

APPENDIX D—WEST TRENCH INVESTIGATION

SECTION 1. INTRODUCTION

This appendix describes the field investigation conducted in the western disposal area as part of the Interim Remedial Action (IRA) at Solid Waste Management Unit (SWMU) B-3. The purpose of the investigation was to document the environmental condition and site closure requirements of the western trench area. This appendix describes the field actions, summarizes the findings, and provides recommendations for further action. A map depicting the general site layout is found on **Figure SWMUB3-1**.

This specific IRA was performed under the U.S. Air Force Center for Environmental Excellence (AFCEE) Contract No. F41624 00-D8025, Delivery Order (DO) 23. AFCEE provided technical oversight for the DO. Based upon the project Statement of Work, a set of work plans was established to govern the fieldwork. These include:

- Work Plan (WP) Overview (**Volume 1-1, RL74 and RL83 Addendum**);
- DO 23 WP Addendum (**Volume 1-2, SWMU B-3**);
- Sampling and Analysis Plan (SAP) (**Volume 1-4, RL74 and RL83 Addendum**);
- DO 23 SAP Addendum (**Volume 1-4, Sampling and Analysis Plan**); and
- Health and Safety Plan (HSP) (**Volume 1-5, RL74 and RL83 Addendum**).

For this appendix, Section 1 provides the site-specific background. Section 2 describes field actions and the waste characterization evaluation for the west trench. Section 3 summarizes the current environmental condition of the site and provides recommendations for further interim measures required for site closure. References cited in this report can be found in the **Bibliography (Volume 1-1, Environmental Encyclopedia)**.

The overall purpose of the SWMU B-3 IRA was to excavate all debris and soil containing volatile organic compounds (VOCs) and concentrations of metals that exceed the Texas Commission on Environmental Quality (TCEQ) Risk Reduction Standard No. 1 (RRS1) criteria in pursuit of clean closure of the land-based unit under RRS1. Removal of all wastes and contaminated media containing VOCs and metals above background levels would qualify the land-based portion of the site for partial closure under TCEQ's RRS1. In addition, excavating the contaminated media in the disposal trenches (soil overlying bedrock) reduces the amount of contaminants available for migration to the groundwater at SWMU B-3 and surrounding areas.

As outlined in the site-specific WP (**Volume 1-2, SWMU B-3**), IRA activities in the western disposal area included removing cover material, exploratory trenching, and collecting soil samples at the site to define the lateral and vertical extent of contamination. Upon determining the extent of contamination, a removal action of all debris and soil media containing VOCs and metals that exceed the TCEQ RRS1 criteria is recommended to pursue clean closure of the land-based unit under RRS1.

SECTION 2. FIELD INVESTIGATION

2.1 FIELD ACTIONS

2.1.1 Exploratory Trenching

Investigation activities at the western disposal area began on September 4, 2002. Starting at the northern end of the trench, the upper 1–2 feet of soil cover was stripped and stockpiled based on field screening assessments. As outlined in the site-specific WP, cover materials free of general debris were placed in the clean fill stockpile pending sampling to demonstrate the material's suitability for use as fill. Metal debris that was easily segregated and deemed recyclable was staged in a scrap stockpile. On September 4 and 5, approximately 960 loose cubic yards of cover material was removed from the western disposal area and stockpiled in the clean fill stockpile. The clean fill stockpile was sampled on September 9, 2002.

On September 4, 2002, three 55-gallon drums of unknown material and origin, one leaking, were encountered during excavation. The drum and associated soil were removed and staged in the lined cell designated for hazardous waste. When excavation resumed on September 5, 2002, a significant volume of waste material was encountered in the upper 1 foot of cover soil at the trench, and stripping of cover material was stopped. Three lateral (east-west) exploratory trenches were excavated across the main disposal trench to profile the waste and determine preliminary trench boundaries. The locations of the trenches are depicted on **Figure SWMUB3-2**. The trench waste and soil media were not removed and stockpiled, but were sampled directly at a minimum of one sample every 1,000 cubic yards to determine waste characterization for disposal. On September 5, waste characterization samples were collected at three depth intervals from each exploratory trench. The shallow sample from each trench was also analyzed to characterize the cover soil for use as fill. After sampling was completed, all excavated material was placed back into the trenches.

