.0047 U	0.0049 U	0.0048 U	0.005 U	0.0048 U	0.0048 U	0.005 U
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	0.0037 U	0.0039 U	0.0037 U	0.0038 U	0.0037 U	0.0039 U	0.0037 U	0.0037 U	0.0039 U
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	0.0031 U	0.01	0.0031 U	0.0032 U	0.0031 U	0.0039 J (F)	0.0031 U	0.0032 U	0.0033 U
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	0.0034 U	0.0036 U	0.0033 U	0.0035 U	0.0034 U	0.0035 U	0.0034 U	0.0034 U	0.0035 U
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	0.0053 U	0.0057 U	0.0053 U	0.0055 U	0.0053 U	0.0056 U	0.0054 U	0.0054 U	0.0056 U
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	0.0036 U	0.0038 U	0.0036 U	0.0037 U	0.0036 U	0.0038 U	0.0036 U	0.0036 U	0.0038 U
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	0.003 U	0.0032 U	0.003 U	0.0031 U	0.003 U	0.0032 U	0.003 U	0.003 U	0.0032 U
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	0.0032 U	0.0035 U	0.0032 U	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	0.0044 U	0.0047 U	0.0044 U	0.0045 U	0.0044 U	0.0046 U	0.0044 U	0.0044 U	0.0046 U
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0033 J (F)	0.0026 U	0.0026 U	0.0027 U
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0039 J (F)	0.0026 U	0.0026 U	0.0027 U
Anthracene	~	1.8E+04	3.4E+03	3444.92041	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0044 J (F)	0.0026 U	0.0026 U	0.0027 U
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	0.0032 U	0.0035 U	0.0032 U	0.0033 U	0.0032 U	0.02	0.0033 U	0.0033 U	0.0037 J
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	0.0027 U	0.0028 U	0.0026 U	0.0027 U	0.0027 U	0.015	0.0027 U	0.0027 U	0.0042 J (F)
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.048	0.0038 U	0.0039 U	0.0067 J (F)
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	0.0034 U	0.0036 U	0.0033 U	0.0035 U	0.0034 U	0.015	0.0034 U	0.0034 U	0.0041 J (F)
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	0.0077 U	0.0081 U	0.0076 U	0.0079 U	0.0077 U	0.008 U	0.0077 U	0.0077 U	0.008 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM21 4.0-4.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM22 9.0-9.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-LFM23 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM24 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM25 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM26 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM27 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM28 10.0-10.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM29 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	0.0036 U	0.0038 U	0.0036 U	0.0037 U	0.0036 U	0.0038 U	0.0036 U	0.0036 U	0.0038 U
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	0.0028 U	0.003 U	0.0028 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0029 U
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	0.0032 U	0.0035 U	0.0032 U	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	0.0031 U	0.0033 U	0.0031 U	0.0032 U	0.0031 U	0.0033 U	0.0031 U	0.0032 U	0.0033 U
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	0.0077 U	0.077	0.0076 U	0.0079 U	0.0077 U	0.008 U	0.0077 U	0.0077 U	0.011
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	0.0029 U	0.0031 U	0.0029 U	0.003 U	0.0029 U	0.003 U	0.0029 U	0.0029 U	0.003 U
Chrysene	~	5.6E+02	7.7E+02	560.1164551	0.0034 U	0.0036 U	0.0033 U	0.0035 U	0.0034 U	0.04	0.0034 U	0.0034 U	0.0045 J (F)
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0037 J (F)	0.0026 U	0.0026 U	0.0027 U
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	0.0028 U	0.003 U	0.02	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0029 U
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	0.0029 U	0.0037 J (F)	0.0029 U	0.003 U	0.0029 U	0.003 U	0.0029 U	0.0029 U	0.0067 J (F)
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	0.0034 U	0.0036 U	0.0033 U	0.0035 U	0.0034 U	0.0035 U	0.0034 U	0.0034 U	0.0035 U
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.07	0.0026 U	0.0026 U	0.0073 J (F)
Fluorene	~	2.3E+03	1.5E+02	149.2689972	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	0.003 U	0.0032 U	0.003 U	0.0031 U	0.003 U	0.0032 U	0.003 U	0.003 U	0.0032 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0051 U	0.0054 U	0.005 U	0.0053 U	0.0051 U	0.0053 U	0.0051 U	0.0051 U	0.0053 U
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	0.0042 U	0.0044 U	0.0041 U	0.0043 U	0.0042 U	0.0044 U	0.0042 U	0.0042 U	0.0044 U
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	0.0045 U	0.0048 U	0.0045 U	0.0047 U	0.0045 U	0.0047 U	0.0045 U	0.0046 U	0.0047 U
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	0.0041 U	0.0043 U	0.004 U	0.0042 U	0.0041 U	0.015	0.0041 U	0.0041 U	0.0054 J
Isophorone	~	1.2E+03	1.5E+00	1.500724196	0.0035 U	0.0037 U	0.0034 U	0.0036 U	0.0035 U	0.0036 U	0.0035 U	0.0035 U	0.0036 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.0038 U	0.0055 J (F)	0.0038 U	0.0039 U	0.0038 U	0.006 J (B)	0.0038 U	0.0039 U	0.004 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	0.0046 U	0.0049 U	0.0046 U	0.0048 U	0.0046 U	0.0049 U	0.0047 U	0.0047 U	0.0049 U
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.0027 U	0.0026 U	0.0026 U	0.0027 U
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	0.0032 U	0.0035 U	0.0032 U	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	0.0035 U	0.0037 U	0.0034 U	0.0036 U	0.0035 U	0.0088	0.0035 U	0.0035 U	0.0036 U
Phenol	~	1.6E+03	9.6E+00	9.573979378	0.0038 U	0.0041 U	0.0038 U	0.0039 U	0.0038 U	0.004 U	0.0038 U	0.0039 U	0.004 U
Pyrene	~	1.7E+03	5.6E+02	558.2573853	0.0026 U	0.0027 U	0.0025 U	0.0026 U	0.0026 U	0.061	0.0026 U	0.0026 U	0.0061 J (F)
TPH													
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	18 U	20 U	18 U	19 U	18 U	19 U	18 U	19 U	19 U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	20 U	18 U	19 U	18 U	19 U	18 U	19 U	19 U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	18 U	20 U	18 U	19 U	18 U	19 U	18 U	19 U	19 U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	20 U	18 U	19 U	18 U	19 U	18 U	19 U	19 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM30 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM31 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM32 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM33 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM34 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM35 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM36 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM37 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM38 9.0-9.5 04/08/2010 Normal Sample (mg/kg)
Metals													
Barium	300[a]	7.8E+03	2.2E+02	300	104	52.9	83.2	107	**555**	48.5	**474**	~	~
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	0.417 J (F)	**3.1**	**8.85**	1.9	**53.9**	0.141 J (F)	**6.83**	~	~
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	14.3	9.71	20.4	11.8	46.7	7.14	44.7	~	~
Copper	23.2[b]	5.5E+02	5.2E+02	520	10.2	104	**904**	26	**4340**	4.54	**1470**	~	~
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	14.2	33.9	**138**	21	**568**	5.52	**1290**	~	~
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	0.479	**0.952 (M)**	**0.924 (R)**	0.28 (M)	**5.13 (M)**	0.29	**13.1 (M)**	~	~
Nickel	35.5[b]	8.3E+02	7.9E+01	79	10.5	19.5	28.8	23	**137**	7.76	46	~	~
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	391 (J)	170	730	52.1	10400	11.7	751	~	~
Explosives													
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	0.094 U	0.092 U	0.091 U	0.094 U	0.097 U	0.089 U	0.11 U	0.092 U	~
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
HMX	~	2.0E+02	1.2E+00	1.171845555	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
RDX	~	2.5E+01	1.8E-02	0.018421099	0.047 U	0.046 U	0.045 U	0.047 U	0.049 U	0.045 U	0.053 U	0.046 U	~
Tetryl	~	3.4E+01	5.5E-01	0.552050114	0.087 U	0.085 U	0.084 U	0.087 U	0.09 U	0.083 U	0.097 U	0.085 U	~
VOCs													
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.00073 U	0.00071 U	0.00071 U	0.00071 U	0.00075 U	~	~	~	~
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	0.00061 U	0.00059 U	0.00059 U	0.002 J (F)	0.002 J (F)	~	~	~	~
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	~	~	~	~
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM30 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM31 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM32 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM33 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM34 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM35 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM36 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM37 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM38 9.0-9.5 04/08/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	0.00073 U	0.00071 U	0.00071 U	0.00071 U	0.00075 U	~	~	~	~
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Benzene	~	4.8E+01	1.3E-02	0.018999999	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Bromoform	~	2.8E+02	3.2E-01	0.315581709	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	~	~	~	~
Chloroform	~	8.0E+00	5.1E-01	0.509712338	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	0.00061 U	0.00089 J (F)	0.00085 J (F)	0.0028 J (F)	0.0024 J (F)	~	~	~	~
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	~	~	~	~
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	~	~	~	~
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	~	~	~	~
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	~	~	~	~
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0016 J (F)	~	~	~	~
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.00061 U	0.0012 J (B)	0.0012 J (B)	0.0012 J (B)	0.0011 J (B)	~	~	~	~
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Styrene	~	4.3E+03	1.6E+00	1.627339244	0.00061 U	0.00059 U	0.00059 U	0.0014 J (F)	0.00086 J (F)	~	~	~	~
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	0.00073 U	0.00071 U	0.00071 U	0.00071 U	0.00075 U	~	~	~	~
Toluene	~	5.4E+03	4.1E+00	4.105180264	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM30 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM31 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM32 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM33 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM34 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM35 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM36 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM37 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM38 9.0-9.5 04/08/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	0.00061 U	0.00059 U	0.00059 U	0.0006 U	0.00062 U	~	~	~	~
SVOCs										~	~	~	~
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0049 U	~	~	~	~
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	0.0045 U	0.0043 U	0.0044 U	0.0044 U	0.0046 U	~	~	~	~
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	0.0044 U	0.0042 U	0.0042 U	0.0043 U	0.0045 U	~	~	~	~
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	0.0034 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	~	~	~	~
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U (J)	~	~	~	~
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	0.004 U	0.0039 U (J)	0.0039 U	0.0039 U (J)	0.0041 U	~	~	~	~
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	0.004 U	0.0039 U (J)	0.0039 U (J)	0.0039 U	0.0041 U	~	~	~	~
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.004 U	~	~	~	~
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	0.005 U	0.0048 U	0.0048 U	0.0049 U	0.0051 U	~	~	~	~
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.004 U	~	~	~	~
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	0.0033 U	0.0032 U	0.0032 U	0.0046 J (F)	0.0034 U	~	~	~	~
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0036 U	~	~	~	~
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	0.0056 U	0.0054 U	0.0054 U	0.0055 U	0.0057 U	~	~	~	~
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	0.0038 U	0.0036 U	0.0037 U	0.0037 U	0.0039 U	~	~	~	~
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0032 U	~	~	~	~
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	0.0034 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	~	~	~	~
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	0.0046 U	0.0045 U (J)	0.0045 U (J)	0.0045 U (J)	0.0047 U (J)	~	~	~	~
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Anthracene	~	1.8E+04	3.4E+03	3444.92041	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	0.0034 U	0.0048 J	0.0033 U	0.0033 U	0.0035 U	~	~	~	~
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	0.0028 U	0.0051 J (F)	0.0027 U	0.0027 U	0.0029 U	~	~	~	~
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	0.004 U	0.01 (J)	0.0039 U (J)	0.0039 U (J)	0.0041 U (J)	~	~	~	~
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	0.0035 U	0.0079	0.0034 U	0.0035 U	0.0036 U	~	~	~	~
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	0.008 U	0.062	0.0078 U	0.0079 U	0.0082 U	~	~	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM30 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM31 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM32 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM33 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM34 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM35 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM36 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM37 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM38 9.0-9.5 04/08/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	0.0038 U	0.0036 U	0.0037 U	0.0037 U	0.0039 U	~	~	~	~
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	0.0029 U	0.0028 U	0.0028 U	0.0029 U	0.003 U	~	~	~	~
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	0.0034 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	~	~	~	~
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	0.0033 U	0.0032 U	0.0032 U	0.0032 U	0.0034 U	~	~	~	~
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	0.18	0.07	0.016	0.041	0.022	~	~	~	~
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	0.003 U	0.0029 U	0.0029 U	0.003 U	0.0031 U	~	~	~	~
Chrysene	~	5.6E+02	7.7E+02	560.1164551	0.0035 U	0.011	0.0034 U	0.0035 U	0.0036 U	~	~	~	~
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	0.0027 U	0.005 J (F)	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	0.004 U	0.0048 J (F)	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	0.0029 U	0.0028 U	0.0028 U	0.0029 U	0.003 U	~	~	~	~
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	0.003 U	0.0051 J (F)	0.0039 J (F)	0.0077 J (F)	0.0049 J (F)	~	~	~	~
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0036 U	~	~	~	~
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	0.0027 U	0.0029 J (F)	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Fluorene	~	2.3E+03	1.5E+02	149.2689972	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0032 U	~	~	~	~
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	0.0053 U	0.0052 U	0.0052 U	0.0052 U	0.0055 U	~	~	~	~
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	0.0044 U	0.0042 U	0.0042 U	0.0043 U	0.0045 U	~	~	~	~
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0049 U	~	~	~	~
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	0.0042 U	0.0041 U	0.0041 U	0.0042 U	0.0044 U	~	~	~	~
Isophorone	~	1.2E+03	1.5E+00	1.500724196	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0037 U	~	~	~	~
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	0.004 U	0.0039 U	0.0039 U	0.0039 U (M)	0.0041 U	~	~	~	~
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	0.0048 U	0.0047 U	0.0047 U	0.0048 U	0.005 U	~	~	~	~
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	0.0027 U	0.0026 U	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	0.0034 U	0.0033 U (M)	0.0033 U (M)	0.0033 U	0.0035 U (M)	~	~	~	~
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	0.0036 U	0.015	0.0035 U	0.0065 J (F)	0.0037 U	~	~	~	~
Phenol	~	1.6E+03	9.6E+00	9.573979378	0.004 U	0.0039 U	0.0039 U	0.0039 U	0.0041 U	~	~	~	~
Pyrene	~	1.7E+03	5.6E+02	558.2573853	0.0027 U	0.0036 J (F)	0.0026 U	0.0026 U	0.0027 U	~	~	~	~
TPH													
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	19 U	19 U	19 U	19 U	19 U	18 U	21 U	19 U	19 U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	19 U	19 U	19 U	19 U	18 U	21 U	19 U	19 U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	19 U	19 U	19 U	19 U	19 U	18 U	21 U	19 U	19 U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	19 U	19 U	19 U	19 U	18 U	21 U	19 U	19 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM39 2.0-2.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM40 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM41 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM42 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM43 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM44 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM45 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM46 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM51 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
Metals													
Barium	300[a]	7.8E+03	2.2E+02	300	~	~	~	~	198	109	35.2	~	55.6
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	~	~	~	~	2.29	2.29	0.085 U	~	**75.3**
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	~	~	~	~	16.6	13.9	6.76	~	18.6
Copper	23.2[b]	5.5E+02	5.2E+02	520	~	~	~	~	81.7	43.9	4.93	~	**694**
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	~	~	~	~	33.1	63.1	6.11	~	**94.8**
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	~	~	~	~	**23.3 (M)**	**2.89 (M)**	0.0558 (M)	~	**18.1**
Nickel	35.5[b]	8.3E+02	7.9E+01	79	~	~	~	~	30.7	19.1	6.44	~	23.9
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	~	~	~	~	307	210	21.6	~	**666**
Explosives													
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	~	~	~	~	~	0.092 U	0.089 U	0.092 U	~
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
HMX	~	2.0E+02	1.2E+00	1.171845555	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
RDX	~	2.5E+01	1.8E-02	0.018421099	~	~	~	~	~	0.046 U	0.044 U	0.046 U	~
Tetryl	~	3.4E+01	5.5E-01	0.552050114	~	~	~	~	~	0.085 U	0.082 U	0.085 U	~
VOCs													
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	~	~	~	~	~	~	0.00057 U	~	~
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	~	~	~	~	~	~	0.00057 U	~	~
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	~	~	~	~	~	~	0.00057 U	~	~
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	~	~	~	~	~	~	0.00057 U	~	~
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	~	~	~	~	~	~	0.00057 U	~	~
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	~	~	~	~	~	~	0.00057 U	~	~
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	~	~	~	~	~	~	0.00057 U	~	~
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	~	~	~	~	~	~	0.00057 U	~	~
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	~	~	~	~	~	~	0.00057 U	~	~
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	~	~	~	~	~	~	0.00069 U	~	~
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	~	~	~	~	~	~	0.00057 U	~	~
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	~	~	~	~	~	~	0.001 U	~	~
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	~	~	~	~	~	~	0.00057 U	~	~
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	~	~	~	~	~	~	0.00057 U	~	~
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	~	~	~	~	~	~	0.00057 U	~	~
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	~	~	~	~	~	~	0.00057 U	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM39 2.0-2.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM40 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM41 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM42 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM43 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM44 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM45 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM46 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM51 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	~	~	~	~	~	~	0.00057 U	~	~
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	~	~	~	~	~	~	0.00057 U	~	~
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	~	~	~	~	~	~	0.00057 U	~	~
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	~	~	~	~	~	~	0.00057 U	~	~
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	~	~	~	~	~	~	0.00069 U	~	~
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	~	~	~	~	~	~	0.00057 U	~	~
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	~	~	~	~	~	~	0.00057 U	~	~
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	~	~	~	~	~	~	0.00057 U	~	~
Benzene	~	4.8E+01	1.3E-02	0.018999999	~	~	~	~	~	~	0.00057 U	~	~
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	~	~	~	~	~	~	0.00057 U	~	~
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	~	~	~	~	~	~	0.00057 U	~	~
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	~	~	~	~	~	~	0.00057 U	~	~
Bromoform	~	2.8E+02	3.2E-01	0.315581709	~	~	~	~	~	~	0.00057 U	~	~
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	~	~	~	~	~	~	0.00057 U	~	~
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	~	~	~	~	~	~	0.00057 U	~	~
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	~	~	~	~	~	~	0.0011 U	~	~
Chloroform	~	8.0E+00	5.1E-01	0.509712338	~	~	~	~	~	~	0.00057 U	~	~
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	~	~	~	~	~	~	0.00057 U	~	~
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	~	~	~	~	~	~	0.00057 U	~	~
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	~	~	~	~	~	~	0.00057 U	~	~
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	~	~	~	~	~	~	0.00057 U	~	~
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	~	~	~	~	~	~	0.00057 U	~	~
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	~	~	~	~	~	~	0.0013 J (F)	~	~
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	~	~	~	~	~	~	0.0011 U	~	~
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	~	~	~	~	~	~	0.00057 U	~	~
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	~	~	~	~	~	~	0.0011 U	~	~
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	~	~	~	~	~	~	0.0011 U	~	~
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	~	~	~	~	~	~	0.0011 U	~	~
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	~	~	~	~	~	~	0.0015 J (F)	~	~
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	~	~	~	~	~	~	0.0011 J (B)	~	~
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	~	~	~	~	~	~	0.00057 U	~	~
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	~	~	~	~	~	~	0.00057 U	~	~
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	~	~	~	~	~	~	0.00057 U	~	~
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	~	~	~	~	~	~	0.00057 U	~	~
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	~	~	~	~	~	~	0.00057 U	~	~
Styrene	~	4.3E+03	1.6E+00	1.627339244	~	~	~	~	~	~	0.0008 J (F)	~	~
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	~	~	~	~	~	~	0.00057 U	~	~
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	~	~	~	~	~	~	0.00069 U	~	~
Toluene	~	5.4E+03	4.1E+00	4.105180264	~	~	~	~	~	~	0.00057 U	~	~
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	~	~	~	~	~	~	0.00057 U	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM39 2.0-2.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM40 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM41 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM42 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM43 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM44 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM45 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM46 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM51 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	~	~	~	~	~	~	0.00057 U	~	~
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	~	~	~	~	~	~	0.00057 U	~	~
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	~	~	~	~	~	~	0.00057 U	~	~
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	~	~	~	~	~	~	0.00057 U	~	~
SVOCs					~	~	~	~					
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	~	~	~	~	~	~	0.0045 U	~	~
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	~	~	~	~	~	~	0.0038 U	~	~
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	~	~	~	~	~	~	0.0042 U	~	~
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	~	~	~	~	~	~	0.0041 U	~	~
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	~	~	~	~	~	~	0.0025 U	~	~
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	~	~	~	~	~	~	0.0032 U	~	~
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	~	~	~	~	~	~	0.0038 U	~	~
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	~	~	~	~	~	~	0.0025 U	~	~
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	~	~	~	~	~	~	0.0038 U	~	~
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	~	~	~	~	~	~	0.0038 U (R)	~	~
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	~	~	~	~	~	~	0.0038 U	~	~
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	~	~	~	~	~	~	0.0037 U	~	~
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	~	~	~	~	~	~	0.0047 U	~	~
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	~	~	~	~	~	~	0.0037 U	~	~
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	~	~	~	~	~	~	0.0031 U	~	~
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	~	~	~	~	~	~	0.0033 U	~	~
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	~	~	~	~	~	~	0.0038 U	~	~
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	~	~	~	~	~	~	0.0053 U	~	~
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	~	~	~	~	~	~	0.0035 U	~	~
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	~	~	~	~	~	~	0.003 U	~	~
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	~	~	~	~	~	~	0.0038 U	~	~
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	~	~	~	~	~	~	0.0038 U	~	~
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	~	~	~	~	~	~	0.0038 U	~	~
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	~	~	~	~	~	~	0.0025 U	~	~
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	~	~	~	~	~	~	0.0032 U	~	~
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	~	~	~	~	~	~	0.0038 U	~	~
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	~	~	~	~	~	~	0.0043 U (R)	~	~
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	~	~	~	~	~	~	0.0025 U	~	~
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	~	~	~	~	~	~	0.0025 U	~	~
Anthracene	~	1.8E+04	3.4E+03	3444.92041	~	~	~	~	~	~	0.0025 U	~	~
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	~	~	~	~	~	~	0.013	~	~
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	~	~	~	~	~	~	0.0071 J	~	~
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	~	~	~	~	~	~	0.022 (R)	~	~
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	~	~	~	~	~	~	0.0048 J	~	~
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	~	~	~	~	~	~	0.0076 U	~	~

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM39 2.0-2.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM40 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM41 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM42 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM43 4.0-4.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM44 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM45 3.0-3.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM46 6.0-6.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-LFM51 3.0-3.5 04/08/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	~	~	~	~	~	~	0.0035 U	~	~
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	~	~	~	~	~	~	0.0027 U	~	~
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	~	~	~	~	~	~	0.0032 U	~	~
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	~	~	~	~	~	~	0.0031 U	~	~
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	~	~	~	~	~	~	0.0086	~	~
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	~	~	~	~	~	~	0.0029 U	~	~
Chrysene	~	5.6E+02	7.7E+02	560.1164551	~	~	~	~	~	~	0.01	~	~
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	~	~	~	~	~	~	0.0025 U	~	~
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	~	~	~	~	~	~	0.0025 U	~	~
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	~	~	~	~	~	~	0.0038 U	~	~
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	~	~	~	~	~	~	0.0027 U	~	~
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	~	~	~	~	~	~	0.0043 J	~	~
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	~	~	~	~	~	~	0.0033 U	~	~
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	~	~	~	~	~	~	0.01	~	~
Fluorene	~	2.3E+03	1.5E+02	149.2689972	~	~	~	~	~	~	0.0025 U	~	~
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	~	~	~	~	~	~	0.003 U	~	~
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	~	~	~	~	~	~	0.005 U	~	~
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	~	~	~	~	~	~	0.0041 U	~	~
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	~	~	~	~	~	~	0.0045 U	~	~
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	~	~	~	~	~	~	0.0059 J	~	~
Isophorone	~	1.2E+03	1.5E+00	1.500724196	~	~	~	~	~	~	0.0034 U	~	~
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	~	~	~	~	~	~	0.0038 U	~	~
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	~	~	~	~	~	~	0.0038 U	~	~
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	~	~	~	~	~	~	0.0046 U	~	~
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	~	~	~	~	~	~	0.0025 U	~	~
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	~	~	~	~	~	~	0.0032 U (R)	~	~
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	~	~	~	~	~	~	0.0034 U	~	~
Phenol	~	1.6E+03	9.6E+00	9.573979378	~	~	~	~	~	~	0.0038 U	~	~
Pyrene	~	1.7E+03	5.6E+02	558.2573853	~	~	~	~	~	~	0.013	~	~
TPH													
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	19 U	18 U	18 U	19 U	19 U	18 U	18 U	19 U	19U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	18 U	18 U	19 U	19 U	18 U	18 U	19 U	19U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	19 U	18 U	18 U	19 U	19 U	18 U	18 U	19 U	19U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	19 U	18 U	18 U	19 U	19 U	18 U	18 U	19 U	19U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.

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Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM52 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP2 12.0-12.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP3 11.5-12.0 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP4 7.5-8.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP5 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP6 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 5.0-5.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 Dup 0.0-0.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP10 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP11 11.0-11.5 04/08/2010 Normal Sample (mg/kg)
Metals														
Barium	300[a]	7.8E+03	2.2E+02	300	35.7	29.6	9.84	23.9	7.99	29	20.1	17.6	16.5	5.77
Cadmium	3.0[b]	5.2E+01	7.5E-01	3	**8.18**	0.0903 J (M)	0.0665 J (M)	0.087 U (M)	2.2 (M)	0.085 U (M)	3 (M)	0.873 J	0.081 U	0.086 U
Chromium	40.2[b]	2.7E+04	1.2E+03	1200	10.4	7.78	4.39	5.01	3.07	6.93	6.29	4.07	5.94	2.15
Copper	23.2[b]	5.5E+02	5.2E+02	520	167	5.54 (M)	3.49 (M)	3.52 (J)	6.69 (J)	9.71 (J)	165 (J)	62.2	2.87	0.615 J (F)
Lead	84.5[b]	5.0E+02	1.5E+00	84.5	67.7	5.94	2.17	3.71 (M)	2.39 (M)	4.64 (M)	26.3 (M)	14.7	3.69	0.952 J (F)
Mercury	0.77[b]	2.1E+00	3.9E-03	0.77	**33.9**	0.332 (M)	**1.52 (M)**	0.00023 U	0.0503	0.00497	0.0904	0.138	0.0189	0.00025 U
Nickel	35.5[b]	8.3E+02	7.9E+01	79	17.2	6.91	2.84	6.34	6.2	5.59	9.78	10.9	4.59	2.02
Zinc	73.2[b]	9.9E+03	1.2E+03	1200	501	9.43 (M)	5.43 (M)	9.29 (J)	4.79 (J)	13.6 (J)	288 (J)	283	12.6 (J)	1.8 (J)
Explosives														
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.909677327	~	0.088 U (UJ)	0.085 U	0.089 U	0.089 U	0.089 U	0.094 U	0.091 U	0.086 U	0.093 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.003808277	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.08552257	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.015647452	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.922195733	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.215181977	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
HMX	~	2.0E+02	1.2E+00	1.171845555	~	0.044 U	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	~	0.044 U (UJ)	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
RDX	~	2.5E+01	1.8E-02	0.018421099	~	0.044 U	0.042 U	0.044 U	0.045 U	0.045 U	0.047 U	0.045 U	0.043 U	0.047 U
Tetryl	~	3.4E+01	5.5E-01	0.552050114	~	0.081 U (UJ)	0.078 U	0.082 U	0.083 U	0.082 U	0.087 U	0.084 U	0.08 U	0.086 U
VOCs														
1,1,1,2-Tetrachloroethane	~	3.9E+01	7.1E-01	0.70835948	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1,1-Trichloroethane	~	3.2E+04	8.1E-01	0.810029387	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1,2,2-Tetrachloroethane	~	4.0E+00	1.2E-02	0.011543234	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1,2-Trichloroethane	~	1.0E+01	1.0E-02	0.010040921	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1-Dichloroethane	~	2.6E+03	9.2E+00	9.247057915	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1-Dichloroethene	~	1.6E+03	2.5E-02	0.025040001	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,1-Dichloropropene	~	2.6E+01	6.7E-02	0.067242078	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2,3-Trichlorobenzene	~	1.9E+02	1.3E+01	13.14411163	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2,3-Trichloropropane	~	2.0E-01	2.7E-04	0.000271779	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	~	0.00068 U	0.00066 U	0.00069 U	0.00069 U	0.0007 U	0.00071 U	0.00071 U	0.00066 U	0.00073 U
1,2,4-Trimethylbenzene	~	7.3E+01	4.9E+00	4.852841377	~	0.00057 U	0.00055 U	0.0018 J (F)	0.00057 U	0.0019 J	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2-Dibromo-3-chloropropane	~	8.0E-02	8.7E-04	0.000873005	~	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0011 U	0.00099 U	0.0011 U
1,2-Dibromoethane	~	4.3E-01	1.0E-04	0.000103453	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2-Dichloroethane	~	6.4E+00	6.9E-03	0.006862771	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,2-Dichloropropane	~	3.1E+01	1.1E-02	0.0114133	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U

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Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM52 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP2 12.0-12.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP3 11.5-12.0 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP4 7.5-8.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP5 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP6 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 5.0-5.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 Dup 0.0-0.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP10 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP11 11.0-11.5 04/08/2010 Normal Sample (mg/kg)
1,3,5-Trimethylbenzene	~	5.9E+01	2.7E+01	26.60016441	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,3-Dichloropropane	~	2.6E+01	3.2E-02	0.032198582	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
1-Chlorohexane	~	2.3E+03	2.0E+01	19.71107674	~	0.00068 U	0.00066 U	0.00069 U	0.00069 U	0.0007 U	0.00071 U	0.00071 U	0.00066 U	0.00073 U
2,2-Dichloropropane	~	3.1E+01	6.0E-02	0.060359314	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
2-Chlorotoluene	~	8.3E+02	4.5E+00	4.534018993	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
4-Chlorotoluene	~	2.5E+00	1.9E+01	2.470870495	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Benzene	~	4.8E+01	1.3E-02	0.018999999	~	0.0012 J (F)	0.00097 J (F)	0.00058 U	0.00057 U	0.00058 U	0.00059 U (F)	0.00083 J	0.00055 U	0.00061 U
Bromobenzene	~	2.8E+02	1.2E+00	1.237515092	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U (R)	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Bromochloromethane	~	3.5E+02	1.5E+00	1.519645333	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Bromodichloromethane	~	9.8E+01	3.3E-02	0.032715671	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Bromoform	~	2.8E+02	3.2E-01	0.315581709	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Carbon tetrachloride	~	9.7E+00	3.1E-02	0.030938696	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Chlorobenzene	~	3.2E+02	5.5E-01	0.546244323	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Chloroethane	~	2.3E+04	1.5E+01	15.45059967	~	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Chloroform	~	8.0E+00	5.1E-01	0.509712338	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
cis-1,2-Dichloroethene	~	7.2E+02	1.2E-01	0.124168664	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
cis-1,3-Dichloropropene	~	7.1E+00	3.3E-03	0.003323039	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Dibromochloromethane	~	7.2E+01	2.5E-02	0.024560682	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Dibromomethane	~	1.4E+02	5.6E-01	0.564700246	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Dichlorodifluoromethane	~	1.2E+04	1.2E+02	119.7476273	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Ethylbenzene	~	4.0E+03	3.8E+00	3.815000057	~	0.061	0.052	0.029	0.00057 U	0.00084 J	0.00059 U (J)	0.047	0.00083 J (F)	0.00061 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	~	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Isopropylbenzene	~	3.0E+03	1.7E+02	173.705719	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
m,p-Xylene	~	4.7E+03	5.3E+01	52.61772537	~	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Methyl Bromide	~	2.9E+01	6.5E-02	0.065350808	~	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Methyl Chloride	~	8.4E+01	2.0E-01	0.202624857	~	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Methylene chloride	~	2.6E+02	6.5E-03	0.006537714	~	0.0011 U	0.0011 U	0.0016 J (F)	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	~	0.0015 J (B)	0.0011 J (B)	0.0011 J (B)	0.0011 J (B)	0.0014 J	0.0013 J (B)	0.0013 J	0.00099 J (B)	0.0011 J (B)
n-Butylbenzene	~	1.5E+03	6.1E+01	60.67232895	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
n-Propylbenzene	~	1.6E+03	2.2E+01	22.40999794	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
o-Xylene	~	2.9E+04	3.5E+01	35.35507584	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
p-Isopropyltoluene	~	2.5E+03	1.2E+02	115.7605972	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.0032 J	0.00055 U	0.00061 U
sec-Butylbenzene	~	1.6E+03	4.2E+01	42.41320801	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Styrene	~	4.3E+03	1.6E+00	1.627339244	~	0.04	0.034	0.017	0.00057 U	0.00084 J	0.00059 U	0.03	0.00055 U	0.00061 U
tert-Butylbenzene	~	1.4E+03	5.0E+01	49.98741531	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Tetrachloroethene	~	9.4E+01	2.5E-02	0.025099596	~	0.00068 U	0.00066 U	0.00069 U	0.00069 U	0.0007 U	0.00071 U	0.00071 U	0.00066 U	0.00073 U
Toluene	~	5.4E+03	4.1E+00	4.105180264	~	0.0026 J (F)	0.0021 J (F)	0.0012 J (F)	0.00057 U	0.00058 U	0.00059 U (F)	0.0019 J	0.00055 U	0.00061 U
trans-1,2-Dichloroethene	~	3.7E+02	2.5E-01	0.245078534	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U

Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM52 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP2 12.0-12.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP3 11.5-12.0 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP4 7.5-8.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP5 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP6 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 5.0-5.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 Dup 0.0-0.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP10 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP11 11.0-11.5 04/08/2010 Normal Sample (mg/kg)
trans-1,3-Dichloropropene	~	2.6E+01	1.8E-02	0.017944412	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Trichloroethene	~	6.8E+01	1.7E-02	0.016815055	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Trichlorofluoromethane	~	1.2E+04	6.4E+01	63.98823929	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
Vinyl Chloride	~	3.4E+00	1.1E-02	0.011136732	~	0.00057 U	0.00055 U	0.00058 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.00055 U	0.00061 U
SVOCs														
1,2,4-Trichlorobenzene	~	7.0E+01	2.4E+00	2.395683765	~	0.0044 U	0.0043 U	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0046 U	0.0043 U	0.0048 U
1,2-Dichlorobenzene	~	3.9E+02	8.9E+00	8.942685127	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
1,3-Dichlorobenzene	~	6.2E+01	3.4E+00	3.372830391	~	0.0042 U	0.0041 U	0.0043 U	0.0042 U	0.0043 U	0.0043 U	0.0044 U	0.004 U	0.0045 U
1,4-Dichlorobenzene	~	2.5E+02	1.1E+00	1.05135417	~	0.0041 U	0.004 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.0043 U	0.0039 U	0.0044 U
1-chloro-4-phenoxybenzene	~	1.5E-01	1.6E-02	0.01599898	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
2,4,5-Trichlorophenol	~	4.1E+03	1.7E+01	16.90970039	~	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U	0.0034 U
2,4,6-Trichlorophenol	~	6.7E+01	8.7E-02	0.087465182	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
2,4-Dichlorophenol	~	1.9E+02	1.8E-01	0.175853744	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
2,4-Dimethylphenol	~	8.8E+02	1.6E+00	1.617072105	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
2,4-Dinitrophenol	~	1.3E+02	4.7E-02	0.046844691	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.002662154	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.00240452	~	0.0036 U	0.0035 U	0.0037 U	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0035 U	0.0039 U
2-Chloronaphthalene	~	5.0E+03	3.3E+02	334.7917786	~	0.0046 U	0.0045 U	0.0047 U	0.0047 U	0.0048 U	0.0048 U	0.0048 U	0.0045 U	0.005 U
2-Chlorophenol	~	3.6E+02	8.2E-01	0.816241205	~	0.0036 U	0.0035 U	0.0037 U	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0035 U	0.0039 U
2-Methylnaphthalene	~	2.5E+02	8.5E+00	8.533679008	~	0.0031 U	0.003 U	0.0031 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.003 U	0.0033 U
2-Methylphenol	~	1.0E+03	3.6E+00	3.55953455	~	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0032 U	0.0035 U
2-Nitroaniline	~	1.1E+01	1.1E-02	0.010972611	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
2-Nitrophenol	~	1.0E+02	6.7E-02	0.067262866	~	0.0052 U	0.0051 U	0.0053 U	0.0053 U	0.0053 U	0.0054 U	0.0054 U	0.005 U	0.0056 U
3,3-Dichlorobenzidine	~	1.0E+01	3.1E-02	0.03132268	~	0.0035 U	0.0034 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0037 U	0.0034 U	0.0038 U
3-Nitroaniline	~	1.9E+01	1.3E-02	0.012805622	~	0.0029 U	0.0029 U	0.003 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0028 U	0.0032 U
4,6-Dinitro-2-methylphenol	~	5.2E+00	2.3E-03	0.002343291	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
4-Bromophenyl phenyl ether	~	2.7E-01	1.8E-01	0.17664133	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
4-Chloro-3-methylphenol	~	3.3E+02	2.3E+00	2.26423955	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
4-Chloroaniline	~	2.3E+01	1.0E-02	0.010400365	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
4-Methylphenol	~	2.7E+02	3.2E-01	0.315765113	~	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U	0.0034 U
4-Nitroaniline	~	1.9E+02	5.4E-02	0.053973105	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
4-Nitrophenol	~	5.1E+01	5.0E-02	0.049926594	~	0.0043 U	0.0042 U	0.0044 U	0.0044 U	0.0044 U	0.0045 U	0.0045 U	0.0042 U	0.0046 U
Acenaphthene	~	3.0E+03	1.2E+02	118.1831589	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Acenaphthylene	~	3.8E+03	2.0E+02	204.330246	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Anthracene	~	1.8E+04	3.4E+03	3444.92041	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Benzo(a)anthracene	~	5.6E+00	8.9E+00	5.645250797	~	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U	0.0034 U
Benzo(a)pyrene	~	5.6E-01	3.8E+00	0.56365031	~	0.0026 U	0.0025 U	0.0027 U	0.0026 U	0.0027 U	0.0027 U	0.0027 U	0.0025 U	0.0028 U
Benzo(b)fluoranthene	~	5.7E+00	3.0E+01	5.708208561	~	0.0037 U	0.0048 J (F)	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
Benzo(g,h,i)perylene	~	1.8E+03	2.3E+04	1780.340576	~	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0032 U	0.0035 U
Benzoic acid	~	3.5E+02	9.5E+01	94.64918518	~	0.0075 U	0.013	0.0076 U	0.0076 U	0.0076 U	0.0077 U	0.0078 U	0.0072 U	0.008 U

