

June 4, 2013

Mr. Scott Settemeyer, P.G.
Texas Commission on Environmental Quality
P.O. Box 13087, Mail: MC-221
Austin, Texas 78711-3087

**Re: Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas**

**Subject: East Category I Landfill Confirmation Sampling Results
Former ASARCO Smelter Site, El Paso, Texas**

Dear Mr. Sher:

Malcolm Pirnie, Inc. is pleased to provide this data package documenting the results of the confirmation samples that were collected as part of boundary delineation activities described in our East Category I Landfill Removal Plan letter dated December 7, 2012. This letter details the test pits, sampling, landfill delineation and procedures for excavation of clean materials.

The limits of the East Category I landfill were first located using historical survey data. Subsequently, a total of 26 test pits were located and excavated to identify the interface of Category I and native material. The locations of the test pits are provided in Figure 1. Test pit observations, including depth to Category I material are summarized in Table 1.

After completing the test pits, cover soil samples were collected at depths ranging from 1 to 7 feet below ground surface. Test pits TP-12, TP-13, TP-14, TP-21 and TP-23 were unused step-out locations and were not sampled. TP-26 was not sampled because Category I material was not observed. All samples were analyzed for chemicals of concern and analytes of interest. The analytical results are summarized in Table 2.

The western and southeastern samples of the former landfill cover soils (i.e., TP-01-2-3, TP-01B-2-3, TP-03-1-2, TP-04-1.5-2.5, TP-11-2-3, TP-17-2-3) indicated exceedances of the residential standards; therefore, additional environmental samples were collected in the southeastern section which is adjacent to the East Borrow Source (EBS) area. Step-out samples were taken at TP-17B, TP-19A and TP-20A to locate clean soils and better define the eastern boundary. The western interface of the landfill was not fully delineated since this area will be excavated, and confirmation samples will be collected in that location at a later date.

Test pits were excavated using a backhoe to the top of the waste to determine limits of waste in the Category I area. The following observations are taken from the test pit results:

- Cover thickness in the Category I area is generally less than 3 feet with thicker cover material in the northeast and east sections. In these sections there is 4 to 7 feet of cover material over the Category I material.





- Based on analytical samples, the cover soil previously placed over the waste material which is adjacent to the EBS area is below residential standards.
- Cover material in the northeast and east sections consists of fine sand and large angular boulders of andesite rock, which is not native to the immediate area. This material was likely transported to the site for cover material during the placement of the Category I material. The large boulders will be sorted from the Category I material when the material is removed.
- Category I material observed below the soil cover included wood debris, railroad ties, metal debris, concrete and bricks.

The sample results indicated a clean soil boundary could be established to facilitate excavation of clean material from the EBS. The landfill interface (plus a 5-foot buffer) was then delineated in the field to keep construction equipment from inadvertently excavating the material using highly-visible markers. The markers include 7-foot-tall flags and construction fencing along the eastern boundary of the landfill. These markers can be seen from large equipment and indicate the horizontal locations of the boundary of the landfill. As discovered from the test pits, the thickness of the soil cover over the waste material varies, and a vertical limit was established to prevent excavation into the soil cover or the Category I material. This vertical limit was established 2 feet above the toe of the ridge on the eastern side of the landfill at an elevation of 3,871 feet. A paint mark has been added to the cut face indicating this limit, as well as a construction stake (referencing a GPS survey point) listing the elevation in the event the paint mark is not visible. This vertical elevation will act as a visual stopping point for excavation activities to assure that the waste material is not exposed in that area, and will be in effect until the Category I material removal process begins at a later date. Finally, all equipment operators were briefed on the material-handling procedures for EBS material. The material handling procedures (see Attachment 1) provide necessary information required to identify the difference between the native and waste material as well as instructions if waste material is encountered. A copy of these procedures is required to be in all excavation equipment operating in the area.

If you have any questions regarding this submittal please call me at 602-797-4536.

Very truly yours,

MALCOLM PIRNIE, INC.

Scott M. Brown, P.E.
Vice President

Attachments



Table 1
Test Pit Summary
East Borrow Source Area
Former ASARCO Smelter Site
El Paso, Texas

Test Pit	Category I Material Observed	Depth to Top of Category I Material (feet)	Elevation of Top of Category I Material (feet)
TP-1	Yes	3	3854.6
TP-1B	Yes	3	3854.1
TP-2	Yes	3	3853.3
TP-3	Yes	2.5	3852.9
TP-4	Yes	2.5	3851.5
TP-5	Yes	3	3850.0
TP-6	Yes	2	3849.3
TP-7	Yes	3	3841.4
TP-8	Yes	2.5	3857.0
TP-9	Yes	2	3861.5
TP-10	Yes	3	3857.2
TP-11	Yes	3	3855.1
TP-12	Yes	7	3861.2
TP-13	Yes	3	3865.8
TP-14	Yes	5	3863.1
TP-15	Yes	5	3852.6
TP-16	Yes	5	3850.4
TP-17	Yes	2	3852.5
TP-17B	No	N/A	N/A
TP-18	No	N/A	N/A
TP-19A	No	N/A	N/A
TP-20A	No	N/A	N/A
TP-21	Yes	4	3866.6
TP-22	Yes	1	3867.1
TP-23	Yes	2	3863.4
TP-24	Yes	3	3861.7
TP-25	Yes	4	3863.1
TP-26	No	N/A	N/A