On September 6, 2002, another exploratory trench was excavated at a VOC hot spot that had been identified during previous investigations. CSSA was notified of burned debris and ammo boxes encountered at a depth of 6 feet in the trench. On September 10 and 11, 2002, additional exploratory trenches were dug at the west trench area to delineate the trench boundary, determine the amount of material to be excavated, characterize trench contents, and collect additional samples for waste characterization. Two trenches were excavated at what was thought to be the northern and southern extents of waste, and a third trench was excavated in the center of the waste area. The exploratory trenching indicated that the western disposal area is actually composed of four north-south trenches, designated A through D (**Figure SWMUB3-2**). An excavator was used to expose the bottoms of the four sub-trenches at multiple locations. The trenches were surveyed using hand-held GPS to collect information for volume calculations, and on September 12, 2002, waste characterization samples were collected from the sub-trenches. After sampling was completed, all excavated material was placed back into the trenches.

On September 17, 2002, excavation of the upper 2 feet of cover soil from the west trench resumed. From September 17 through 26, approximately 4,596 loose cubic yards of cover

material was removed and placed into the clean fill stockpile based on field assessment and analytical data. On September 25, two east-west test trenches were excavated at the former locations of VEW-1 and VEW-8 to confirm the areal extent of the west disposal area and to delineate the approximate dimensions and centerlines of the four sub-trenches.

Excavation at VEW-1 progressed from west to east. Waste material recovered in the test trench at VEW-1 included one crushed drum, oily fabric, and wood (sub-trench D); burned wood, pieces of fencing, screen, ammo vest, brick, crushed metal containers, a crushed drum, shingles, corrugated metal sheets, piping, muffler, radiator grating, barbed wire, a sink with pipe, cable, shoelaces, and ammo boxes and cases (sub-trench C); ammo case filled with sand and blue material (placed in baggie) (sub-trenches B and C); and abundant pieces of glass slag up to 1 foot in diameter (sub-trench A). Metal and wood debris and abundant amounts of blue material mixed with burned soil and glass were identified approximately 50 feet from the west end of the exploratory trench at a depth of 15 to 20 feet, and three pieces of possible transite pipe 2 to 3 feet long were isolated in sub-trenches C and D.

Excavation of the second exploratory trench at VEW-8 progressed from east to west. Material recovered during excavation included a crushed drum and dark brown to black burned soil with fragments of burned wood, glass, and metal (sub-trench A); abundant twisted wire and flexible hose, blue material, wood, and practice bombs (sub-trench B); paper, wood, and plastic material, batteries, and metal banding (sub-trench C); oily paper and plastic debris, pens, and plastic strapping (sub-trenches C and D).

Trenching activities were discontinued after sloughing of the sidewalls began to occur in sub-trenches C and D. The centerlines of the sub-trenches and endpoints of the two test trenches were surveyed using a hand-held GPS, and all excavated material was returned to the trenches. With the exception of the leaking drum and associated soil encountered on September 4, 2002, no waste material was removed from the western disposal area sub-trenches. A total of 463 truckloads, or approximately 5,556 loose cubic yards of cover soil, excavated from the upper 1–2 feet of the western disposal area was staged in the clean fill stockpile for use as backfill at the eastern trench area.

2.1.2 Analytical Program

Columbia Analytical Services, Redding, California, analyzed the SWMU B-3 samples in accordance with the analytical methods and parameters specified in the site-specific WP (Volume 1-4, **Sampling and Analysis Plan (SAP) Addendum and AFCEE QAPP**). Analytical methods are taken from the latest revision of the EPA SW-846, *Test Methods for Evaluating Solid Waste, Third Edition and Updates* (1986). In addition, Severn Trent laboratories, Corpus Christi, Texas, analyzed the samples for TPH in accordance with TCEQ Method 1005, Revision 03, June 1, 2001. The specific analytical methods are listed in the following table.