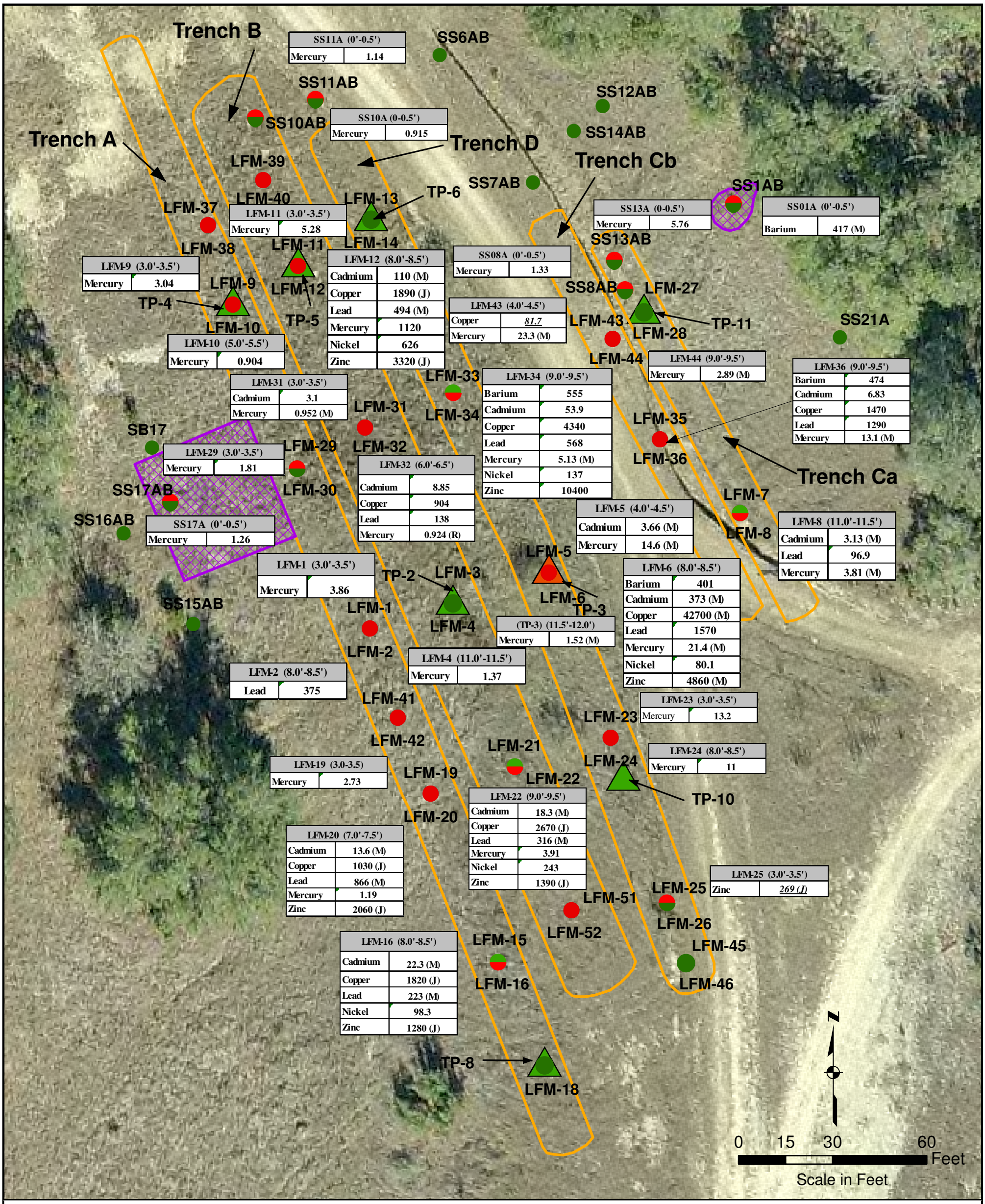
Table 10A-2
Soil Data Summary - SWMU B-4 Trenches
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Background Value[1] (mg/kg)	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Residential Tier 1 RAL[2] 30-Acre Source $^{GW}Soil_{Ing}$	Critical RAL[5] (mg/kg)	SWMUB4-LFM52 8.0-8.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP2 12.0-12.5 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP3 11.5-12.0 04/06/2010 Normal Sample (mg/kg)	SWMUB4-TP4 7.5-8.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP5 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP6 9.5-10.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 5.0-5.5 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP8 Dup 0.0-0.0 04/07/2010 Normal Sample (mg/kg)	SWMUB4-TP10 9.0-9.5 04/08/2010 Normal Sample (mg/kg)	SWMUB4-TP11 11.0-11.5 04/08/2010 Normal Sample (mg/kg)
Benzyl alcohol	~	2.7E+03	2.9E+00	14.64754486	~	0.0035 U	0.0034 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0037 U	0.0034 U	0.0038 U
bis(2-Chloroethoxy)methane	~	2.5E+00	5.9E-03	0.005884056	~	0.0027 U	0.0027 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0026 U	0.0029 U
bis(2-Chloroethyl)ether	~	1.4E+00	1.1E-03	0.001052665	~	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U	0.0034 U
bis(2-Chloroisopropyl)ether	~	4.1E+01	9.5E-02	0.095002547	~	0.0031 U	0.003 U	0.0031 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.003 U	0.0033 U
bis(2-Ethylhexyl)phthalate	~	4.3E+01	8.2E+01	43.15771103	~	0.0075 U	0.021	0.0076 U	0.0076 U	0.0076 U	0.0077 U	0.03	0.0072 U	0.008 U
Butyl Benzyl Phthalate	~	1.6E+03	1.3E+02	132.4941559	~	0.0028 U	0.0047 J	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.003 U	0.0027 U	0.003 U
Chrysene	~	5.6E+02	7.7E+02	560.1164551	~	0.0033 U	0.0032 J (F)	0.0034 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0032 U	0.0035 U
Dibenzo(a,h)anthracene	~	5.5E-01	7.6E+00	0.549376309	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Dibenzofuran	~	2.7E+02	1.7E+01	16.68971443	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Diethyl phthalate	~	1.4E+03	7.8E+01	77.9254837	~	0.0037 U	0.01	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
Dimethyl phthalate	~	6.6E+02	3.1E+01	31.10131454	~	0.0027 U	0.0027 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0026 U	0.0029 U
Di-N-Butyl phthalate	~	4.4E+03	1.7E+03	1658.746094	~	0.0028 U	0.018	0.0029 U	0.0029 U	0.0029 U	0.0029 U	0.003 U	0.0027 U	0.003 U
Di-N-Octyl phthalate	~	1.3E+03	8.1E+05	1282.522827	~	0.0033 U	0.0032 U	0.0034 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0032 U	0.0035 U
Fluoranthene	~	2.3E+03	9.6E+02	958.6298218	~	0.0025 U	0.004 J (F)	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Fluorene	~	2.3E+03	1.5E+02	149.2689972	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Hexachlorobenzene	~	1.0E+00	5.6E-01	0.564662397	~	0.0029 U	0.0029 U	0.003 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0028 U	0.0032 U
Hexachlorobutadiene	~	1.2E+01	1.6E+00	1.644530773	~	0.005 U	0.0049 U	0.0051 U	0.005 U	0.0051 U	0.0052 U	0.0052 U	0.0048 U	0.0054 U
Hexachlorocyclopentadiene	~	7.2E+00	9.6E+00	7.160054684	~	0.0041 U	0.004 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.0043 U	0.0039 U	0.0044 U
Hexachloroethane	~	6.7E+01	9.2E-01	0.917928815	~	0.0044 U	0.0043 U	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0046 U	0.0043 U	0.0048 U
Indeno(1,2,3-cd)pyrene	~	5.7E+00	8.7E+01	5.720935345	~	0.004 U	0.0039 U	0.004 U	0.004 U	0.0041 U	0.0041 U	0.0041 U	0.0038 U	0.0043 U
Isophorone	~	1.2E+03	1.5E+00	1.500724196	~	0.0034 U	0.0033 U	0.0035 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0033 U	0.0037 U
Naphthalene	~	1.2E+02	1.6E+01	15.62311554	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.17577064	~	0.0037 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
N-Nitroso-di-N-propylamine	~	4.0E-01	1.8E-04	0.000176332	~	0.0045 U	0.0044 U	0.0046 U	0.0046 U	0.0046 U	0.0047 U	0.0047 U	0.0044 U	0.0049 U
N-Nitrosodiphenylamine	~	5.7E+02	1.4E+00	1.411761761	~	0.0025 U	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
Pentachlorophenol	~	2.4E+00	9.2E-03	0.009158099	~	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0031 U	0.0034 U
Phenanthrene	~	1.7E+03	2.1E+02	207.8587036	~	0.0034 U	0.0061 J (F)	0.0035 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0033 U	0.0037 U
Phenol	~	1.6E+03	9.6E+00	9.573979378	~	0.0037 U	0.0074	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0036 U	0.004 U
Pyrene	~	1.7E+03	5.6E+02	558.2573853	~	0.0025 U	0.0029 J (F)	0.0025 U	0.0025 U	0.0025 U	0.0026 U	0.0026 U	0.0024 U	0.0027 U
TPH														
TPH (>C12 to C28)	~	2.0E+03	9.9E+01	99.00186157	18 U	18 U	17 U	18 U	18 U	18 U	18 U	19 U	17 U	19 U
TPH (>C28 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	18 U	17 U	18 U	18 U	18 U	18 U	19 U	17 U	19 U
TPH (C06 to C12)	~	1.1E+03	3.3E+01	32.51713943	18 U	18 U	17 U	18 U	18 U	18 U	18 U	19 U	17 U	19 U
TPH (C06 to C35)	~	2.0E+03	9.9E+01	99.00186157	18 U	18 U	17 U	18 U	18 U	18 U	18 U	19 U	17 U	19 U

mg/kg - milligrams per kilogram
~ - Value not applicable or not calculated
--- - Sample not analyzed for constituent
U - Constituent not detected at method detection limit
J - Estimated value

M - Matrix effect present in sample
B - Analyte detected in method blank
( ) - Manually flagged result by WESTON data validator
PCL - Protective Concentration Level
TRRP - Texas Risk Reduction Program

Notes:
1. Default Tier 1 PCLs obtained from TRRP PCL Tables dated May 24, 2011.
2. The Critical PCL is lowest TRRP Tier 1 Residential exposure pathway value.
3. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
4. Shaded cells indicate sample detection limit (SDL) exceeds the critical PCL.



Legend

Upper Sample (LFM - 23, SS1A)

Lower Sample (LFM - 24, SS1B)

Result Indicators

COC Concentration Less than RAL and ESV

COC Concentration Greater than RAL or ESV

Native Soil From Trench Bottom

SS - Surface soil sample
LFM - Trench material sample
TP - Trench bottom sample
BGS - Below ground surface
COC - Chemical of concern
ESV - Ecological Screening value
RAL - Residential Assessment Level
(J) Estimated value
(M) Matrix effect present
(R) Rejected value (shown for reference only)

Notes:
1. All concentrations in milligrams per kilogram (mg/kg).
2. Bolded values exceed Tier 1 RALs detected in pre-removal surface soil and trench materials.
3. Underlined values exceed only ecological screening benchmark in trench 0.0 – 5.0 Feet.
4. Surface samples (SS) designated “A” collected from 0-0.5 feet (“A”) and 1.0-1.5 feet (“B”) BGS. Surface sample SB17 collected from 0-0.5 feet BGS.
5. Refer to Tables APX12-1 and 4D for all COCs analyzed and concentration data.

Source: Camp Stanley aerial imagery
This figure is for reference only and is not intended for survey or engineering purposes.

WESTON SOLUTIONS

Figure 10A
Pre-Removal Exploratory Sampling Map
March – April 2010

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
AUGUST, 2011	03886.529.005.0007.00	AS SHOWN

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11. SOIL CRITICAL PCL DEVELOPMENT

11.1 Tier 2 or 3 PCL Development and Non-Default Parameters

As described in Section 4 of this document, at the conclusion of the SWMU B-4 IRA the metals cadmium and mercury in confirmation samples from some locations exceeded CSSA background values or default residential Tier 1 PCLs for the $^{GW}Soil_{Ing}$ exposure pathway. Tier 2 residential $^{GW}Soil_{Ing}$ PCLs for a 30-acre source area were determined for these metals using a soil attenuation model (SAM) and site-specific inputs as provided in §350.73(e)(1)(A) and §350.73(e)(1)(C).

In consideration of the complex hydrogeology at CSSA, key groundwater parameter inputs for the SAM were developed using conservative assumptions. Specifically, input values for depth to water, saturated thickness, and groundwater velocity were selected based on an assumption of shallow perched water flow occurring within higher permeability marl units between limestone layers. Since groundwater was not observed during any of the trenching or borings during the 2010-2012 APA sampling activities the average boring investigation depth (approximately 22 feet) was utilized as a conservative assumed minimum depth to groundwater. An assumed saturated thickness of one foot was used as a conservative value based on the condition that at CSSA, perched water sometimes occurs in thin marl units within the upper Glen Rose limestone.

Site-specific input parameters and Tier 1 defaults used for calculation of the Tier 2 $^{GW}Soil_{Ing}$ PCLs are presented in Appendix 9.

11.2 Soil PCL Adjustments

No soil PCL adjustments are required or have been made based on residual saturation, cumulative risk, soil vapor calculations, or hazard index evaluations.

11.3 Soil Critical PCLs

Although the past and present land use at SWMU B-4 has been commercial/industrial, CSSA remediation goals for the site are residential (un-restricted use). Therefore, critical PCL development was based residential land use.

For surface soil, critical PCLs are based on background levels or the lower of the default Tier 1 $^{Tot}Soil_{Comb}$ PCL, the Tier 1 default or calculated Tier 2 site-specific $^{GW}Soil_{Ing}$ PCL (Class 1 and 2 groundwater resources), and ecological risk screening benchmark values. Development of ecological PCLs was not required because COC concentrations remaining in surface soil to a depth of 5 feet were within the range of background concentrations. Critical PCLs for subsurface soil are based on the lower value of the Tier 1 default or calculated Tier 2 site-specific $^{GW}Soil_{Ing}$ PCL, or the Tier 1 $^{Air}Soil_{Inh\text{-}V}$ PCL. For all media, the CSSA or Texas-Specific Background Concentration for metals was used as the critical PCL if the value was greater than the Tier 1 or 2 PCL or ecological risk screening benchmark.

Based on the total area of SWMU B-4 and disposal trench configuration, a source area of 30 acres was deemed appropriate and used as an initial basis for PCL development for all COCs and exposure pathways. The APA determined that residual concentrations of cadmium and mercury exceeded the Tier 1 $^{GW}Soil_{Ing}$ PCLs in subsurface soil at several locations within the limits of the excavated trenches and so Tier 2 PCLs were developed for those COCs.

At one location within the excavated floor of Trench Cb, mercury exceeded the Tier 1 $^{Air}Soil_{Inh\text{-}V}$ PCL for a 30-acre source area. The total affected area represented by the sample was estimated to be on the order of 550 square feet and so the Tier 1 PCL for a 0.5 acre source area was determined to be appropriate for exposure via the $^{Air}Soil_{Inh\text{-}V}$ pathway.

A summary of the critical PCL development for COCs is provided in Tables 11A-1 and 11A-2, respectively. No COCs were reported above any of the applicable human health critical PCL in post-IRA soil samples collected at SWMU B-4. Therefore, neither an affected property nor a PCLE zone exists at SWMU B-4.

The following table provides a soil critical PCL evaluation for exposure pathways for those COCs in the surface soil at SWMU B-4 which were not screened from PCL development in Section 10.

Table 11A. Surface Soil Critical PCLs

Date of the Tier 1 PCL tables used in the determination of PCLs: 31 March 2011

On-Site Surface Soil Critical PCLs

Land use for purpose of critical PCL development: ☒ Residential ☐ Commercial/industrial

COC	$^{Tot}Soil_{Comb}$ PCL			$^{GW}Soil^{1}$ PCL			Ecological PCL		MQL (mg/kg)	Back-ground[a] (mg/kg)	$^{SW}Soil^{2}$ (mg/kg)	$^{Sed}Soil^{2}$ (mg/kg)	Conc (mg/kg)		Remedy or NFA
	(mg/kg)	Tier	Source area size (acres)	(mg/kg)	Tier	Source area size (acres)	0-0.5 ft. (mg/kg)	0.5-5 ft. (mg/kg)					Max	Rep[3]	
Barium	7800	1	30	220	1	30	NA	NA	6.16	**300**[a]	N/A	N/A	116	N/A	NFA
Cadmium	52	1	30	0.75	1	30	NA	NA	0.616	**3.0**[b]	N/A	N/A	0.89	N/A	NFA
Copper	550	1	30	**520**	1	30	NA	NA	1.07	23.2[b]	N/A	N/A	15.8	N/A	NFA
Lead	500	1	30	1.5	1	30	NA	NA	1.07	**84.5**[b]	N/A	N/A	23.1	N/A	NFA
Mercury	2.1	1	30	0.0039	1	30	NA	NA	0.0937	**0.77**[b]	N/A	N/A	0.569	N/A	NFA
Nickel	830	1	30	**79**	1	30	NA	NA	0.621	35.5[b]	N/A	N/A	14.8	N/A	NFA
Zinc	9900	1	30	**1200**	1	30	NA	NA	0.616	73.2[b]	N/A	N/A	21.6	N/A	NFA

Notes:
a – Texas State Median Concentration.
b – Camp Stanley site-specific background concentration.
M – Sample matrix effect.
Critical PCL is bolded.

[1] $^{GW}Soil$ includes $^{GW}Soil_{Ing}$, $^{GW}Soil_{Class3}$, $^{Air}GW\text{-}Soil_{Inh\text{-}V}$, and $^{GW}Soil$ for secondary MCLs, as applicable.
[2] Refer to *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24) to determine if a PCL is required to be developed for this pathway.
[3] Provide justifications and calculations for use of representative concentrations in Appendix 8.

Off-Site Surface Soil Critical PCLs – Not Applicable, No Off-Site Affected Soil

Land use for purpose of critical PCL development:[1] X Residential ___ Commercial/industrial

COC	$^{Tot}Soil_{Comb}$ PCL			$^{GW}Soil^{1}$ PCL			Ecological PCL		MQL (mg/kg)	Back-ground (mg/kg)	$^{SW}Soil^{2}$ (mg/kg)	$^{Sed}Soil^{2}$ (mg/kg)	Conc (mg/kg)		Remedy or NFA
	(mg/kg)	Tier	Source area size (acres)	(mg/kg)	Tier	Source area size (acres)	0-0.5 ft. (mg/kg)	0.5-5 ft. (mg/kg)					Max	Rep[3]	
N/A															

Table 11B. Subsurface Soil Critical PCLs

Date of the Tier 1 PCL tables used in the determination of PCLs: 31 March 2011

On-Site Subsurface Soil Critical PCLs

Land use for purpose of critical PCL development: ☒ Residential ☐ Commercial/industrial

COC	$^{Air}Soil_{Inh\text{-}V}$ PCL			$^{GW}Soil^{2}$ PCL			MQL (mg/kg)	Background (mg/kg)	Max conc (mg/kg)	Remedy or NFA
	(mg/kg)	Tier	Source area size (acres)	(mg/kg)	Tier	Source area size (acres)				
Barium	N/A	N/A	N/A	220	1	30	0.521	**300**[a]	52.2	NFA
Cadmium	N/A	N/A	N/A	**296**	2	30	0.470	3.0[b]	4.78	NFA
Copper	N/A	N/A	N/A	**520**	1	30	51.2	23.2[b]	296	NFA
Lead	N/A	N/A	N/A	1.5	1	30	0.512	**84.5**[b]	15.7	NFA
Mercury	**4.6**	1	0.5	5.3	2	30	0.0181	0.77[b]	2.53	NFA
Nickel	N/A	N/A	N/A	**79**	1	30	0.596	35.5[b]	26.9	NFA
Zinc	N/A	N/A	N/A	**1200**	1	30	0.512	73.2[b]	133	NFA

a – Texas State Median Concentration.
b – Camp Stanley site-specific background concentration.
Critical PCL is bolded.

[1] Repeat the table if needed for different off-site land uses.
[2] $^{GW}Soil$ includes $^{GW}Soil_{Ing}$, $^{GW}Soil_{Class3}$, $^{Air}GW\text{-}Soil_{Inh\text{-}V}$, and $^{GW}Soil$ for secondary MCLs, as applicable.

Off-Site Subsurface Soil Critical PCLs – Not Applicable, No Off-Site Affected Soil

Land use for purpose of PCL development[1]: ☐ Residential ☐ Commercial/industrial

COC	$^{Air}Soil_{Inh\text{-}V}$ PCL			$^{GW}Soil^{1}$ PCL			MQL (mg/kg)	Background (mg/kg)	Max conc (mg/kg)	Remedy or NFA
	(mg/kg)	Tier	Source area size (acres)	(mg/kg)	Tier	Source area size (acres)				

[1] Repeat the table if needed for differing off-site land uses.

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APPENDICES

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APPENDIX 10

LABORATORY DATA PACKAGES AND DATA USABILITY SUMMARY

(Reference CD provided)

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APPENDIX 2

BORING LOGS

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70 NE Loop 410
Suite 600
San Antonio, Texas 78216
210-308-4300 / Fax: 210-308-4329

Boring/Well Log

BORING ID: **SWMUB4-SB-B5**
WELL ID:

PROJECT INFORMATION

PROJECT:	**B-4 Trench borings**
SITE LOCATION:	**Camp Stanley**
JOB NUMBER:	**03886.529.005.0005.00**
PROJECT MANAGER:	**Russ Cason**
LOGGED BY:	**Weston Lothringer**
DATE(S) DRILLED:	**4/27/11**

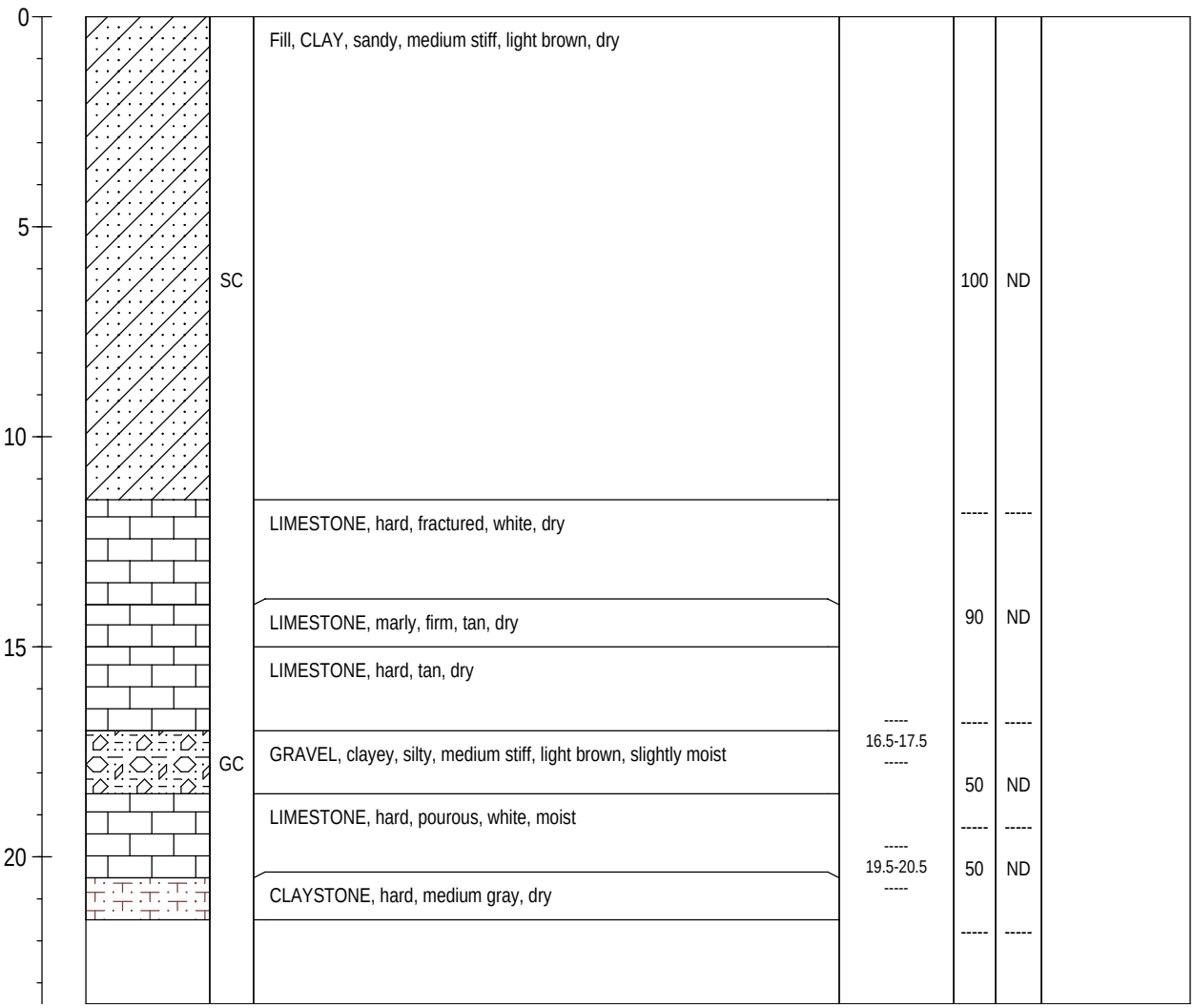
DRILLING INFORMATION

DRILLING COMPANY:	**Geoprojects**		
DRILLING METHOD:	**Hollow stem auger and core**		
BORING DEPTH:	**21.5 bgs**	WELL DEPTH:	**NA**
BORING DIAMETER:	**2 in.**	WELL DIAMETER:	**NA**

TOP OF CASING ELEV: NA	N. LATITUDE	W. LONGITUDE
GROUND ELEVATION:		

REMARKS:

WATER LEVEL: **ND**
PRODUCT LEVEL: **ND**



bgs - below ground surface, MSL - Mean Sea Level, btoc - below top of casing, ND - Not Detected, NA - Not Applicable, NR - No Recovery

These logs should not be used separately from original report

STATE OF TEXAS WELL REPORT for Tracking #263510

Owner:	**Camp Stanley Storage Activity**	Owner Well #:	**SB-B5**
Address:	**25800 Ralph Fair Road Boerne , TX 78015**	Grid #:	**68-20-4**
Well Location:	**25800 Ralph Fair Road Boerne , TX 78015**	Latitude:	**29° 42' 24" N**
Well County:	**Bexar**	Longitude:	**098° 36' 46" W**
Elevation:	**1242 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Environmental Soil Boring**

Drilling Date: Started: **4/27/2011**
Completed: **4/27/2011**

Diameter of Hole: Diameter: **8 in From Surface To 11.5 ft**
Diameter: **3.25 in From 11.5 ft To 21.5 ft**

Drilling Method: **Air Rotary Hollow Stem Auger**

Borehole Completion: **No Data**

Annular Seal Data: 1st Interval: **No Data**
2nd Interval: **No Data**
3rd Interval: **No Data**

Surface Completion: **No Data**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: The well **was** plugged within 48 hours.
Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
No casing left in well.
Plugged from 0-2' with 1-sack cement
Plugged from 2'-21.5' with 9-sacks bentonite

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company **Geoprojects International, Inc.**

Information:	**8834 Circle Drive Austin , TX 78736**
Driller License Number:	**2551**
Licensed Well Driller Signature:	**Jose Landeros**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #**263510**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-11.5 Weathered/fill
11.5 to 21.5 Limestone, Lower Glen Rose Formation

CASING, BLANK PIPE & WELL SCREEN DATA

No Data

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70 NE Loop 410
Suite 600
San Antonio, Texas 78216
210-308-4300 / Fax: 210-308-4329

Boring/Well Log

BORING ID: **SWMUB4-SB-Cb2**
WELL ID:

PROJECT INFORMATION

PROJECT:	**B-4 Trench borings**
SITE LOCATION:	**Camp Stanley**
JOB NUMBER:	**03886.529.005.0005.00**
PROJECT MANAGER:	**Russ Cason**
LOGGED BY:	**Weston Lothringer**
DATE(S) DRILLED:	**4/26/11**

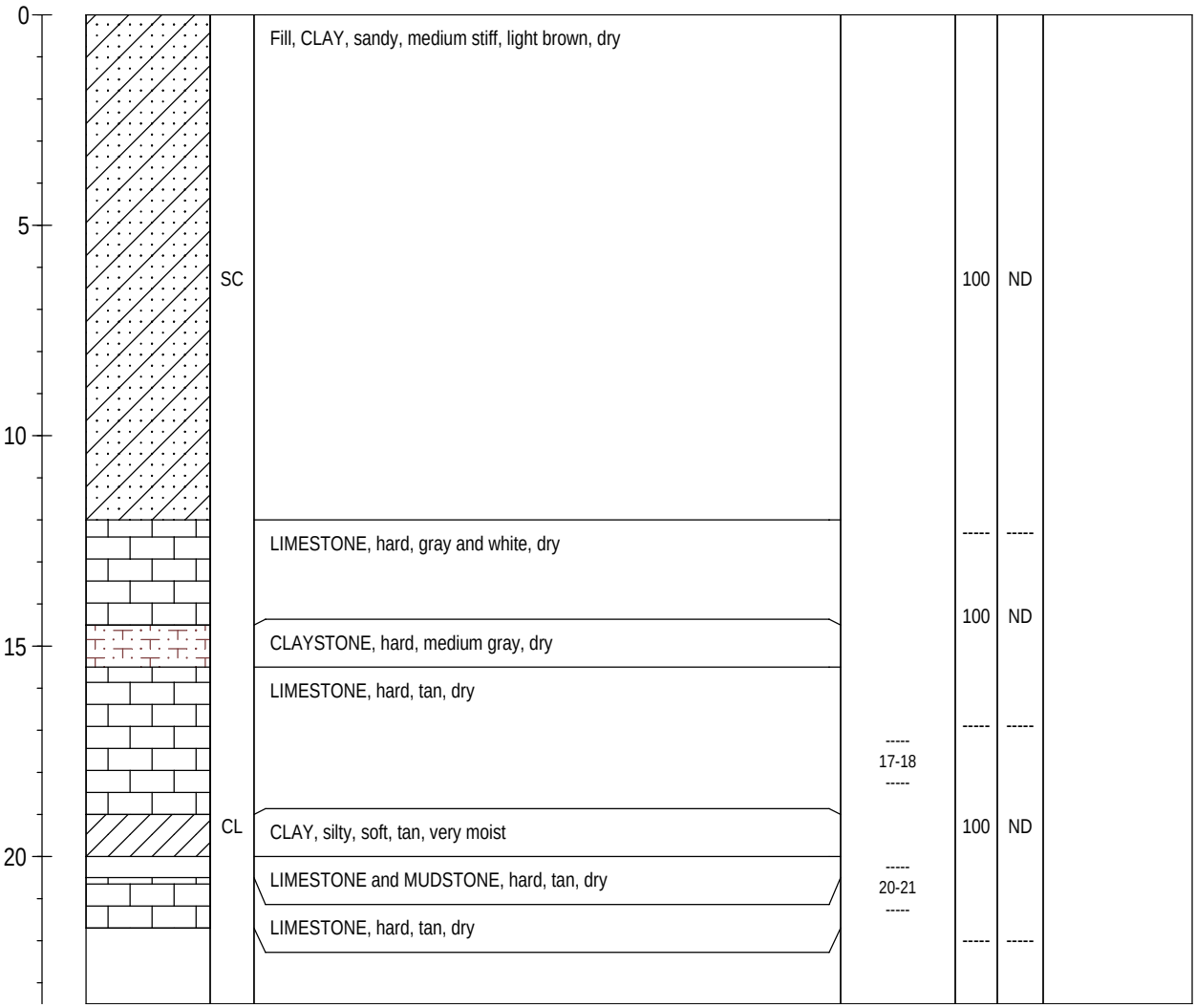
DRILLING INFORMATION

DRILLING COMPANY:	**Geoprojects**		
DRILLING METHOD:	**Hollow stem auger and core**		
BORING DEPTH:	**21.7 bgs**	WELL DEPTH:	**NA**
BORING DIAMETER:	**2 in.**	WELL DIAMETER:	**NA**

TOP OF CASING ELEV: NA	N. LATITUDE	W. LONGITUDE
GROUND ELEVATION:		

REMARKS:

WATER LEVEL: **ND**
PRODUCT LEVEL: **ND**



bgs - below ground surface, MSL - Mean Sea Level, btoc - below top of casing, ND - Not Detected, NA - Not Applicable, NR - No Recovery

These logs should not be used separately from original report

STATE OF TEXAS WELL REPORT for Tracking #263514

Owner:	**Camp Stanley Storage Activity**	Owner Well #:	**SB-Cb2**
Address:	**25800 Ralph Fair Road Boerne , TX 78015**	Grid #:	**68-20-4**
Well Location:	**25800 Ralph Fair Road Boerne , TX 78015**	Latitude:	**29° 42' 25" N**
Well County:	**Bexar**	Longitude:	**098° 36' 46" W**
Elevation:	**1252 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Environmental Soil Boring**

Drilling Date: Started: **4/26/2011**
Completed: **4/26/2011**

Diameter of Hole: Diameter: **8 in From Surface To 12 ft**
Diameter: **3.25 in From 12 ft To 22 ft**

Drilling Method: **Air Rotary Hollow Stem Auger**

Borehole Completion: **No Data**

Annular Seal Data: 1st Interval: **No Data**
2nd Interval: **No Data**
3rd Interval: **No Data**

Surface Completion: **No Data**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: The well **was** plugged within 48 hours.
Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
No casing left in well.
Plugged from 0-2' with 1-sack cement
Plugged from 2'-22' with 9-sacks bentonite

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company **Geoprojects International, Inc.**

Information:	**8834 Circle Drive Austin , TX 78736**
Driller License Number:	**2551**
Licensed Well Driller Signature:	**Jose Landeros**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #**263514**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-12 Weathered/fill
12 to 22 Limestone, Lower Glen Rose Formation

CASING, BLANK PIPE & WELL SCREEN DATA

No Data

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70 NE Loop 410
Suite 600
San Antonio, Texas 78216
210-308-4300 / Fax: 210-308-4329

Boring/Well Log

BORING ID: **SWMUB4-SB-D3**
WELL ID:

PROJECT INFORMATION

PROJECT:	**B-4 Trench borings**
SITE LOCATION:	**Camp Stanley**
JOB NUMBER:	**03886.529.005.0005.00**
PROJECT MANAGER:	**Russ Cason**
LOGGED BY:	**Weston Lothringer**
DATE(S) DRILLED:	**4/26/11**

DRILLING INFORMATION

DRILLING COMPANY:	**Geoprojects**		
DRILLING METHOD:	**Hollow stem auger and core**		
BORING DEPTH:	**21.8 bgs**	WELL DEPTH:	**NA**
BORING DIAMETER:	**2 in.**	WELL DIAMETER:	**NA**

TOP OF CASING ELEV: NA	N. LATITUDE	W. LONGITUDE
GROUND ELEVATION:		

REMARKS:

WATER LEVEL: **ND**
PRODUCT LEVEL: **ND**

DEPTH	LITHOLOGY	USCS	DESCRIPTION	SAMPLE ID	REC. %	OVM	WELL COMPLETION	INSTALLATION NOTES
0		SC	Fill, CLAY, sandy, medium stiff, light brown, dry		100	ND		
5								
10			LIMESTONE, hard, gray and tan, dry		-----	-----		
					75	ND		
15			LIMESTONE and MUDSTONE, tan, slightly moist	-----	-----	-----		
				17-18				
			LIMESTONE, hard, tan, dry	-----	30	ND		
20				-----				
			CLAYSTONE, hard, medium gray, dry	20-21				
				-----	-----	-----		

bgs - below ground surface, MSL - Mean Sea Level, btoc - below top of casing, ND - Not Detected, NA - Not Applicable, NR - No Recovery

These logs should not be used separately from original report

STATE OF TEXAS WELL REPORT for Tracking #263517

Owner:	**Camp Stanley Storage Activity**	Owner Well #:	**SB-D3**
Address:	**25800 Ralph Fair Road Boerne , TX 78015**	Grid #:	**68-20-4**
Well Location:	**25800 Ralph Fair Road Boerne , TX 78015**	Latitude:	**29° 42' 25" N**
Well County:	**Bexar**	Longitude:	**098° 36' 46" W**
Elevation:	**1254 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Environmental Soil Boring**

Drilling Date: Started: **4/26/2011**
Completed: **4/26/2011**

Diameter of Hole: Diameter: **8 in From Surface To 12 ft**
Diameter: **3.25 in From 12 ft To 26 ft**

Drilling Method: **Air Rotary Hollow Stem Auger**

Borehole Completion: **No Data**

Annular Seal Data: 1st Interval: **No Data**
2nd Interval: **No Data**
3rd Interval: **No Data**

Surface Completion: **No Data**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: The well **was** plugged within 48 hours.
Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
No casing left in well.
Plugged from 0-2' with 1-sack cement
Plugged from 2'-26' with 10-sacks bentonite

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company **Geoprojects International, Inc.**

Information:	**8834 Circle Drive Austin , TX 78736**
Driller License Number:	**2551**
Licensed Well Driller Signature:	**Jose Landeros**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking #**263517**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-12 Weathered/fill
12 to 26 Limestone, Lower Glen Rose Formation

CASING, BLANK PIPE & WELL SCREEN DATA

No Data

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70 NE Loop 410
Suite 600
San Antonio, Texas 78216
210-308-4300 / Fax: 210-308-4329

Boring/Well Log

BORING ID: **SWMUB4-SB-D5**
WELL ID:

PROJECT INFORMATION

PROJECT:	**B-4 Trench borings**
SITE LOCATION:	**Camp Stanley**
JOB NUMBER:	**03886.529.005.0005.00**
PROJECT MANAGER:	**Russ Cason**
LOGGED BY:	**Weston Lothringer**
DATE(S) DRILLED:	**4/26/11**

DRILLING INFORMATION

DRILLING COMPANY:	**Geoprojects**		
DRILLING METHOD:	**Hollow stem auger and core**		
BORING DEPTH:	**23 bgs**	WELL DEPTH:	**NA**
BORING DIAMETER:	**2 in.**	WELL DIAMETER:	**NA**

TOP OF CASING ELEV: NA	N. LATITUDE	W. LONGITUDE
GROUND ELEVATION:		

REMARKS:

WATER LEVEL: **ND**
PRODUCT LEVEL: **ND**

DEPTH	LITHOLOGY	USCS	DESCRIPTION	SAMPLE ID	REC. %	OVM	WELL COMPLETION	INSTALLATION NOTES
0		SC	Fill, CLAY, sandy, medium stiff, light brown, dry		100	ND		
5								
10								
15			LIMESTONE, hard, fractured, tan, dry		-----	-----		
					75	ND		
			LIMESTONE, marly, firm, tan, dry					
			LIMESTONE, hard, tan, dry	-----	-----	-----		
				18-19				

20			LIMESTONE and MUDSTONE, hard, tan, dry		30	ND		
			CLAYSTONE, hard, medium gray, dry	-----				
				21-22				
				-----	-----	-----		

bgs - below ground surface, MSL - Mean Sea Level, btoc - below top of casing, ND - Not Detected, NA - Not Applicable, NR - No Recovery

These logs should not be used separately from original report

STATE OF TEXAS WELL REPORT for Tracking #263519

Owner:	**Camp Stanley Storage Activity**	Owner Well #:	**SB-D5**
Address:	**25800 Ralph Fair Road Boerne , TX 78015**	Grid #:	**68-20-4**
Well Location:	**25800 Ralph Fair Road Boerne , TX 78015**	Latitude:	**29° 42' 26" N**
Well County:	**Bexar**	Longitude:	**098° 36' 46" W**
Elevation:	**1251 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Environmental Soil Boring**

Drilling Date: Started: **4/26/2011**
Completed: **4/26/2011**

Diameter of Hole: Diameter: **8 in From Surface To 18 ft**
Diameter: **3.25 in From 18 ft To 25 ft**

Drilling Method: **Air Rotary Hollow Stem Auger**

Borehole Completion: **No Data**

Annular Seal Data: 1st Interval: **No Data**
2nd Interval: **No Data**
3rd Interval: **No Data**

Surface Completion: **No Data**

Water Level: Static level: **No Data**
Artesian flow: **No Data**

Packers: **No Data**

Plugging Info: The well **was** plugged within 48 hours.
Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
No casing left in well.
Plugged from 0-2' with 1-sack cement
Plugged from 2'-25' with 10-sacks bentonite

Type Of Pump: **No Data**

Well Tests: **No Data**

Water Quality: Type of Water: **No Data**
Depth of Strata: **No Data**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company **Geoprojects International, Inc.**

Information:	**8834 Circle Drive Austin , TX 78736**
Driller License Number:	**2551**
Licensed Well Driller Signature:	**Jose Landeros**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**No Data**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking #**263519**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-18 Weathered/fill
18 to 25 Limestone, Lower Glen Rose Formation

CASING, BLANK PIPE & WELL SCREEN DATA

No Data

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APPENDIX 8

STATISTICS DATA TABLES AND CALCULATIONS

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

April 23, 2002

LTC Shirley, Commander
Camp Stanley Storage Activity (CSSA)
25800 Ralph Fair Road
Boerne, Texas 78015

Re: CSSA/Boerne, Texas
TNRCC Solid Waste Registration No. 69026
Evaluation of Background Metals Concentrations, dated February 2002

Dear LTC Shirley:

The Texas Natural Resource Commission (TNRCC) has completed the review of the above referenced report. Camp Stanley previously evaluated background for eight separate soil types and one rock type in 1994 and 1996. In 1999 Camp Stanley resampled certain locations where samples were analyzed by ITS laboratory. More recently Camp Stanley is considering combining the most recent reworked data from the eight separate soil types into one large group of soil data. During a meeting on January 10, 2002 representatives from Camp Stanley and Parsons Engineering, and representatives from the TNRCC decided that a TNRCC statistical expert would participate in the review of the report.

Based on the report, the pooling of the data from the different soil types into one data set appear to be statistically and geotechnically valid and that the statistical calculations are correct. There was concern during the meeting of an elevated lead sample and the TNRCC asked Camp Stanley to omit this sample and re-evaluate the background concentration for lead. The difference in the estimated concentration was not significant. Based on the information provided, the TNRCC approves the report.

Questions concerning this letter should be directed to me at (512) 239-2572. When responding by mail, please submit an original and one copy of all correspondence and reports to the Corrective Action Section at Mail Code MC-127 with an additional copy submitted to the TNRCC Region 13 Office in San Antonio. The TNRCC Solid Waste Registration Number should be referenced in all submittals.

Sincerely,

Kirk Coulter, Project Manager
Team III, Corrective Action Section
Remediation Division

KEC/kec

cc: Waste Program Manager, TNRCC Region 13, San Antonio

Table B.1
Background Metals Concentrations
Detected in All Soils
Camp Stanley Storage Activity, Texas

Sample ID	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
BKGR-SS1	21	73.3	0.62 (U)	18.3	7.9	56	0.04	28	34.4
BKGR-SS2	26	76.3	0.59 (U)	15.2	5.9	49	0.02 (U)	29	20.3
BKGR-SS3	20	69.4	0.60 (U)	16.3	8.4	48	0.05	26	21.8
BKGR-SS4	26 (U)	133	0.67	29.3	14.1	36	0.03 (U)	32	41.2
BKGR-SS5	20	33	0.60 (U)	4.8	5.8	50	0.03	22	15.8
BKGR-SS6	15.8	112	0.61 (U)	24.2	10.3	36	0.04	24	30.6
BKGR-SS7	12 (U)	40.9	0.61 (U)	8.7	4.2	49	0.04	25	12.6
BKGR-SS8	11 (U)	20.3	0.55 (U)	4.7	4	49	0.04	23.6	7.5
BKGR-SS9	25	65	0.59 (U)	13.4	17.2	92	0.03 (U)	24.3	90
BKGR-SS10	4.7	25.5	0.54 (U)	8.3	4.8	48	0.77	25	31
BKGR-SS11	3	100	3.8 (U)	7.1	15.84	28	0.02 (U)	23.71 (J)	41.80 (J)
BKGR-SS12	4.3	91	2.1	14	15.45	19	0.02 (U)	19.15 (J)	60.59 (J)
BKGR-SS13	4.4	25	3.6 (U)	7.1	9.68	7.5	0.02 (U)	16.53 (M)	31.90 (J)
BKGR-SS14	4.3	34	3.6 (U)	8.2	13.00	19	0.02 (U)	13.57 (J)	30.10 (J)
BKGR-SS15	5.66 (M)	39.72	0.12 (M)	10.9 (F)	9.32	16.14 (M)	0.02 (F)	7.42 (M)	11.42 (J)
BKGR-SS16	5.3	61	3	19	8.92	19	0.02 (U)	6.66 (M)	12.69 (J)
BKGR-SS17	4.0	77	4.2 (U)	11	11.42 (J)	16	0.02 (U)	15.08 (M)	33.72 (J)
BKGR-SS18	4.6	100	2.6	17	12.36 (J)	15	0.02 (U)	13.74 (J)	31.00 (J)
BKGR-SS19	4.6 (U)	19	3.6 (U)	2.6	4.37 (J)	5.3	0.02 (U)	4.99 (J)	11.41 (J)
BKGR-SS20	5.0 (U)	65	3.8 (U)	5.7	9.26 (J)	9.8	0.02 (U)	12.92 (M)	26.18 (J)
BKGR-SS21	4.8 (U)	22	3.6 (U)	2.5	8.43 (J)	8.9	0.02 (U)	9.34 (J)	19.56 (J)
BKGR-SS22	2.7	62	3.8 (U)	5.6	6.07	10	0.02 (U)	4.97 (J)	9.23 (J)
BKGR-SS23	5.2 (U)	36	3.6 (U)	4.1	11.52 (J)	5.5	0.02 (U)	13.18 (J)	29.66 (J)
BKGR-SS24	4.8 (U)	91	4.0 (U)	6.9	5.59	13	0.02 (U)	4.95 (J)	9.10 (J)
BKGR-SS25	5.4 (U)	78	3.8 (U)	5.4	14.18	6.4	0.02 (U)	10.50 (J)	31.12 (J)
BKGR-SS26	2.6	37	3.8 (U)	6.1	6.37 (J)	13	0.02 (U)	5.44 (J)	14.00 (J)
BKGR-SS27	4.8 (U)	28	3.6 (U)	4.3	10.17	6	0.02 (U)	10.22 (J)	25.69 (J)
BKGR-SS28	4.6 (U)	12	3.4 (U)	3.3	6.55	6.9	0.02 (U)	9.04 (J)	17.68 (J)
BKGR-SS29	4.4 (U)	13	3.4 (U)	2.4	11.30	5.3	0.02 (U)	12.21 (J)	23.26 (J)
BKGR-SS30	4.4 (U)	18	3.4 (U)	2.9	3.13	7.3	0.02 (U)	3.16 (J)	7.28 (J)
BKGR-SS31	5.2 (U)	43	3.8 (U)	8.6	10.07 (J)	7.9	0.02 (U)	11.79 (J)	21.63 (J)
BKGR-SS32	5.0 (U)	41	3.8 (U)	6.5	4.46	12	0.02 (U)	4.67 (J)	8.26 (J)
BKGR-SS33	5.0 (U)	45	3.8 (U)	3.9	4.74	7.4	0.02 (U)	6.39 (M)	8.19 (J)
BKGR-SS34	4.8 (U)	20	3.6 (U)	2.4	13.91	5.5	0.02 (U)	18.03 (M)	35.55 (J)
BKGR-SS35	5.0 (U)	39	3.8 (U)	3.6	6.85	8.7	0.02 (U)	11.33 (M)	21.48 (J)
BKGR-SS36	5.38 (M)	26.93	0.18 (M)	4.6 (F)	6.07	13.55 (M)	0.01 (U)	4.47 (J)	11.99 (J)
BKGR-SS37	11.63 (M)	101.32	0.26 (M)	22.9	14.84	43.27 (M)	0.04 (F)	21.38 (J)	46.07 (J)
BKGR-SS38	7.00 (M)	78.47	0.25 (M)	20.4	11.46	51.91 (M)	0.03 (F)	11.33 (J)	34.04 (J)
BKGR-SS40	6.95 (M)	95.96 (J)	0.21 (M)	23.9	14.48 (J)	21.75 (M)	0.06 (F)	15.76 (J)	35.12 (J)
BKGR-SS41	9.96 (M)	91.58	0.42 (M)	24.6	13.72	23.46 (M)	0.04 (F)	19.54 (J)	52.50 (J)
BKGR-SS42	3.79 (M)	15.44	0.15 (M)	4.4 (F)	2.91	16.92 (M)	0.02 (F)	3.74 (J)	11.47 (J)
BKGR-SS43	4.98 (M)	19.52	0.11 (M)	7.0 (F)	3.77 (J)	8.62 (M)	0.03 (F)	5.02 (J)	10.25 (J)
BKGR-SS44	5.39 (M)	33.69	0.16 (M)	9.3 (F)	5.13	12.07 (M)	0.01 (U)	7.42 (J)	45.69 (J)
BKGR-SS45	11.17 (M)	82.27	0.42 (J)	22.2	13.35	24.82 (J)	0.06 (F)	17.87 (J)	49.65 (J)
BKGR-SS46	7.13 (J)	73.17	0.20 (J)	14.3 (F)	7.24	10.50 (J)	0.01 (U)	10.55 (J)	22.27 (J)
BKGR-SS47	4.36 (M)	25.75	0.11	5.4 (F)	4.51	23.68 (J)	0.01 (U)	4.09 (J)	11.57 (J)
BKGR-SS48	9.89 (M)	98.71	0.46	23.5	14.96	98.03 (J)	0.01 (U)	15.91 (J)	43.85 (J)
BKGR-SS49	6.20 (M)	55.98	0.23	14.6 (F)	10.07	28.09 (J)	0.01 (U)	10.64 (J)	20.02 (J)
BKGR-SS50	5.38 (M)	21.14	0.14	6.4 (F)	5.32	12.20 (J)	0.01 (U)	5.34 (J)	9.63 (J)
BKGR-SS51	5.74 (M)	42.55	0.15	12.4 (F)	26.96	23.46 (J)	0.01 (U)	7.85 (J)	19.43 (J)
BKGR-SS52	12.56 (M)	91.87	0.27	15.8 (F)	15.66	60.55 (J)	0.13	14.97 (J)	31.35 (J)
BKGR-SS53	4.71 (M)	35.01	0.29	7.7 (F)	6.53	31.85 (J)	0.02 (F)	5.41 (J)	18.59 (J)
BKGR-SS54	2.64 (M)	77.28 (M)	0.27 (M)	8.4 (F)	7.61 (J)	17.86 (M)	0.02 (F)	8.16 (J)	26.78 (J)
BKGR-SS55	5.35 (M)	80.46 (M)	0.23 (M)	7.3 (F)	4.48	11.38 (M)	0.01 (U)	8.87 (J)	12.91 (J)
BKGR-SS56	6.18 (M)	67.29 (M)	0.17 (M)	8.8 (F)	5.42	11.55 (M)	0.01 (U)	8.24 (J)	16.64 (J)
BKGR-SS57	7.14 (M)	117.55 (M)	0.31 (M)	24.9	19.43	212.59 (M)	0.20	17.45 (J)	98.57 (J)
BKGR-SS58	5.05 (M)	74.17 (M)	0.19 (M)	15.2 (F)	12.83	20.99 (M)	0.01 (U)	11.90 (J)	29.84 (J)
BKGR-SS59	6.60 (M)	76.89 (M)	0.23 (M)	20.5	11.44	13.87 (M)	0.01 (U)	15.29 (J)	29.23 (J)
BKGR-SS61	6.84 (M)	105.38 (M)	0.21 (M)	26.0	14.56 (J)	21.18 (M)	0.04 (F)	19.42 (J)	40.48 (J)
BKGR-SS62	6.88 (M)	269.67 (M)	0.18 (M)	17.1 (F)	10.14 (J)	23.79 (M)	0.05 (F)	24.98 (J)	22.10 (J)
BKGR-SS63	7.15 (M)	60.05	0.17 (M)	15.3 (F)	9.78	23.21 (M)	0.04 (F)	9.27 (M)	17.02 (M)

Sample ID	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
BKGR-SS64	5.89 (M)	54.53	0.17 (M)	12.4 (F)	8.22	29.28 (M)	0.04 (F)	7.45 (M)	20.66 (M)
BKGR-SS65	6.84 (M)	51.35	0.15 (M)	11.6 (F)	13.44	15.48 (M)	0.03 (F)	7.37 (M)	17.38 (M)
BKGR-SS66	4.31 (M)	82.38	0.19 (M)	16.6 (F)	10.38	19.04 (M)	0.02 (F)	8.45 (M)	25.61 (M)
BKGR-SS67	2.12 (M)	33.72	0.10 (M)	5.5 (M)	4.41	16.77 (M)	0.03 (F)	3.24 (M)	7.02 (M)
BKGR-SS68	3.80 (M)	85.77	0.18 (M)	19.3 (F)	9.45	21.79 (M)	0.02 (F)	9.17 (M)	22.15 (M)
BKGR-SS69	3.87 (M)	122.37	0.20 (M)	27.7	14.71	43.85 (M)	0.04 (F)	14.65 (M)	31.25 (M)
BKGR-SS70	3.20 (M)	26.99	0.13 (M)	6.4 (F)	6.53	13.36 (M)	0.03 (F)	4.39 (M)	11.08 (M)
BKGR-SS71	10.04 (M)	92.51	0.20 (M)	29.0	16.59	30.16 (M)	0.04 (F)	17.31 (M)	32.03 (M)
BKGR-SS72	6.26 (M)	30.47	0.16 (J)	9.7 (F)	6.49	11.45 (M)	0.03 (F)	8.03 (J)	19.91 (J)
BKGR-SS73	9.88 (M)	56.23	0.19 (J)	13.9 (F)	8.67	41.19 (M)	0.04 (F)	8.46 (J)	26.59 (J)
BKGR-SS74	7.80 (M)	122.05	0.25	34.1	17.83	24.87 (M)	0.59	22.65 (J)	43.05 (J)
BKGR-SS75	7.08 (M)	55.91	0.22 (J)	15.1 (F)	7.37	45.79 (M)	0.08 (F)	7.88 (J)	63.77 (J)
BKGR-SS76	9.53 (M)	146.38	0.22 (J)	34.7	16.18	20.04 (M)	0.04 (F)	21.86 (J)	37.66 (J)
BKGR-SS77	11.12 (M)	70.28	0.23 (J)	17.4 (F)	15.40	14.08 (M)	0.12	12.58 (J)	33.73 (J)
BKGR-SS78	7.47 (M)	37.32	0.28 (J)	6.7 (F)	5.87	14.38 (M)	0.33	6.88 (J)	15.36 (J)
BKGR-SS79	5.73 (M)	18.62	0.11 (J)	5.4 (F)	6.00	16.08 (M)	0.03 (F)	4.27 (J)	10.13 (J)
BKGR-SS80	4.88 (M)	84.33	0.23 (J)	17.6 (F)	16.70	23.38 (M)	0.05 (F)	11.71 (J)	37.14 (J)
Percentage of Nondetects	23	0	38	0	0	0	50	0	0
Procedure (described below)	Procedure 2	Procedure 1	Procedure 3	Procedure 1	Procedure 1	Procedure 1	Procedure 3	Procedure 1	Procedure 1
Procedure 3 Non-Parametric Upper Tolerance Limit	19.6	186	3.0	40.2	23.2	84.5	0.77	35.5	73.2

Revision 2 Note: Sample results previously provided by ITS Laboratory have been replaced.

Definition of qualifiers:

U The analyte was analyzed for but not detected. The numerical value reported here for statistical purposes is the SQL. Numerical values reported by the laboratory for non-detect results are listed in Appendix A.

J The analyte was positively identified; the quantitation is an estimation.

F The analyte was positively identified but the associated numerical value is below the SQL.

M A matrix effect was present.

Rejected values ("R" qualifier) are ignored for all evaluations and calculations in all steps.

The data are evaluated to determine the percentage of non-detect values ("U" qualifier) and SQL values present.

All non-detects and detects below the SQL have been replaced with the SQL for the purposes of these statistical calculations.

The statistical procedures are as follows:

Procedure 1: If less than 15% of all samples are SQL values, a parametric tolerance limit is used.

Procedure 2: If the percent of the SQL values is between 15% and 50%, Cohen's or Aitchison's adjustment is made to the sample mean and the standard deviation in order to continue with a parametric tolerance limit.

Procedure 3: If the percent of SQL values is greater than 50%, or the data are non normally or non lognormally distributed, a nonparametric tolerance limit is used. The nonparametric TL is the largest detected value observed.

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APPENDIX 9

DEVELOPMENT OF NON-DEFAULT RBELS AND PCLS

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APPENDIX 9

TIER 2 PROTECTIVE CONCENTRATION LEVEL DEVELOPMENT SWMU B-4 AFFECTED PROPERTY ASSESSMENT CAMP STANLEY STORAGE ACTIVITY BOERNE, TEXAS

A Tier 2 soil-to-groundwater ($^{GW}Soil_{ing}$) residential protective concentration level (PCL) was developed to evaluate potential risks to human health and the environment from chemical of concern (COC) concentrations (mercury and cadmium exceeding Tier 1 soil-to-groundwater PCLs in soil at SWMU B-4. The Tier 2 residential PCLs were developed utilizing the Texas Commission on Environmental Quality (TCEQ) Soil Attenuation Model (SAM) utilizing Texas Risk Reduction Program (TRRP) Tier 2 PCL equations.

Area Hydrogeology

The Final Hydrogeologic Conceptual Site Model (HCSM) for Camp Stanley Storage Activity, dated January 2006, describes the principal water bearing strata at Camp Stanley to include the Upper Trinity and Middle Trinity Aquifers, associated with the Upper and Lower limestone members of the Glen Rose Formation, respectively. Of the two strata, the Middle Trinity Aquifer is the more prolific groundwater producing body and is utilized at Camp Stanley (CSSA) and the area surrounding the post as a drinking water source. The Middle Trinity Aquifer at (CSSA) is recharged from direct precipitation to the outcrop and from stream flow infiltration. Middle Trinity groundwater elevations observed during a post-wide monitoring event conducted in March 2006 ranged from 907.59 feet above mean sea level (msl) to 1,049.49 feet above msl with an averaged general gradient of 0.0084 ft/ft to the south-southwest. The average post-wide gradient reported in the 2009 Annual Groundwater Monitoring report is 0.0046 ft/ft to the south-southeast (Parsons, 2010).

The Upper Glen Rose (UGR) formation overlies the Lower Glen Rose (LGR)at the majority of CSSA at a thickness estimated to range from 20 to 150 feet. The HCSM states that "movement of groundwater in the [Upper Glen Rose formation] Upper Trinity aquifer is restricted to lateral flow along bedding planes between marl and limestone, where solution has enhanced permeability…. Static water levels in adjacent wells completed in different beds are often different, demonstrating the possibility that beds are not hydraulically connected by avenues of vertical permeability….[In the CSSA area], upper Trinity water is generally of poor quality and most wells achieve only low production." Geologic structural features of the area including CSSA are dominated by faults associated with the Balcones Fault Zone (BFZ) escarpment. The presence and movement of groundwater at CSSA is significantly influenced by faulting and related fractures and karst development occurring throughout the region (Parsons, 2006).

SWMU B-4 is located in areas with a transition of surface outcroppings through the bottom intervals of the UGR to the upper most interval LGR formation. SWMU B-4 is situated at an average elevation of approximately 1,239 feet msl. Average LGR (Middle Trinity) aquifer elevations for the post vary from 60 to over 200 feet bgs beneath SWMU B-4. At CSSA, perched groundwater may accumulate at some locations in the Upper Trinity formation after significant precipitation events.

Determination of Site-Specific Tier 2 $^{GW}Soil_{ing}$ Residential PCL for Cadmium and Mercury

TRRP Tier 2 PCL SAM equations, provided in §350.73(e)(1)(A) and §350.73(e)(1)(C), have been utilized to determine a site-specific value protective of groundwater. Key groundwater parameter inputs for the SAM were developed utilizing conservative assumptions. Specifically, input values for depth to water, saturated thickness, and groundwater velocity were selected based on an assumption that perched water may occur in thin marl units within bedrock just below the maximum depth of investigation during the APA (approximately 22 feet). As a conservative estimate, the source area (extent of affected media in SWMU B-4 trenches was assumed to be 380 feet which is representative of the maximum extent of affected debris in any of the trenches and that groundwater flow in a perched zone beneath the source area would be perpendicular to the width of the source area. Site-specific input parameters and Tier 1 defaults used for calculation of the Tier 2 PCLs are listed in the following tables. Output sheets generated by the SAM are included as appended material.

Summary of Soil Attenuation Model Parameters and Inputs
Calculation of a Site-Specific Tier 2 $^{GW}Soil_{Ing}$ PCLs
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Parameter	Input Value	Source
Land use	Residential	CSSA Cleanup Objectives
Groundwater Classification	Category 1	Verified Use of groundwater at CSSA
^{GW}PCL - Groundwater PCL for ingestion	Cadmium – 0.005 mg/L Mercury – 0.002 mg/L	TRRP Residential Protective Concentration Level (May 2011) and EPA Maximum Contaminant Level
L_1 - Thickness of Affected Soil	488 cm	Maximum thickness of affected media in SWMU B-4 trenches prior to removal
P - Mean Annual Precipitation	94.89 cm/yr	CSSA Hydrogeologic Conceptual Site Model (HCSM)
Vadose Zone Soil Type	Clay	Observations of trench media during investigations.
W_s - Lateral Width of Affected Zone	116 meters	Estimated maximum extent of affected media in trenches.
U_{gw} - Groundwater Darcy Velocity	4.385 cm/year	Calculated from assumed gradient of 0.005 ft/ft and a hydraulic conductivity of 8.77E+02 centimeters/year for silty clay loam soils
b_{gw} – Aquifer Thickness	0.3 meters	Assumed thickness for a shallow perched water zone.
Source Area Size	30-Acre	Default, site exceeds 0.5 acres
pH	8.56	Site-specific SWMU B-4 soils average for pH (see following data table)
L_2 - Depth from top of affected soil to groundwater table	671 cm	Conservative assumption for depth to shallow perched water based on maximum depth investigated (22 feet). Groundwater was not encountered in trenches or in soil borings during the affected property assessment.

Summary of Soil Attenuation Model Parameters and Inputs Calculation of a Site-Specific Tier 2 $^{GW}Soil_{Ing}$ PCLs SWMU B-4 Affected Property Assessment Camp Stanley Storage Activity Boerne, Texas		
Parameter	**Input Value**	**Source**
ρ_b – Soil Bulk Density (g-soil/cm^3-soil	1.67	Tier 1 Default
θ_{ws} – Volumetric Water Content of Soil (cm^3-water/cm^3-soil)	0.16	Tier 1 Default
θ_{as} – Volumetric Air Content of Soil (cm^3-air/cm^3-soil)	0.21	Tier 1 Default
Lateral Dilution Factor	10.0	Tier 1 Default for 30 acre site
f_{oc} – Fraction of Organic Carbon in Soil (g-carbon/g-soil)	~	FOC value not required for metals Kd evaluation.
K_d – Soil Water Partitioning Coefficient (cm3-water/g-soil)	Varies by COC	Tier 1 Default

SWMU B-4 Soil Geochemical/Geotechnical Data Summary

Sample ID/Type	Sample Date/Reference	pH (Standard Units)
SWMUB4-Ca1-SE1/Subsurface Soil	1/06/2011	8.14
SWMUB4-Ca1-F1/Subsurface Soil	1/06/2011	8.23
SWMUB4-B1-F1/Subsurface Soil	1/24/2011	9.07
SWMUB4-B5-F2/Subsurface Soil	2/01/2011	9.31
SWMU B-4 Surface Soil – Tarrant Undulating Series	CSSA Soil Background Metals Study (Parsons, 2002)	8.08
SWMU B-4 Soil Average pH		**8.56**

pH analysis by EPA Method SW 9045

SAM calculation sheets are included in Appendix 9.

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Surface and Subsurface Soil - ^{GW}Soil

Tier 2 Evaluation – SWMU B-4 30 acre site

Specify media to which tables apply X Surface soil X Subsurface soil

Specify if table is for on-site or off-site property X On-site ____ Off-site
Off-site land use(s) for purpose of PCL development[1]: X Residential ____ Commercial/industrial

	Soil bulk density ρ_b (g/cm^3)	Volumetric water content θ_{ws} (cm^3/cm^3)	Volumetric air content θ_{as} (cm^3/cm^3)	Fraction organic carbon foc (g/g)	Groundwater Darcy velocity U_{gw} (cm/year)	Aquifer thickness b_{gw} (m)	Ground-water gradient i (m/m)	Hydraulic conductivity K (m/day)	Average annual precipitation P (cm/yr)	Net infiltration rate I_f (cm/yr)	Saturated hydraulic conductivity of vadose zone soils K_{vs} (cm/s)
Tier 1 defaults	1.67	0.16	0.21	0.002	NA	NA	NA	NA	NA	NA	NA
Tier 2 values	1.67	0.16	0.21	N/A	4.385	0.30	0.005	2.4E-02	94.89	1.62	2.8E-05

COC	Critical GW PCL (from Table 12A)		Affected soil thickness L_1 (cm)	Depth from top of affected soil to gw table L_2 (cm)	Source area width parallel to gw flow W_s (m)	GW mixing zone thickness δ_{gw} (m)	Soil-leachate partition factor K_{sw} (mg/L/mg/kg)	Lateral dilution factor LDF	^{GW}Soil PCL (mg/kg)
	(mg/L)	pathway[2]							
Cadmium	0.005	$^{GW}GW_{Ing}$	488	671	116	12.58	0.0002	10.0	296
Mercury	0.002	$^{GW}GW_{Ing}$	488	671	116	12.58	0.0050	10.0	5.5

Note: SWMU B-4 site-specific soils average pH = 8.56 standard units.

[1] Repeat the table if needed for different off-site land uses.
[2] Specify the pathway for the critical groundwater PCL ($^{GW}GW_{Ing}$, $^{GW}GW_{Class3}$, $^{Air}GW_{Inh\text{-}V}$, ecological PCL (eco), ^{SW}GW, etc.)

SOIL ATTENUATION MODEL RESULTS
RESIDENTIAL TIER 2 $^{GW}SOIL_{ING}$ PCL DEVELOPMENT FOR CADMIUM
SWMU B-4 AFFECTED PROPERTY ASSESSMENT
CAMP STANLEY STORAGE ACTIVITY, TEXAS

INPUT PARAMETERS

Parameter	Definition	Value	Notes
--	Land use	1	Residental
--	Groundwater Classification	1	GW_Ing
^{GW}PCL	Constituent's Groundwater Protective Concentration Limit (mg/L	0.005	Cadmium
L_1	Thickness of affected soil (cm)	488	
P	Mean annual precipitation (cm/yr)	94.89	
--	Vadose zone soil type	3	Clay
W_s	Lateral width of affected vadose zone in direction of groundwater (m)	116.00	
U_{gw}	Groundwater Darcy velocity (cm/yr)	4.385	
b_{gw}	Aquifer thicknes (m)	0.30	
--	Source area	2	30 acre
--	COC type	Metal	
pH	pH of vadose zone soils (SU)	8.6	

TIERED MODEL PARAMETERS

Parameter	Definition	Value	Notes
L_2	Depth from top of affected soil to groundwater table (cm)	671.00	
ρ_b	Soil bulk density (g-soil/cm3-soil)	1.67	
θ_{ws}	Volumetric water content of vadose zone soils (cm^3-water/cm^3-soil)	0.16	
θ_{as}	Volumetric air content of vadose zone soils (cm^3-air/cm^3-soil)	0.21	
LDF	Lateral Dilution Factor	10.000	
foc	Fraction of organic carbon in soil (g-carbon/g-soil)	0.002	
Kd	Soil-water partition coefficient (cm3-water/g-soil)	4300.000	

CALCULATED PARAMETERS

Parameter	Definition	Value	Notes
I_f	Net infiltration rate of water through soil (cm/yr)	1.62	
α_v	Vertical groundwater dispersivity (m)	0.650	
δ_{gw}	Groundwater mixing zone thickness (m)	12.58	
H'	Dimensionless Henry's Law Constant (cm^3-water/cm^3-air)	0	
K_{SW}	Soil-Leachate partition factor for COC (mg/L-water/kg-soil)	0.0002	
Bw	Bulk water partioning coefficient (unitless)	7181.160	

MODEL RESULTS

Parameter	Definition	Value	Notes
BDF	Tier 3 Biodecay Factor (dimensionless)	0.0000	☐ USE -- Tier 3 Only
TAF	Tier 3 Time Averaging Factor - Carcinogens Only (dimensionless)	1.0000	☐ USE -- Tier 3 Only
^{GW}SOIL	Concentration of constituent in soil protective of groundwater (mg/k	295.632	

Note: grey shaded cells NOT used in Tier 2 PCL calculation

SOIL ATTENUATION MODEL RESULTS
RESIDENTIAL TIER 2 $^{GW}SOIL_{ING}$ PCL DEVELOPMENT FOR MERCURY
SWMU B-4 AFFECTED PROPERTY ASSESSMENT
CAMP STANLEY STORAGE ACTIVITY, TEXAS

INPUT PARAMETERS

Parameter	Definition	Value	Notes
--	Land use	1	Residental
--	Groundwater Classification	1	GW_Ing
^{GW}PCL	Constituent's Groundwater Protective Concentration Limit (mg/L)	0.002	Mercury (pH = 4.9)
L_1	Thickness of affected soil (cm)	488	
P	Mean annual precipitation (cm/yr)	94.89	
--	Vadose zone soil type	3	Clay
W_s	Lateral width of affected vadose zone in direction of groundwater (m)	116.00	
U_{gw}	Groundwater Darcy velocity (cm/yr)	4.385	
b_{gw}	Aquifer thicknes (m)	0.30	
--	Source area	2	30 acre
--	COC type	Metal	
pH	pH of vadose zone soils (SU)	8.56	

TIERED MODEL PARAMETERS

Parameter	Definition	Value	Notes
L_2	Depth from top of affected soil to groundwater table (cm)	670.56	
ρ_b	Soil bulk density (g-soil/cm3-soil)	1.67	
θ_{ws}	Volumetric water content of vadose zone soils (cm^3-water/cm^3-soil)	0.16	
θ_{as}	Volumetric air content of vadose zone soils (cm^3-air/cm^3-soil)	0.21	
LDF	Lateral Dilution Factor	10.000	
foc	Fraction of organic carbon in soil (g-carbon/g-soil)	0.002	
Kd	Soil-water partition coefficient (cm3-water/g-soil)	200.000	

CALCULATED PARAMETERS

Parameter	Definition	Value	Notes
I_f	Net infiltration rate of water through soil (cm/yr)	1.62	
α_v	Vertical groundwater dispersivity (m)	0.650	
δ_{gw}	Groundwater mixing zone thickness (m)	12.58	
H'	Dimensionless Henry's Law Constant (cm^3-water/cm^3-air)	0.473898	
K_{SW}	Soil-Leachate partition factor for COC (mg/L-water/kg-soil)	0.0050	
Bw	Bulk water partioning coefficient (unitless)	334.260	

MODEL RESULTS

Parameter	Definition	Value	Notes
BDF	Tier 3 Biodecay Factor (dimensionless)	0.0000	☐ USE -- Tier 3 Only
TAF	Tier 3 Time Averaging Factor - Carcinogens Only (dimensionless)	0.9999	☐ USE -- Tier 3 Only
$^{GW}SOIL$	Concentration of constituent in soil protective of groundwater (mg/kg)	5.501	

Note: grey shaded cells NOT used in Tier 2 PCL calculation

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APPENDIX 10

LABORATORY DATA PACKAGES AND DATA USABILITY SUMMARY

(Reference CD provided)

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APPENDIX 11

MICELLANEOUS ASSESSMENT

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APPENDIX 11-A

1995 and 2000 Remedial Investigation Data – SWMU B-4

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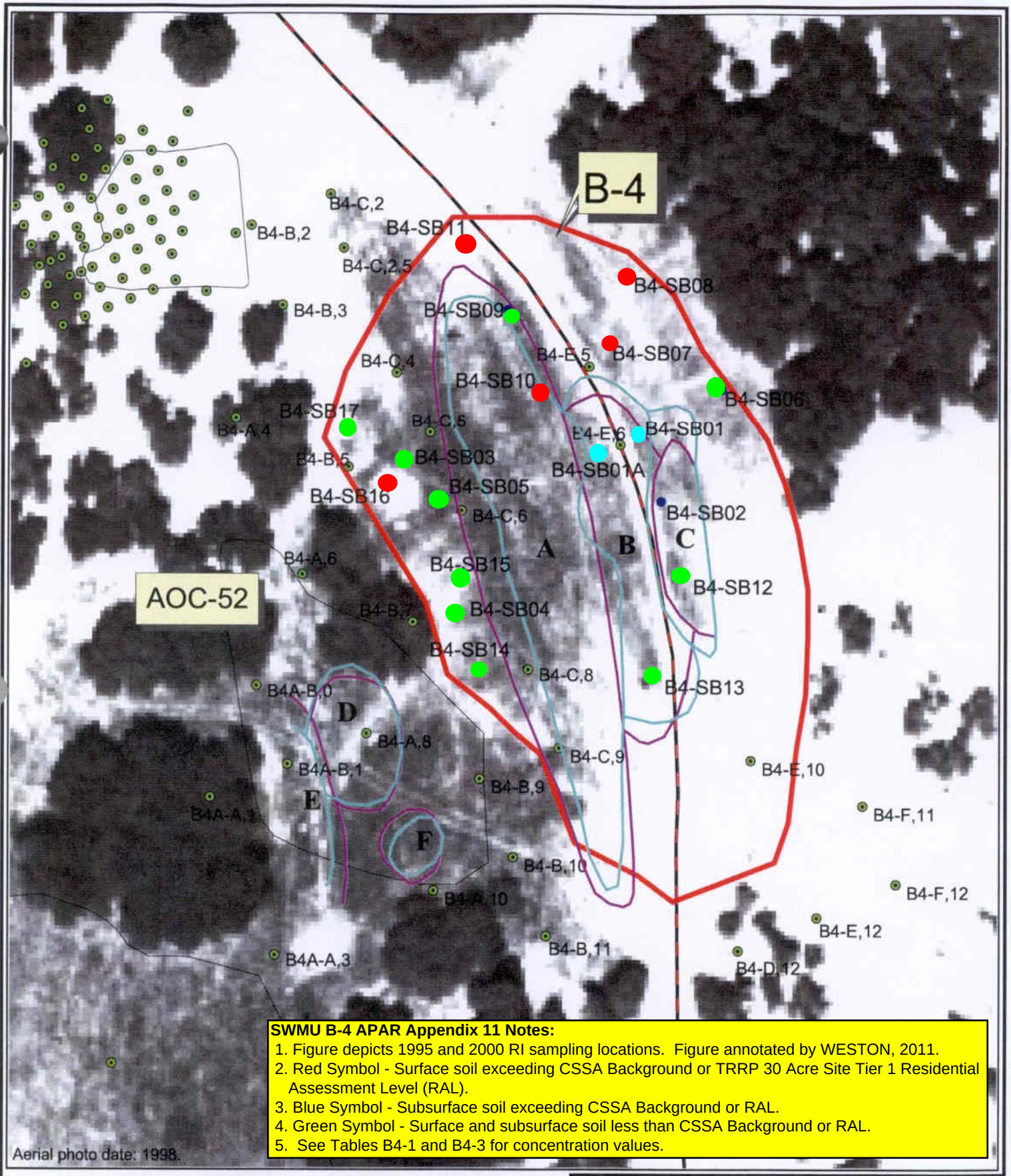

SWMU B-4 APAR Appendix 11 Notes:

1. Figure depicts 1995 and 2000 RI sampling locations. Figure annotated by WESTON, 2011.
2. Red Symbol - Surface soil exceeding CSSA Background or TRRP 30 Acre Site Tier 1 Residential Assessment Level (RAL).
3. Blue Symbol - Subsurface soil exceeding CSSA Background or RAL.
4. Green Symbol - Surface and subsurface soil less than CSSA Background or RAL.
5. See Tables B4-1 and B4-3 for concentration values.

Aerial photo date: 1998.

N

75 0 75 Feet

Due to different margins of error associated with the various methods utilized for data point collection, all sample locations are approximate. For more information see the 2001 amendment to the Field Sampling Plan, Vol. 1-4 of the Environmental Encyclopedia.

- Soil Gas Survey Location
- Soil Boring / Surface Sample Location
- Water Well Locations
- Creeks (Dashed where intermittent)
- Roads
- EM Conductivity Anomaly
- EM In-Phase Anomaly

Figure B4-4

Sample Location Map

Camp Stanley Storage Activity

PARSONS ENGINEERING SCIENCE, INC.

Table B4-1 Chemical Constituents Detected in Soil at SWMU B-4, March 1995
Camp Stanley Storage Activity, Texas

Constituent	Lab MDL	Lab PQL	Background[b] Glen Rose	RRS2-GWP[c] (Ind.)	RRS2-SAI[c] (Ind.)	B4-SB1	B4-SB1	B4-SB1A	B4-SB1A	B4-SB2	B4-SB2	B4-SB2[d]	B4-SB2	B4-SB3	B4-SB3
Sample ID						B4-SB1	B4-SB1	B4-SB1A	B4-SB1A	B4-SB2	B4-SB2	B4-SB2[d]	B4-SB2	B4-SB3	B4-SB3
Depth (ft)						3.0-4.0	6.0-9.0	3.0-4.0	11.2-12.3	2.0-3.0	14.0-15.0	14.0-15.0	23.0-25.0	8.0-10.0	19.0-21.0
Soil/Rock Type						Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose
Date Collected						3/10/1995	3/10/1995	3/10/1995	3/10/1995	3/10/1995	3/10/1995	3/10/1995	3/13/1995	3/13/1995	3/13/1995
	Soil Comparison Criteria					Soil Sample Analytical Results[a]									
VOCs, SW8260 (ug/kg):															
No analytes detected	--	--	--	--	--	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1
SVOCs, SW8270 (ug/kg)[e]:															
No analytes detected	--	--	--	--	--	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1
Metals, SW6010 (mg/kg):															
Cadmium	NA	0.25	2.0	0.50	410	1.3 U_2	9.1 U_2	1.1 U_2	**65**	1.2 U_2	0.33 U_2	0.43 U_2	0.60 U_2	0.38 U_2	0.46 U_2
Calcium	NA	25	--	--	--	177,000	113,000	211,000	217,000	202,000	249,000	270,000	197,000	269,000	233,000
Chromium	NA	0.5	3.1	10	240,000	**6.8**	**46**	**6.6**	**8.6**	**5.4**	2.7	2.7	3.2 U_2	3.1	**3.6**
Copper	NA	0.5	6.9	130	74,000	6.3	**760**	3.8	**120**	4.3	1.5	1.5	3.9	3.0	4.3
Iron	NA	2.5	--	--	--	7,800	52,200	8,900	10,900	6,300	3,400	3,800	5,300	3,300	3,900
Lead[e]	NA	1.5	69.3	1.5	1,000	12	**140**	7.1	48	14	2.6	2.6	3.6 U_2	2.1	2.9
Magnesium	NA	25	--	--	--	3,600	2,200	2,100	4,200	2,400	2,300	2,500	3,900	2,700	1,900
Manganese	NA	0.5	--	1,400	81,000	150	600	140	110	130	50	71	56	64	100
Nickel	NA	0.5	29.9	200	12,000	5.1	**74**	5.8	**58**	4.9	3	4.2	4.5	3.4	5.4
Potassium	NA	25	--	--	--	1,900	1,900	1,600	1,200	1,100	740	700	1,300	840	1,200

Constituent	B4-SB3	B4-SB4	B4-SB4	B4-SB4	B4-SB5	B4-SB5	B4-SB5
Sample ID	B4-SB3	B4-SB4	B4-SB4	B4-SB4	B4-SB5	B4-SB5	B4-SB5
Depth (ft)	33.0-34.0	5.0-6.0	11.0-16.0	27.0-29.0	9.5-11.0	19.5-21.0	26.0-27.0
Soil/Rock Type	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose	Glen Rose
Date Collected	3/13/1995	3/14/1995	3/14/1995	3/14/1995	3/14/1995	3/14/1995	3/14/1995
	Soil Sample Analytical Results (Continued)[a]						
VOCs, SW8260 (ug/kg):							
No analytes detected	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1
SVOCs, SW8270 (ug/kg):							
No analytes detected	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1	-- U_1
Metals, SW6010 (mg/kg):							
Cadmium	0.47 U_2	0.97 U_2	0.52 U_2	0.53 U_2	0.25 U_1	0.64 U_2	0.28 U_2
Calcium	240,000	183,000	262,000	226,000	284,000	167,000	256,000
Chromium	**3.4**	**7.3**	**3.2**	**4.6**	2.6 U_2	2.5 U_2	2.2 U_2
Copper	1.9	4.2	2.6	2.6	2	7.8	1.5
Iron	3,900	8,200	4,300	4,500	1,900	5,100	7,800
Lead[e]	3.2	8.5	2.4	3.5	1.8	3.6	1.7
Magnesium	2,600	1,300	2,300	2,700	2,500	6,500	10,000
Manganese	53	160	73	52	48	74	37
Nickel	4.4	5.8	4.2	5.6	1.3	9.7	4
Potassium	990	1,100	760	1,500	590	1,200	680

Notes:

[a] All samples analyzed by Chemron, Inc., San Antonio, Texas. All results reported on a wet-weight basis.

[b] Background values from *Evaluation of Background Metals Concentrations in Soil Types at Camp Stanley Storage Activity, June 1997.*

[c] Industrial risk reduction standards for groundwater protection (GWP), soil-air ingestion (SAI), and groundwater (GW).

[d] Duplicate sample.

[e] The background concentration of lead in the Glen Rose limestone is greater than the groundwater protection (GWP) standard. Sample concentrations are only highlighted if they also exceed the background concentration.

Concentrations exceeding RRS1 background levels are in bold type.

Concentrations exceeding RRS2 standards are highlighted.

CLP Data Qualifiers:

U_1 The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U_2 The sample contained less than five times the amount of the analyte in the corresponding method blank.