Analyte	Method
VOCs	EPA Method 8260B
Semivolatile organic compounds (SVOCs)	EPA Method 8270C
COC metals—arsenic, barium, cadmium, chromium, copper, lead, nickel, zinc, mercury	EPA Methods 6010B/7471A

Analyte	Method
TPH	TCEQ Method 1005, Revision 03, June 1, 2001
TCLP VOCs—benzene, chlorobenzene, carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethene, methyl ethyl ketone, PCE, and TCE	EPA Methods 1311/8260B
TCLP Texas List metals—antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, and silver	EPA Methods 1311/6010B/7470A

Equipment decontamination procedures, as well as sample collection, preparation, handling, and shipping protocols, are described in the site-specific WP and the CSSA SAP presented in the **Environmental Encyclopedia (Volume 1-4, Sampling Analysis Plan for SWMU Closures at Camp Stanley Storage Activity, February 1996)**. Laboratory QC samples associated with the IRA sample analyses included method blanks, laboratory control samples, matrix spike samples, and laboratory duplicate samples. Field QC samples collected in support of the SWMU B-3 IRA included field duplicate samples, matrix spike samples, equipment rinse blank samples to ensure adequate decontamination of sampling equipment, and trip blank samples associated with the VOC analyses. Sample locations were surveyed using a global positional system following the procedures in the CSSA SAP.

2.1.3 Waste Characterization Sampling

Historical data were used initially to determine the nature and extent of contamination at SWMU B-3. Removal actions at the west trench indicated that additional disposal trenches and waste material were present at the site. Waste material was not removed from the sub-trenches or stockpiled, so waste characterization samples were collected directly from the exploratory trenches excavated across the western disposal area. Sampling at the western disposal area was conducted at a minimum of one sample per 1,000 cubic yards of waste material in accordance with the site-specific WP. Samples for waste characterization were collected on two separate dates. Complete analytical results are contained in Appendix A.

On September 5, 2002, nine composite soil samples were collected from the three exploratory trenches as shown on **Figure SWMUB3-2**. Sample CSB3-WT-1 (depth intervals 0–2 feet, 2–8 feet, and 8–16 feet) was collected from the southernmost trench, sample CSB3-WT-2 (depth intervals 0–2 feet, 2–6 feet, and 6–12 feet) was collected from the middle trench, and sample CSB3-WT-3 (depth intervals 2–4 feet, 4–6 feet, and 6 feet to total depth) was collected from the northernmost trench. The samples were analyzed for TCLP VOCs, TCLP Texas List metals, and TPH for waste characterization. The samples collected from the cover soil (shallowest depth interval in each trench) were also analyzed for VOCs and COC metals for comparison to background criteria to demonstrate the suitability of the material as cover soil or backfill. Two of the samples (CSB3-WT-3, depths 2–4 feet and 4–6 feet) were analyzed for SVOCs.

On September 12, 2002, 18 soil samples (designated “A”, “B”, “C”, and “D”) were collected from four sub-trenches identified in the western disposal area as shown on **Figure SWMUB3-2**. Six samples were collected from Trench A (CSB3 WT A-00 through A-5); three

from Trench B (CSB3 WT B-1 through B-3); five from Trench C (CSB3 WT C-1 through C-5), and four from Trench D (CSB3 WT D-1 through D-4). These waste characterization samples were analyzed for TCLP VOCs, TCLP Texas List metals, and TPH.