Acronyms and Abbreviations

Acronyms and Abbreviations

MDL Method detection limit
mg/kg Milligram per kilogram
NA Not available
PQL Practical quantitation limit
RRS2 Risk reduction standard 2
SVOC Semivolatile organic compound
ug/kg Microgram per kilogram
VOC Volatile organic compound

SWMUB-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Red oval designates concentration exceeding Texas Risk Reduction Program Tier 1 Residential Assessment Level (RAL) for 30-acre site.

Table B4-2 Chemical Constituents Detected in Groundwater at SWMU B-4, March 1995
Camp Stanley Storage Activity, Texas

Constituent	Groundwater Comparison Criteria: Lab MDL	Lab PQL	Back-ground	RRS2 GW[a] (Ind.)	Sample ID: B4-SB5 Date Collected: 3/15/1995 Groundwater Sample Analytical Results[b]
VOCs, SW8260 (ug/L):					
No analytes detected	--	--	NA	--	-- U_1
SVOCs, SW8270 (ug/L):					
No analytes detected	--	--	NA	--	-- U_1
Metals, SW6010 (mg/L):					
Cadmium	NA	**0.005**	NA	**0.005**	0.005 U_1
Calcium	NA	**0.5**	NA	--	480
Chromium	NA	**0.01**	NA	**0.1**	0.01
Copper	NA	**0.01**	NA	**1.3**	0.01
Iron	NA	**0.02**	NA	--	4.0
Lead	NA	**0.03**	NA	**0.015**	0.03 U_1
Magnesium	NA	**0.5**	NA	--	14
Manganese	NA	**0.01**	NA	**14**	0.12
Nickel	NA	**0.01**	NA	**0.73**	0.01
Potassium	NA	**0.5**	NA	--	2.4

Notes:

[a] Industrial risk reduction standards for groundwater protection (GWP), soil-air ingestion (SAI), and groundwater (G

[b] All samples were analyzed by Chemron, Inc., of San Antonio, Texas

Concentrations exceeding RRS1 background levels are in bold type.

Concentrations exceeding RRS2 standards are highlighted.

CLP Data Qualifiers:

U_1 The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Acronyms and Abbreviaitons:

MDL Method detection limit
mg/L Milligram per liter
NA Not available
PQL Practical quantitation limit
RRS1 Risk reduction standard 1
RRS2 Risk reduction standard 2
ug/L Microgram per liter

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Constituent concentrations detected do not exceed Texas Risk Reduction Program Residential Assessment Levels.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

Sample ID							B4-SB06					B4-SB06					B4-SB06					B4-SB06					B4-SB07					B4-SB07					B4-SB07					B4-SB07					B4-SB07				
Sample Date							04/03/00					04/03/00					04/03/00					04/03/00					04/03/00					04/03/00					04/03/00					04/03/00					04/03/00				
Sample Type							N1					N1					N1					N1					N1					N1					GR					N1					N1				
Soil Type							Soil (TaB)					Soil (TaB)					GR					GR					Soil (TaB)					Soil (TaB)					GR					GR					GR				
Beginning Depth							0					4.5					11					15.5					0					4.5					8.5					14.5					14.5				
Ending Depth							0.5					5					11.5					16					0.5					5					9					15					15				
Lab ID							AP90573/00C00788					AP90574/00C00789					AP90575/00C00790					AP90576/00C00791					AP90577/00C00792					AP90578/00C00793					AP90579/00C00794					AP90580/00C00795					AP90581/00C00796				
	Soil Comparison Criteria																																																	
	Lab MDL	**Lab RL**	**Background[a] GR**	**Background[a] Soil**	**RRS2-GWP (Ind.)**	**RRS2-SAI (Ind.)**	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)																																																	
Moisture							17.6				9.				3.5				5.9				14.9				7.2				5.1				7.1				7.			
SW6010B (mg/kg)																																																	
Barium	0.08	1.0	10.0	186	200	59,000	117.15	J	1	1.0	62.57	J	1	1.0	6.31		1	1.0	9.98	J	1	1.0	46.76	J	1	1.0	33.59	J	1	1.0	**42.20**	**J**	**1**	**1.0**	**10.51**	**J**	**1**	**1.0**	9.91	J	1	1.0
Chromium	0.1	20.0	8.1	40.2	10	350,000	20.4	J	1	20.0	18.5	F	1	20.0	4.9	F	1	20.0	10.5	F	1	20.0	10.8	F	1	20.0	11.2	F	1	20.0	**15.9**	**F**	**1**	**20.0**	**10.3**	**F**	**1**	**20.0**	**9.7**	**F**	**1**	**20.0**
Copper	0.19	2.0	13.1	23.2	130	74,000	13.30		1	2.0	10.75		1	2.0	2.86		1	2.0	3.24	J	1	2.0	9.38		1	2.0	9.39		1	2.0	6.90		1	2.0	2.77		1	2.0	3.11		1	2.0
Nickel	0.12	2.0	6.8	35.5	200	12,000	11.27	J	1	2.0	10.29	J	1	2.0	3.39		1	2.0	5.52	J	1	2.0	6.25	J	1	2.0	6.22	J	1	2.0	**9.18**	**J**	**1**	**2.0**	4.89	J	1	2.0	5.46	J	1	2.0
Zinc	0.63	5.0	11.3	73.2	3,100	41,000	30.06	J	1	5.0	23.25	J	1	5.0	5.24		1	5.0	8.45	J	1	5.0	37.96	J	1	5.0	18.97	J	1	5.0	**16.54**	**J**	**1**	**5.0**	10.03	J	1	5.0	10.86	J	1	5.0
SW7060A (mg/kg)																																																	
Arsenic	0.04	0.5	3.8	19.6	5	200	4.14	J	1	0.5	5.86	J	5	2.5	1.63	J	1	0.5	1.76	J	1	0.5	2.95	J	1	0.5	1.40	J	1	0.5	1.59	J	1	0.5	0.34	F	1	0.5	1.53	J	1	0.5
SW7131A (mg/kg)																																																	
Cadmium	0.01	0.1	0.1	3.	0.5	410	0.17	J	1	0.1	0.19	J	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1	0.38	J	5	0.5	0.28	J	1	0.1	0.07	F	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1
SW7421 (mg/kg)																																																	
Lead	0.13	0.5	5.5	84.5	1.5	1,000	15.76	J	5	2.5	7.53	J	5	2.5	2.52	J	1	0.5	2.90	J	1	0.5	37.32	J	10	5.0	4.73	J	1	0.5	4.91	J	1	0.5	2.54	J	1	0.5	3.29	J	1	0.5
SW7471A (mg/kg)																																																	
Mercury	0.01	0.1	0.1	0.77	0.01	0.1	0.29		1	0.1	0.02	F	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1	**16.99**		**10**	**1.0**	0.19		1	0.1	0.04	F	1	0.1	0.01	U	1	0.1	0.02	F	1	0.1
SW8260B (mg/kg)																																																	
Benzene	0.0003	0.002	--	--	0.5	1.5	0.0005	F	1	0.002	0.0004	F	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	0.005	--	--	14	4.9	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	0.002	--	--	10	0.51	0.0005	F	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	0.003	--	--	70	6,900	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	0.005	--	--	0.5	16	0.0040	F	1	0.005	0.0014	F	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0012	F	1	0.005	0.0012	F	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Toluene	0.0003	0.005	--	--	100	2,400	**0.0066**		**1**	**0.005**	0.0004	F	1	0.005	0.0006	F	1	0.005	0.0004	F	1	0.005	0.0029	F	1	0.005	0.0003	U	1	0.005	0.0003	U	1	0.005	0.0005	F	1	0.005	0.0003	U	1	0.005
Trichloroethene	0.001	0.010	--	--	0.5	6.6	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	0.005	--	--	100	48,000	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)																																																	
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65	0.03	U	1	0.7	0.03	U	1	0.7	0.07	F	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7	0.07	F	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7
SW8330 (mg/kg)																																																	
TETRYL	0.022	0.65	--	--	NA	NA	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:
Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.

--	No risk reduction standard or background level available
a	Background values from Revised Background Report, 2002
DL	Dilution
FD1	Field Duplicate
GR	Glen Rose
GWP-Ind	Soil MSC based on groundwater protection
MDL	Method Detection Limit
N1	Environmental Sample
NA	Not Available
RL	Reporting Limit
SAI-Ind	Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
SQL	Sample Quantitation Limit
TaB	Tarrant, gently undulating

Data Qualifiers:
B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by Weston, 2011
2. Red oval designates concentration exceeding Texas Risk Reduction Program Tier 1 Residential Assessment Level (RAL) for 30-acre site.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

	Soil Comparison Criteria																																	
Sample ID							B4-SB08				B4-SB08				B4-SB08				B4-SB08				B4-SB09				B4-SB09				B4-SB09				B4-SB09			
Sample Date							04/04/00				04/04/00				04/04/00				04/04/00				04/04/00				04/04/00				04/04/00				04/04/00			
Sample Type							N1				N1				N1				N1				N1				N1				N1				FD1			
Soil Type							Soil (TaB)				Soil (TaB/Fill)/Fill				GR				GR				Soil (TaB/Fill)/Fill				Soil (TaB/Fill)/Fill				Soil (TaB/Fill)/fill				GR				GR			
Beginning Depth							0				5				10				15				0				5				9.5				14.5			
Ending Depth							0.5				5.5				10.5				15.5				0.5				5.5				10				15			
Lab ID							AP90612/00C00797				AP90613/00C00798				AP90614/00C00799				AP90615/00C00780				AP90616/00C00781				AP90617/00C00782				AP90618/00C00783				AP90619/00C00784				AP90620/00C00785			
	Lab MDL	**Lab RL**	**Background[a] GR**	**Background[a] Soil**	**RRS2-GWP (Ind.)**	**RRS2-SAI (Ind.)**	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)																																											
Moisture							24.3				5.4				2.6				10.7				10.7				10.6				5.8				8.				6.9			
SW6010B (mg/kg)																																											
Barium	0.08	1.0	10.0	186	200	59,000	**776.45**	**J**	**5**	**5.0**	15.24	J	1	1.0	8.82	J	1	1.0	**12.12**	**M**	**1**	**1.0**	39.72	J	1	1.0	53.94	J	1	1.0	56.40	J	1	1.0	**12.60**	**M**	**1**	**1.0**	10.00	M	1	1.0
Chromium	0.1	20.0	8.1	40.2	10	350,000	20.2	J	1	20.0	7.7	J	1	20.0	5.4	J	1	20.0	**11.8**	**M**	**1**	**20.0**	10.0	J	1	20.0	13.5	J	1	20.0	18.0	J	1	20.0	**11.7**	**M**	**1**	**20.0**	**8.2**	**M**	**1**	**20.0**
Copper	0.19	2.0	13.1	23.2	130	74,000	**26.66**		**1**	**2.0**	3.63		1	2.0	1.98	F	1	2.0	2.86		1	2.0	8.35		1	2.0	**30.56**		**1**	**2.0**	17.1		1	2.0	2.37		1	2.0	2.21		1	2.0
Nickel	0.12	2.0	6.8	35.5	200	12,000	12.11	J	1	2.0	4.30	J	1	2.0	2.16	J	1	2.0	6.07	M	1	2.0	6.49	J	1	2.0	8.17	J	1	2.0	9.48	J	1	2.0	6.18	M	1	2.0	5.83	M	1	2.0
Zinc	0.63	5.0	11.3	73.2	3,100	41,000	**124.44**		**1**	**5.0**	6.96		1	5.0	6.63		1	5.0	9.83		1	5.0	21.23		1	5.0	29.50		1	5.0	23.78		1	5.0	**11.64**		**1**	**5.0**	10.14		1	5.0
SW7060A (mg/kg)																																											
Arsenic	0.04	0.5	3.8	19.6	5	200	4.23	J	1	0.5	0.78	J	1	0.5	0.04	R	1	0.5	1.00	M	1	0.5	1.33	J	1	0.5	1.72	J	1	0.5	1.74	J	1	0.5	1.64	M	1	0.5	2.66	M	1	0.5
SW7131A (mg/kg)																																											
Cadmium	0.01	0.1	0.1	3.	0.5	410	2.09		20	2.0	0.02	F	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1	0.20		1	0.1	0.20		1	0.1	0.14		1	0.1	0.01	U	1	0.1	0.04	F	1	0.1
SW7421 (mg/kg)																																											
Lead	0.13	0.5	5.5	84.5	1.5	1,000	34.16	J	20	10.0	3.75	J	1	0.5	1.29	J	1	0.5	2.93	M	1	0.5	5.57	J	5	2.5	7.32	J	5	2.5	4.86	J	5	2.5	3.37	M	1	0.5	0.95	M	1	0.5
SW7471A (mg/kg)																																											
Mercury	0.01	0.1	0.1	0.77	0.01	0.1	**1.52**	**B**	**1**	**0.1**	0.03	F	1	0.1	0.01	U	1	0.1	**0.13**	**B**	**1**	**0.1**	**0.77**	**B**	**1**	**0.1**	0.22	B	1	0.1	0.35	B	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1
SW8260B (mg/kg)																																											
Benzene	0.0003	0.002	--	--	0.5	1.5	0.0004	F	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0004	F	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	0.005	--	--	14	4.9	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0013	F	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Chloroform	0.0003	0.002	--	--	10	0.51	0.0003	U	1	0.002	0.0004	F	1	0.002	0.0005	F	1	0.002	0.0005	F	1	0.002	0.0007	F	1	0.002	0.0007	F	1	0.002	0.0005	F	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	0.003	--	--	70	6,900	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	0.005	--	--	0.5	16	0.0038	F	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Toluene	0.0003	0.005	--	--	100	2,400	0.0016	F	1	0.005	0.0008	F	1	0.005	0.0011	F	1	0.005	0.0003	U	1	0.005	**0.0103**		**1**	**0.005**	0.0009	F	1	0.005	0.0013	F	1	0.005	0.0004	F	1	0.005	0.0004	F	1	0.005
Trichloroethene	0.001	0.010	--	--	0.5	6.6	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Xylene, o-	0.0004	0.005	--	--	100	48,000	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)																																											
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65	0.05	F	1	0.7	0.05	F	1	0.7	0.08	F	1	0.7	0.03	M	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7	0.40	F	1	0.7	0.04	M	1	0.7	**4.70**	**M**	**1**	**0.7**
SW8330 (mg/kg)																																											
TETRYL	0.022	0.65	--	--	NA	NA	0.022	U	1	0.65	0.022	U	1	0.65	0.19	F	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:
Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.
-- No risk reduction standard or background level available
a Background values from Revised Background Report, 2002
DL Dilution
FD1 Field Duplicate
GR Glen Rose
GWP-Ind Soil MSC based on groundwater protection
MDL Method Detection Limit
N1 Environmental Sample
NA Not Available
RL Reporting Limit
SAI-Ind Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
SQL Sample Quantitation Limit
TaB Tarrant, gently undulating

Data Qualifiers:
B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Red oval designates concentration exceeding Texas Risk Reduction Program Tier 1 Residential Assessment Level (RAL) for 30-acre site.
3. 2002 RI document attributes bis(2-ethylhexyl) phthalate concentrations to laboratory and sampling influence.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

	Soil Comparison Criteria					
	Lab MDL	**Lab RL**	**Background[a] *GR***	**Background[a] Soil**	**RRS2-GWP (Ind.)**	**RRS2-SAI (Ind.)**
D2216 (%)						
Moisture						
SW6010B (mg/kg)						
Barium	0.08	1.0	10.0	186	200	59,000
Chromium	0.1	20.0	8.1	40.2	10	350,000
Copper	0.19	2.0	13.1	23.2	130	74,000
Nickel	0.12	2.0	6.8	35.5	200	12,000
Zinc	0.63	5.0	11.3	73.2	3,100	41,000
SW7060A (mg/kg)						
Arsenic	0.04	0.5	3.8	19.6	5	200
SW7131A (mg/kg)						
Cadmium	0.01	0.1	0.1	3.	0.5	410
SW7421 (mg/kg)						
Lead	0.13	0.5	5.5	84.5	1.5	1,000
SW7471A (mg/kg)						
Mercury	0.01	0.1	0.1	0.77	0.01	0.1
SW8260B (mg/kg)						
Benzene	0.0003	0.002	--	--	0.5	1.5
Bromomethane	0.0007	0.005	--	--	14	4.9
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA
Chloroform	0.0003	0.002	--	--	10	0.51
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100
Ethylbenzene	0.0004	0.003	--	--	70	6,900
Methylene chloride	0.0007	0.005	--	--	0.5	16
Toluene	0.0003	0.005	--	--	100	2,400
Trichloroethene	0.001	0.010	--	--	0.5	6.6
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA
Xylene, o-	0.0004	0.005	--	--	100	48,000
SW8270C (mg/kg)						
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65
SW8330 (mg/kg)						
TETRYL	0.022	0.65	--	--	NA	NA

Sample ID	B4-SB10				B4-SB10				B4-SB11			
Sample Date	04/04/00				04/04/00				04/04/00			
Sample Type	N1				N1				N1			
Soil Type	Soil (TaB/Fill)/Fill				Soil (TaB/Fill)/Fill				Soil (TaB)			
Beginning Depth	0				4.5				0			
Ending Depth	0.5				5				0.5			
Lab ID	AP90625/00C00786				AP90626/00C00787				AP90627/00C00800			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	15.7				7.6				10.8			
SW6010B (mg/kg)												
Barium	52.73	J	1	1.0	53.15	J	1	1.0	38.28	J	1	1.0
Chromium	13.4	F	1	20.0	16.1	J	1	20.0	10.3	J	1	20.0
Copper	**27.37**		**1**	**2.0**	19.19		1	2.0	10.16		1	2.0
Nickel	8.35	J	1	2.0	9.45	J	1	2.0	6.91	J	1	2.0
Zinc	30.52		1	5.0	65.55		1	5.0	21.47		1	5.0
SW7060A (mg/kg)												
Arsenic	1.46	J	1	0.5	1.59	J	1	0.5	1.65	J	1	0.5
SW7131A (mg/kg)												
Cadmium	1.20		5	0.5	0.64		5	0.5	0.16		1	0.1
SW7421 (mg/kg)												
Lead	7.35	J	5	2.5	6.02	J	5	2.5	4.87	J	1	0.5
SW7471A (mg/kg)												
Mercury	**1.17**	**B**	**1**	**0.1**	**9.32**	**B**	**10**	**1.0**	**0.92**	**B**	**1**	**0.1**
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0004	F	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Toluene	0.0008	F	1	0.005	0.0014	F	1	0.005	0.0020	F	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.03	U	1	0.7	0.08	F	1	0.7	0.03	U	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Sample ID	B4-SB11				B4-SB11				B4-SB11			
Sample Date	04/04/00				04/04/00				04/04/00			
Sample Type	N1				N1				N1			
Soil Type	Soil (TaB)				GR				GR			
Beginning Depth	5				9.5				15			
Ending Depth	5.5				10				15.5			
Lab ID	AP90628/00C00801				AP90629/00C00802				AP90630/00C00803			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	2.5				3.9				5.2			
SW6010B (mg/kg)												
Barium	10.22	J	1	1.0	9.33	J	1	1.0	8.00	M	1	1.0
Chromium	24.6	J	1	20.0	**26.2**	**J**	**1**	**20.0**	**14.0**	**M**	**1**	**20.0**
Copper	2.53		1	2.0	3.38		1	2.0	3.26		1	2.0
Nickel	13.20	J	1	2.0	**11.89**	**J**	**1**	**2.0**	5.86	M	1	2.0
Zinc	5.88		1	5.0	9.38		1	5.0	9.97		1	5.0
SW7060A (mg/kg)												
Arsenic	0.22	J	1	0.5	0.05	F	1	0.5	0.04	R	1	0.5
SW7131A (mg/kg)												
Cadmium	0.01	U	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1
SW7421 (mg/kg)												
Lead	0.94	J	1	0.5	1.75	J	1	0.5	1.28	M	1	0.5
SW7471A (mg/kg)												
Mercury	0.07	F	1	0.1	**0.06**	**F**	**1**	**0.1**	**0.05**	**F**	**1**	**0.1**
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Toluene	0.0003	U	1	0.005	0.0003	U	1	0.005	0.0004	F	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	**14.00**		**10**	**7.0**	**6.90**		**10**	**7.0**	**2.20**		**5**	**3.5**
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Sample ID	B4-SB12				B4-SB12				B4-SB12			
Sample Date	04/05/00				04/05/00				04/05/00			
Sample Type	N1				FD1				N1			
Soil Type	Soil (TaB)				Soil (TaB)				GR			
Beginning Depth	0				0				4.5			
Ending Depth	0.5				0.5				5			
Lab ID	AP90679/00C00805				AP90680/00C00806				AP90681/00C00807			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	16.				17.				2.5			
SW6010B (mg/kg)												
Barium	70.13	J	1	1.0	60.63	J	1	1.0	**15.22**	**J**	**1**	**1.0**
Chromium	16.0	F	1	20.0	15.2	F	1	20.0	4.1	F	1	20.0
Copper	9.23	J	1	2.0	9.23	J	1	2.0	2.46	J	1	2.0
Nickel	9.63	J	1	2.0	8.67	J	1	2.0	3.29	J	1	2.0
Zinc	23.48	J	1	5.0	21.76	J	1	5.0	5.98	J	1	5.0
SW7060A (mg/kg)												
Arsenic	3.79	J	1	0.5	3.70	J	1	0.5	0.52	J	1	0.5
SW7131A (mg/kg)												
Cadmium	0.24		1	0.1	0.22		1	0.1	0.01	U	1	0.1
SW7421 (mg/kg)												
Lead	6.14	J	5	2.5	8.18	J	5	2.5	0.63	J	1	0.5
SW7471A (mg/kg)												
Mercury	0.10	J	1	0.1	0.13	J	1	0.1	**0.06**	**F**	**1**	**0.1**
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0006	F	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Toluene	0.0014	F	1	0.005	**0.0092**		**1**	**0.005**	0.0003	U	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.03	U	1	0.7	0.03	U	1	0.7	0.04	F	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:
Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.
-- No risk reduction standard or background level available
a Background values from Revised Background Report, 2002
DL Dilution
FD1 Field Duplicate
GR Glen Rose
GWP-Ind Soil MSC based on groundwater protection
MDL Method Detection Limit
N1 Environmental Sample
NA Not Available
RL Reporting Limit
SAI-Ind Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
SQL Sample Quantitation Limit
TaB Tarrant, gently undulating

Data Qualifiers:
B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.
R - The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Red oval designates concentration exceeding Texas Risk Reduction Program Tier 1 Residential Assessment Level (RAL) for 30-acre site.
3. 2002 RI document attributes bis(2-ethylhexyl) phthalate concentrations to laboratory and sampling influence.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

	Lab MDL	Lab RL	Background[a] GR	Background[a] Soil	RRS2-GWP (Ind.)	RRS2-SAI (Ind.)	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
Sample ID							B4-SB12				B4-SB12			
Sample Date							04/05/00				04/05/00			
Sample Type							N1				N1			
Soil Type							GR				GR			
Beginning Depth							10				15			
Ending Depth							10.5				15.5			
Lab ID							AP9068200C00808				AP90683/00C00809			
	Soil Comparison Criteria													
D2216 (%)														
Moisture							11.4				9.2			
SW6010B (mg/kg)														
Barium	0.08	1.0	10.0	186	200	59,000	9.21	J	1	1.0	6.77	J	1	1.0
Chromium	0.1	20.0	8.1	40.2	10	350,000	8.7	F	1	20.0	7.0	F	1	20.0
Copper	0.19	2.0	13.1	23.2	130	74,000	3.79	J	1	2.0	2.16	J	1	2.0
Nickel	0.12	2.0	6.8	35.5	200	12,000	4.33	J	1	2.0	4.66	J	1	2.0
Zinc	0.63	5.0	11.3	73.2	3,100	41,000	7.82	J	1	5.0	6.71	J	1	5.0
SW7060A (mg/kg)														
Arsenic	0.04	0.5	3.8	19.6	5	200	0.91	J	1	0.5	0.10	M	1	0.5
SW7131A (mg/kg)														
Cadmium	0.01	0.1	0.1	3.	0.5	410	0.01	U	1	0.1	0.01	U	1	0.1
SW7421 (mg/kg)														
Lead	0.13	0.5	5.5	84.5	1.5	1,000	2.82	J	1	0.5	2.09	J	1	0.5
SW7471A (mg/kg)														
Mercury	0.01	0.1	0.1	0.77	0.01	0.1	0.03	F	1	0.1	0.04	F	1	0.1
SW8260B (mg/kg)														
Benzene	0.0003	0.002	--	--	0.5	1.5	0.0003	U	1	0.002	0.0003	M	1	0.002
Bromomethane	0.0007	0.005	--	--	14	4.9	0.0007	U	1	0.005	0.0007	M	1	0.005
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	M	1	0.007
Chloroform	0.0003	0.002	--	--	10	0.51	0.0003	U	1	0.002	0.0003	M	1	0.002
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	0.003	--	--	70	6,900	0.0004	U	1	0.003	0.0004	M	1	0.003
Methylene chloride	0.0007	0.005	--	--	0.5	16	0.0007	U	1	0.005	0.0010	F	1	0.005
Toluene	0.0003	0.005	--	--	100	2,400	0.0003	U	1	0.005	0.0003	M	1	0.005
Trichloroethene	0.001	0.010	--	--	0.5	6.6	0.001	U	1	0.010	0.001	M	1	0.010
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800	0.0009	U	1	0.004	0.0009	M	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007	0.0004	M	1	0.007
Xylene, o-	0.0004	0.005	--	--	100	48,000	0.0004	U	1	0.005	0.0004	M	1	0.005
SW8270C (mg/kg)														
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65	0.03	U	1	0.7	0.03	M	1	0.7
SW8330 (mg/kg)														
TETRYL	0.022	0.65	--	--	NA	NA	0.022	U	1	0.65	0.022	U	1	0.65

	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
Sample ID	B4-SB13				B4-SB13				B4-SB13				B4-SB13			
Sample Date	04/05/00				04/05/00				04/05/00				04/05/00			
Sample Type	N1				N1				N1				N1			
Soil Type	Soil (TaB)				GR				GR				GR			
Beginning Depth	0				4.5				10				14.5			
Ending Depth	0.5				5				10.5				15			
Lab ID	AP90684/00C00810				AP90685/00C00811				AP90686/00C00812				AP90687/00C00813			
D2216 (%)																
Moisture	16.6				11.5				6.4				0.			
SW6010B (mg/kg)																
Barium	43.48	J	1	1.0	9.82	J	1	1.0	**30.19**	**J**	**1**	**1.0**	7.05	J	1	1.0
Chromium	13.7	F	1	20.0	4.9	F	1	20.0	6.4	F	1	20.0	4.4	F	1	20.0
Copper	7.21	J	1	2.0	3.10	J	1	2.0	2.82	J	1	2.0	1.99	F	1	2.0
Nickel	9.26	J	1	2.0	5.58	J	1	2.0	6.23	J	1	2.0	2.62	J	1	2.0
Zinc	18.07	J	1	5.0	7.15	J	1	5.0	7.23	J	1	5.0	7.02	J	1	5.0
SW7060A (mg/kg)																
Arsenic	2.28	J	1	0.5	0.32	F	1	0.5	0.04	J	1	0.5	0.04	J	1	0.5
SW7131A (mg/kg)																
Cadmium	0.14		1	0.1	0.01	U	1	0.1	0.01	U	1	0.1	0.03	F	1	0.1
SW7421 (mg/kg)																
Lead	5.62	J	5	2.5	1.42	J	1	0.5	2.74	J	1	0.5	1.50	J	1	0.5
SW7471A (mg/kg)																
Mercury	0.10	J	1	0.1	0.04	F	1	0.1	0.05	F	1	0.1	0.01	R	1	0.1
SW8260B (mg/kg)																
Benzene	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	M	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	M	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	M	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	M	1	0.003
Methylene chloride	**0.0118**	**B**	**1**	**0.005**	0.0031	F	1	0.005	0.0009	F	1	0.005	0.0007	U	1	0.005
Toluene	0.0004	F	1	0.005	0.0006	F	1	0.005	0.0016	F	1	0.005	0.0011	M	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010	0.001	M	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	M	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	M	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	M	1	0.005
SW8270C (mg/kg)																
Bis(2-ethylhexyl)phthalate	0.03	U	1	0.7	0.14	F	1	0.7	0.03	U	1	0.7	0.05	M	1	0.7
SW8330 (mg/kg)																
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

	Results	Flags	Dilution	SQL	Results	Flags	Diliution	SQL	Results	Flags	Diliution	SQL
Sample ID	B4-SB14				B4-SB14				B4-SB14			
Sample Date	04/05/00				04/05/00				04/05/00			
Sample Type	N1				N1				N1			
Soil Type	Soil (TaB)				GR				GR			
Beginning Depth	0				4.5				8			
Ending Depth	0.5				5				10			
Lab ID	AP90688/00C00814				AP90689/00C00815				AP90690/00C00816			
D2216 (%)												
Moisture	17.5				10.5				7.			
SW6010B (mg/kg)												
Barium	56.67	J	1	1.0	8.86	J	1	1.0	7.27	J	1	1.0
Chromium	17.3	F	1	20.0	7.0	F	1	20.0	6.7	M	1	20.0
Copper	9.10	J	1	2.0	3.26	J	1	2.0	2.89		1	2.0
Nickel	9.61	J	1	2.0	3.36	J	1	2.0	4.90	M	1	2.0
Zinc	20.61	J	1	5.0	**11.91**	**J**	**1**	**5.0**	8.92		1	5.0
SW7060A (mg/kg)												
Arsenic	2.58	J	1	0.5	0.07	F	1	0.5	0.44	F	1	0.5
SW7131A (mg/kg)												
Cadmium	0.15		1	0.1	0.02	F	1	0.1	0.04	F	1	0.1
SW7421 (mg/kg)												
Lead	6.98	J	5	2.5	2.41	J	1	0.5	2.63	J	1	0.5
SW7471A (mg/kg)												
Mercury	0.07	F	1	0.1	0.01	R	1	0.1	0.01	R	1	0.1
SW8260B (mg/kg)												
Benzene	0.0004	U	1	0.0020	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.0050	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.0070	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.0020	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.0050	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.0030	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	**0.0093**	**B**	**1**	**0.0050**	0.0023	F	1	0.005	0.0029	F	1	0.005
Toluene	0.0011	F	1	0.0050	0.0006	F	1	0.005	0.0003	U	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.0040	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.0070	0.0004	U	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.0050	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.03	U	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:

Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.

-- No risk reduction standard or background level available
a Background values from Revised Background Report, 2002
DL Dilution
FD1 Field Duplicate
GR Glen Rose
GWP-Ind Soil MSC based on groundwater protection
MDL Method Detection Limit
N1 Environmental Sample
NA Not Available
RL Reporting Limit
SAI-Ind Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
SQL Sample Quantitation Limit
TaB Tarrant, gently undulating

Data Qualifiers:

B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.
R - The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria.

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Methylene chloride detected in laboratory blank.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

Soil Comparison Criteria

Analyte	Lab MDL	Lab RL	Background[a] GR	Background[a] Soil	RRS2-GWP (Ind.)	RRS2-SAI (Ind.)
D2216 (%)						
Moisture						
SW6010B (mg/kg)						
Barium	0.08	1.0	10.0	186	200	59,000
Chromium	0.1	20.0	8.1	40.2	10	350,000
Copper	0.19	2.0	13.1	23.2	130	74,000
Nickel	0.12	2.0	6.8	35.5	200	12,000
Zinc	0.63	5.0	11.3	73.2	3,100	41,000
SW7060A (mg/kg)						
Arsenic	0.04	0.5	3.8	19.6	5	200
SW7131A (mg/kg)						
Cadmium	0.01	0.1	0.1	3.	0.5	410
SW7421 (mg/kg)						
Lead	0.13	0.5	5.5	84.5	1.5	1,000
SW7471A (mg/kg)						
Mercury	0.01	0.1	0.1	0.77	0.01	0.1
SW8260B (mg/kg)						
Benzene	0.0003	0.002	--	--	0.5	1.5
Bromomethane	0.0007	0.005	--	--	14	4.9
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA
Chloroform	0.0003	0.002	--	--	10	0.51
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100
Ethylbenzene	0.0004	0.003	--	--	70	6,900
Methylene chloride	0.0007	0.005	--	--	0.5	16
Toluene	0.0003	0.005	--	--	100	2,400
Trichloroethene	0.001	0.010	--	--	0.5	6.6
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA
Xylene, o-	0.0004	0.005	--	--	100	48,000
SW8270C (mg/kg)						
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65
SW8330 (mg/kg)						
TETRYL	0.022	0.65	--	--	NA	NA

Sample ID	B4-SB14				B4-SB14				B4-SB15			
Sample Date	04/05/00				04/05/00				04/06/00			
Sample Type	FD1				N1				N1			
Soil Type	GR				GR				Soil (TaB)			
Beginning Depth	8				15				0			
Ending Depth	10				16				0.5			
Lab ID	AP90691/00C00817				AP90693/00C00818				AP90709/00C00838			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	5.7				14.9				18.2			
SW6010B (mg/kg)												
Barium	7.32	J	1	1.0	**14.18**	**J**	**1**	**1.0**	68.83	J	1	1.0
Chromium	6.7	F	1	20.0	**14.6**	**F**	**1**	**20.0**	19.	F	1	20.0
Copper	2.35	J	1	2.0	**11.75**	**J**	**1**	**2.0**	13.59		1	2.0
Nickel	4.63	J	1	2.0	**14.25**	**J**	**1**	**2.0**	11.81	J	1	2.0
Zinc	**12.05**	**J**	**1**	**5.0**	**15.31**	**J**	**1**	**5.0**	30.40		1	5.0
SW7060A (mg/kg)												
Arsenic	0.17	F	1	0.5	2.54	M	1	0.5	4.06	J	1	0.5
SW7131A (mg/kg)												
Cadmium	0.02	F	1	0.1	**0.12**		**1**	**0.1**	0.28		1	0.1
SW7421 (mg/kg)												
Lead	2.31	J	1	0.5	4.17	J	1	0.5	12.52	J	5	2.5
SW7471A (mg/kg)												
Mercury	0.01	R	1	0.1	0.02	F	1	0.1	0.42	J	1	0.1
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0004	M	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	M	1	0.005	0.0009	F	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	M	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	M	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	M	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0032	F	1	0.005	**0.0055**	**B**	**1**	**0.005**	0.0035	F	1	0.005
Toluene	0.0003	U	1	0.005	0.0008	M	1	0.005	0.0003	U	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	M	1	0.010	0.002	F	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	M	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	M	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	M	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.03	U	1	0.7	0.03	M	1	0.7	0.04	F	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Sample ID	B4-SB15				B4-SB15				B4-SB15			
Sample Date	04/06/00				04/06/00				04/06/00			
Sample Type	N1				N1				N1			
Soil Type	Soil (TaB)				GR				GR			
Beginning Depth	5				9				16.5			
Ending Depth	5.5				9.5				17			
Lab ID	AP90710/00C00839				AP90711/00C00840				AP90712/00C00841			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	13.3				6.1				19.7			
SW6010B (mg/kg)												
Barium	94.59	J	1	1.0	**10.47**	**J**	**1**	**1.0**	**23.70**	**J**	**1**	**1.0**
Chromium	24.1		1	20.0	**8.9**	**F**	**1**	**20.0**	**18.5**	**F**	**1**	**20.0**
Copper	20.36		1	2.0	3.48		1	2.0	**13.09**		**1**	**2.0**
Nickel	13.41	J	1	2.0	5.32	J	1	2.0	**15.44**	**J**	**1**	**2.0**
Zinc	34.90		1	5.0	**15.54**		**1**	**5.0**	**19.30**		**1**	**5.0**
SW7060A (mg/kg)												
Arsenic	2.84	M	1	0.5	0.05	F	1	0.5	2.17	J	1	0.5
SW7131A (mg/kg)												
Cadmium	0.18		1	0.1	0.04	F	1	0.1	0.09	F	1	0.1
SW7421 (mg/kg)												
Lead	9.49	J	5	2.5	2.43	J	1	0.5	3.71	J	1	0.5
SW7471A (mg/kg)												
Mercury	0.01	U	1	0.1	0.01	U	1	0.1	0.01	U	1	0.1
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	0.0008	U	1	0.005	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0021	F	1	0.005	0.0018	F	1	0.005	0.0007	U	1	0.005
Toluene	0.0003	U	1	0.005	0.0003	U	1	0.005	0.0003	U	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0009	U	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.05	F	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Sample ID	B4-SB16				B4-SB16				B4-SB16			
Sample Date	04/06/00				04/06/00				04/06/00			
Sample Type	N1				FD1				N1			
Soil Type	Soil (TaB)				Soil (TaB)				GR			
Beginning Depth	0				0				5			
Ending Depth	0.5				0.5				5.5			
Lab ID	AP90713/00C00843				AP90714/00C00842				AP90715/00C00844			
	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL	Results	Flags	Dilution	SQL
D2216 (%)												
Moisture	16.9				18.1				4.9			
SW6010B (mg/kg)												
Barium	70.63	J	1	1.0	66.14	J	1	1.0	7.80	J	1	1.0
Chromium	17.7	F	1	20.0	15.4	F	1	20.0	7.2	F	1	20.0
Copper	20.73		1	2.0	21.05		1	2.0	2.58		1	2.0
Nickel	10.06	J	1	2.0	9.15	J	1	2.0	3.09	J	1	2.0
Zinc	62.98		1	5.0	58.69		1	5.0	7.59		1	5.0
SW7060A (mg/kg)												
Arsenic	4.72	J	5	2.5	3.10	J	1	0.5	0.04	M	1	0.5
SW7131A (mg/kg)												
Cadmium	**1.14**		**5**	**0.5**	**1.33**		**5**	**0.5**	0.02	F	1	0.1
SW7421 (mg/kg)												
Lead	16.28	J	5	2.5	23.79	J	5	2.5	2.03	J	1	0.5
SW7471A (mg/kg)												
Mercury	**5.91**	**J**	**10**	**1.0**	**7.00**	**J**	**10**	**1.0**	0.04	F	1	0.1
SW8260B (mg/kg)												
Benzene	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Bromomethane	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0007	U	1	0.005
Butylbenzene, sec-	0.0004	U	1	0.007	0.0004	U	1	0.007	0.0004	U	1	0.007
Chloroform	0.0003	U	1	0.002	0.0003	U	1	0.002	0.0003	U	1	0.002
Dichlorodifluoromethane	**0.0144**		**1**	**0.005**	0.0008	U	1	0.005	0.0008	U	1	0.005
Ethylbenzene	0.0004	U	1	0.003	0.0004	U	1	0.003	0.0004	U	1	0.003
Methylene chloride	0.0007	U	1	0.005	0.0007	U	1	0.005	0.0019	F	1	0.005
Toluene	0.0003	U	1	0.005	0.0003	U	1	0.005	0.0003	U	1	0.005
Trichloroethene	0.001	U	1	0.010	0.001	U	1	0.010	0.001	U	1	0.010
Trichlorofluoromethane	0.0022	F	1	0.004	0.0009	U	1	0.004	0.0009	U	1	0.004
Trimethylbenzene, 1,2,4-	0.0004	U	1	0.007	0.0005	F	1	0.007	0.0004	U	1	0.007
Xylene, o-	0.0004	U	1	0.005	0.0004	U	1	0.005	0.0004	U	1	0.005
SW8270C (mg/kg)												
Bis(2-ethylhexyl)phthalate	0.11	F	1	0.7	0.03	U	1	0.7	0.03	U	1	0.7
SW8330 (mg/kg)												
TETRYL	0.022	U	1	0.65	0.022	U	1	0.65	0.022	U	1	0.65

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:

Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.

- -- No risk reduction standard or background level available
- a Background values from Revised Background Report, 2002
- DL Dilution
- FD1 Field Duplicate
- GR Glen Rose
- GWP-Ind Soil MSC based on groundwater protection
- MDL Method Detection Limit
- N1 Environmental Sample
- NA Not Available
- RL Reporting Limit
- SAI-Ind Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
- SQL Sample Quantitation Limit
- TaB Tarrant, gently undulating

Data Qualifiers:

B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.
R - The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria

SWMU B-4 APAR Appendix 11 Notes:

1. Table annotated by WESTON, 2011.
2. Red oval designates concentration exceeding Texas Risk Reduction Program Tier 1 Residential Assessment Level (RAL) for 30-acre site.

Table B4-3
Summary of Chemical Constituents Detected in Soil, April 2000
Solid Waste Management Unit B-4

Sample ID							B4-SB16					B4-SB16					B4-SB17					B4-SB17					B4-SB17					B4-SB17				
Sample Date							04/06/00					04/06/00					04/06/00					04/06/00					04/06/00					04/06/00				
Sample Type							N1					N1					N1					FD1					N1					N1				
Soil Type							GR					GR					Soil (TaB)					GR					GR					GR				
Beginning Depth							9.5					14.5					0					4					13					18.5				
Ending Depth							10					15					0.5					6					13.5					19				
Lab ID							AP90716/00C00845					AP90717/00C00846					AP90718/00C00847					AP90721/00C00834					AP90722/00C00835					AP90725/00C00836					AP90726/00C00837				
	Soil Comparison Criteria																																			
	Lab MDL	**Lab RL**	**Background[a]** *GR*	**Background[a]** Soil	**RRS2-GWP (Ind.)**	**RRS2-SAI (Ind.)**	Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL		Results	Flags	Dilution	SQL	
D2216 (%)																																				
Moisture							6.3					10.5					14.3					6.					6.3					8.4					11.7				
SW6010B (mg/kg)																																				
Barium	0.08	1.0	10.0	186	200	59,000	**13.31**	**J**	**1**	**1.0**		**12.42**	**J**	**1**	**1**		23.36	J	1	1.0		8.49	J	1	1.0		6.83	J	1	1.0		10.01	J	1	1.0		**10.77**	**J**	**1**	**1.0**	
Chromium	0.1	20.0	8.1	40.2	10	350,000	**9.0**	**F**	**1**	**20.0**		8.1	F	1	20		11.6	F	1	20.0		**8.2**	**F**	**1**	**20.0**		6.9	F	1	20.0		7.9	F	1	20.0		**10.4**	**F**	**1**	**20.0**	
Copper	0.19	2.0	13.1	23.2	130	74,000	4.00		1	2.0		5.61		1	2		7.43		1	2.0		2.97		1	2.0		2.81		1	2.0		6.41		1	2.0		6.57		1	2.0	
Nickel	0.12	2.0	6.8	35.5	200	12,000	4.48	J	1	2.0		5.03	J	1	2		6.65	J	1	2.0		2.74	J	1	2.0		3.04	J	1	2.0		4.43	J	1	2.0		**7.30**	**J**	**1**	**2.0**	
Zinc	0.63	5.0	11.3	73.2	3,100	41,000	8.84		1	5.0		**12.03**		**1**	**5**		16.16		1	5.0		8.21		1	5.0		7.19		1	5.0		8.94		1	5.0		7.88		1	5.0	
SW7060A (mg/kg)																																				
Arsenic	0.04	0.5	3.8	19.6	5	200	0.46	F	1	0.5		2.16	J	1	0.5		0.89	J	1	0.5		0.20	M	5	2.50		0.2	M	1	0.5		0.99	J	1	0.5		2.42	J	1	0.5	
SW7131A (mg/kg)																																				
Cadmium	0.01	0.1	0.1	3.	0.5	410	0.01	U	1	0.1		0.01	U	1	0.1		0.07	F	1	0.1		0.02	F	1	0.1		0.01	U	1	0.1		0.01	U	1	0.1		0.01	U	1	0.1	
SW7421 (mg/kg)																																				
Lead	0.13	0.5	5.5	84.5	1.5	1,000	3.46	J	1	0.5		4.45	J	1	0.5		4.68	J	1	0.5		1.68	J	1	0.5		2.64	J	1	0.5		2.70	J	1	0.5		4.51	J	1	0.5	
SW7471A (mg/kg)																																				
Mercury	0.01	0.1	0.1	0.77	0.01	0.1	0.01	U	1	0.1		0.01	U	1	0.1		0.1	J	1	0.1		0.01	U	1	0.1		0.01	U	1	0.1		0.01	U	1	0.1		0.01	U	1	0.1	
SW8260B (mg/kg)																																				
Benzene	0.0003	0.002	--	--	0.5	1.5	0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0008	F	1	0.002	
Bromomethane	0.0007	0.005	--	--	14	4.9	0.0007	U	1	0.005		0.0007	U	1	0.005		0.0007	U	1	0.005		0.0007	U	1	0.005		0.0007	U	1	0.005		0.0007	U	1	0.005		0.0007	U	1	0.005	
Butylbenzene, sec-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007	
Chloroform	0.0003	0.002	--	--	10	0.51	0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002		0.0003	U	1	0.002	
Dichlorodifluoromethane	0.0008	0.005	--	--	2,000	3,100	0.0041	F	1	0.005		**0.0096**		**1**	**0.005**		0.0008	U	1	0.005		0.0008	U	1	0.005		0.0008	U	1	0.005		0.0008	U	1	0.005		0.0008	U	1	0.005	
Ethylbenzene	0.0004	0.003	--	--	70	6,900	0.0004	U	1	0.003		0.0004	U	1	0.003		0.0004	U	1	0.003		0.0004	U	1	0.003		0.0004	U	1	0.003		0.0004	U	1	0.003		0.0005	F	1	0.003	
Methylene chloride	0.0007	0.005	--	--	0.5	16	0.0007	U	1	0.005		0.0007	U	1	0.005		0.0020	F	1	0.005		0.0018	F	1	0.005		0.0029	F	1	0.005		0.0017	F	1	0.005		0.0007	U	1	0.005	
Toluene	0.0003	0.005	--	--	100	2,400	0.0003	U	1	0.005		0.0003	U	1	0.005		0.0003	U	1	0.005		0.0003	U	1	0.005		0.0003	U	1	0.005		0.0003	U	1	0.005		0.0034	F	1	0.005	
Trichloroethene	0.001	0.010	--	--	0.5	6.6	0.001	U	1	0.010		0.001	U	1	0.010		0.001	U	1	0.010		0.001	U	1	0.010		0.001	U	1	0.010		0.001	U	1	0.010		0.001	U	1	0.010	
Trichlorofluoromethane	0.0009	0.004	--	--	3,100	3,800	0.0009	U	1	0.004		0.0015	F	1	0.004		0.0009	U	1	0.004		0.0009	U	1	0.004		0.0009	U	1	0.004		0.0009	U	1	0.004		0.0009	U	1	0.004	
Trimethylbenzene, 1,2,4-	0.0004	0.007	--	--	NA	NA	0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007		0.0004	U	1	0.007	
Xylene, o-	0.0004	0.005	--	--	100	48,000	0.0004	U	1	0.005		0.0004	U	1	0.005		0.0004	U	1	0.005		0.0004	U	1	0.0050		0.0004	U	1	0.005		0.0004	U	1	0.0050		0.0006	F	1	0.005	
SW8270C (mg/kg)																																				
Bis(2-ethylhexyl)phthalate	0.03	0.7	--	--	0.6	65	0.04	F	1	0.7		0.03	U	1	0.7		0.03	U	1	0.7		0.03	U	1	0.7		0.03	U	1	0.7		0.03	U	1	0.7		0.03	U	1	0.7	
SW8330 (mg/kg)																																				
TETRYL	0.022	0.65	--	--	NA	NA	0.022	U	1	0.65		0.022	U	1	0.65		0.022	U	1	0.65		0.022	U	1	0.65		0.022	U	1	0.65		0.022	U	1	0.65		0.022	U	1	0.65	

Tables present all laboratory results for analytes detected above the method detection limit.
Results from all laboratory analysis are presented in Appendix A.
All samples were analyzed by APPL Inc. and DataChem Laboratories.
Referenced laboratory package numbers: APPL Inc.: 32352, 32360, 32368, 32374
DataChem: 83-01, 83-02, 84-01, 87-01

All MS/MSD results are presented in the Data Verification Reports, Appendix C.

Abbreviations and Notes:
Highlighted and bolded sample concentrations exceed RRS1 Standards.
Boxed samples indicate results greater than RRS2 Standards.

--	No risk reduction standard or background level available
a	Background values from Revised Background Report, 2002
DL	Dilution
FD1	Field Duplicate
GR	Glen Rose
GWP-Ind	Soil MSC based on groundwater protection
MDL	Method Detection Limit
N1	Environmental Sample
NA	Not Available
RL	Reporting Limit
SAI-Ind	Soil MSC for industrial use based on inhalation, ingestion, and dermal contact
SQL	Sample Quantitation Limit
TaB	Tarrant, gently undulating

Data Qualifiers:
B- The analyte was found in an associated blank, as well as in the sample.
F- The analyte was positively identified, but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
M - A matrix effect was present.
R - The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria

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1995 and 2001 Soil Gas Survey Data – SWMU B-4

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Groundwater Investigation and Associated Source Characterization Appendix F - Technical Memorandum on Soil Gas Surveys

Section 4 - SWMU B-4

4.1 - Site Description

SWMU B-4 is located just south of SWMU B-3 in the inner cantonment. B-4 was apparently used to burn classified documents and trash. B-4 is similar in nature to B-3 in the respect that it contains a north-south oriented dirt road, limestone outcrop to the south and northwest, isolated surface metal, and trees which surround the site (Figure 4.1). B-4 also contains drainage channels which trend east to west in the west-central portion of the site. Exposed in the drainage channels are pieces of plywood. The topography of the site slopes from north to south. The southwest quadrant of B-4 was extended to cover an open area with a drainage channel. This additional area (B-4A) is depicted west of B-4 and shows the locations of surrounding trees and continuation of the small drainage channel initiated at B-4.

4.2 - Soil Gas Survey Results

PCE was detected in soil gas samples from SWMU B-4. The highest concentration detected was 10 ug/L and was detected at location A,0.5 located along the edge of the grid that borders the oxidation pond. A complete listing of the soil gas survey data from the site reconnaissance survey is given in Table 4.1. Soil gas sampling locations are shown on Figure 4.1. All but five soil gas samples were collected from this site during the initial phase of the soil gas survey. The additional samples were collected from the southeast corner of the landfill to define the limits of the PCE contamination in that area; the results are in Table 4.2.

The results of soil gas surveys indicated that the distribution of PCE shows a trend of decreasing concentrations away from the oxidation pond located at the northwest corner of the site (Figure 4.1). Based on this distribution, the oxidation pond is probably the source of the PCE detected at SWMU B-4.

[Next Section]

Groundwater Investigation and Associated Source Characterization Appendix F - Technical Memorandum on Soil Gas Surveys, June 1996

Table 4.1 - Summary of Soil Gas Survey Data for SWMU B-4 (all units in micrograms per liter)

Date	Location	Depth (ft BGL)	Benzene	Toluene	Ethyl benzene	Total xylenes	Total Hydrocarbons	cis-1,2-DCE	TCE	PCE
13-Jul-95	C,2.5	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	3.8
13-Jul-95	B,2	1.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.22
13-Jul-95	A,8	4	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.02
13-Jul-95	B,7	4	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.01
13-Jul-95	C,8	4	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.07
13-Jul-95	B,9	6	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.03
13-Jul-95	A,10	6	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.81

13-Jul-95	B,10	6	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.39
13-Jul-95	C,5	5.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.02
13-Jul-95	A,6	5.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.22
13-Jul-95	A,4	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.41
13-Jul-95	C,4	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.03
13-Jul-95	E,5	1.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.26
13-Jul-95	E,5Dup	1.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.06
14-Jul-95	B,5	2.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.26
14-Jul-95	C,6	2	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.02
14-Jul-95	B,11	2.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.05
14-Jul-95	E,6	5.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.34
14-Jul-95	C,9	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.44

14-Jul-95	C,9Dup	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.5
14-Jul-95	B,3	2.5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.07
SWMU B-4A										
13-Jul-95	B,0	3	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.26
13-Jul-95	A,1	6	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	1.8
13-Jul-95	A,1 DUP	6	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	1.8
13-Jul-95	A,3	5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.03
13-Jul-95	B,1	5	0.2 U	0.2 U	0.3 U	0.3 U	0.2 U	0.3 U	0.02U	0.29

PARSONS ENGINEERING SCIENCE, INC.

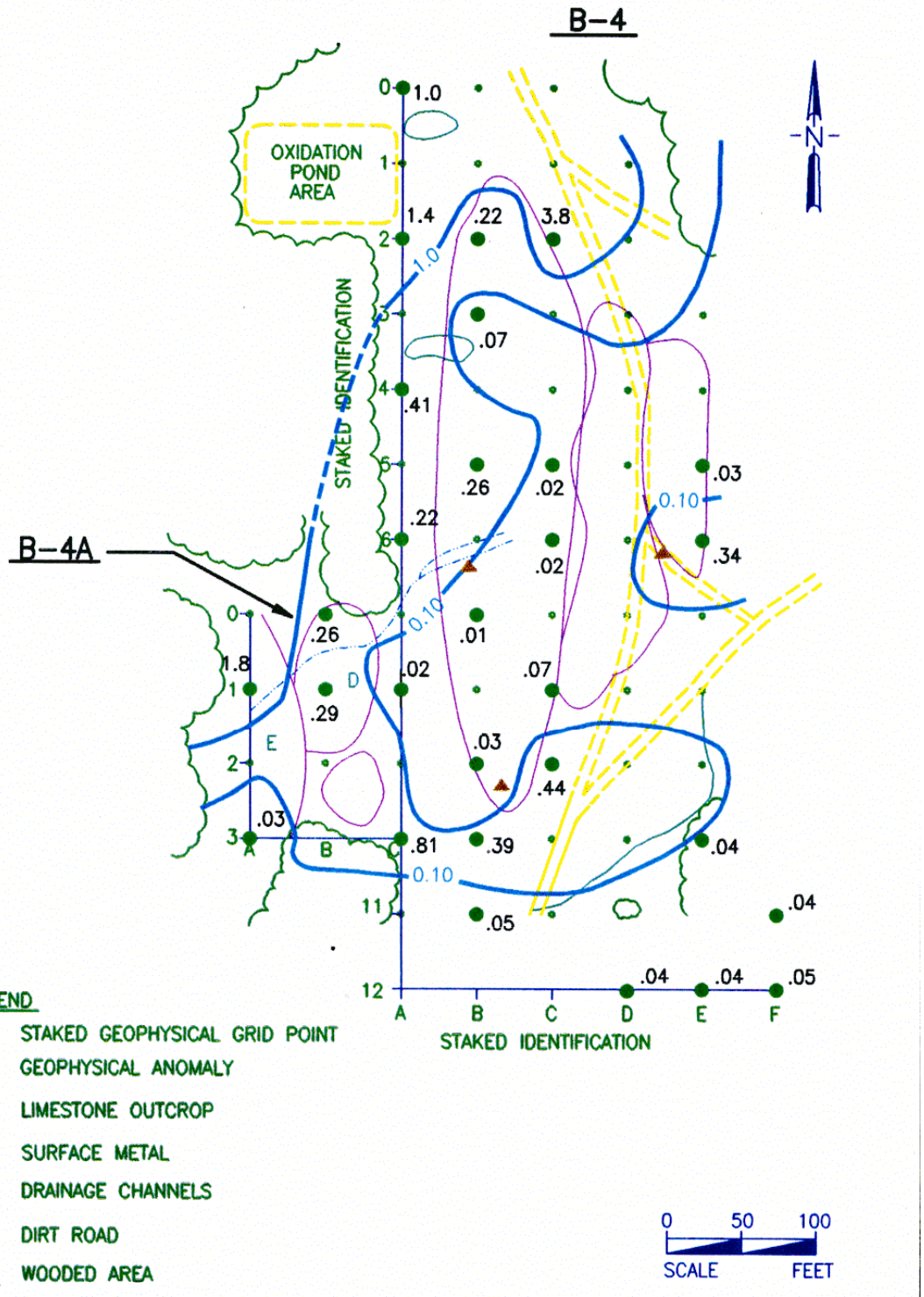

FIGURE 4.1

DISTRIBUTION OF PCE IN SOIL GAS AT SWMU B-4

CSSA GROUNDWATER EVALUATION

B4-A-SG 12/27/95

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SWMU B-4
SOIL GAS SURVEY RESULTS
JANUARY – FEBRUARY 2001

INTRODUCTION

A soil gas survey was performed at SWMU B-4 located in the central portion of CSSA. This report contains a summary of the analytical results from the SWMU B-4 soil gas survey. A detailed description of the methodology is included behind the **Soil Gas Surveys** tab in **Volume 3-1.1**. This work was performed in conjunction with soil gas surveys performed at SWMU B-3, AOC 55, AOC 57, AOC 63, AOC 65 and the WWTP from January 2, 2001 through February 23, 2001.

The distribution and concentrations for the compounds detected are addressed below. Minor amounts of benzene, toluene, and xylene were detected in soil gas samples throughout the soil gas survey. The detection of these compounds is attributed to artifact contamination from the gas generator used to power the vacuum pump and/or the combustion engine of the geoprobe truck. The frequency of detectable BTEX compounds decreased substantially after the gas generator was moved to the front of the geoprobe rig, and the rig was shut down during sample collection. The BTEX concentrations detected during the soil gas survey are presented in the data tables, but are not discussed in the soil gas findings. The complete laboratory results are presented in **Appendix A**. Sample locations are presented in the SWMU B-4 Sample Location Map, **Figure B4-1**.

Determination of Sampling Locations

SWMU B-4 is located southeast of a former oxidation pond (SWMU O-1). It was selected for soil gas testing because it is located in the vicinity of SWMU B-3 and SWMU O-1. Like both of these units, SWMU B-4 was identified as a classified burn area, so the potential exists for some VOC contamination to be present. A total of 20 grid locations were sampled on a grid layout that extended over the estimated lateral extent of SWMU B-4. Grid spacing was approximately 25 feet east-west, and 50 feet north-south. The grid layout for SWMU B-4 is presented on **Figure B4-1**.

Soil Gas Survey Results for SWMU B-4

A total of 20 soil gas samples were collected at SWMU B-4 at locations presented on **Figure B4-1**. Benzene was detected at sampling point B4-1 at a concentration of 0.02 m g/L. Detected constituents are provided in **Table B4-1**. No figure is included in this report depicting a contaminant plume in this grid layout because the target compound benzene that was detected at a concentration of 0.02 m g/L is attributed to the geoprobe rig and gas generated exhaust. No other target VOC

compounds were detected. Soil gas sampling depths varied from 2 feet to 10 feet, and were usually determined by refusal. Within SWMU B-4 there appears to be three landfill cells associated with past waste disposal activities. Historical data suggest that this area was used to dispose of small caliber ordnance.

Summary of Findings and Recommendations

From the soil gas survey results, it appears that no significant VOC contamination has been released to, or is present in, the soil and groundwater underlying SWMU B-4. No additional investigation activities are proposed at any of the SWMUs with regard to VOC contamination.

Table B4-1 SWMU B-4 Detected Constituents

Sample ID	Sample Date	Benzene	DCE, cis-1,2-	DCE, trans-1,2-	Ethylbenzene	PCE	Toluene	TCE	Vinyl chloride	Xylene, m,p-	Xylene, o
	MDL	0.02	0.03	0.04	0.06	0.07	0.04	0.03	0.09	0.06	0.06
	RL	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.51	0.20	0.20
B4-1	02/19/01	= 0.02	< 0.03	< 0.04	< 0.06	< 0.07	< 0.04	< 0.03	< 0.09	< 0.06	< 0.06

Notes:

BTEX detections are attributed to geoprobe rig and gas generator exhaust.

In the soil comparison criteria, the lab MDL and RL are based on a Dilution Factor of 1.

All results are based on a dilution factor of 1 unless otherwise noted in parenthesis below result value.

All samples with detections above the MDL are highlighted.

All samples with a J flag are in bold.

All samples are reported in ug/L

Acronyms and Abbreviations:

MDL Method Detection Limit

RL Reporting Limit


Service Road
0
40
80
scale
feet
Oxidation Pond
SWMU O-1
B4-1
B4-10
B4-19
B4-12
B4-2
B4-9
B4-11
B4-20
B4-18
B4-3
B4-13
B4-8
B4-16
B4-17
B4-7
B4-4
B4-14
B4-6
B4-15
B4-5
B-4
LEGEND
Sample Location
Service Road
Figure B4-1
SWMU B-4, Soil Gas Survey
Sample Location Map
Camp Stanley Storage Activity
PARSONS ENGINEERING SCIENCE, INC.
738290 CSSA-B4.DWG

1995 Geophysical Survey Data – SWMU B-4

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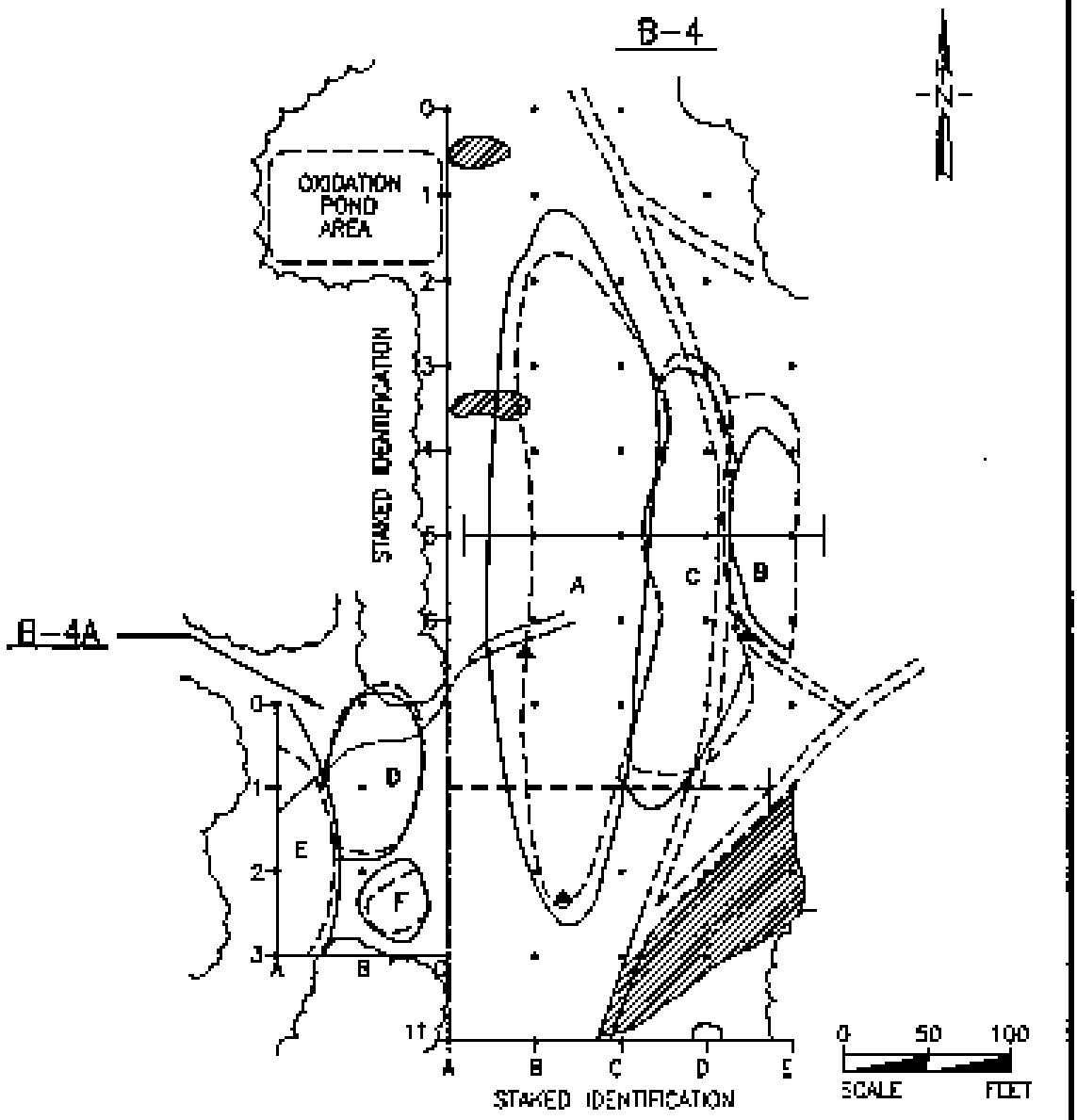
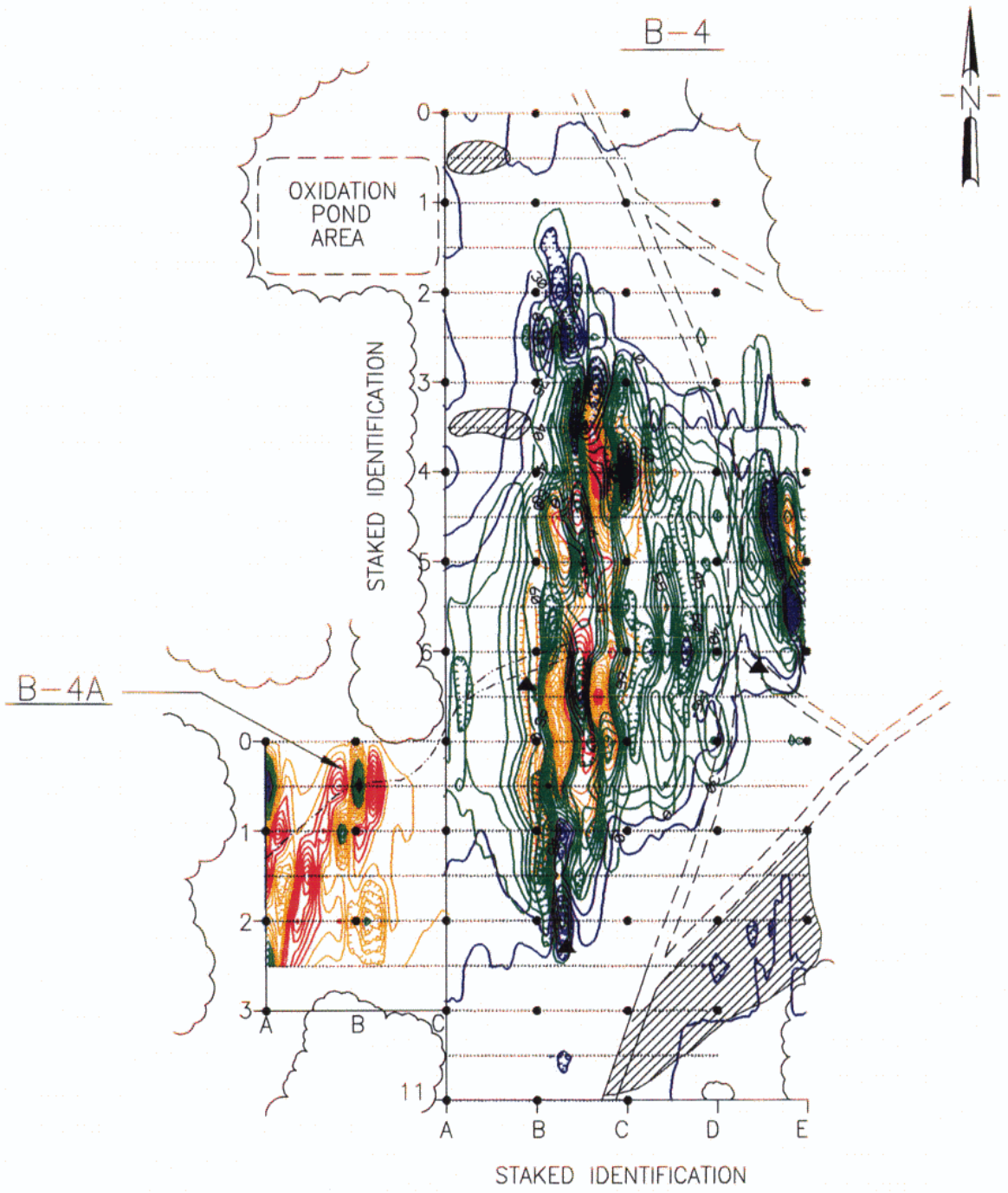


LEGEND

- STAKED GEOPHYSICAL GRID POINT
- LIMESTONE OUTCROP
- SURFACE METAL
- DRAINAGE CHANNELS
- DIRT ROAD
- WOODED AREA
- LOCATION OF GSSI SIR-3 GPR PROFILE SHOWN ON FIGURE 5.5
- LOCATION OF PULSE EKKO GPR PROFILE SHOWN ON FIGURE 5.6
- EM IN-PHASE ANOMALY
- EM CONDUCTIVITY ANOMALY
- A,B,C,D,E,F = ANOMALIES

ANOMALY LOCATION MAP
SWMU B-4 AND B-4A
CSSA GROUNDWATER EVALUATION



LEGEND

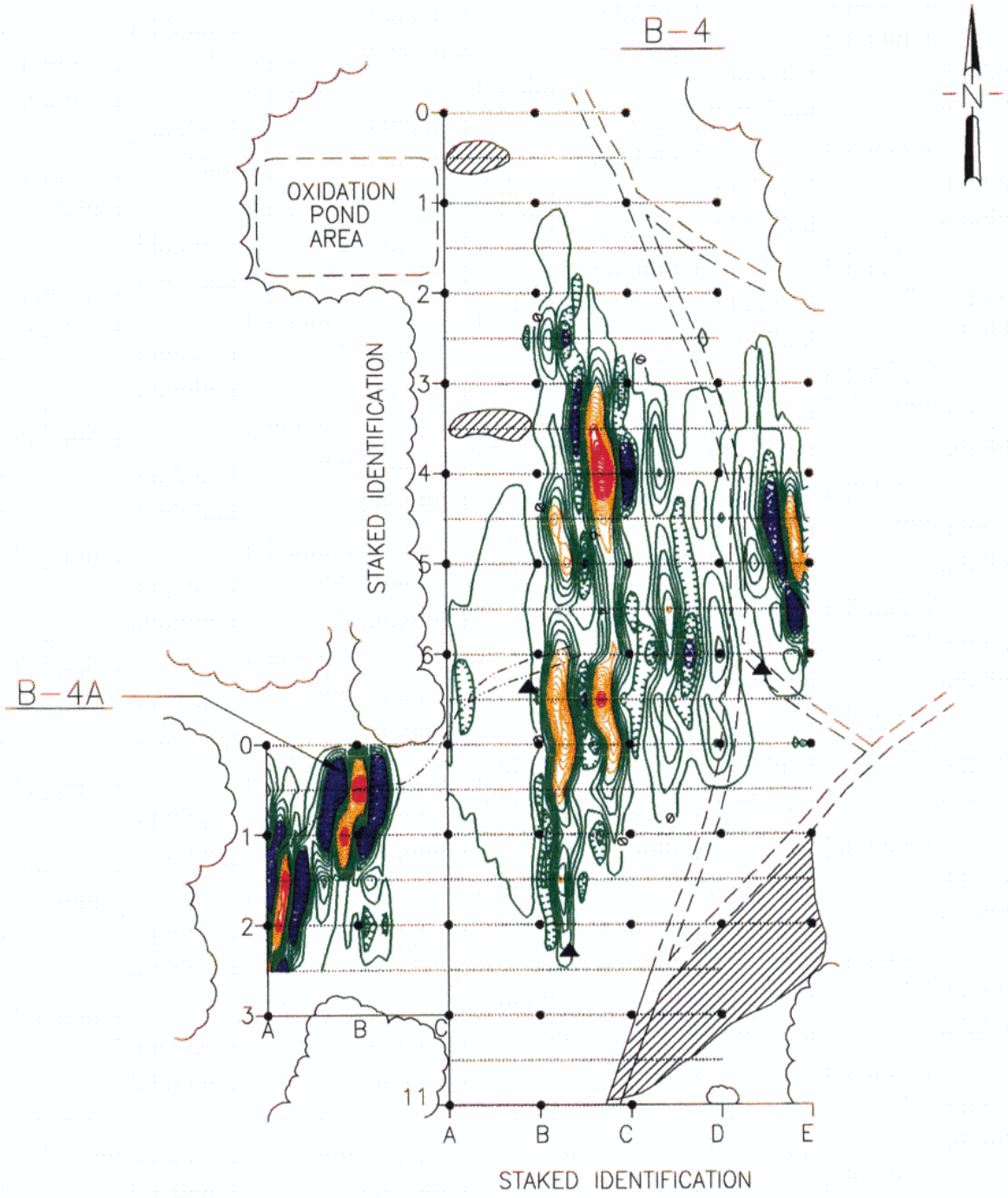
- STAKED GEOPHYSICAL GRID POINT
- LIMESTONE OUTCROP
- SURFACE METAL
- DRAINAGE CHANNELS
- DIRT ROAD
- WOODED AREA

0 50 100
SCALE FEET

CONTOUR INTERVAL = 5 MILLISIEMENS PER METER

FIGURE 5.2

EM CONDUCTIVITY DATA
SWMU B-4 AND B-4A



LEGEND

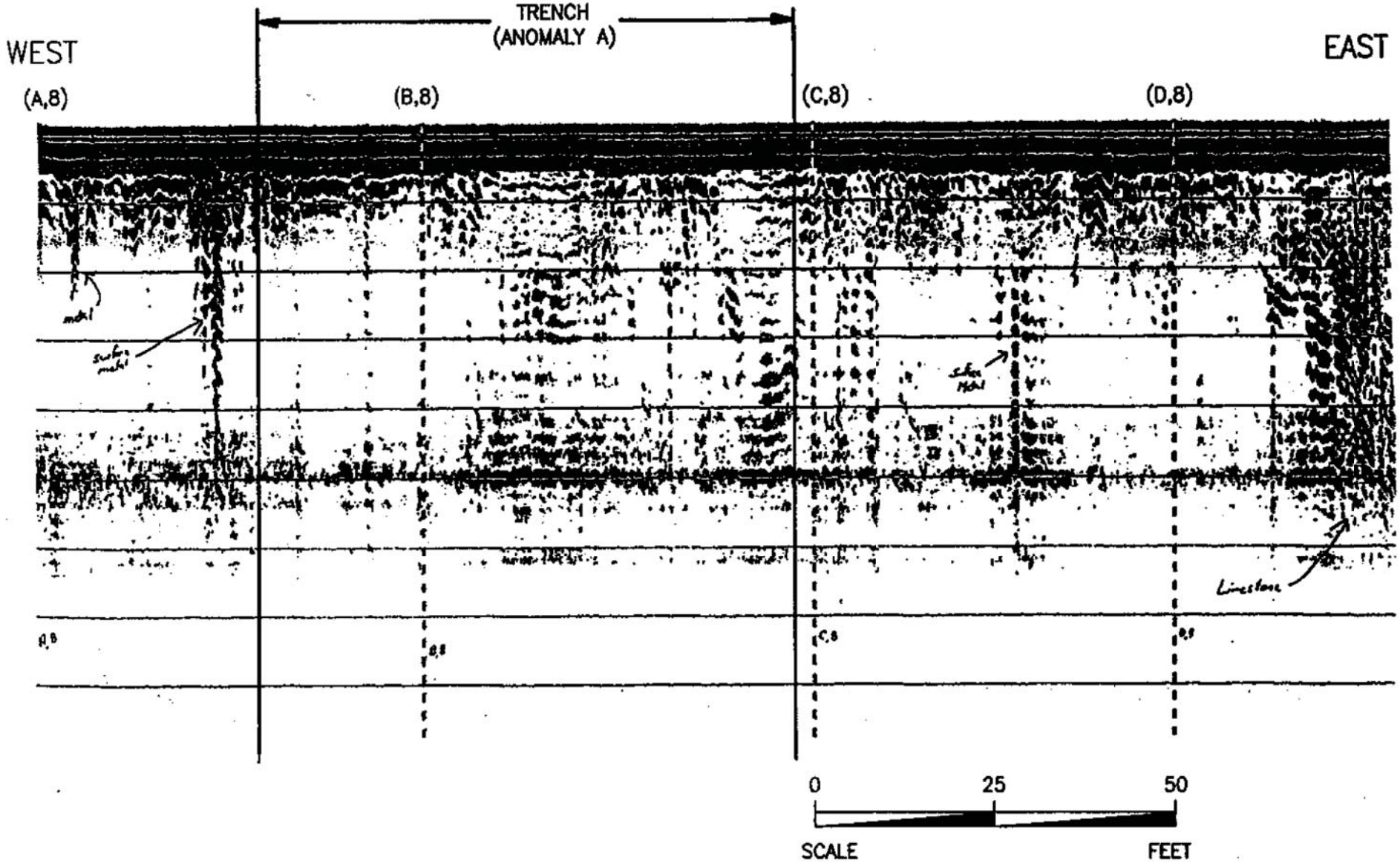
- STAKED GEOPHYSICAL GRID POINT
- LIMESTONE OUTCROP
- SURFACE METAL
- DRAINAGE CHANNELS
- DIRT ROAD
- WOODED AREA

0 50 100
SCALE FEET

CONTOUR INTERVAL = 2 PARTS PER THOUSAND

FIGURE 5.3

EM IN-PHASE DATA
SWMU B-4 AND B-4A



THE LOCATION OF THIS GPR PROFILE IS SHOWN ON FIGURE 5.1

FIGURE 5.5
GSSI SIR-3 GPR PROFILE
(LINE 8)
SWMU B-4

APPENDIX 11-B

BACKFILL SOURCE CHARACTERIZATION

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APPENDIX 11-B

BACKFILL SOURCE CHARACTERIZATION

Source Sample Collection

All earth material used to backfill the trenches for the January-February 2011 Interim Removal Action (IRA) assessment was obtained from the main borrow area located on the southwestern portion of Camp Stanley Storage Activity (CSSA). No known sources of contamination are known to be in this area and borrow for environmental and construction sites on CSSA is regularly obtained from the source.

On 1 January 2011 a composite sample of soil from the borrow pit was prepared by collecting grab samples from eight discreet locations within the south portion of the borrow area. Each grab sample consisted of approximately 8 ounces of soil obtained using a hand trowel. The grab samples were placed in a clean plastic bucket and gently homogenized with the trowel. The composited material was transferred to laboratory containers appropriate for the required analyses and shipped to the laboratory under chain-of-custody protocol.

Source Sample Analysis and Results

The composite sample was analyzed for the following parameters:

- Barium, Cadmium, Chromium, Copper, Lead, Nickel and Zinc by Method SW6020;
- Mercury by Method 7471A;
- Volatile Organic Compound (VOCs) by SW8260B
- Semivolatile Organic Compounds (SVOC)s by Method SW8270C; and
- Explosives by Method SW8330.

A trip blank accompanied the composite sample during shipment was analyzed for VOCs by Method SW8260B. No VOCs were detected in the trip blank.

The results of the analyses indicated that metals detected were within CSSA background values. VOCs, SVOC, and explosive constituents were not detected above sample detection limits (SDLs). With the exception of a few VOCs, SVOCs and explosive constituents that were screened out as chemicals of concern at SWMU B-4 (refer to APAR Section 10); SDLs were equal or less than Texas Risk Reduction Program (TRRP) residential assessment levels (RALs). The results of the analyses are summarized in Table APX-11A.

Based on the results of borrow pit sample and the known history of the source, the soil obtained from the borrow area was determined to be suitable for use as “clean” fill material for backfilling the excavated trenches at SWMU B-4.