2.2 RESULTS AND COMPARISONS

2.2.1 Waste Characterization—West Trench

On September 5, 2002, three lateral (east-west) exploratory trenches were excavated across the main disposal area. Composite waste characterization samples were collected at three depth intervals from each of the trenches and analyzed for TCLP VOCs, TCLP Texas List metals, and TPH as described in Section 2.1.3. As shown in **Tables SWMUB3-1 and SWMUB3-2**, low-level detections of several TCLP metals and TPH were reported in the samples; all concentrations were less than 40 CFR hazardous or Class 1 nonhazardous criteria. Two additional exploratory trenches were excavated on September 10, 2002, at what was thought to be the northern and southern extents of waste, and a third trench was excavated in the center of the waste disposal area. The exploratory trenching indicated that the west trench is actually composed of four north-south trenches, designated A through D. The areal extent of the disposal area for the west trench was much larger than indicated in previous investigations. The main trenches were found to extend further north and south than depicted on the base geophysical survey, with two of the sub-trenches located east of the limit based on the geophysical results and borings. The extent of the west trench increased to an estimated 466 by 121 feet.

On September 12, 2002, 18 soil samples were collected from the four sub-trenches to characterize the waste in the western disposal area. Waste characterization samples were analyzed for TCLP VOCs, TCLP Texas List metals, and TPH. As shown in **Table SWMUB3-2**, the analytical results indicate that samples representing approximately 1,000 loose cubic yards of materials exceeded the 40 CFR characteristic hazardous criteria for lead (5.0 mg/L) and TCE (0.5 mg/L) (D008 and D039 hazardous waste). TCE concentrations in sample CSB3 WT A-3 and lead concentrations in sample CSB3 WT A-4 both exceeded TCLP standards for hazardous waste. In addition, sample CSB3 WT A-3 contained concentrations of antimony and lead and sample CSB3 WT C-4 contained concentrations of cadmium exceeding the Class 1 nonhazardous waste standards. With the exception of one leaking drum and associated soil, no soils or waste material from the western trenches was removed as part of this IRA. Additional characterization testing will be required to determine the appropriate profiles for wastes generated through the excavation of the SWMU B-3 west trench.

On September 25, 2002, exploratory trenching was initiated at the former locations of VEW-1 and VEW-8 in the northern portion of the trench to further define the areal extent of the western disposal area and to delineate the approximate dimensions and centerlines of the four sub-trenches. The volume of waste material in the sub-trenches was estimated based on the trapezoidal cross sections observed in the trenches and measurements made during exploratory trenching. The dimensions of the four sub-trenches, areal extent of the west disposal area, and calculations of the volume of waste contained in each sub-trench is summarized in Attachment 1.

SECTION 3. CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

In fall 2002, an IRA was conducted that removed the waste and contaminated soil media exceeding TCEQ RRS1 criteria from the east disposal area at SWMUB-3. IRA activities for the western disposal area consisted of removing the upper 2 feet of cover soil from the west trenches (approximately 5,556 loose cubic yards used as backfill at the east trench area) and excavating exploratory trenches to determine the trench configuration and boundaries, characterize the contents of the trench and amount of material to be excavated, and collect soil samples for waste characterization. The areal extent of the disposal area for the west trench was much larger than indicated in previous investigations. Four sub-trenches were defined that extended further north and south than depicted on the base geophysical survey, with two to the sub-trenches located east of the limit based on the geophysical results and borings. The areal extent of the west disposal area was revised to 466 by 121 feet, resulting in an estimated total in-place volume for excavation, disposal, and backfill of approximately 17,432 bank cubic yards. Analytical results from samples collected during the exploratory trenching indicate that D008 and D039/D040 hazardous waste may be present in the west trench.

3.2 EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT

Data quality objectives (DQOs) for the SWMU B-3 IRA are provided in the *Data Quality Objectives for the Removal Action and a Technology Evaluation at Solid Waste Management Unit B-3* (USAF, 2002). A detailed list of DQOs for SWMU B-3, along with an evaluation of whether each DQO has been attained, is provided in Appendix C.