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Table APX11-B
Backfill Source Analytical Data
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

Analyte	CSSA Background Value[1] mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$ mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$ mg/kg	Critical PCL[3] mg/kg	SWMUB4-CSSA-Borrow Pit 01/05/2011 Composite Sample mg/kg
Metals					
Barium	300 [a]	7800	220	300	35.6
Cadmium	3.0 [b]	52	0.75	52.0	0.125 J
Chromium	40.2 [b]	27000	1200	1200	7.64
Copper	23.2 [b]	550	520	520	4.82
Lead	84.5 [b]	500	1.5	84.5	8.78
Mercury	0.77 [b]	2.1	0.0039	2.1	0.00425
Nickel	35.5 [b]	830	79	79	7.52
Zinc	73.2 [b]	9900	1200	1200	11.8
VOCs					
1,1,1,2-Tetrachloroethane	---	3.9E+01	7.1E-01	0.71	0.0006 U
1,1,1-Trichloroethane	---	3.2E+04	8.1E-01	0.81	0.0006 U
1,1,2,2-Tetrachloroethane	---	4.0E+00	1.2E-02	0.012	0.0006 U
1,1,2-Trichloroethane	---	1.0E+01	1.0E-02	0.010	0.0006 U
1,1-Dichloroethane	---	2.6E+03	9.2E+00	9.2	0.0006 U
1,1-Dichloroethene	---	1.6E+03	2.5E-02	0.025	0.0006 U
1,1-Dichloropropene	---	2.6E+01	6.7E-02	0.067	0.0006 U
1,2,3-Trichlorobenzene	---	1.9E+02	1.3E+01	13	0.0006 U
1,2,3-Trichloropropane	---	2.0E-01	2.7E-04	0.00027	0.0006 U
1,2,4-Trichlorobenzene	---	7.0E+01	2.4E+00	2.4	0.00072 U
1,2,4-Trimethylbenzene	---	7.3E+01	4.9E+00	4.9	0.0006 U
1,2-Dibromo-3-chloropropane	---	8.0E-02	8.7E-04	0.00087	0.0011 U
1,2-Dibromoethane	---	4.3E-01	1.0E-04	0.00010	0.0006 U
1,2-Dichlorobenzene	---	3.9E+02	8.9E+00	8.9	0.0006 U
1,2-Dichloroethane	---	6.4E+00	6.9E-03	0.0069	0.0006 U
1,2-Dichloropropane	---	3.1E+01	1.1E-02	0.011	0.0006 U
1,3,5-Trimethylbenzene	---	5.9E+01	2.7E+01	27	0.0006 U
1,3-Dichlorobenzene	---	6.2E+01	3.4E+00	3.4	0.0006 U
1,3-Dichloropropane	---	2.6E+01	3.2E-02	0.032	0.0006 U
1,4-Dichlorobenzene	---	2.5E+02	1.1E+00	1.1	0.0006 U
1-Chlorohexane	---	2.3E+03	2.0E+01	20	0.00072 U
2,2-Dichloropropane	---	3.1E+01	6.0E-02	0.060	0.0006 U
2-Chlorotoluene	---	8.3E+02	4.5E+00	4.5	0.0006 U
4-Chlorotoluene	---	2.5E+00	1.9E+01	2.50	0.0006 U
Benzene	---	4.8E+01	1.3E-02	0.013	0.0006 U
Bromobenzene	---	2.8E+02	1.2E+00	1.2	0.0006 U
Bromochloromethane	---	3.5E+02	1.5E+00	1.5	0.0006 U
Bromodichloromethane	---	9.8E+01	3.3E-02	0.033	0.0006 U
Bromoform	---	2.8E+02	3.2E-01	0.32	0.0006 U
Carbon tetrachloride	---	9.7E+00	3.1E-02	0.031	0.0006 U
Chlorobenzene	---	3.2E+02	5.5E-01	0.55	0.0006 U

Table APX11-B
Backfill Source Analytical Data
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

Analyte	CSSA Background Value[1] mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$ mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$ mg/kg	Critical PCL[3] mg/kg	SWMUB4-CSSA-Borrow Pit 01/05/2011 Composite Sample mg/kg
Chloroethane	---	2.3E+04	1.5E+01	15	0.0012 U
Chloroform	---	8.0E+00	5.1E-01	0.51	0.0006 U
cis-1,2-Dichloroethene	---	7.2E+02	1.2E-01	0.12	0.0006 U
cis-1,3-Dichloropropene	---	7.1E+00	3.3E-03	0.003	0.0006 U
Dibromochloromethane	---	7.2E+01	2.5E-02	0.025	0.0006 U
Dibromomethane	---	1.4E+02	5.6E-01	0.56	0.0006 U
Dichlorodifluoromethane	---	1.2E+04	1.2E+02	120	0.0006 U
Ethylbenzene	---	4.0E+03	3.8E+00	3.8	0.0006 U
Hexachlorobutadiene	---	1.2E+01	1.6E+00	1.6	0.0012 U
Isopropylbenzene	---	3.0E+03	1.7E+02	170	0.0006 U
m,p-Xylene	---	4.7E+03	5.3E+01	53	0.0012 U
Methyl Bromide	---	2.9E+01	6.5E-02	0.065	0.0012 U
Methyl Chloride	---	8.4E+01	2.0E-01	0.20	0.0012 U
Methylene chloride	---	2.6E+02	6.5E-03	0.0065	0.0012 U
Naphthalene	---	1.2E+02	1.6E+01	16	0.0006 U
n-Butylbenzene	---	1.5E+03	6.1E+01	61	0.0006 U
n-Propylbenzene	---	1.6E+03	2.2E+01	22	0.0006 U
o-Xylene	---	2.9E+04	3.5E+01	35	0.0006 U
p-Isopropyltoluene	---	2.5E+03	1.2E+02	120	0.0006 U
sec-Butylbenzene	---	1.6E+03	4.2E+01	42	0.0006 U
Styrene	---	4.3E+03	1.6E+00	1.6	0.0006 U
tert-Butylbenzene	---	1.4E+03	5.0E+01	50	0.0006 U
Tetrachloroethene	---	9.4E+01	2.5E-02	0.025	0.00072 U
Toluene	---	5.4E+03	4.1E+00	4.1	0.0006 U
trans-1,2-Dichloroethene	---	3.7E+02	2.5E-01	0.25	0.0006 U
trans-1,3-Dichloropropene	---	2.6E+01	1.8E-02	0.018	0.0006 U
Trichloroethene	---	6.8E+01	1.7E-02	0.017	0.0006 U
Trichlorofluoromethane	---	1.2E+04	6.4E+01	64	0.0006 U
Vinyl Chloride	---	3.4E+00	1.1E-02	0.011	0.0006 U
SVOCs					
1,2,4-Trichlorobenzene	---	7.0E+01	2.4E+00	2.4	0.0047 U
1,2-Dichlorobenzene	---	3.9E+02	8.9E+00	8.9	0.0039 U
1,3-Dichlorobenzene	---	6.2E+01	3.4E+00	3.4	0.0044 U
1,4-Dichlorobenzene	---	2.5E+02	1.1E+00	1.1	0.0043 U
1-chloro-4-phenoxybenzene	---	1.5E-01	1.6E-02	0.016	0.0026 U
2,4,5-Trichlorophenol	---	4.1E+03	1.7E+01	17	0.0034 U
2,4,6-Trichlorophenol	---	6.7E+01	8.7E-02	0.087	0.0039 U
2,4-Dichlorophenol	---	1.9E+02	1.8E-01	0.18	0.0026 U
2,4-Dimethylphenol	---	8.8E+02	1.6E+00	1.6	0.0039 U
2,4-Dinitrophenol	---	1.3E+02	4.7E-02	0.047	0.0039 U
2,4-Dinitrotoluene	---	6.9E+00	2.7E-03	0.0027	0.0039 U
2,6-Dinitrotoluene	---	6.9E+00	2.4E-03	0.0024	0.0038 U
2-Chloronaphthalene	---	5.0E+03	3.3E+02	330	0.0049 U

Table APX11-B
Backfill Source Analytical Data
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

Analyte	CSSA Background Value[1] mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$ mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$ mg/kg	Critical PCL[3] mg/kg	SWMUB4-CSSA-Borrow Pit 01/05/2011 Composite Sample mg/kg
2-Chlorophenol	---	3.6E+02	8.2E-01	0.82	0.0038 U
2-Methylnaphthalene	---	2.5E+02	8.5E+00	8.5	0.0032 U
2-Methylphenol	---	1.0E+03	3.6E+00	3.6	0.0035 U
2-Nitroaniline	---	1.1E+01	1.1E-02	0.011	0.0039 U
2-Nitrophenol	---	1.0E+02	6.7E-02	0.067	0.0055 U
3,3-Dichlorobenzidine	---	1.0E+01	3.1E-02	0.031	0.0037 U
3-Nitroaniline	---	1.9E+01	1.3E-02	0.013	0.0031 U
4,6-Dinitro-2-methylphenol	---	5.2E+00	2.3E-03	0.0023	0.0039 U
4-Bromophenyl phenyl ether	---	2.7E-01	1.8E-01	0.18	0.0039 U
4-Chloro-3-methylphenol	---	3.3E+02	2.3E+00	2.3	0.0039 U
4-Chloroaniline	---	2.3E+01	1.0E-02	0.010	0.0026 U
4-Methylphenol	---	2.7E+02	3.2E-01	0.32	0.0034 U
4-Nitroaniline	---	1.9E+02	5.4E-02	0.054	0.0039 U
4-Nitrophenol	---	5.1E+01	5.0E-02	0.050	0.0045 U
Acenaphthene	---	3.0E+03	1.2E+02	120	0.0026 U
Acenaphthylene	---	3.8E+03	2.0E+02	200	0.0026 U
Anthracene	---	1.8E+04	3.4E+03	3400	0.0026 U
Benzo(a)anthracene	---	5.6E+00	8.9E+00	5.6	0.0034 U
Benzo(a)pyrene	---	5.6E-01	3.8E+00	0.56	0.0028 U
Benzo(b)fluoranthene	---	5.7E+00	3.0E+01	5.7	0.0039 U
Benzo(g,h,i)perylene	---	1.8E+03	2.3E+04	1800	0.0035 U
Benzoic acid	---	3.5E+02	9.5E+01	95	0.0079 U
Benzyl alcohol	---	6.7E+03	2.9E+00	29.0	0.0037 U
bis(2-Chloroethoxy)methane	---	2.5E+00	5.9E-03	0.0059	0.0029 U
bis(2-Chloroethyl)ether	---	1.4E+00	1.1E-03	0.0011	0.0034 U
bis(2-Chloroisopropyl)ether	---	4.1E+01	9.5E-02	0.095	0.0032 U
bis(2-Ethylhexyl)phthalate	---	4.3E+01	8.2E+01	43	0.0079 U
Butyl Benzyl Phthalate	---	1.6E+03	1.3E+02	132	0.003 U
Chrysene	---	5.6E+02	7.7E+02	560	0.0035 U
Dibenzo(a,h)anthracene	---	5.5E-01	7.6E+00	0.55	0.0026 U
Dibenzofuran	---	2.7E+02	1.7E+01	17	0.0026 U
Diethyl phthalate	---	1.4E+03	7.8E+01	78	0.0039 U
Dimethyl phthalate	---	6.6E+02	3.1E+01	31	0.0029 U
Di-N-Butyl phthalate	---	4.4E+03	1.7E+03	1700	0.003 U
Di-N-Octyl phthalate	---	1.3E+03	8.1E+05	1300	0.0035 U
Fluoranthene	---	2.3E+03	9.6E+02	960	0.0026 U
Fluorene	---	2.3E+03	1.5E+02	150	0.0026 U
Hexachlorobenzene	---	1.0E+00	5.6E-01	0.56	0.0031 U
Hexachlorobutadiene	---	1.2E+01	1.6E+00	1.6	0.0053 U
Hexachlorocyclopentadiene	---	7.2E+00	9.6E+00	7.2	0.0043 U
Hexachloroethane	---	6.7E+01	9.2E-01	0.92	0.0047 U
Indeno(1,2,3-cd)pyrene	---	5.7E+00	8.7E+01	5.7	0.0042 U
Isophorone	---	1.2E+03	1.5E+00	1.5	0.0036 U

Table APX11-B
Backfill Source Analytical Data
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

Analyte	CSSA Background Value[1] mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{Tot}Soil_{Comb}$ mg/kg	TRRP Residential Tier 1 PCL[2] 30-Acre Source $^{GW}Soil_{Ing}$ mg/kg	Critical PCL[3] mg/kg	SWMUB4-CSSA-Borrow Pit 01/05/2011 Composite Sample mg/kg
SVOCs					
Naphthalene	---	1.2E+02	1.6E+01	16	0.0039 U
Nitrobenzene	---	3.4E+01	1.8E-01	0.18	0.0039 U
N-Nitroso-di-N-propylamine	---	4.0E-01	1.8E-04	0.00018	0.0048 U
N-Nitrosodiphenylamine	---	5.7E+02	1.4E+00	1.4	0.0026 U
Pentachlorophenol	---	2.4E+00	9.2E-03	0.0092	0.0034 U
Phenanthrene	---	1.7E+03	2.1E+02	210	0.0036 U
Phenol	---	1.6E+03	9.6E+00	9.6	0.0039 U
Pyrene	---	1.7E+03	5.6E+02	560	0.0026 U
Explosives					
1,3,5-Trinitrobenzene	~	2.0E+03	9.1E-01	0.91	0.0076 U
1,3-Dinitrobenzene	~	6.3E+00	3.8E-03	0.0038	0.0047 U
2,4,6-Trinitrotoluene	~	1.7E+01	8.6E-02	0.086	0.015 U
2,4-Dinitrotoluene	~	6.9E+00	2.7E-03	0.0027	0.0025 U
2,6-Dinitrotoluene	~	6.9E+00	2.4E-03	0.0024	0.0033 U
2-Nitrotoluene	~	2.1E+01	1.6E-02	0.016	0.013 U
3-Nitrotoluene	~	2.7E+02	9.2E-01	0.92	0.0058 U
4-Nitrotoluene	~	1.7E+02	2.2E-01	0.22	0.019 U
HMX	~	1.6E+03	1.2E+00	1.2	0.020 U
Nitrobenzene	~	3.4E+01	1.8E-01	0.18	0.0063 U
RDX	~	4.3E+01	1.8E-02	0.018	0.0069 U
Tetryl	~	3.4E+01	5.5E-01	0.55	0.0070 U

Legend:

mg/kg - milligrams per kilogram

U - Constituent not detected at method detection limit

J - Estimated value

CSSA - Camp Stanley Storage Activity

PCL - Protective Concentration Level

TRRP - Texas Risk Reduction Program

Notes:

1. Background is the greater value of the Texas Specific Background Concentration (a) or Camp Stanley Storage Activity (CSSA) site-specific background value (b).
2. Default Tier 1 PCLs - TRRP PCL Tables dated May 24, 2011.
3. The Critical PCL equals lower value of the Tier 1 or Tier 2 PCL or background if the greater value.
4. Data qualifiers assigned in accordance with January 2003 Final CSSA QAPP.
5. Shaded cells indicate sample quantitation limit (SQL) exceeds the
6. Metals analysis by EPA Method Series SW846-6020/7471A.
7. Volatile organic compound analysis by EPA Method SW846-8260B.
8. Semivolatile organic compound analysis by EPA Method SW846-
9. Explosives analysis by EPA Method SW846-8330.

ALS Environmental

Work Order: 1101163

Project Name:

Camp Stanley Phase II

Weston Solutions, Inc.

Russ Casson
70 NE Loop 410, Suite 600
San Antonio, TX 78216
(210) 308-4338

16-Feb-2011

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: TX: T104704231-10-3

SWMU B-4 APAR Appendix 11 Note:

1. Abbreviated report is supplied for Appendix 11. Full analytical report and associated Data Usability Summary is included in Appendix 10.

TABLE OF CONTENTS
Work Order # 1101163

ALS Environmental

16-Feb-2011

Russ Casson
Weston Solutions, Inc.
70 NE Loop 410, Suite 600
San Antonio, TX 78216

Tel: (210) 308-4338
Fax: (210) 308-4329

Re: Camp Stanley Phase II

Work Order: **1101163**

Dear Russ,

ALS Environmental received 2 samples on 07-Jan-2011 09:05 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 568.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Ed B. Fry

Electronically approved by: Mary K. Knowles

Ed B. Fry
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac

Certificate No: TX: T104704231-10-3

ALS Environmental **Date:** *16-Feb-11*

Client:	Weston Solutions, Inc.
Project:	Camp Stanley Phase II
Work Order:	1101163

TRRP Laboratory Data Package Cover Page

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:
a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:
a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	Weston Solutions, Inc.	**TRRP Laboratory Data Package Cover Page**
Project:	Camp Stanley Phase II	
Work Order:	1101163	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Ed B. Fry

Ed B. Fry
Project Manager

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 1/12/2011					
Project Name: Camp Stanley Phase II			Laboratory Job Number: 1101163					
Reviewer Name: Ed B. Fry			Prep Batch Number(s): 49159, 49198, 49205, 49209, R103581, R103596, R103675					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
R2	OI	**Sample and quality control (QC) identification**						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
R3	OI	**Test reports**						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?	X					
		Were % moisture (or solids) reported for all soil and sediment samples?	X					
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
R4	O	**Surrogate recovery data**						
		Were surrogates added prior to extraction?	X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	X					
R5	OI	**Test reports/summary forms for blank samples**						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
R6	OI	**Laboratory control samples (LCS):**						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X					
		Was the LCSD RPD within QC limits?	X					
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**						
		Were the project/method specified analytes included in the MS and MSD?	X					
		Were MS/MSD analyzed at the appropriate frequency?	X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1	
		Were MS/MSD RPDs within laboratory QC limits?		X			2	
R8	OI	**Analytical duplicate data**						
		Were appropriate analytical duplicates analyzed for each matrix?	X					
		Were analytical duplicates analyzed at the appropriate frequency?	X					
		Were RPDs or relative standard deviations within the laboratory QC limits?		X			3	
R9	OI	**Method quantitation limits (MQLs):**						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
R10	OI	**Other problems/anomalies**						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 1/12/2011					
Project Name: Camp Stanley Phase II			Laboratory Job Number: 1101163					
Reviewer Name: Ed B. Fry			Prep Batch Number(s): 49159, 49198, 49205, 49209, R103581, R103596, R103675					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X					
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?	X					
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			4	
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 1/12/2011
Project Name: Camp Stanley Phase II	Laboratory Job Number: 1101163
Reviewer Name: Ed B. Fry	Prep Batch Number(s): 49159, 49198, 49205, 49209, R103581, R103596, R103675

ER#[5]	Description
1	Batch 49198, Mercury, Sample 1101159-11 : MS/MSD is for an unrelated sample. Batch 49205, Metals, Sample 1101159-11 : MS is for an unrelated sample. Batch R103581, Volatile Organics, Sample 1101145-02 : MSD is for an unrelated sample. Batch R103596, Volatile Organics, Sample 1101143-05 : MS/MSD is for an unrelated sample.
2	Batch 49205, Metals, Sample 1101159-11 : MSD RPD is for an unrelated sample.
3	Batch 49205, Metals, Sample 1101159-11 : Duplicate RPD is for an unrelated sample.
4	Batch 49205, Metals, Sample 1101159-11 : PDS is for an unrelated sample.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

ALS Environmental

Date: 16-Feb-11

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Work Order: **1101163**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1101163-01	SWMUB4-CSSA_010511_N1300 Barrow Pit	Soil		1/5/2011 13:00	1/7/2011 09:05	☐
1101163-02	Trip Blank	Water		1/5/2011	1/7/2011 09:05	☐

Client:	Weston Solutions, Inc.
Project:	Camp Stanley Phase II
Work Order:	1101163

Case Narrative

This report was revised on February 15, 2011 to report sample results in ppm per client request.

This report was revised on February 10, 2011 to include missing Volatile Organics and to revise the ICSAB form for Metals anlaysis.

☑ ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

☐ [illegible]
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

Page 1 of 1

ALS Project Manager: | ALS Work Order #: 1101105

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	00 70 166	Project Name	Camp Stanely Phase II	A	VOC (8260) Client Select List
Work Order	03886.529.0005.01	Project Number		B	TPH (TX1005)
Company Name	Weston Solutions, Inc	Bill To Company	Weston Solutions, Inc	C	SVOC (8270) Client Select list
Send Report To	Russ Casson	Invoice Attn	Russ Casson	D	Total Metals (6020/7000) Client Select List (Ba, Cd, Cr, Cu, Pb, Zn,
Address	70 NE Loop 410, Suite 600	Address	70 NE Loop 410 Suite 600	E	TCLP Metals (SW-846)
				F	Moisture
City/State/Zip	San Antonio, TX 78216	City/State/Zip	San Antonio, TX 78216	G	Explosives (SW 8330)
Phone	(210) 308-4300	Phone	(210) 308-4300	H	Barium (SW 6020)*
Fax	(210) 308-4329	Fax	(210) 308-4329	I	
e-Mail Address	R.Casson@WestonSolutions.com	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SWMUB4-SPBCK01_010511_N0800	1-5-11	0800	S	8	1				X							STD TA
2	SWMUB4-SPBCK02_010511_N0805		0805	S	8	1				X							STD TA
3	SWMUB4-SPBCK03_010511_N0810		0810	S	8	1				X							STD TA
4	SWMUB4-SPBCK04_010511_N0815		0815	S	8	1				X							STD TA
5	SWMUB4-SS1C_010511_N0930		0930	S	8	1								X			STD TA
6	SWMUB4-CSSA_010511_N1300 Barmelit		1300	S	8	4	X		X	X			X				3 day TA
7	Trip Blank		—	W	—	2	X										
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Weston Lothringer

Shipment Method: Fed EX

Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☒ Other 3 day ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Notes: 3 Day TAT ~~Contingency SPLP~~

Relinquished by:	Date: 1-6-11	Time: 1900	Received by:			
Relinquished by:	Date:	Time:	Received by (Laboratory):	1/7/11	Cooler ID	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	0925	3826	

QC Package: (Check One Box Below)
☐ Level I Std QC ☐ TRRP Chec
☐ Level II Std QC/Raw Data ☒ TRRP Level
☐ Level V (SW 846)/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ALS Environmental

Sample Receipt Checklist

Client Name: **WESTON - SAN ANTONIO** Date/Time Received: **07-Jan-11 09:05**

Work Order: **1101163** Received by: **DWH**

Checklist completed by David Hightower eSignature 07-Jan-11 Date Reviewed by: Ed B. Fry eSignature 07-Jan-11 Date

Matrices: soil
Carrier name: ALS.HS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.6c	002	
Cooler(s)/Kit(s):	3826		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
WorkOrder: **1101163**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/Kg-dry	Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter
wt%	

Analytical Report

Weston Solutions, Inc.
Camp Stanley Phase II
ALS WO# 1101163

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: SWMUB4-CSSA_010511_N1300 Barrow Pit
Collection Date: 1/5/2011 01:00 PM

Work Order: 1101163
Lab ID: 1101163-01
Matrix: SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
EXPLOSIVES		Method: **SW8330**			Prep: SW8330 / 1/10/11		Analyst: **NPI**
1,3,5-Trinitrobenzene	U		0.0076	0.0596	mg/Kg-dry	1	1/11/2011 17:13
1,3-Dinitrobenzene	U		0.0047	0.0596	mg/Kg-dry	1	1/11/2011 17:13
2,4,6-Trinitrotoluene	U		0.015	0.0596	mg/Kg-dry	1	1/11/2011 17:13
2,4-Dinitrotoluene	U		0.0025	0.0596	mg/Kg-dry	1	1/11/2011 17:13
2,6-Dinitrotoluene	U		0.0033	0.0596	mg/Kg-dry	1	1/11/2011 17:13
2-Nitrotoluene	U		0.013	0.0596	mg/Kg-dry	1	1/11/2011 17:13
3-Nitrotoluene	U		0.0058	0.0596	mg/Kg-dry	1	1/11/2011 17:13
4-Nitrotoluene	U		0.019	0.0596	mg/Kg-dry	1	1/11/2011 17:13
HMX	U		0.020	0.0596	mg/Kg-dry	1	1/11/2011 17:13
Nitrobenzene	U		0.0063	0.0596	mg/Kg-dry	1	1/11/2011 17:13
RDX	U		0.0069	0.0596	mg/Kg-dry	1	1/11/2011 17:13
Tetryl	U		0.0070	0.0596	mg/Kg-dry	1	1/11/2011 17:13
Surr: 1,2-Dinitrobenzene	*73.8*			*50-150*	*%REC*	1	1/11/2011 17:13
MERCURY		Method: **SW7471A**			Prep: SW7471A / 1/10/11		Analyst: **JCJ**
Mercury	**0.00425**		**0.00025**	**0.00424**	**mg/Kg-dry**	1	1/10/2011 18:54
METALS		Method: **SW6020**			Prep: SW3050A / 1/10/11		Analyst: **SKS**
Barium	**35.6**		**0.088**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Cadmium	**0.125**	J	**0.044**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Chromium	**7.64**		**0.055**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Copper	**4.82**		**0.15**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Lead	**8.78**		**0.055**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Nickel	**7.52**		**0.066**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
Zinc	**11.8**		**0.27**	**0.550**	**mg/Kg-dry**	1	1/11/2011 04:55
LOW-LEVEL SEMIVOLATILES		Method: **SW8270**			Prep: SW3541 / 1/7/11		Analyst: **KMB**
1,2,4-Trichlorobenzene	U		0.0047	0.0079	mg/Kg-dry	1	1/8/2011 02:09
1,2-Dichlorobenzene	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
1,3-Dichlorobenzene	U		0.0044	0.0079	mg/Kg-dry	1	1/8/2011 02:09
1,4-Dichlorobenzene	U		0.0043	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,4,5-Trichlorophenol	U		0.0034	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,4,6-Trichlorophenol	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,4-Dichlorophenol	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,4-Dimethylphenol	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,4-Dinitrophenol	U		0.0039	0.039	mg/Kg-dry	1	1/8/2011 02:09
2,4-Dinitrotoluene	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2,6-Dinitrotoluene	U		0.0038	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2-Chloronaphthalene	U		0.0049	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2-Chlorophenol	U		0.0038	0.0079	mg/Kg-dry	1	1/8/2011 02:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: SWMUB4-CSSA_010511_N1300 Barrow Pit
Collection Date: 1/5/2011 01:00 PM

Work Order: 1101163
Lab ID: 1101163-01
Matrix: SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
2-Methylnaphthalene	U		0.0032	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2-Methylphenol	U		0.0035	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2-Nitroaniline	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
2-Nitrophenol	U		0.0055	0.0079	mg/Kg-dry	1	1/8/2011 02:09
3&4-Methylphenol	U		0.0034	0.0079	mg/Kg-dry	1	1/8/2011 02:09
3,3'-Dichlorobenzidine	U		0.0037	0.0079	mg/Kg-dry	1	1/8/2011 02:09
3-Nitroaniline	U		0.0031	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4,6-Dinitro-2-methylphenol	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Bromophenyl phenyl ether	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Chloro-3-methylphenol	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Chloroaniline	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Chlorophenyl phenyl ether	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Nitroaniline	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
4-Nitrophenol	U		0.0045	0.039	mg/Kg-dry	1	1/8/2011 02:09
Acenaphthene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Acenaphthylene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Anthracene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benz(a)anthracene	U		0.0034	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benzo(a)pyrene	U		0.0028	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benzo(b)fluoranthene	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benzo(g,h,i)perylene	U		0.0035	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benzoic acid	U		0.0079	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Benzyl alcohol	U		0.0037	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Bis(2-chloroethoxy)methane	U		0.0029	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Bis(2-chloroethyl)ether	U		0.0034	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Bis(2-chloroisopropyl)ether	U		0.0032	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Bis(2-ethylhexyl)phthalate	U		0.0079	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Butyl benzyl phthalate	U		0.0030	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Chrysene	U		0.0035	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Di-n-butyl phthalate	U		0.0030	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Di-n-octyl phthalate	U		0.0035	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Dibenz(a,h)anthracene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Dibenzofuran	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Diethyl phthalate	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Dimethyl phthalate	U		0.0029	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Fluoranthene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Fluorene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Hexachlorobenzene	U		0.0031	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Hexachlorobutadiene	U		0.0053	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Hexachlorocyclopentadiene	U		0.0043	0.0079	mg/Kg-dry	1	1/8/2011 02:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: SWMUB4-CSSA_010511_N1300 Barrow Pit
Collection Date: 1/5/2011 01:00 PM

Work Order: 1101163
Lab ID: 1101163-01
Matrix: SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Hexachloroethane	U		0.0047	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Indeno(1,2,3-cd)pyrene	U		0.0042	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Isophorone	U		0.0036	0.0079	mg/Kg-dry	1	1/8/2011 02:09
N-Nitrosodi-n-propylamine	U		0.0048	0.0079	mg/Kg-dry	1	1/8/2011 02:09
N-Nitrosodiphenylamine	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Naphthalene	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Nitrobenzene	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Pentachlorophenol	U		0.0034	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Phenanthrene	U		0.0036	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Phenol	U		0.0039	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Pyrene	U		0.0026	0.0079	mg/Kg-dry	1	1/8/2011 02:09
Surr: 2,4,6-Tribromophenol	*79.6*			*36-126*	*%REC*	1	1/8/2011 02:09
Surr: 2-Fluorobiphenyl	*66.3*			*43-125*	*%REC*	1	1/8/2011 02:09
Surr: 2-Fluorophenol	*58.6*			*37-125*	*%REC*	1	1/8/2011 02:09
Surr: 4-Terphenyl-d14	*79.8*			*32-125*	*%REC*	1	1/8/2011 02:09
Surr: Nitrobenzene-d5	*66.0*			*37-125*	*%REC*	1	1/8/2011 02:09
Surr: Phenol-d6	*64.2*			*40-125*	*%REC*	1	1/8/2011 02:09
VOLATILES		Method: **SW8260**					Analyst: **WLR**
1,1,1,2-Tetrachloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1,1-Trichloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1,2,2-Tetrachloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1,2-Trichloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1-Dichloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1-Dichloroethene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,1-Dichloropropene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2,3-Trichlorobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2,3-Trichloropropane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2,4-Trichlorobenzene	U		0.00072	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2,4-Trimethylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2-Dibromo-3-chloropropane	U		0.0011	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2-Dibromoethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2-Dichlorobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2-Dichloroethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,2-Dichloropropane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,3,5-Trimethylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,3-Dichlorobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,3-Dichloropropane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1,4-Dichlorobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
1-Chlorohexane	U		0.00072	0.0060	mg/Kg-dry	1	1/7/2011 14:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: SWMUB4-CSSA_010511_N1300 Barrow Pit
Collection Date: 1/5/2011 01:00 PM

Work Order: 1101163
Lab ID: 1101163-01
Matrix: SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
2,2-Dichloropropane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
2-Chlorotoluene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
4-Chlorotoluene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
4-Isopropyltoluene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Benzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Bromobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Bromochloromethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Bromodichloromethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Bromoform	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Bromomethane	U		0.0012	0.012	mg/Kg-dry	1	1/7/2011 14:56
Carbon tetrachloride	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Chlorobenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Chloroethane	U		0.0012	0.012	mg/Kg-dry	1	1/7/2011 14:56
Chloroform	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Chloromethane	U		0.0012	0.012	mg/Kg-dry	1	1/7/2011 14:56
cis-1,2-Dichloroethene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
cis-1,3-Dichloropropene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Dibromochloromethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Dibromomethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Dichlorodifluoromethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Ethylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Hexachlorobutadiene	U		0.0012	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Isopropylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
m,p-Xylene	U		0.0012	0.012	mg/Kg-dry	1	1/7/2011 14:56
Methylene chloride	U		0.0012	0.012	mg/Kg-dry	1	1/7/2011 14:56
n-Butylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
n-Propylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Naphthalene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
o-Xylene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
sec-Butylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Styrene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
tert-Butylbenzene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Tetrachloroethene	U		0.00072	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Toluene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
trans-1,2-Dichloroethene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
trans-1,3-Dichloropropene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Trichloroethene	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Trichlorofluoromethane	U		0.00060	0.0060	mg/Kg-dry	1	1/7/2011 14:56
Vinyl chloride	U		0.00060	0.0024	mg/Kg-dry	1	1/7/2011 14:56
Surr: 1,2-Dichloroethane-d4	*94.9*			*70-128*	*%REC*	1	1/7/2011 14:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: SWMUB4-CSSA_010511_N1300 Barrow Pit
Collection Date: 1/5/2011 01:00 PM

Work Order: 1101163
Lab ID: 1101163-01
Matrix: SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Surr: 4-Bromofluorobenzene	*94.5*			*73-126*	*%REC*	1	1/7/2011 14:56
Surr: Dibromofluoromethane	*91.9*			*71-128*	*%REC*	1	1/7/2011 14:56
Surr: Toluene-d8	*102*			*73-127*	*%REC*	1	1/7/2011 14:56
MOISTURE		Method: **E160.3**					Analyst: **TDW**
Percent Moisture	**16.6**	n	**0.010**	**0.0100**	**wt%**	1	1/10/2011 14:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: Trip Blank
Collection Date: 1/5/2011

Work Order: 1101163
Lab ID: 1101163-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES		Method: SW8260					Analyst: AKP
1,1,1,2-Tetrachloroethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,1,1-Trichloroethane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,1,2,2-Tetrachloroethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,1,2-Trichloroethane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,1-Dichloroethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,1-Dichloroethene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,1-Dichloropropene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,2,3-Trichlorobenzene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
1,2,3-Trichloropropane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2,4-Trichlorobenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2,4-Trimethylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2-Dibromo-3-chloropropane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2-Dichlorobenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2-Dichloroethane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,2-Dichloropropane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1,4-Dichlorobenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
1-Chlorohexane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
2,2-Dichloropropane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
2-Chlorotoluene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
4-Chlorotoluene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
4-Isopropyltoluene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Benzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Bromobenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Bromochloromethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Bromodichloromethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Bromoform	U		0.00030	0.0010	mg/L	1	1/7/2011 14:00
Bromomethane	U		0.00030	0.0010	mg/L	1	1/7/2011 14:00
Carbon tetrachloride	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Chlorobenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Chloroethane	U		0.00030	0.0010	mg/L	1	1/7/2011 14:00
Chloroform	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Chloromethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
cis-1,2-Dichloroethene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
cis-1,3-Dichloropropene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Dibromochloromethane	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Dibromomethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Dichlorodifluoromethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Ethylbenzene	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *16-Feb-11*

Client: Weston Solutions, Inc.
Project: Camp Stanley Phase II
Sample ID: Trip Blank
Collection Date: 1/5/2011

Work Order: 1101163
Lab ID: 1101163-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Hexachlorobutadiene	U		0.00040	0.0010	mg/L	1	1/7/2011 14:00
Isopropylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
m,p-Xylene	U		0.00020	0.0020	mg/L	1	1/7/2011 14:00
Methylene chloride	U		0.00020	0.0020	mg/L	1	1/7/2011 14:00
n-Butylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
n-Propylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Naphthalene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
o-Xylene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
sec-Butylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Styrene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
tert-Butylbenzene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Tetrachloroethene	U		0.00030	0.0010	mg/L	1	1/7/2011 14:00
Toluene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
trans-1,2-Dichloroethene	U		0.00030	0.0010	mg/L	1	1/7/2011 14:00
trans-1,3-Dichloropropene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Trichloroethene	U		0.00010	0.0010	mg/L	1	1/7/2011 14:00
Trichlorofluoromethane	U		0.00020	0.0010	mg/L	1	1/7/2011 14:00
Vinyl chloride	U		0.00040	0.0010	mg/L	1	1/7/2011 14:00
Surr: 1,2-Dichloroethane-d4	*105*			*71-125*	*%REC*	1	1/7/2011 14:00
Surr: 4-Bromofluorobenzene	*98.1*			*70-125*	*%REC*	1	1/7/2011 14:00
Surr: Dibromofluoromethane	*93.0*			*74-125*	*%REC*	1	1/7/2011 14:00
Surr: Toluene-d8	*98.4*			*78-123*	*%REC*	1	1/7/2011 14:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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APPENDIX 11-C

METES AND BOUNDS SURVEY

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Ace Surveying, Inc.
RHONDA K. BUTLER
REGISTERED PROFESSIONAL
LAND SURVEYOR #5409

P. O. BOX 597
DEVINE, TEXAS 78016
Phone: 830-334-7264
Fax: 830-665-5796
Email: acesurveying@sbcglobal.net

1.898 ACRES
CAMP STANLEY AMMUNITION
STORAGE ACTIVITY

A field note description of a 1.898 acre tract of land situated in Bexar County, Texas, out of and a part of a 17,273.87 acre tract of land described in deed recorded in Volume 1335, Page 207 of the Deed Records of Bexar County, Texas, also being out of the Camp Stanley Ammunition Storage Activity tract; (Note: All iron pins set are ½" rebar with a pink plastic cap stamped "RKB 5409", Coordinates based on WGS84, NAD83, Texas State Plane Coordinate System, South Central Zone #4204, based on CSSA Survey Control Monuments.)

Beginning at an iron pin set for the south corner of the herein described tract, having coordinates of North: 13804487.79 East: 2091401.05, from which CSSA Monument #4 having coordinates of North: 13798635.04, East: 2087699.28 bears S 32°18'46" W a distance of 6925.16 feet;

Thence along the southwest line of the herein described tract the following 2 calls:

1) N 26°36'27" W, 98.14 feet to an iron pin set for an angle point, having coordinates of North: 13804575.54 East : 2091357.09;
2) N 18°34'36" W, 383.09 feet to an iron pin set for the northwest corner of the herein described tract, having coordinates of North: 13804938.67 East : 2091235.05;

Thence N 72°53'17" E, 146.37 feet along the northwest line to an iron pin set for the most northerly northeast corner of the herein described tract, having coordinates of North: 13804981.74 East: 2091374.94;

Thence S 26°32'19" E, 57.37 feet along an interior line to an iron pin set for a re-entrant corner of the herein described tract, having coordinates of North: 13804930.41 East: 2091400.57;

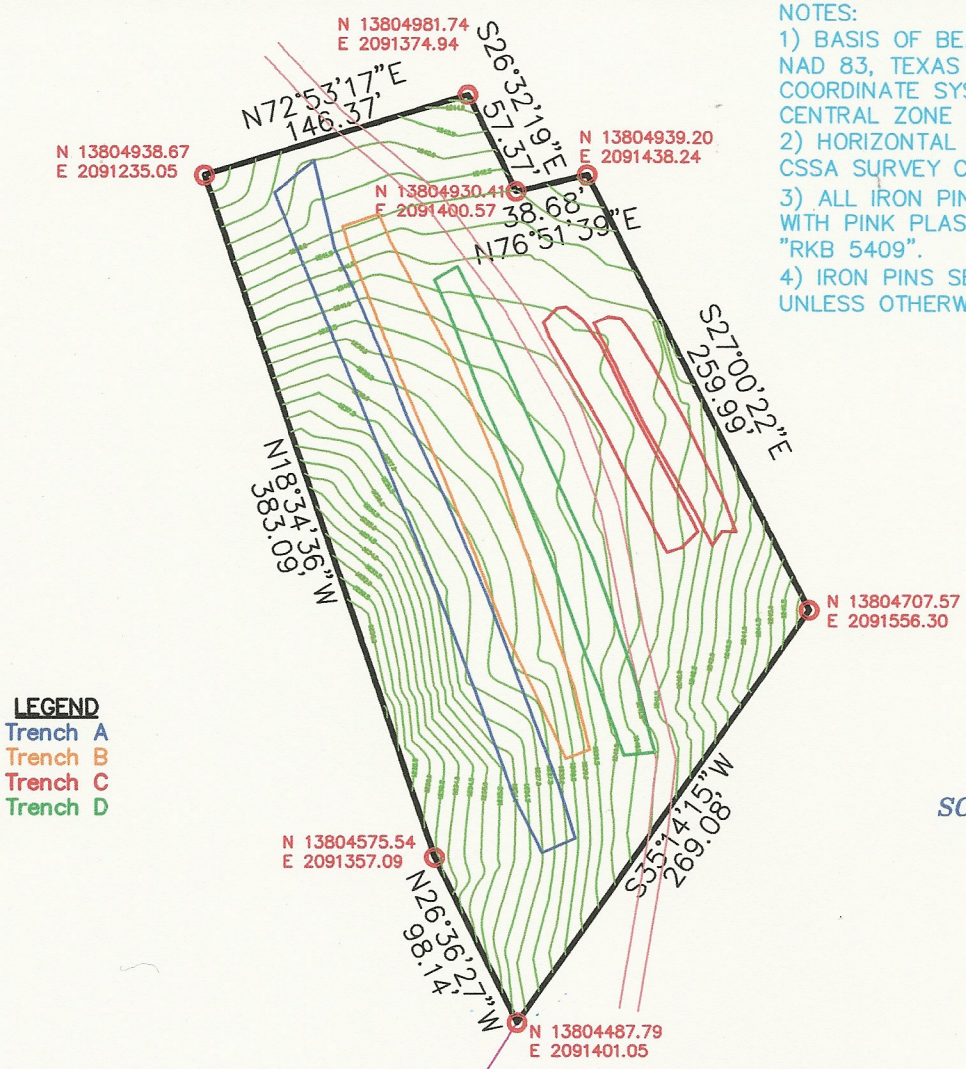
Thence N 76°51'39" E, 38.68 feet along an interior line to an iron pin set for the most easterly northeast corner of the herein described tract, having coordinates of North: 13804939.20 East: 2091438.24;

Thence S 27°00'22" E, 259.99 feet along the northeast line to an iron pin set for the east corner of the herein described tract, having coordinates of North: 13804707.57 East: 2091556.30;

Thence S 35°14'15" W, 269.08 feet along the southeast line of the herein described tract to the place of beginning and containing 1.898 acres of land according to a survey made on the ground on March 30, 2011 by Ace Surveying, Inc.

Rhonda K. Butler
Registered Professional
Land Surveyor #5409
File: GT Weston Camp Stanley B4
Corresponding Drawing Prepared

Camp Stanley Storage Activity_B4 Site



NOTES:
1) BASIS OF BEARING IS WGS 84, NAD 83, TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE #4204.
2) HORIZONTAL DATUM BASED ON CSSA SURVEY CONTROL MONUMENTS.
3) ALL IRON PINS SET ARE ½" REBAR WITH PINK PLASTIC CAP STAMPED "RKB 5409".
4) IRON PINS SET AT ALL CORNERS UNLESS OTHERWISE NOTED.

LEGEND
Trench A
Trench B
Trench C
Trench D

SCALE 1" = 100'

SURVEY OF A 1.898 ACRE TRACT OF LAND SITUATED IN BEXAR COUNTY, TEXAS, BEING OUT OF AND A PART OF A 17,273.87 ACRE TRACT OF LAND DESCRIBED IN DEED RECORDED IN VOLUME 1335, PAGE 207 OF THE DEED RECORDS OF BEXAR COUNTY, TEXAS, ALSO BEING OUT OF THE CAMP STANLEY AMMUNITION STORAGE ACTIVITY TRACT.

STATE OF TEXAS:
COUNTY OF MEDINA:

I, RHONDA K. BUTLER, DO HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND BY MEN WORKING UNDER MY SUPERVISION.

RHONDA K. BUTLER
REGISTERED PROFESSIONAL LAND SURVEYOR #5409

SURVEYED: MARCH 30, 2011
FILE NO: GT Weston Camp Stanley B4

Ace Surveying, Inc.
P. O. BOX 597
DEVINE, TEXAS 78016
830-334-7264
830-665-5796 FAX
acesurveying@sbcglobal.net

STATE OF TEXAS
REGISTERED
RHONDA K. BUTLER
5409
PROFESSIONAL
LAND SURVEYOR

APPENDIX 11-D

PARSONS ENGINEERING SCIENCE

POST INTERIM REMOVAL ACTION

GEOPHYSICAL SCREENING SURVEY – MAY 2012

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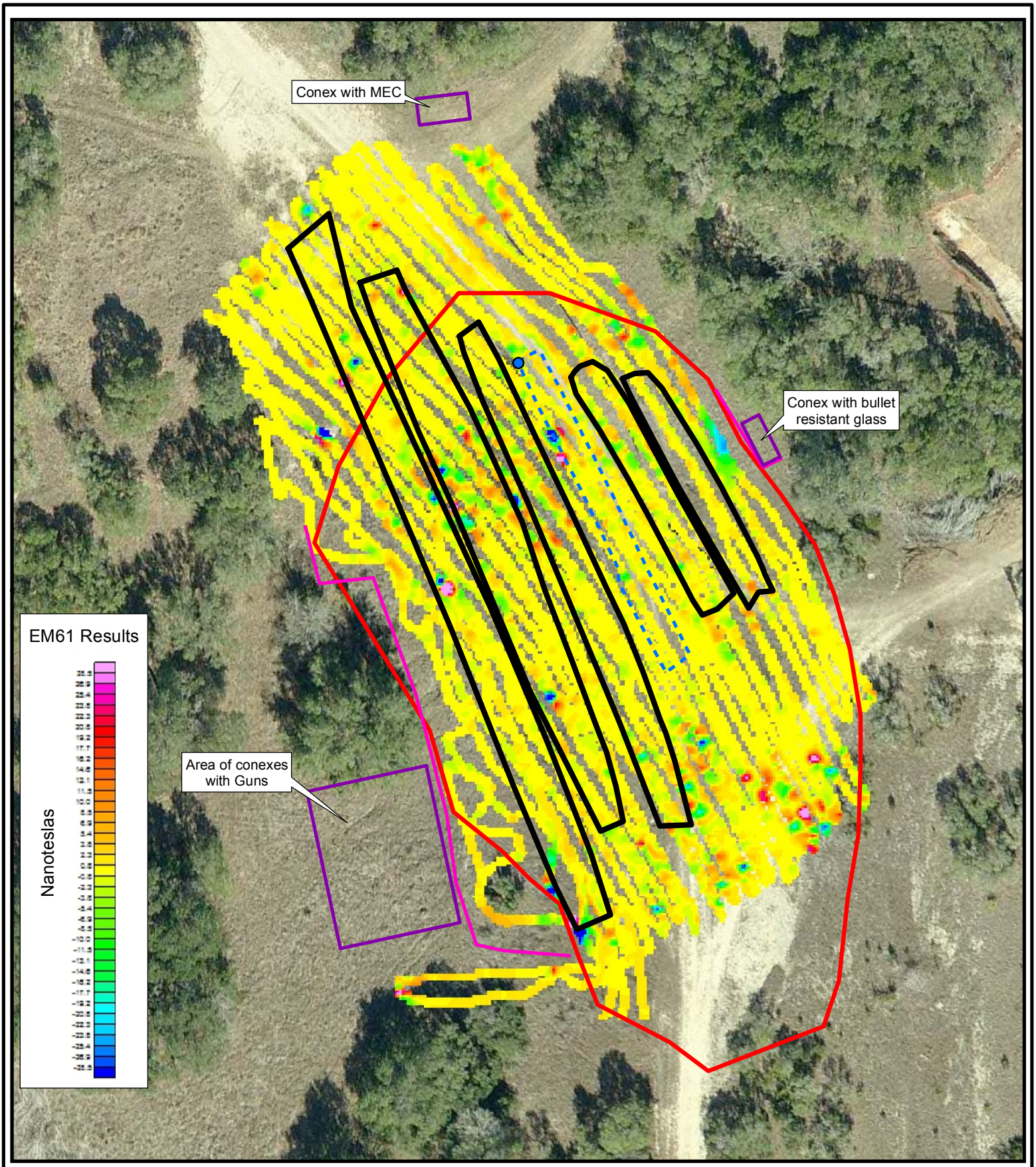

Figure 1

SWMU B-4
Post Excavation Geophysical Survey
Camp Stanley Storage Activity

PARSONS

J:\CSSA\GIS\B4\Maps\B4_Geophysical_Map.mxd

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APPENDIX 12

WASTE CHARACTERIZATION AND DISPOSITION DOCUMENTATION

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A12 WASTE CHARACTERIZATION AND DISPOSAL DOCUMENTATION

Waste characterization efforts were performed in accordance with requirements of CSSA's RCRA Facility Investigation Interim Measures Waste Management Plan (RFI/IM WMP) – Revised, dated May 2006 (approved by TCEQ in August 2006) and the RFI/IM WMP Addendum for SWMU B-4, dated February 2012. As authorized by TCEQ, soil from affected sites meeting Class 1 and Class 2 non-hazardous waste criteria can be used as backing material for the firing range berm at the East Pasture (TCEQ, 2010). The East Pasture is an active arms range located in the central cantonment of CSSA. Material classified as hazardous waste is prohibited from placement at the East Pasture firing berm.

A12.1 WASTE CHARACTERIZATION

A12.1.1 January–February 2011 Removal Action

The majority of the affected soil and intermixed debris within the SWMU B-4 disposal trenches A, B, C, and D was characterized in-situ during the April 2010 pre-Interim Removal Action (IRA) assessment. Twenty-three test pits were excavated into the trenches and samples (LFM-) were collected from the upper and lower trench materials at each location. Additionally, at eight locations where readily excavatable native soil underlay trench materials a sample (TP-) was collected to assess COC concentrations to provide an initial assessment of COC concentrations in the trench floors and to supplement waste characterization of the total trench contents. Two additional LFM samples from Trench B were analyzed during the January-February 2011 IRA as it was determined during excavation that additional trench volume required characterization. The locations of the pre-IRA sampling points and those sample points where TRRP RALs were exceeded are shown on Figure APX12.

The pre-IRA samples were analyzed for SWMU B-4 target metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and explosives, and total petroleum hydrocarbons (TPH). The results of the pre-IRA waste analysis indicated that detected concentrations of VOCs, SVOCs, and explosive constituents were less than Tier 1 protective concentration levels (PCLs). Barium, cadmium, copper, lead, mercury, nickel, and zinc were detected in various samples that exceeded Tier 1 PCLs. The results of all LFM and TP samples collected during the pre-IRA assessment are summarized in Table 10A-1. Table APX12-1 summarizes the CSSA RFI/IM WMP minimum requirements for waste characterization criteria.

An estimated volume of 8,400 bank cubic yards (bcy) was removed during the January-February 2011 IRA. Of a total of 46 trench samples analyzed for metals, 14 samples did not exhibit metal COCs exceeding background or RALs. Concentrations of total cadmium, lead, and mercury (in mg/kg) in various LFM samples were detected at concentrations greater than the CSSA waste characterization guideline of 18 times the federal Toxicity Characteristic Leaching Procedure

(TCLP) limit (in mg/L) and were considered to have the potential to generate leachate with COC concentrations exceeding the limit and resulting in a hazardous waste classification. Barium concentrations were detected in trench materials in various samples at concentrations exceeding the RALs but did not exceed 18 times the federal TCLP limit.

A total of 39 LFM samples were analyzed TCLP and 47 samples for TPH to provide a representative characterization of the estimated 8,022 bcy of material that exhibited COCs greater than Tier 1 PCLs or the greater than 18 times TCLP limit criteria. The analytical results of the waste characterization analyses for the 2011 removal are summarized in Table APX12-2. The waste characterization analytical results indicated the following:

- Cadmium and lead concentratons in TCLP leachate generated from sample LFM-6 exceeded the federal TCLP limits. LFM-6 was collected from the lower trench materials in the central portion of Trench D.
- Lead concentrations in TCLP leachate generated from samples LFM-36 exceeded the Texas threshold of 1.5 mg/L for Class 1 non-hazardous waste. LFM-36 was collected from lower trench materials that were removed from the central portion of Trench Cb.
- Cadmium concentrations in TCLP leachate generated from samples LFM-12 exceeded the Texas threshold of 0.5 mg/L for Class 1 non-hazardous waste. LFM-12 was collected from lower trench materials that were removed from the northern portion of Trench B.
- TPH was detected at a maximum concentration of 35 mg/kg in sample LFM-12, significantly less than the Texas threshold of 1,500 mg/kg for Class 1 non-hazardous waste.

The results of the waste characterization analyses of soil and debris from trenches A, B, C, and D indicated that:

- Trench materials 4.5 feet below grade in a 75 foot long section in the central portion of Trench D centered on sample location LFM-6 (approximately 311 bcy) were potentially a characteristic hazardous waste for cadmium and lead.

- Approximately 345 bcy of material in Trench B and 279 bcy in Trench Cb met the criteria for Class 1 non-hazardous waste based on a comparison with Texas Class 1 waste threshold TCLP criteria.

- The balance of the materials in the SWMU B-4 trenches met Class 2 non-hazardous waste criteria.

The location and estimated extent of trench material identified as meeting the criteria for potentially hazardous and Class 1 non-hazardous are shown on Figure APX12-1.

The 311 bcy of soil within the central section of Trench D judged to be a potential characteristic hazardous waste for cadmium and lead was treated by physical stabilization using Portland

cement to render the material a Class 2 non-hazardous waste. Prior to stabilization, small arms ammunition (SAA), large metallic debris and large rock were segregated from the volume by mechanical sifting from the material resulting in a total volume for stabilization estimated to be approximately 200 loose cubic yards (lcy).

On 7 February 2011, stabilization was performed by mixing the soil in the affected section of the trench with approximately 20 tons of Portland cement. The soil and stabilizing agent were mixed using excavation equipment to ensure a homogeneous mass. Two composite samples (SWMUB-4-D-STAB01 and –STAB02), each consisting of four grab samples were collected from the stabilized material and analyzed by the TCLP for barium, cadmium, chromium, lead, and mercury. The results of analyses indicated that the stabilized material met Class 2 non-hazardous waste criteria. A composite sample (SWMUB4-D-STKPL1) from approximately 200 lcy of large rock and debris separated from the material plus additional rock over-excavated beneath the impacted area prior to stabilization was collected and analyzed for the same TCLP parameters as the stabilized material. The results of the rock debris sample also indicated the segregated rock debris met Class 2 non-hazardous waste criteria. Analytical results for the stabilized material and rock debris stockpile samples are summarized in Table APX12-3.

Large rock, non-soil debris, and munitions debris removed from the trenches including approximately 135 lcy of mechanically screened un-expended SAA and SAA mixed with soil was stockpiled at the southeast end of SWMU B-4 for future management and disposition by CSSA. All debris was placed on plastic sheeting and an earthen berm from clean backfill was constructed up-slope of the stockpiles to divert stormwater. A silt fence was keyed into the ground on the down-slope side of the stockpile area. During August and September 2011, Parsons Engineering Science (Parsons) performed separation of metallic and munitions debris (Parsons, 2012a, b). Photographs of debris separation activities are included in Appendix 13 of the APAR.

A12.2 March–April 2012 Removal Action

Approximately 2,100 cubic yards of soil and debris was removed from Trench NT1 by Parsons during the March–April 2012 removal (Parsons 2012b). Rock, non-soil debris, and munitions debris were separated from soil and segregated according to type. Soil was placed in three separate stockpiles each approximately 500 lcy in volume. Waste characterization samples were collected from three soil stockpiles and analyzed for total and TCLP metals; the analytical results are summarized in Table APX12-4.

Waste characterization results indicated that the impacted media removed from Trench NT1 met Class 2 non-hazardous criteria. Metals concentrations in samples collected from two of the stockpiles were less than RALs, however, total mercury (1.2 mg/kg and 1.46 mg/kg) in those samples exceeded background and ecological screening levels. Since mercury concentrations were below RALs, Parsons used the soil from these two stockpiles to backfill Trench NT1 below

a depth of 6 feet (i.e. deeper than the TRRP 0 to 5 foot ecological assessment zone) so that potential threats to ecological receptors were mitigated. Clean backfill was placed in Trench NT1 from 6 feet to surface.

Mercury (2.9 mg/kg) detected in the waste characterization sample from the third soil stockpile exceeded the RAL and was transported to the East Pasture Berm for reuse.

Approximately 45 lcy of recyclable metal was collected from SWMU B-4 and sent for recycling to Monterrey Iron and Metal Company in San Antonio, Texas. The waste manifests and profile data, including the waste analytical results, are kept on file at the CSSA Environmental Office.

A12.3 WASTE DISPOSITION

Table APX12-5 summarizes the estimated amount and disposition of segregated materials.

A12.4 REFERENCES

Camp Stanley Storage Activity (CSSA), 2006: *RFI and Interim Action Waste Management Plan* (Revised), January 2006.

Parsons Engineering Science (Parsons), 2012a: Technical Memorandum – *Interim Removal Action for New Trench at Solid Waste Management Unit B-4, Camp Stanley Storage Activity, Texas*, April 20, 2012.

Parsons, 2012b: Addendum to April 20, 2012 Technical Memorandum – *Interim Removal Action for New Trench at Solid Waste Management Unit B-4, Camp Stanley Storage Activity, Texas*, June 2012.

Texas Commission on Environmental Quality (TCEQ), 2005: *Guidelines for the Classification and Coding of Industrial and Hazardous Waste Classification*, Regulatory Guidance Document RG-22, February 2005.

TCEQ, 2010: TCEQ correspondence from Mr. Kirk Coulter – TCEQ Corrective Action Team 1, VCP-VA Section, Remediation Division allowing movement of non-hazardous metals impacted soils from SWMU/AOC closure efforts to East Pasture Range, Camp Stanley Storage Activity, Solid Waste Registration No. 69026, December 3, 2010.

APPENDIX 12 TABLES

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Table APX12-1
CSSA Minimum Waste Characterization Criteria
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

COC Condition in Media	Analyses	Sampling Frequency
>18 Times TCLP Limit	TPH and TCLP for COCs	1 per 200 yd^3
>TRRP Residential Tier 1 PCL but <TCLP Limit	TPH and TCLP for COCs	1 per 500 yd^3
<TRRP Residential Tier 1 PCL	No further analysis	No sampling; return to site

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Table APX12-2
Waste Characterization - SWMU B-4 Trench Soil and Debris
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Federal TCLP Limit	Texas TCLP Limit Class I Non-Hazardous	SWMUB4-LFM1 3.0-3.5 04/06/2010 Normal Sample	SWMUB4-LFM2 8.0-8.5 04/06/2010 Normal Sample	SWMUB4-LFM3 4.0-4.5 04/06/2010 Normal Sample	SWMUB4-LFM4 11.0-11.5 04/06/2010 Normal Sample	SWMUB4-LFM5 4.0-4.5 04/06/2010 Normal Sample	SWMUB4-LFM6 8.0-8.5 04/06/2010 Normal Sample	SWMUB4-LFM7 6.0-6.5 04/06/2010 Normal Sample	SWMUB4-LFM8 11.0-11.5 04/06/2010 Normal Sample	SWMUB4-LFM9 3.0-3.5 04/07/2010 Normal Sample	SWMUB4-LFM10 5.0-5.5 04/07/2010 Normal Sample	SWMUB4-LFM11 3.0-3.5 04/07/2010 Normal Sample
TCLP Metals	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Barium	100	N/A	0.518	~	0.307	0.601	0.568	11.4	0.541	0.518	0.308	0.533	0.407
Cadmium	1.0	**0.5**	0.006 U	~	0.006 U	0.006 U	0.0272 J	**1.63**	0.006 U	0.00874 J	0.006 U	0.006 U	0.00997 J
Lead	**5.0**	**1.5**	0.004 U	~	0.004 U	0.004 U	0.0282 J	**10.8**	0.0154 J	0.0202 J	0.004 U	0.00463 J	0.004 U
Mercury	0.2	N/A	0.000042 U	~	0.000042 U	0.000042 U	0.000047 J	0.000075 J	0.000042 U	0.000053 J	0.000042 U	0.000042 U	0.000042 U
TPH	**N/A**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TPH (C_6 to C_{35})	N/A	1500	18 U	30 J	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U	19 U
TPH (C_6 to C_{12})	N/A	N/A	18 U	21 U	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U	19 U
TPH (>C_{12} to C_{28})	N/A	N/A	18 U	30 J	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U	19 U
TPH (>C_{28} to C_{35})	N/A	N/A	18 U	21 U	19 U	19 U	18 U	20 U	18 U	20 U	19 U	19 U	19 U

Analyte	TCLP Limit	Hazardous	SWMUB4-LFM12 8.0-8.5 04/07/2010 Normal Sample	SWMUB4-LFM13 4.0-4.5 04/07/2010 Normal Sample	SWMUB4-LFM14 8.0-8.5 04/07/2010 Normal Sample	SWMUB4-LFM15 4.0-4.5 04/07/2010 Normal Sample	SWMUB4-LFM16 8.0-8.5 04/07/2010 Normal Sample	SWMUB4-LFM18 3.0-3.5 04/07/2010 Normal Sample	SWMUB4-LFM19 3.0-3.5 04/07/2010 Normal Sample	SWMUB4-LFM20 7.0-7.5 04/07/2010 Normal Sample	SWMUB4-LFM21 4.0-4.5 04/07/2010 Normal Sample	SWMUB4-LFM22 9.0-9.5 04/07/2010 Normal Sample	SWMUB4-LFM23 3.0-3.5 04/08/2010 Normal Sample
TCLP Metals	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Barium	100	N/A	0.759	~	~	0.243	0.494	~	0.481	2.23	0.291	1.64	0.408
Cadmium	1.0	**0.5**	**0.674**	~	~	0.006 U	0.049 J	~	0.006 U	0.0458 J	0.006 U	0.041 J	0.006 U
Lead	**5.0**	**1.5**	0.826	~	~	0.004 U	0.0464 J	~	0.004 U	0.444	0.004 U	0.218	0.004 U
Mercury	0.2	N/A	0.0336	~	~	0.000042 U	0.000042 U	~	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000042 U
TPH	**N/A**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TPH (C_6 to C_{35})	N/A	1500	35 J	19 U	18 U	18 U	19 U	18 U	19 U	19 U	18 U	20 U	18 U
TPH (C_6 to C_{12})	N/A	N/A	19 U	19 U	18 U	18 U	19 U	18 U	19 U	19 U	18 U	20 U	18 U
TPH (>C_{12} to C_{28})	N/A	N/A	35 J	19 U	18 U	18 U	19 U	18 U	19 U	19 U	18 U	20 U	18 U
TPH (>C_{28} to C_{35})	N/A	N/A	19 U	19 U	18 U	18 U	19 U	18 U	19 U	19 U	18 U	20 U	18 U

Analyte	Federal TCLP Limit	Texas TCLP Limit Class I Non-Hazardous	SWMUB4-LFM24 8.0-8.5 04/08/2010 Normal Sample	SWMUB4-LFM25 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM26 8.0-8.5 04/08/2010 Normal Sample	SWMUB4-LFM27 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM28 10.0-10.5 04/08/2010 Normal Sample	SWMUB4-LFM29 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM30 6.0-6.5 04/08/2010 Normal Sample	SWMUB4-LFM31 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM32 6.0-6.5 04/08/2010 Normal Sample	SWMUB4-LFM33 4.0-4.5 04/08/2010 Normal Sample	SWMUB4-LFM34 9.0-9.5 04/08/2010 Normal Sample
TCLP Metals	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Barium	100	N/A	0.423	~	~	0.584	1.66	0.687	1.38	0.451	0.444	0.596	1.81
Cadmium	1.0	**0.5**	0.006 U	~	~	0.006 U	0.006 U	0.006 U	0.0105 J	0.0151 J	0.0095 J	0.006 U	0.0178 J
Lead	**5.0**	**1.5**	0.004 U	~	~	0.00634 J (B)	0.00669 J (B)	0.004 U	0.004 U	0.00877 J	0.00481 J	0.004 U	0.0202 J
Mercury	0.2	N/A	0.000042 U	~	~	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000042 U
TPH	**N/A**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TPH (C_6 to C_{35})	N/A	1500	19 U	18 U	19 U	18 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
TPH (C_6 to C_{12})	N/A	N/A	19 U	18 U	19 U	18 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
TPH (>C_{12} to C_{28})	N/A	N/A	19 U	18 U	19 U	18 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
TPH (>C_{28} to C_{35})	N/A	N/A	19 U	18 U	19 U	18 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U

Table APX12-2
Waste Characterization - SWMU B-4 Trench Soil and Debris
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Analyte	Federal TCLP Limit	Texas TCLP Limit Class I Non-Hazardous	SWMUB4-LFM35 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM36 9.0-9.5 04/08/2010 Normal Sample	SWMUB4-LFM37 3.0-3.5 04/08/2010 Normal Sample	SWMUB4-LFM38 9.0-9.5 04/08/2010 Normal Sample	SWMUB4-LFM39 2.0-2.5 04/08/2010 Normal Sample	SWMUB4-LFM40 8.0-8.5 04/08/2010 Normal Sample	SWMUB4-LFM41 4.0-4.5 04/08/2010 Normal Sample	SWMUB4-LFM42 9.0-9.5 04/08/2010 Normal Sample	SWMUB4-LFM43 4.0-4.5 04/08/2010 Normal Sample	SWMUB4-LFM44 9.0-9.5 04/08/2010 Normal Sample	SWMUB4-LFM45 3.0-3.5 04/08/2010 Normal Sample
TCLP Metals	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Barium	100	N/A	0.416	2.34	0.212 (B)	0.213 (B)	0.413	0.138 (B)	0.724	0.646	1.2	0.951	~
Cadmium	1.0	**0.5**	0.006 U	0.0298 J	0.006 U	0.0153 J	0.0731	0.006 U	0.006 U	0.011 J	0.006 U	0.00626 J	~
Lead	**5.0**	**1.5**	0.00465 J	**1.64**	0.004 U	0.0907	0.0134 J	0.004 U	0.004 U	0.004 U	0.0104 J	0.00532 J	~
Mercury	0.2	N/A	0.000042 U	0.000042 U	0.000042 U	0.000042 U	0.000362	0.000088 J	0.000042 U	0.000042 U	0.000042 J	0.000042 U	~
TPH	**N/A**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TPH (C_6 to C_{35})	N/A	1500	18 U	21 U	19 U	19 U	19 U	18 U	18 U	19 U	19 U	18 U	18 U
TPH (C_6 to C_{12})	N/A	N/A	18 U	21 U	19 U	19 U	19 U	18 U	18 U	19 U	19 U	18 U	18 U
TPH (>C_{12} to C_{28})	N/A	N/A	18 U	21 U	19 U	19 U	19 U	18 U	18 U	19 U	19 U	18 U	18 U
TPH (>C_{28} to C_{35})	N/A	N/A	18 U	21 U	19 U	19 U	19 U	18 U	18 U	19 U	19 U	18 U	18 U

Analyte	TCLP Limit	Hazardous	SWMUB4-LFM46 6.0-6.5 04/08/2010 Normal Sample	SWMUB4-LFM51 3.0-3.5 01/27/2110 Normal Sample	SWMUB4-LFM52 8.0-8.5 01/27/2011 Normal Sample
TCLP Metals	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Barium	100	N/A	~	0.562	0.607
Cadmium	1.0	**0.5**	~	0.0928	0.374
Lead	**5.0**	**1.5**	~	0.0300 J	0.0551
Mercury	0.2	N/A	~	0.000363	0.000206
TPH	**N/A**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TPH (C_6 to C_{35})	N/A	1500	19 U	19U	18 U
TPH (C_6 to C_{12})	N/A	N/A	19 U	19U	18 U
TPH (>C_{12} to C_{28})	N/A	N/A	19 U	19U	18 U
TPH (>C_{28} to C_{35})	N/A	N/A	19 U	19U	18 U

Table APX12-3
Waste Characterization - Trench D Stabilized Waste and Rock Debris Stockpile
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Leachate Analyte	Federal TCLP Limit (mg/L)	Texas TCLP Limit Class I Non-Hazardous (mg/L)	SWMUB4-D-STAB01 02/07/2011 Composite Sample (mg/L)	SWMUB4-D-STAB02 02/07/2011 Composite Sample (mg/L)	SWMUB4-D-STKPL1 02/08/2011 Composite Sample (mg/L)
Barium	100	N/A	1.51	1.4	3.11 (M)
Cadmium	1.0	0.5	0.0066 J	0.006 U	0.0402 J
Chromium	5.0	N/A	0.006 U	0.0355 J	0.006 U
Lead	5.0	1.5	0.0134 J	0.00845 J	0.704
Mercury	0.2	N/A	0.000049 J	0.000052 J	0.000063 J

mg/L - Milligrams per liter.
TCLP - Toxicity Characteristic Leaching Procedure.
N/A - Criteria not applicable.
U - Analyte not detected at limit shown.
J - Estimated value.
M - Matrix effect noted in sample.
( ) - Qualifier applied by WESTON validator.
Metals analysis by EPA Methods SW6010B/SW7471A.

Table APX12-4
Waste Characterization – Trench NT1
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

SAMPLE ID: DATE SAMPLED: LAB SAMPLE ID: Units		B4-WC01 2/27/2012 AY55857		B4-WC02 2/27/2012 AY55858		B4-WC03 2/27/2012 AY55859	
Total Metals Results							
Arsenic	mg/kg	3.5F	F	3.4	F	4.6	F
Barium	mg/kg	40	J	36	J	57	J
Cadmium	mg/kg	0.030	U	0.030	U	0.030	U
Chromium	mg/kg	8.0	F	7.0	F	12	F
Copper	mg/kg	14	J	7.6	J	9.7	J
Lead	mg/kg	6.5	F	5.5	F	6.3	F
Mercury	mg/kg	1.2		1.5		2.9	
Nickel	mg/kg	4.8	J	4.5	J	8.7	J
Zinc	mg/kg	32	J	22	J	38	J
TCLP Results							
Arsenic	mg/L	0.0030	F	0.0060	F	0.0050	F
Barium	mg/L	0.40		0.56		0.62	
Cadmium	mg/L	0.00030	U	0.00030	U	0.00030	U
Chromium	mg/L	0.0010	U	0.0010	U	0.0010	U
Lead	mg/L	0.0012	U	0.0012	U	0.0012	U
Mercury	mg/L	0.00010	U	0.00010	U	0.00010	U
Selenium	mg/L	0.0020	U	0.0020	U	0.0020	U
Silver	mg/L	0.023	U	0.045	U	0.034	U

U - Analyte was not detected above the indicated Method Detection Limit (MDL).
F - Analyte quantitation is an estimated value greater than the MDL and below the Sample Quantitation Limit (SQL).
J - Analyte was positively identified, but the quantitation is an estimation due to discrepancies in meeting certain
Metals analysis by EPA Methods SW6010B/SW7471A.
Data from Parsons, 2012a.

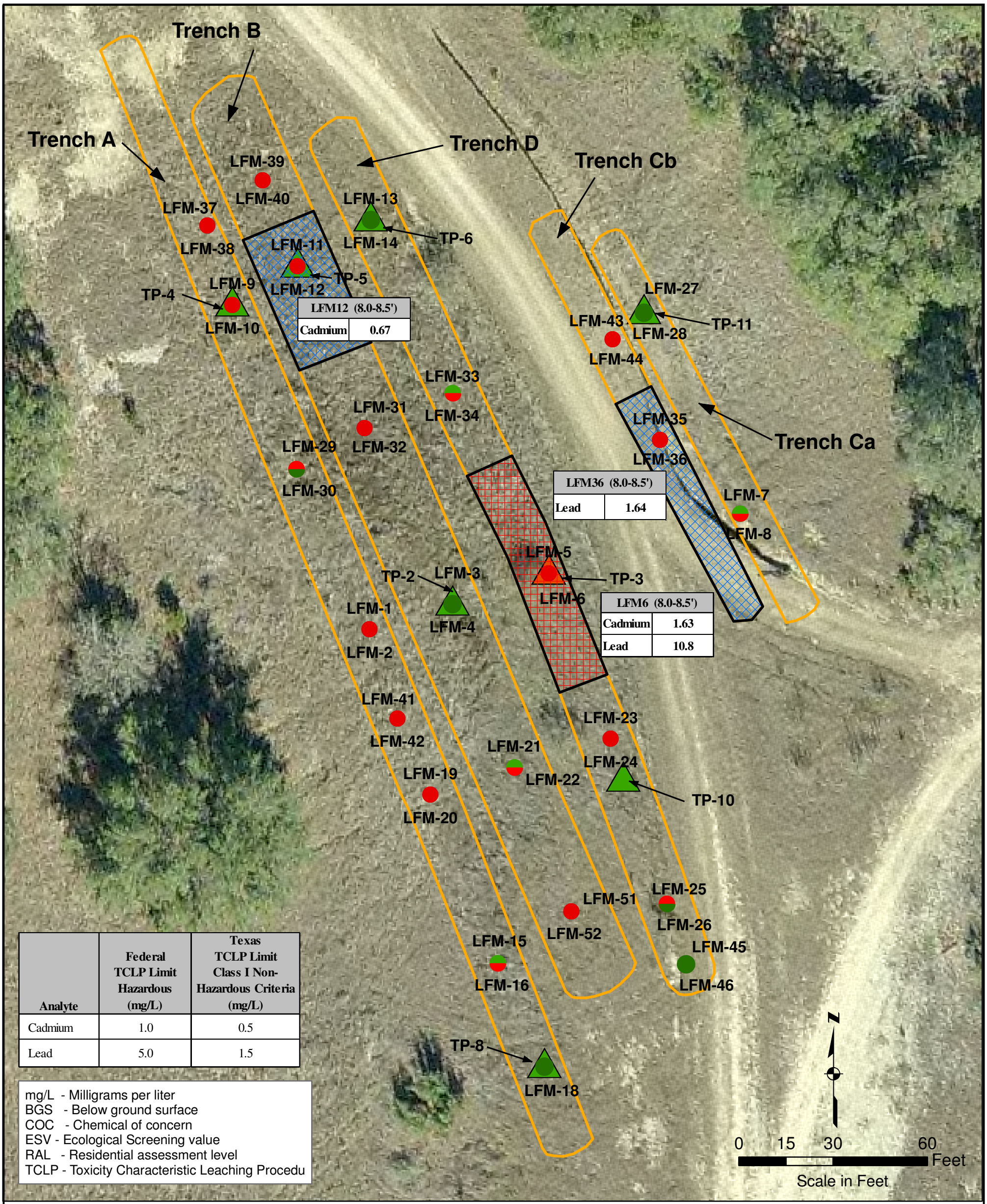
Table APX12-5
Disposition of Excavated Materials – 2011 SWMU B-4 Interim Remedial Action
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Material	Volume	Disposition
January – February 2011 Removal		
Class 2 and 1 non-hazardous soil removed during the January– February 2011 removal.	9110 lcy	Mechanically sifted and stabilized materials placed at CSSA East Pasture firing range berm, compacted and graded, March 2011.
Mixed metal and munitions debris	943 lcy	Recyclable metal and munitions debris separated by CSSA August – September 2011.* Approximately 90 lcy of recyclable metal transported to Monterey Iron and Metals San Antonio, Texas recycling facility by CSSA, April 2011. No manifest retained.* The remainder of munitions debris transported by CSSA to AOC 52 for storage pending disposal.
Unexpended SAA mixed with soil	135 lcy	SAA separated from soil by CSSA and transported in 8 drums to Bonetti Explosives disposal facility in Columbus, Texas for destruction by furnace, April 2012.* Soil transported to East Pasture firing range berm, compacted and graded, April 2012.
Class 2 non-hazardous large rock and debris screened from central portion of Trench D	200 lcy	Placed as base material at CSSA East Pasture firing range berm, September 2011.
Class 1 non-hazardous large rock and debris removed from Trench B and Trench Cb.	112 lcy	Placed as base material at CSSA East Pasture firing range berm, September 2011.
Class 2 non-hazardous large rock and debris removed from all excavations.	840 lcy	Placed as base material at CSSA East Pasture firing range berm, September 2011.
Practice grenades and other potential UXO.	>10 lcy	Transported by CSSA to AOC 52 for storage pending disposal.

Table APX12-5 (Concluded)
Disposition of Excavated Materials – 2011 SWMU B-4 Interim Remedial Action
SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity Boerne, Texas

Material	Volume	Disposition
February – March 2012 Removal		
Class 2 non-hazardous soil removed during February–March 2012 removal.	1000 lcy	Returned to Trench NT1 March 2012 as backfill for portions deeper than 6 feet. Metals concentrations less than TRRP Tier 1 RALs.
	500 lcy	Metals concentrations less than TRRP Tier 1 RALs but greater than ecological screening level for mercury. Placed at CSSA East Pasture firing range berm, compacted and graded, March 2012.
Total Recyclable Metal	45 lcy	Transported to Monterey Iron and Metal Company, San Antonio, Texas. No manifest retained.*
Miscellaneous Munitions Debris	60 lcy	Transported to AOC 52, CSSA.

All volumes are approximate.
lcy – Loose cubic yards.
SAA – Small arms ammunition.
UXO – Unexploded ordnance.
CSSA – Camp Stanley Storage Activity.
* - Information summary, Parsons Engineering Science April 20, 2012.



Analyte	Federal TCLP Limit Hazardous (mg/L)	Texas TCLP Limit Class I Non-Hazardous Criteria (mg/L)
Cadmium	1.0	0.5
Lead	5.0	1.5

mg/L - Milligrams per liter
BGS - Below ground surface
COC - Chemical of concern
ESV - Ecological Screening value
RAL - Residential assessment level
TCLP - Toxicity Characteristic Leaching Procedu

Legend

- Upper Sample (LFM - 23) (Depth range 2.0 - 6.5 feet BGS)
- Lower Sample (LFM - 24) (Depth range 6.0 - 11.5 feet BGS)
- Native Soil From Trench Bottom

Result Indicators

- COC Concentration Less than RAL and ESV
- COC Concentration Greater than RAL or ESV
- Area of Trench Material >4.5 Feet BGS Stabilized to Class 2 Non-Hazardous Criteria
- Area of Trench Material >3.0 Feet Managed as Class 1 Non-Hazardous Waste

Notes:
1. All results in (mg/L). Bolded values exceed applicable TCLP limit.
2. Refer to Tables APX12-1 and 4D for all COC analyzed and concentration data.

Source: Camp Stanley aerial imagery.
This figure is for reference only and is not intended for survey or engineering purposes.

WESTON SOLUTIONS

Figure APX12
Pre-Removal Waste Characterization Sample Map

SWMU B-4 Affected Property Assessment
Camp Stanley Storage Activity
Boerne, Texas

DATE	PROJECT NO.	SCALE
AUGUST, 2011	03886.529.005.0007.00	AS SHOWN

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APPENDIX 13

PHOTOGRAPHIC DOCUMENTATION

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1. SWMU B-4 Prior to interim removal action. View to south, April 2010.

2. Silt fence installed along down-slope southern and eastern site perimeter, April 2010.

3. Interface of cover and trench debris in exploratory trench. April 2010 pre-IRA assessment.

4. Close up view of top of debris in exploratory trench, April 2010 pre-IRA assessment.

5. Excavation of Trench Ca. View to south, January 2011.

6. Debris (e.g., small arms barrels, metal banding), Trench Ca. View to north, January 2011.

7. Southern end of Trench Cb during backfilling excavation. Note wall separating Trench Ca on right. View to north, January 2011.

8. Top of debris in Trench A. View from west side of trench towards east, January 2011.

9. Trench A. View to south, January 2011.

10. Excavating top of debris (steel banding, vehicle parts, misc. metal), Trench B, January 2011.

11. East sidewall, northern section Trench B showing typical trench lithology. Confirmation samples collected from gray to reddish-brown upper soil (US-) and yellow-orange marly limestone (S-) in sidewalls; excavation floor samples (F-) from very hard white limestone. January 2011.

12. Overexcavating floor of Trench B at location B5. View from west sidewall, January 2011.

13. View of Trench B towards south. Overexcavated location B2 in foreground, January 2011.

14. Small arms ammo casings and unexpended ammo in central section of Trench D, February 2011.

15. Northern section of Trench D. View to south, February 2011.

16. View of layer of small arms barrels in Trench D near sample point D5, February 2011.

17. Large metal segregated for potential recycling. Stockpile area, southeast SWMU B-4. Earthern stormwater berm visible in background. February, 2011.

18. Large metal debris stockpile for recycling. View to southeast from SWMU B-4 access road. January 2011.

19. Separated debris and rock. View to southeast, February 2011.

20. Demilitarized practice (inert) bomb casings from Trench Ca and Cb. January 2011.

21. SWMU B-4 after surface scraping and grading. Stockpile area behind silt fence in background. View to south, March 2011.

22. Final grade material placed at East Pasture firing berm March 2011. View to the east.

23. Excavation of Trench NT1. View to south, February 2012.

24. Excavation of Trench NT1. View to north, February 2012.

25. Gun parts and ammo magazines from Trench NT1. February 2012.

26. Printing press removed from Trench NT1. February 2012.

27. Metal debris being placed on sorting table. March 2012.

28. Sorting metal debris from Trench NT1. March 2012.

29. Inspection of metal debris. April 2012.

30. Small arms ammo recovered from Trench NT1. April 2012.

APPENDIX 14

STANDARD OPERATING PROCEDURES

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FINAL
SAMPLING AND ANALYSIS PLAN

AFFECTED PROPERTY ASSESSMENT AND INTERIM REMOVAL ACTION
SOLID WASTE MANAGEMENT UNIT B-4
CAMP STANLEY STORAGE ACTIVITY
BOERNE, TEXAS

United States Army Corp of Engineers
Fort Worth District
Contract No. W912BV-04-D-2026
Delivery Order: DY 04

Prepared by:
Weston Solutions, Inc.
70 N.E. Loop 410, Ste. 600
San Antonio, Texas 78216

February 2010

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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
APA	Affected Property Assessment
APAR	Affected Property Assessment Report
ASTM	American Society for Testing Materials
ATHA	Ambient Temperature Headspace Analysis
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESWF	Corps of Engineers Fort Worth District
chERP	CSSA customized hybrid Environmental Restoration Program
CSSA	Camp Stanley Storage Activity
COCs	Chemicals of Concern
COR	Contracting Officer's Representative
CQP	Construction Quality Plan
DO	Delivery Order
DoD	Department of Defense
DOT	Department of Transportation
DQO	Data Quality Objectives
DUS	Data Usability Summary
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
ERPIMS	Environmental Resource Program Management Information System
ft^2	square feet
FSP	Field Sampling Plan
GPS	Global Positioning System
IDW	investigation derived waste
IRA	Interim Removal Action
MEC	munitions and explosives of concern
mg/kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
NIOSH	National Institute for Occupational Safety and Health

LIST OF ACRONYMS AND ABBREVIATIONS (Cont.)