3.3 RECOMMENDATIONS

Additional IRA activities are recommended for the disposal trenches in the west area (sub-trenches A, B, C, and D). Waste and contaminated soil media exceeding the TCEQ RRS1 criteria should be excavated and removed from the site and disposed as hazardous waste, or as Class 1 or Class 2 nonhazardous waste. After excavation is complete and all confirmation samples meet clean closure criteria, the area will be suitable for backfilling and regrading.

ATTACHMENT 1

The topographic survey performed by Baker includes the sample locations for the eastern trench, limits of the deep excavation of the eastern trench, and limits of excavation for the western trench. Baker Surveying provided an electronic CAD deliverable and a hardcopy summary (attached) of the survey locations (02-198UTM xyMetter Zfeet Samples.xls and 02-198UTM.dwg). Two sampling events were performed at the west trench; GPS coordinates were recorded in the field during both events using NAD-83, UTM Zone 14. During the first event, three exploratory trenches were excavated. Composite samples were collected from each of the trenches from three different depth intervals. The GPS coordinates for the lateral extents of each exploratory east-west trench are as follows:

- Exploratory Trench 1 (sample WT-1): west extent (3286473 N, 537343 E), east extent (3286462 N, 537360 E)
- Exploratory Trench 2 (sample WT-2): west extent (3286489 N, 537350 E), east extent (3286479 N, 537370 E)
- Exploratory Trench 3 (sample WT-3): west extent (3286509 N, 537354 E), east extent (3286500 N, 537378 E)

Four sub-trenches were discovered, trench A, trench B, trench C, and trench D. The GPS coordinates for samples collected from each of these trenches are as follows:

	Northing	Easting
Trench A		
A-1	32866433	537360
A-2	32866465	537372
A-3	32866475	537381
A-4	32866504	537394
Trench B		
B-1	32866432	537352
B-2	32866467	537366
B-3	32866477	537373
Trench C		
C-1	32866428	537339
C-2	32866449	537351
C-3	32866463	537350
C-4	32866511	537377
C-5	32866541	537381
Trench D		
D-1	32866429	537333
D-2	32866452	537341
D-3	32866514	537368
D-4	32866543	537373

Figure SWMUB3-2 is a plot of the west trench area delineated using GPS that shows the approximate centerlines of the four trenches within the impacted area. The locations of samples A-00 and A-5 were provided to CSSA in a memo dated October 16, 2002. The areal extent of the west trench area is approximately 466 feet by 121 feet. The attached calculation sheet

provides a volume estimate of cover soils and waste in the four subtrenches based on the IRA field investigation results.



Submitted to

Tetra Tech Foster Wheeler, Inc.

Camp Stanley Storage Activity

Sample Points & Monitoring Well Locations

Nov-03

P.O. 043481

Datum & Coordinate System:

NAD-83, UTM Zone 14, NAVD-88

<i>Description</i>	<i>Northing</i>	<i>Easting</i>	<i>Elevation (Meters)</i>	<i>Elevation (Feet)</i>
Sample Locations				
SL 1	3286716.199	537375.900	379.388	1244.71
SL 3	3286704.037	537368.802	379.559	1245.27
SL 4	3286675.347	537358.268	379.550	1245.24
SL 5	3286647.991	537346.372	378.504	1241.81
SL 7	3286634.799	537343.877	378.181	1240.75
SL 9	3286650.029	537352.633	379.077	1243.69
SL 10	3286652.866	537357.762	379.562	1245.28
SL 11	3286644.991	537359.266	379.858	1246.25
SL 12	3286655.370	537364.218	379.958	1246.58
SL 13	3286678.774	537370.066	380.382	1247.97
SL 14	3286702.598	537374.124	380.251	1247.54
Additional Samples Points				
17	3286716.624	537376.134	379.306	1244.44
18	3286676.223	537369.793	379.608	1245.43
19	3286641.240	537359.336	379.093	1243.74
20	3286700.587	537377.963	380.016	1246.77
21	3286703.705	537364.547	376.843	1236.36
111	3286717.933	537326.074	377.328	1237.95
112	3286716.199	537329.469	378.459	1241.66
113	3286715.095	537332.142	378.139	1240.61
116	3286714.788	537336.988	378.300	1241.14
BOTTOM SAMPLE 16	3286677.156	537363.014	378.041	1240.29
DRUMS	3286705.996	537371.803	377.547	1238.67
Old Mointoring Wells and Vapor Wells				
OLD M/W	3286691.301	537341.171	378.578	1242.05
OLD M/W	3286689.184	537343.894	378.687	1242.41



Submitted to

Tetra Tech Foster Wheeler, Inc.