OSHA	Occupational Safety and Health Administration
PCL	Protective Concentration Level
PID	Photoionization Detector
POC	Point-of-Contact
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAL	Residential Assessment Level
RCI	reactivity, corrosivity, and ignitability
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAP	Sampling and Analysis Plan
SPCC	Spill Prevention, Control and Countermeasures
SQL	Sample Quantitation Limit
SSHSP	Site Specific Health and Safety Plan
SVOCs	Semi-volatile Organic Compounds
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
$^{Total}Soil_{comb}$	Total combined soil exposure pathway
$^{GW}Soil_{ing}$	Soil to groundwater leaching and ingestion exposure pathway
TCEQ	Texas Commission on Environmental Quality
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TRRP	Texas Risk Reduction Program
TSP	Total Suspended Particulates
USACE	United States Army Corps of Engineers
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WESTON®	Weston Solutions, Inc.
yd^3	cubic yard

1. INTRODUCTION

This Sampling and Analysis Plan (SAP) describes the sampling and analytical protocols that will be used during site assessment and remedial activities that will be implemented for an Affected Property Assessment (APA) and Interim Removal Action (IRA) to address affected soil and munitions debris at Solid Waste Management Unit (SWMU) B-1, Camp Stanley Storage Activity (CSSA).

This SAP is an integral part of the SWMU B-4 Work Plan ("Work Plan") and is included as Attachment A of the Work Plan (WESTON, 2009). In addition to the Work Plans, applicable components of the regulator approved CSSA SAP, including the Field Sampling Plan (FSP) (CSSA, 1996) and the Quality Assurance Project Plan (QAPP) (CSSA, 2002) will be referenced and utilized to direct activities for the current project.

CSSA has contracted Weston Solutions, Inc., (WESTON®) through the United States Army Corps of Engineers (USACE) Fort Worth District (CESWF) to conduct assessment of surface and subsurface soil impacts and remove munitions debris and affected soil with contaminants exceeding Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) protective concentration levels (PCLs) at the site. Activities will be documented in an Affected Property Assessment Report (APAR). WESTON has prepared this SAP under USACE Contract No. W912BV-04-D-2026, Delivery Order (DO) DY 04.

1.1 BACKGROUND

SWMU B-4 was utilized for the subsurface disposal of classified documents, trash, and possibly spent munitions debris for an indeterminate period from 1970's through 1980's. The site is approximately 2 acres in size and is located approximately 200 feet to the west of AOC 64. Figure 1-1 shows pertinent site features and the areas of suspected affected media at the site. Three linear, anomalous areas oriented approximately side by side in the north-south direction were identified on the SWMU B-4 geophysical anomaly contour maps in 1995. The anomalies exhibited large deviations from background values and their origin was determined to have likely resulted from ground disturbance related to past waste disposal activities. The estimated area of trenching based on the geophysical anomalies is shown on Figure 1-1. The 2002 RCRA Facility Investigation (RFI) approximated the trenches to be on the order of 12 feet deep and 20 feet wide (Parsons, 2002).

The cumulative results of the RFI's conducted in 1995 and 2002 found that barium, cadmium, chromium, copper, lead, mercury, nickel and zinc concentrations exceeded CSSA background values. Of these metals, only barium, cadmium, copper, lead, and mercury exceeded TRRP Tier residential PCLs in one or more samples. The volatile organic compounds (VOCs) toluene, methylene chloride, and dichlorodifluoromethane and the semi-volatile organic compound (SVOC) bis(2-ethylhexyl)phthalate were detected at low levels in some subsurface soil samples. A screening level groundwater sample collected directly from boring B4-SB5 did not detect metals concentrations exceeding TRRP residential assessment levels (RALs) and VOCs and SVOCs were not detected in the sample.

Analytical results for the numerous soil boring samples collected at the site have shown only limited chemical of concern (COC) concentrations above TRRP PCLs. As stated in the conclusions of the 2002 RFI, there has been limited investigation of the buried waste known to be at the site due to the potential presence of ordnance, and so the nature and extent of the waste is not fully known. Impacts above TRRP PCLs and ecological risk screening benchmarks to surface soil appears to be from metals only (barium, cadmium, copper, chromium, lead, mercury, nickel, and zinc).

Additional sampling is therefore required to determine the presence of VOCs, SVOCs, and explosives in trench debris and the extent of metals exceeding TRRP PCLs in surface soil. The foregoing conclusion was based on the fact that the 1995 RFI and 2002 RFI borings were not completed within the limits of the disposal trenches due to the potential presence of unexploded ordnance (UXO). Therefore, until otherwise confirmed by proper assessment techniques within the disposal trenches, the potential site COC list must include all potential classes of COCs that may be present at SWMU B-4 (i.e., VOCs, SVOCs, explosives, and metals).

1.2 OBJECTIVE

This SAP outlines the specific technical approach to complete the affected media confirmation and waste characterization sampling described in the Work Plan.

Estimated in-situ volumes of affected media include approximately 740 cubic yards (yd^3) of surface soil and 8,000 yd^3 of soil and debris contained in the former disposal trenches. Site assessment and remediation objectives will be in accordance with TCEQ Tier 1 or Tier 2 TRRP ecological benchmarks and residential PCLs for sites greater than 0.5 acres (30-acre assessment level). Tier 2 values will be developed as needed to demonstrate soil-to-groundwater protection only. Due to the potential presence of munitions debris at the site, a certified UXO technician will be on-site during assessment and remediation activities to screen for the presence of munitions and explosives of concern (MEC). Any UXO encountered will be deferred to CSSA for management and disposal.

The overall project objective is to assess and remediate affected soil and trench debris to allow unrestricted use of SWMU B-4 after closure. The attainment of TRRP Remedy A for residential use will allow future unrestricted use of the site without institutional control, will be protective of ecological receptors, and is consistent with the overall project objective.

Specific portions of the project scope of work addressed by this SAP include:

- Confirmation sampling to determine the lateral and vertical extent of affected surface soil in two areas at the site.
- Field screening and sampling of affected subsurface soil within the former disposal trenches to determine COC concentrations at the vertical extent of the trenches and to provide information on the nature of the trench debris relative to COC concentrations, presence of MEC, and volume of material to be managed for disposal.
- Confirmation that the IRA removal action has been completed in accordance with the project objectives.

- Verification sampling to confirm that treated soils test below Toxicity Characteristic Leaching Procedure (TCLP) values for non-hazardous waste disposal.
- Characterization of imported backfill.
- Characterization of decontamination rinsate water or other miscellaneous investigation derived waste.
- Field monitoring of ambient air for metals impacted soil and total suspended particulates (TSP) as needed.

COCs identified during previous investigations include various inorganic compounds (metals), VOCs, and SVOCs. Due to the nature of historical on-site disposal activities at CSSA in general, there is the potential for explosive compounds to be COCs at SWMU B-4.

A summary of site COCs previously detected at concentrations greater than the sample quantitation limit (SQL) or background and their applicable TRRP human health PCLs is presented in Table 1-1. Post-removal confirmation samples will be evaluated with respect to the "critical PCL" identified for each COC listed below to determine if buried munitions debris and impacted soil have been adequately removed.

Table 1-1 Summary of Target COCs

Analysis Group	Parameter	TRRP Tier 1 Residential 30-Acre Source $^{Tot}Soil_{Comb}$	TRRP Tier 1 Residential 30-Acre Source $^{GW}Soil_{Ing}$	Background	Media	Max Value
VOC	Toluene	5,400	4.1	N/A	Soil	0.0103
VOC	Methylene Chloride (MeC)	260	0.006	N/A	Soil	0.0118 B
VOC	Dichlorodifluoro methane	12,000	120	N/A	Soil, GR	0.0144
SVOC	Bis(2-ethylhexyl) phthalate (DEHP)	43	82	N/A	Soil, GR	14.0
Metals	Barium	7,800	220	300[b]	Soil	**776**
Metals	Cadmium	52	0.75	3[b]	Soil	**85**
Metals	Copper	550	520	15[a]	GR	**760**
Metals	Chromium	24,000	1,200	40[a]	Soil	**46**
Metals	Lead	500	1.5	15[a]	GR	**140**
Metals	Mercury	2.1	0.0039	0.77[b]	Soil	**16.99**
Metals	Nickel	830	79	35.5[b]	Soil	**74**
Metals	Zinc	1,200	86	73.26	Soil	**124**

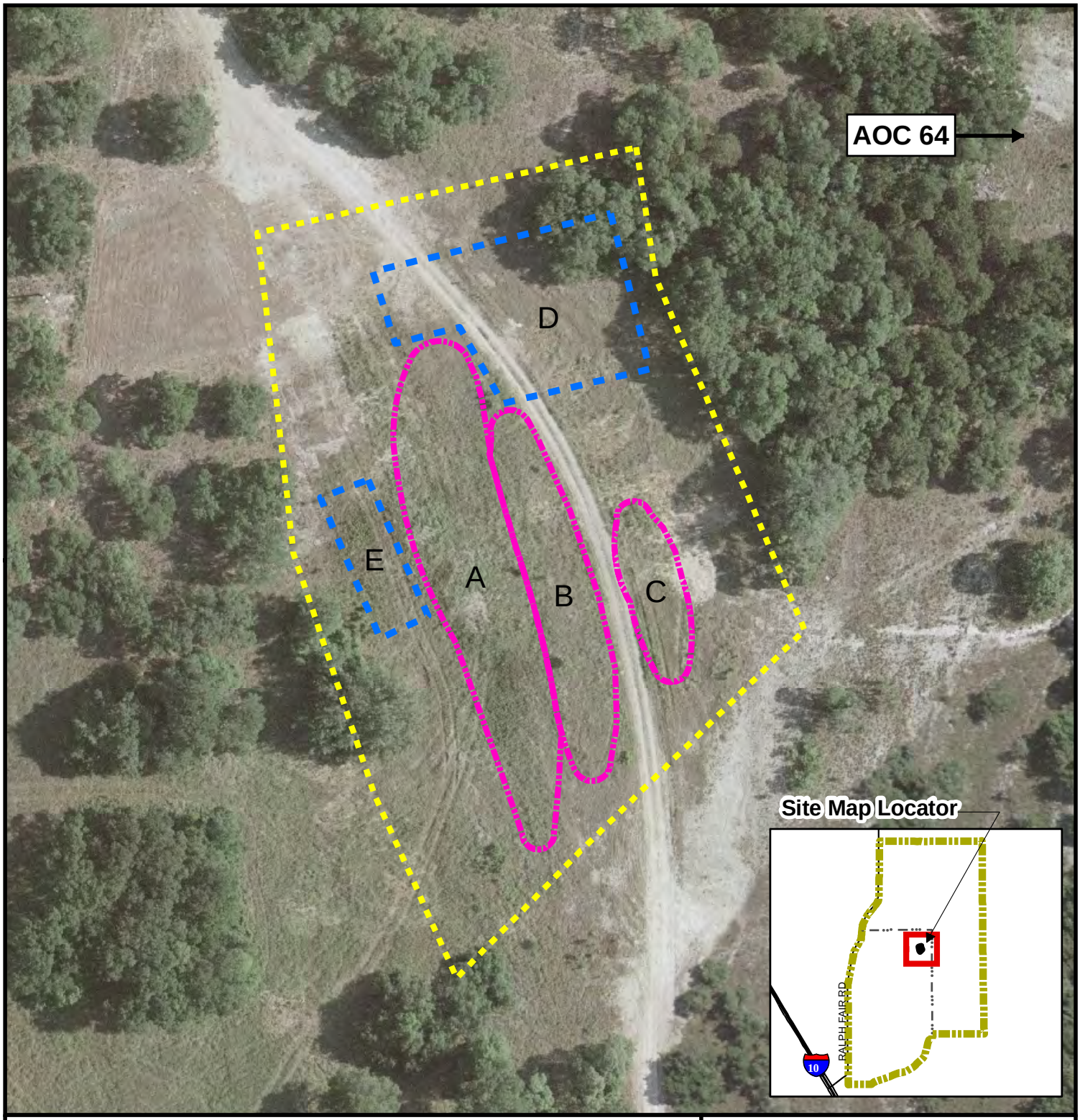
All values in mg/kg – milligrams per kilogram
Bolded values exceed background or TRRP Tier 1 protective concentration levels.
B – Analyte found in QA/QC blanks
TRRP – Texas Risk Reduction Program
SVOC – Semi-Volatile Organic Compounds
VOC – Volatile Organic Compounds
GR – Glen Rose Limestone (bedrock)
$^{Tot}Soil_{Comb}$ – Default TRRP protective concentration level (PCL) for direct exposure of humans to contaminated soil.
$^{GW}Soil_{Ing}$ – Default TRRP protective concentration level (PCL) for soil COC cross-media transfer to groundwater and subsequent human ingestion.
a - Texas-Specific Background Concentration (30 TAC 350.51(m).
b - Camp Stanley background for soil or Glen Rose Limestone.

The remainder of this SAP has been organized as follows:

- Section 2 Field Operations
- Section 3 Environmental Sampling
- Section 4 Field Measurements
- Section 5 Data Evaluation and Recordkeeping/Reporting
- Section 6 References

Supporting documents to the SAP that are appended to the Work Plan (Weston, 2009) include:

- Site Historical Data – Appendix A
- Construction Quality Plan (CQP) – Attachment B
- Site Specific Health and Safety Plan (SSHSP) – Attachment C
- Stormwater Pollution Prevention Plan (SWPPP) – Attachment D



0 80 160

SCALE IN FEET

Legend

- SWMU B-4 INVESTIGATION AREA
- ESTIMATED AREA OF AFFECTED SURFACE SOIL
- GEOPHYSICAL ANOMALY INDICATING TRENCHED AREAS

N

SOURCE: CAMP STANLEY AERIAL IMAGERY
This figure is prepared for reference purposes only and should not be used, and is not intended for survey or engineering purposes.

WESTON SOLUTIONS

Figure 1 - 1
AREAS OF INVESTIGATION
REMEDIATION SWMU B-4
CAMP STANLEY STORAGE ACTIVITY
BOERNE, TEXAS

DATE	PROJECT NO	SCALE
OCT 2009	03886.535.018	AS SHOWN

File: \\asatx01\gis_cad\GIS Project Files\CampStanley\GIS\Proposed_Removal\Fig2-2 Affected Soil & Debris- AOC 64.mxd, 20-Jun-08 14:15, thomasog

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2. FIELD OPERATIONS

2.1 EQUIPMENT DECONTAMINATION

Disposable sampling equipment will be utilized where possible to reduce decontamination requirements. Non-disposable sampling equipment that may contact samples will be decontaminated at mobile decontamination stations set up near the sampling locations. Care will be taken to set up mobile decontamination stations upwind from impacted areas to minimize the potential for ambient air contamination. The following procedure shall be used to decontaminate sampling devices such as tools, samplers, and hand trowels that can be hand-manipulated:

- Pre-rinse in potable water to remove excessive soil;
- Wash and scrub in a solution of potable water and Liquinox;
- Potable water rinse;
- ASTM Type II Reagent grade de-ionized water rinse; and
- Air dry.

If non-disposable sampling equipment is excessively contaminated by oils or other hard to remove substances, final rinses with pesticide grade methanol and/or methane will be performed and the equipment allowed to air dry.

Large equipment such as excavators and loaders will be dry brushed cleaned to remove as much soil to the extent practical. Brushings will be placed on stockpiles awaiting disposal. Equipment may be steam cleaned at a fixed decontamination pad designated at SWMU B-4 if needed to complete gross decontamination. The decontamination pad will be constructed to prevent run-off of spent decontamination fluids and located in an area at the site that will be protected from significant stormwater runoff. The proposed location for the large equipment decontamination pad at SWMU B-4 is described in the Work Plan (Section 4.2, Figure 2-4).

2.2 INVESTIGATION DERIVED WASTE MANAGEMENT

Any waste materials generated in the course of environmental sampling will be managed in accordance with the CSSA RFI and Interim Measures Waste Management Plan (CSSA, 2006). IDW generated during sampling activities during the assessment and IRA phases is expected to be generated in *de minimus* quantities. Disposable plastic scoops, sampling gloves, and general refuse will be placed in plastic garbage bags and transferred to an appropriate solid waste receptacle at CSSA. Residual soil after sample collection and containment will be placed on the stockpiles of excavated materials for bulk management. Minor amounts of decontamination rinsate generated by the cleaning of non-disposable soil sampling equipment will be sprinkled on impacted soil stockpiles or soil in areas identified for removal to be absorbed. Large amounts of decontamination water generated by cleaning large equipment will be containerized in drums pending waste characterization analysis and managed for disposal according to the Work Plan (Section 4.7).

2.3 CORRECTIVE ACTION

The initial responsibility for monitoring the quality of field measurements and observations is with the field personnel. The Project Quality Assurance (QA) Manager will be responsible for verifying that all quality control (QC) procedures are followed. This requires that the Project QA Manager assess the correctness of field methods and the ability to meet QA objectives. If a problem that might jeopardize the integrity of the project or cause some specific QA objective not to be met occurs, the Project QA Manager Inspector will notify the Project Manager and the Program QA Officer.

An appropriate corrective action will then be decided upon and implemented. The Project QA Manager will document the problem, the corrective action, and results using forms in the CQP that will be provided or amended as necessary.

3. ENVIRONMENTAL SAMPLING

3.1 DATA QUALITY OBJECTIVES

Data quality objectives (DQOs) were developed for this project to provide guidelines for field and laboratory procedures. The intention of the sampling and analysis effort is to produce data of acceptable quality to confirm the removal of contaminated soil above the appropriate response action levels, and to characterize the nature of treated media and other regulated wastes prior to disposal. Sampling and analysis will be conducted for surface water collected within open excavations that requires pumping, and ambient air for health and safety monitoring as needed.

A primary QA objective is that all measurements be representative of actual site conditions and that all data resulting from sampling and analysis activities be adequate for comparison to applicable regulatory requirements. Sampling and analysis methods and data quality management processes outlined in the Draft Interim CSSA QAPP and TRRP data quality requirements have been utilized in development of the following sections of the SAP.

3.2 SAMPLING PROCEDURES

This SAP describes sampling procedures and analytical testing requirements to properly characterize residual soil contaminant conditions during the assessment phase and following removal actions, and waste that will be generated at SWMU B-4. Sampling equipment will be decontaminated according to the specifications in Subsection 2.1 prior to any sampling activities and will be protected from contamination until ready for use. In-situ screening and confirmation samples, waste characterization samples, field screening and monitoring samples will be collected as part of this field effort. An addendum to this SAP will be prepared in the event that additional environmental media sampling is required. A summary of the type and number of samples to be collected and submitted for laboratory analysis (or field measurement) is presented in Table 3-1.

3.2.1 Sample Analysis Summary

Table 3-1 presents a summary of the type and frequency of analytical and field QA/QC samples that are anticipated for the project. Note that the number of samples listed on Table 3-1 is estimated. The final number of samples collected will depend on site conditions, and waste characterization/treatment requirements.

Table 3-1 Sample Analysis Summary

Description	Location	Analyses (Method)	Frequency
Surface Soil Confirmation Samples	Grid locations within area of affected surface soils	SWMU B-4 Metals (SW6010B/7470)	Two samples at each 2,500 ft^2 grid sample location
Phase I Exploratory Excavation Samples	Disposal trench bottom exposed in test pits and trench spoil	VOCs (SW8260B) SVOCs (SW8270C) Explosives (SW8330) SWMU B-4 Metals (SW6010B/7470)	One trench floor sample per each test pit (9 test pits estimated). One sample per each 1,000 yd^2 of trench spoil
Phase II\\ IRA Excavation Limit Confirmation Samples	Excavation limits (floors, and sidewalls)	VOCs (SW8260B) SVOCs (SW8270C) Explosives (SW8330) SWMU B-4 Metals (SW6010B/7470)	Sidewalls: 1 per 50 linear ft. Floors: 1 per 50 linear feet
Soil Waste Characterization Samples	Stockpiles	TPH (TX1005) TCLP – VOCs, SVOCs, Metals (SW1311-SW8260B, 8270C, 6010B/7470)	1 per 200 yd^2 or 1 per 500 yd^2 as per CSSA Minimum Waste Characterization Criteria
Stabilized Waste	Segregated stockpiles	TCLP – VOCs, SVOCs, Metals (SW1311-SW8260B, SW8270C, SW6010B/7470)	1 per 200 yd^2
Soil Samples – Backfill (as necessary)	Backfill Source	Total Metals (SW6010B) VOC (SW8260B) SVOC (SW8270C)	1 composite sample per source area/location
Bulk Decontamination Rinsate	Drums	VOCs (SW8260B) SVOCs (SW8270C) Explosives (SW8330) SWMU B-4 Metals (SW6010B/7470)	1 composite sample per 500 gallons
Stormwater Discharged from Excavations	Excavations	VOCs (SW8260B) SVOCs (SW8270C) Explosives (SW8330) SWMU B-4 Metals (SW6010B/7470)	1 grab sample per event
Air Samples	Site perimeter and excavation	Lead, TSP (NIOSH 0600)	As needed
Field QC Samples (confirmation level samples)	Trip Blank	VOCs (SW8260B)	1 per cooler transport
	Field Duplicate	All analytical methods used	1 per 20 samples
	MS/MSD	All analytical methods used	1 per 20 samples
	Equipment Blank	All analytical methods used	1 per 20 samples

Note: Field QA/QC samples will not be collected for screening sampling or waste characterization sampling.

3.2.2 Affected Surface Soil Delineation Sampling

Based on the soil boring locations from the historical assessments that indicated impacted surface soil, a sampling grid will be set up for each suspected area of affected soil that will allow for the collection of surface soil samples at a frequency of one per 2,500 square foot (ft^2) (50 by 50 foot) area as described in the Work Plan. The sampling stations will be marked with flagged stakes and recorded using a hand-held geographic positioning system (GPS). The location of the sample grids will be within Areas D and E shown on Figure 1-1

Surface soil samples will be collected at each marked sampling station using a hand auger from just below the leaf litter zone to 1 foot below ground surface (bgs) and 1.5 to 2 feet bgs. The sample collected from the shallower interval will be used to determine the degree of COC impact within the affected zone for TRRP assessment and waste characterization. The deeper sample interval is intended to evaluate the vertical extent of affected surface soil and will be used for IRA confirmation purposes.

The leaf litter at the sampling stations will be brushed away and a decontaminated hand auger will be advanced from 0 to 0.5 feet to collect the upper sample at the station. The soil will be field screened with a hand-held photoionization detector (PID). The soil sample will be removed from the hand auger bucket and placed directly into laboratory-supplied containers and managed for transport as described in Section 3.4. A portion of the sample will be field screened for organic vapors with the PID and a brief field description of the sample will be recorded in the field log book. After collection of the upper interval sample, the hand auger will be decontaminated and advanced within the boring collect a sample from the 1 to 1.5 foot interval for field screening and sample management.

Field QA/QC samples associated with the surface soil assessment will include blind field duplicate samples, equipment rinsate blanks for non-disposable sampling equipment, and laboratory matrix-spike/matrix spike duplicate (MS/MSD) samples. Duplicate samples shall be collected at the rate of one per 20 regular samples collected. MS/MSD samples will be collected at the rate of one per 20 regular samples collected and will be identified on the chain-of- custody as designated site-specific MS/MSD samples. A temperature blank will be supplied by the laboratory and will consist of one small container of laboratory grade water for the purpose of measurement of sample temperature upon receipt of the sample cooler at the laboratory. All QA/QC samples will be analyzed for the target COCs for SWMU B-4.

Surface soil samples will be analyzed for site COCs as summarized in Table 3-1. Field QA/QC samples will be collected for analysis as described in Section 3.3. If analytical results for any COC detected in the lowermost sample collected from a sampling station exceeds TRRP RALs additional deeper samples will be collected until vertical delineation is achieved to RALs.

3.2.3 Excavation Sampling

3.2.3.1 Exploratory Excavation Sampling

Samples of soil will be collected from the trenches in two phases. The initial phase (Phase I) will be performed during exploratory excavation activities and will involve collecting soil samples from test pits excavated in the disposal trenches to determine COC concentrations from the vertical extent of the trenches and assess the level of vertical excavation required during the IRA. Additionally, samples of the trench spoil will be analyzed for COCs to determine the probable waste characterization and management requirements during the IRA. The second phase of sampling will involve confirmation sampling conducted during the IRA.

During Phase I assessment activities, it is estimated that nine soil samples will be collected from the trench bottoms: four from Trench A, three from Trench B, and two from trench C (see Figure 1-1). The final number of bottom samples will be collected will vary depending on the actual lengths of the trenches. Soil samples collected using the excavator bucket. The sampler will direct the excavator operator to collect soils from a specific location at the bottom of the test pit. Upon retrieval, the samples will be collected by hand from soils not in contact with the backhoe bucket, field screened, described, and managed for transport to the laboratory as described previously.

During excavation of the test pits, trench spoils will be evaluated by a UXO technician who will describe and record for debris content. The spoils will be field screened for organic vapors with a PID. Based on visual assessment and field screening results samples of the trench spoils will be collected by hand at a frequency of approximately one sample per 1,000 yd^3 for target COC analyses. All soil samples collected during the exploratory excavation activates will be analyzed for SWMU B-4 target COCs as summarized in Table 3-1. All samples will be analyzed on a standard turn around basis. The analytical results of the exploratory excavation sub-phase will be considered as screening level so no field QA/QC samples will be collected.

3.2.3.2 Interim Remedial Action Confirmation Sampling

As the disposal trenches are progressively excavated during the IRA, discreet location confirmation samples will be collected from the sidewalls and floor of the excavation on a frequency of one per 50 linear feet of excavation sidewall and trench bottom. Samples or cores will not be collected from excavation floor areas consisting of indurate bedrock. The samples will be collected using the excavator as previously described for the exploratory excavation sub-phase. Visual observations and field screening as previously described will be used to aid in selecting the intervals within the trenches to be sampled. All soil confirmation samples will be analyzed for SWMU B-4 target COCs as summarized in Table 3-1.

Field QA/QC samples will include blind field duplicate samples, equipment blanks (for non-disposable equipment) and MS/MSD samples. Duplicate samples will be collected at the rate of one per 20 regular samples collected. MS/MSD samples will be collected at the rate of one per 20 regular samples collected and will be identified on the chain-of-custody as designated site-specific MS/MSD samples. Equipment blanks will not be collected as all sampling will be performed with disposable equipment. A temperature blank will be supplied by the laboratory

and will consist of one small container of laboratory grade water for the purpose of measurement of sample temperature upon receipt of the sample cooler at the laboratory. All QA/QC samples will be analyzed for the target COCs for SWMU B-4.

If confirmation sample results are above the respective response action levels, additional excavation will be performed and samples will be collected at the extended bottom or sidewalls of the excavation as needed to verify adequate removal of impacted soil.

Analysis by the synthetic precipitation leaching procedure (SPLP) may be conducted prior to additional excavation if initial sample results exceed groundwater protection values only. If SPLP results do not exceed the applicable TRRP Tier 1 PCL for ingestion of groundwater, no further excavation will be conducted. This process will be repeated until either the applicable PCLs are achieved, or until bedrock is reached. Turn around times for laboratory analysis will be 5 working days. Confirmation samples will be analyzed for parameters listed in Table 3-1.

Accumulation of surface water in excavations is possible following significant rainfall events. Unless this water impedes operations, characterization sampling is not planned, and the small amount of water will be incorporated into the treatment train process. In the event that surface water run-on should need removal from an excavation, it will be sampled for total metals, VOCs, SVOCs, and explosives prior to disposal or release on site.

3.2.4 Waste Characterization Sampling

3.2.4.1 Excavated Soils

The frequency of waste characterization sample collection will be based on CSSA minimum criteria for waste characterization. The CSSA criteria are tiered based on the level of COCs detected in the waste relative to TRRP Tier 1 residential PCLs and is summarized in Table 3-2.

Representative COC concentrations in trench spoils will be based on the analytical results obtained during the exploratory excavation sub-phase. The frequency of waste soil characterization sampling will be selected per the criteria in Table 3-2. Each waste characterization sample will consist of a four-part composite collected from an estimated volume of stockpiled soil (i.e. 200 or 500 yd^3). Soil samples will be collected by hand using disposable collection equipment, placed into laboratory-supplied jars and managed for transport and analysis in accordance with procedures described in Section 3.4. Each soil stockpile will be placarded with its waste characterization identification number. The approximate location and configuration of the stockpile, as well as the individual composite samples, will be recorded using a hand-held GPS unit and recorded in the field logbook.

All waste characterization samples will be analyzed for total petroleum hydrocarbons (TPH) and TCLP for all COCs by TCEQ and U.S. Environmental Protection Agency (EPA) methods specified in the CSSA QAPP. If TCLP leachate from any stockpile section sample exhibits COC concentrations in excess of the federal limits for characteristic hazardous waste, soil in that section will be segregated for further testing or stabilization.

Table 3-2 CSSA Minimum Waste Characterization Criteria

COC Condition in Media	Analyses	Sampling Frequency
>18 Times TCLP Limit	TPH and TCLP for COCs	1 per 200 yd^3
>TRRP Residential Tier 1 PCL but <TCLP Limit	TPH and TCLP for COCs	1 per 500 yd^3
<TRRP Residential PCL	No further analysis	No sampling; return to site

3.2.4.2 Stabilized Waste Characterization

Stabilized soil will be tested for final disposition by the TCLP for all COCs that exceeded the TCLP leachate limit during sampling of the initial un-stabilized waste. As an example, if the initial TCLP analysis for the stockpile section tested exceeded the TCLP for metals only, the stabilized waste would be tested for TCLP metals but not for TCLP VOCs or SVOCs.

3.3 FIELD QUALITY CONTROL SAMPLES

Field QC samples will be submitted with all confirmation level investigation samples.

3.3.1 Field Duplicates

A field duplicate sample, also called a split, is a single sample divided into two equal aliquots for analysis. The duplicate samples will be assigned a sequential identification number (e.g. DUP01) and 00:00 time (i.e. blind) such that they cannot be identified as replicate samples by laboratory personnel performing the analysis. Duplicate sample cross-references with the primary investigation sample will be carefully noted in the field log book. The frequency of collection for field duplicates will be one per every 20 investigation samples.

3.3.2 Equipment Rinsate Blanks

Equipment rinsate blanks (equipment blanks) will be prepared to check the effectiveness of decontamination of non-disposable sampling equipment (e.g. hand augers, stainless steel sampling scoops). In accordance with the minimum sampling frequency specified in the CSSA SAP, one equipment blank will be collected for every 20 soil confirmation samples that are collected using non-disposable sampling equipment. The equipment blank will be prepared by pouring American Society for Testing Materials (ASTM) Type II de-ionized water over the sampling surfaces of the equipment used and capturing the water directly into a laboratory-supplied container pre-preserved according to the parameters to be analyzed and transported to the laboratory in the same manner as the investigation samples. The sample type will be EB, numbered sequentially starting with 1 (i.e., EB01) as the first EB collected during the project. The blank will be analyzed for the COCs requested for the sample data group collected.

3.3.3 Matrix Spike and Matrix Spike Duplicates

MS/MSD samples will be prepared in the field by collecting additional sample volume sufficient for two additional samples at the selected location. The additional samples will be separately designated with the primary sample location number (i.e. SWMUB4-SS1 (0-0.5') and a suffix indicating the sample as the MS or the MSD sample. The purpose of the samples as MS/MSD will be noted in the comments section of the chain-of-custody. The sample type is MS for the matrix spike, and SD for the matrix spike duplicate and numbered sequentially starting with 1 (e.g., MS1 and SD1).

3.3.4 Trip Blanks

Trip blanks will be prepared by the laboratory using VOC samples vial filled with ASTM Type II reagent grade water, transported to the sampling site, handled like an environmental sample, and returned to the laboratory for analysis. Trip blanks will be prepared only when VOC samples are taken and are analyzed only for VOC analytes. One trip blank will accompany each cooler sent to the laboratory containing samples for VOC analysis.

3.4 SAMPLE HANDLING

3.4.1 Sample Volumes, Container Types, and Preservation Requirements

Sample volumes, container types, and preservation requirements for the analytical methods performed during the project are listed in Table 3-3. Sample holding time tracking begins with the collection of samples and continues until the analysis is complete. Sample containers will be provided by the analytical laboratory and will be treated according to specifications required by the CSSA QAPP for the analytical method. Fresh containers will be stored in clean areas to prevent exposure to fuels, solvents, or other potential contaminants.

3.4.2 Sample Identification

Samples collected during field activities will be given a unique identification that will reflect the source of the sample and the date the sample was collected utilizing the CSSA/customized hybrid Environmental Restoration Program (chERP) system.

Table 3-3 Requirements for Containers, Preservation Techniques, Sample Volumes, and Holding Times

Analyses	Analytical Methods	Container[a]	Preservation	Minimum Sample Volume or Weight	Maximum Holding Time
TCLP – Metals	SW1311 (Extraction) SW6010B/SW7470	Soil: G	4ºC	8 oz	28 days mercury, 180 days all other
Total Metals	SW6010B/SW7470	Soil: G	4ºC	8 oz	28 days mercury, 180 days all other
		Water: P	4ºC, HNO_3	500 mL	28 days mercury, 180 days all other
TPH	TX1005	Soil: G	4ºC	8 oz	14 days
SVOCs	SW8270B	Soil: G	4ºC	8 oz	14 days to extraction 40 days after extraction
		Water: G	4ºC	1 L	7 days to extraction 40 days after extraction
VOCs	SW8260B	Soil: G	4ºC, HCL	4 oz	14 days
		Water: G	4ºC, HCL	40 mL	
Explosives	SW8330	Soil: G	4ºC	8 oz	14 days 40 days after extraction
		Water: G	4ºC	1 L	7 days 40 days after extraction
Lead	NIOSH 7105	Air: C	NA	8 x 10	180 days
TSP	NIOSH 0500	Air: C	NA	8 x 10	180 days
pH	SW9045	Soil: G	4ºC	4 oz	As soon as possible, 3 days maximum

a Polyethylene (P); glass (G); Teflon-lined septum (T); MCE 0.8 µm clear cassette (C)

3.5 SAMPLE CUSTODY

Procedures to ensure the custody and integrity of the samples will begin at the time of sampling and continue through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal. Records concerning the custody and condition of the samples are maintained in field and laboratory records.

WESTON will generate chain-of-custody records for all field and field QC samples utilizing the CSSA chERPs system. For definition, a sample is defined as being under a person's custody if any of the following conditions exist: (1) it is in their possession; (2) it is in their view, after being in their possession; (3) it was in their possession and they locked it up; or (4) it is in a designated secure area. All samples will be uniquely identified, labeled, and documented in the field at the time of collection.

All sample containers will be sealed in a manner that will prevent or detect tampering. Inert packing material will be used to prevent breakage. The following minimum information concerning the sample will be documented on the chain-of-custody form:

- Unique sample identification.
- Date and time of sample collection.
- Source of sample (including name, location, and sample type).
- Designation of MS/MSD samples.
- Preservative used.
- Analyses required.
- Name of collector(s).
- Custody transfer signatures and dates and times of sample transfer from the field to transporters and to the laboratory or laboratories.
- Bill of lading or transporter tracking number (if applicable).

Samples collected in the field will be transported to the laboratory by priority courier service. The samples will be packed in an iced cooler after collection and during transportation sufficient to maintain a temperature near 4°C ±2°C. A temperature blank will be included in every cooler and used to determine its internal temperature upon receipt of at the laboratory.

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4. FIELD MEASUREMENTS

4.1 FIELD SCREENING AND MONITORING PARAMETERS

Table 4-1 lists parameters to be measured in the field and the instruments that will be used to measure these parameters.

Table 4-1 Field Parameters

Media	Parameter	Instrument
Sample ATHA	Organic Vapors	Photoionization Detector (PID), 10.6 eV lamp (Rae Systems MiniRae or equivalent)
Workspace air	Organic vapor, combustible gas, lower explosive limit	PID and Multi-gas combustible gas indicator (Rae Systems MultiRae or equivalent)
Ambient Site Air	Particulates, total suspended solids and lead	Air particle monitor (Rae Systems MiniRAM or equivalent) as specified in Work Plan
Non-survey grade coordinate location	Decimal latitude and longitude	Hand-held WASS GPS (Garmin CS60 or equivalent) or CSSA GPS if available

ATHA – Ambient temperature headspace analysis GPS – Global positioning system.
WAAS – Wide area augmentation system.

4.2 EQUIPMENT CALIBRATION AND QUALITY CONTROL

Field equipment calibration procedures will be in accordance with manufacturer specifications. Calibrations will be performed at least daily and at any time erroneous readings are suspected or weather conditions significantly change on site. Quality control checks will be performed at least daily or when readings are questioned. Calibrations, quality checks, and any corrective actions required will be documented in the field logbook. The equipment power supplies will be intrinsically safe and charged according to manufacturer specifications to allow ample supply during work periods.

4.3 FIELD MONITORING MEASUREMENTS

Air monitoring requirements and action levels are described in the SSHSP and the Work Plan.

4.4 FIELD PERFORMANCE AND SYSTEM AUDITS

4.4.1 Pre-Mobilization Meeting

A pre-mobilization meeting will be held before field activities commence. The meeting will be attended by the Project Manager, the Project QA Manager, appropriate field staff, the field CSSA and USACE representatives, auditors, and other key technical personnel.

The goals of this meeting will be to:

- Review the Work Plan and SAP to identify field activities that would be most appropriate to audit.
- Clarify the objectives and scopes of the field audits.
- Discuss and finalize the content of the audit checklists.
- Set tentative dates for the scheduled field audits.
- Discuss in general terms the timing of the unscheduled field audits.

The results of the meeting will be documented in meeting minutes prepared by the Project Manager, placed in the project files, and distributed to all participants.

4.4.2 Field Audits

In addition to the pre-mobilization meeting, field audits may be performed during the project activities to evaluate work practices. The objective of conducting field audits is to ensure that the activities are in compliance with the following:

- The approved SAP, SSHSP, and schedule.
- WESTON Standard Operating Procedures relevant to the field activities.
- Currently accepted technical standards for field activities.
- Other technical and administrative requirements that might be applicable.

This activity is important because it will provide independent verification and documentation that appropriate techniques and technologies were employed to generate data used to confirm that the treatment objectives were met.

5. DATA EVALUATION AND RECORDKEEPING/REPORTING

5.1 DATA EVALUATION

Data received from the subcontract laboratory will include a report of analytical results and data package in conformance with the CSSA QAPP for data evaluation. The laboratory results will be reviewed to ensure that project DQOs are met and that the data are valid and useable. The data will then be reviewed for usability according to CSSA QAPP requirements. A Data Usability Summary (DUS) report will be prepared for sample data sets outlining the results of the data review and any data qualification.

Regarding data evaluation, the significance of any detected constituents will be determined by comparing the concentrations reported by the laboratory to TRRP Tier 1 or Tier 2 PCLs. TRRP PCLs have been developed specifically to protect human health, and they include use of background values for inorganic contaminants (metals) and promulgated human health based screening levels. Detected contaminant concentrations, as well as reporting limits for analytes indicated as not detected, will be compared to the applicable TRRP PCLs to determine the need for additional sampling or removal actions throughout the project.

5.2 DATA REPORTING

TCEQ TRRP laboratory packages will be prepared by the selected analytical laboratory. These deliverables will include all analytical data results from field and laboratory QA/QC samples. In addition, DUS reports will be prepared for sample data sets outlining the results of the data review and any data qualification. Environmental Resource Program Information Management System (ERPIMS) format electronic data deliverable will be prepared for environmental samples, excluding waste characterization and field screening/monitoring samples.

5.3 RECORDKEEPING

WESTON will maintain field records sufficient to recreate the sampling and measurement activities. The requirements listed in this section apply to all measuring and sampling activities. Requirements specific to individual activities are listed in the section that addresses each activity. The information will be recorded with indelible ink in a permanently bound notebook with sequentially numbered pages. These records will be archived in the project file, which will be maintained in WESTON's San Antonio, Texas office.

The following information will be recorded for all field activities: (1) location (also logged with a GPS unit); (2) date and time; (3) identity of people performing activity; and (4) weather conditions. For field measurements: (1) the numerical value and units of each measurement; and (2) the identity of and calibration results for each field instrument will also be recorded.

The following additional information will be recorded for all sampling activities: (1) sample type and sampling method; (2) the identity of each sample and depth(s), where applicable, from which it was collected; (3) the amount of each sample; (4) sample description (e.g., color, odor, clarity); (5) identification of sampling devices; and (6) identification of conditions that might affect the representativeness of a sample (e.g., dust conditions, refueling operations, rain).

Other field documentation such as chain of custody forms, bills of lading, field data sheets, audit and corrective action forms, photographs, and other associated and pertinent documentation will also be archived in the project file.

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APPENDIX 16

REFERENCES

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