Camp Stanley Storage Activity

Sample Points & Monitoring Well Locations

Nov-03

P.O. 043481

Datum & Coordinate System:

NAD-83, UTM Zone 14, NAVD-88

<i>Description</i>	<i>Northing</i>	<i>Easting</i>	<i>Elevation (Meters)</i>	<i>Elevation (Feet)</i>
VAPOR WELL	3286666.206	537324.021	377.785	1239.45
VAPOR WELL	3286673.275	537326.584	377.843	1239.64
VAPOR WELL	3286677.140	537320.045	377.745	1239.32
VAPOR WELL	3286685.157	537323.349	377.761	1239.37
VAPOR WELL	3286680.536	537329.719	378.047	1240.31
VAPOR WELL	3286677.138	537334.871	378.422	1241.54
VAPOR WELL	3286684.425	537336.845	378.437	1241.59
VAPOR WELL	3286692.880	537326.136	377.834	1239.61
VAPOR WELL	3286696.365	537334.130	378.212	1240.85
VAPOR WELL	3286693.774	537337.619	378.425	1241.55
VAPOR WELL	3286687.765	537345.790	378.657	1242.31
VAPOR WELL	3286687.761	537345.798	378.660	1242.32

Trench Cross-Sections

ESTIMATE BASED ON TOTAL AREA			
Length =	142 m =	466 ft	
Pt 1	7340	6410	
Pt 2	7387	6544	
Width =	37 m =	121 ft	
Pt 1	7349	6482	
Pt 2	7383	6468	
Average Cover Thickness =		3 ft	
Cover Volume =	6,265 BCY		
	8,145 LCY		
Conversion:	3.28084 ft/m		
Conversion:	1.3 LCY/BCY		

ESTIMATE BASED ON TRENCH CROSS-SECTION

Trench A													
Point 1	Point 2	Length	Depth 1	Depth 2	Average Thickness	Trench Width		Area		Volume (BCY)	Class 2	Class 1	Hazardous
						Bottom	Top	Bottom	Top				
A-est	A-00	14.7	7	8	4.5	15	24	220	352	48	48		0
A-00	A-1	61.3	8	11	6.5	15	28	919	1,716	317	317		0
A-1	A-2	112.1	11	10	7.5	15	30	1,682	3,364	701	701		0
A-2	A-3	44.1	10	12	8	15	31	662	1,368	301	150	150	0
A-3	A-3a	48.8	12	15	10.5	15	36	732	1,756	484	0	242	242
A-3a	A-3b	43.8	15	15	12	15	39	657	1,707	525	0	263	263
A-3b	A-4	16.4	15	9	9	15	33	246	541	131	0	66	66
A-4	A-5	30.2	9	7	5	15	25	454	756	112	56		56
A-5	A-6	95.2	7	4	2.5	15	20	1,428	1,904	154	154		0
TOTAL		466.6 LF								2,619	1,272	720	626

Trench B													
Point 1	Point 2	Length	Depth 1	Depth 2	Average Thickness	Trench Width		Area		Volume (BCY)	Class 2	Class 1	Hazardous
						Bottom	Top	Bottom	Top				
B-est	B-1	73.4	7	11	6	15	27	1,100	1,981	342	342		0
B-1	B-2	123.7	11	9	7	15	29	1,855	3,587	705	705		0
B-2	B-3	40.0	9	10	6.5	15	28	601	1,121	207	207		0
B-3	B-4	50.2	10	13	8.5	15	32	753	1,606	371	371		0
B-4	B-5	36.7	13	13	10	15	35	550	1,284	340	340		0
B-5	B-6	124.9	13	4	5.5	15	26	1,874	3,248	522	522		0
TOTAL		448.9 LF								2,488	2,488	0	0

Trench C													
Point 1	Point 2	Length	Depth 1	Depth 2	Average Thickness	Trench Width		Area		Volume (BCY)	Class 2	Class 1	Hazardous
						Bottom	Top	Bottom	Top				
C-est	C-1	68.5	7	14	7.5	20	35	1,370	2,398	523	523		0
C-1	C-2	79.4	14	10	9	20	38	1,587	3,015	767	767		0
C-2	C-3	46.0	10	10	7	20	34	921	1,566	322	322		0
C-3	C-3a	117.6	10	23	13.5	20	47	2,352	5,528	1,970	985	985	0
C-3a	C-4	63.1	23	7	12	20	44	1,262	2,777	898	449	449	0
C-4	C-5	99.3	7	0	0.5	20	21	1,986	2,085	38	19	19	0
TOTAL		473.9 LF								4,518	3,065	1,453	0

Trench D													
Point 1	Point 2	Length	Depth 1	Depth 2	Average Thickness	Trench Width		Area		Volume (BCY)	Class 2	Class 1	Hazardous
						Bottom	Top	Bottom	Top				
D-est	D-1	63.7	7	10	5.5	25	36	1,593	2,293	396	396		0
D-1	D-2	79.9	10	16	10	25	45	1,997	3,595	1,036	1,036		0
D-2	D-2a	160.0	16	23	16.5	25	58	3,999	9,277	4,057	4,057		0
D-2a	D-3	62.2	23	14	15.5	25	56	1,556	3,486	1,447	1,447		0
D-3	D-4	96.5	14	7	7.5	25	40	2,414	3,862	872	872		0
TOTAL		462.3 LF								7,807	7,807	0	0

Trench E (East Trench)		Road Crossing		TOTAL	
Stockpile Volume Estimates		18 ft wide		Class 1	0 LCY
Class 2	900 CY	30 ft long	Class 2	0 BCY	900 LCY
Haz	180 CY	10 ft deep	Haz	80 BCY	284 LCY
Cover	500 CY	6 ft cover	Cover	120 BCY	656 LCY

Volume Summary	Class 2		Class 1		Hazardous		Clean Soil		TOTAL VOLUME		WASTE VOLUME	
	BCY	LCY	BCY	LCY	BCY	LCY	BCY	LCY	BCY	LCY	BCY	LCY
Trench A	1,272	1,654	720	937	626	814			2,619	3,404	2,619	3,404
Trench B	2,488	3,234	0	0	0	0			2,488	3,234	2,488	3,234
Trench C	3,065	3,985	1,453	1,888	0	0			4,518	5,873	4,518	5,873
Trench D	7,807	10,149	0	0	0	0			7,807	10,149	7,807	10,149
Trench E	692	900	0	0	218	284	505	656	1,415	1,840	911	1,184
West Trench Area							6,265	8,145	6,265	8,145	0	0
TOTAL	15,324	19,922	2,173	2,825	845	1,098	6,770	8,801	25,112	32,645	18,342	23,845

Volume Summary	PHASE 1 (LCY)			PHASE 2 (LCY)		
	Class 2	Class 1	Haz	Class 2	Class 1	Haz
Trench A	1,654	937	814	0	0	0
Trench B				3,234		
Trench C				3,985	1,888	
Trench D				10,149		
Trench E	900	0	284	0	0	0
West Trench Area						
TOTAL	2,554	937	1,098	17,368	1,888	0

Stockpiles	BCY	LCY
Trench A Pb	626	814
Trench A TCE	720	937
Trench E TCE	218	284
Clean Soil	6,770	8,801
TOTAL	8,335	10,835

Trench Cross-Sections