N/A = not applicable

Table 2
Soil Analytical Data - Test Pit Locations
East Borrow Source Area
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP (mg/kg)	EBS-TP-01-2-3	EBS-TP-01B-2-3	EBS-TP-02-2-3	EBS-TP-03-1-2	EBS-TP-04-1.5-2.5	EBS-TP-05-2-3	EBS-TP-06-1-2	EBS-TP-07-2-3	EBS-TP-08-1.5-2.5	EBS-TP-09-1-2	EBS-TP-10-2-3	
		1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013
		Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)
Antimony	15	20.0	14.0	1.16 J	3.35	2.69	0.770 J	<0.237	2.73	0.297 J	0.248 J	<0.287	
Arsenic	24	189	116	12.9	73.9	75.6	4.63	4.64	32.6	6.34	5.26	2.44	
Barium	8100	239	92.5	604	223	247	243	80.4	86.5	39.9	106	19.5	
Cadmium	52	132	227	38.9	18.8	20.5	0.730	1.28	4.68	2.38	0.743	0.490 J	
Chromium	27000	14.3	6.14	5.84	4.89	4.97	5.63	5.43	3.80	5.90	3.55	6.37	
Cobalt	21	12.0	4.81	3.54	5.09	3.80	3.25	7.72	2.54	3.01	2.02	3.54	
Copper	550	1,460	598	80.3	405	458	13.1	16.6	122	30.3	17.2	6.71	
Iron	--	20,100	7,070	7,020	5,900	5,300	6,310	6,900	4,250	6,430	3,960	6,540	
Lead	500	2,610	749	74.6	534	653	15.2	17.7	130	42.5	21.2	7.68	
Molybdenum	160	34.5	2.92	0.433 J	2.92	1.92	0.471 J	0.469 J	0.753 J	0.367 J	0.266 J	0.172 J	
Nickel	840	13.7	10.1	12.8	17.8	7.42	6.94	9.96	7.73	6.62	4.58	8.16	
Selenium	310	12.5	3.49	3.02	3.45	5.63	0.488 J	<0.176	1.26	0.612 J	<0.167	0.226 J	
Silver	97	7.78	6.26	0.144 J	3.38	2.85	<0.105	<0.0978	1.60	<0.112	<0.0926	<0.118	
Zinc	9900	8,610	548	56.6	782	251	24.5	28.3	96.2	36.6	25.8	19.9	
Mercury	2	7.91	0.419	1.36	1.45	2.33	0.0542 J	0.118 J	0.308	0.610	0.319 J	0.0258 J	

Notes:

Bolded value = Result exceeds screening limit

TRRP = Total Soil Combined Standard, 30-acre residential site

mg/kg = milligrams per kilogram; mg/L = milligrams per liter

Total = Total Metals Analysis

"--" = Not applicable

< = Analyte not detected above listed sample detection limit (SDL)

J = Estimated value; U = Estimated reporting limit

Table 2
Soil Analytical Data - Test Pit Locations
East Borrow Source Area
Former ASARCO Smelter Site
El Paso, Texas

Parameter	TRRP (mg/kg)	EBS-TP-11-2-3	EBS-TP-15-4-5	EBS-TP-16-3-4	EBS-TP-17-2-3	EBS-TP17B-2-3	EBS-TP-18-2-3	FD011113	EBS-TP-19A-2-3	EBS-TP20A-2-3	EBS-TP22-6-7	EBS-TP24-3-4	EBS-TP25-4-5	
		1/10/2013	1/10/2013	1/11/2013	1/11/2013	1/24/2013	1/11/2013	1/11/2013	1/11/2013	1/24/2013	1/24/2013	2/8/2013	2/8/2013	2/8/2013
		Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)	Total (mg/kg)
Antimony	15	6.80	<0.236	0.277 J	9.24	0.480 J	<0.253	<0.222	<0.225	0.374 J	0.427 J	0.308 J	< 0.236	
Arsenic	24	134	2.79	4.10	137	4.45	8.05	3.42	4.90	1.39 J	12.9	2.32	1.71 J	
Barium	8100	129	75.8	59.5	119	269	210	77.2	102	22.4	126	39.9	46.2	
Cadmium	52	26.6	0.498	0.747	39.8	0.767	0.807	0.571	0.639	0.494	1.43	0.623	0.421 J	
Chromium	27000	3.86	5.87	3.16	4.93	9.03	6.87	3.71	8.45	6.02	5.58	10.5	6.33	
Cobalt	21	3.89	3.37	2.13	8.25	4.76	5.79	2.51	4.23	2.88	2.80	4.44	2.89	
Copper	550	752	8.59	19.5	947	15.0	21	15.5	11.6	4.76	47.2	7.41	5.98	
Iron	--	4,710	6,870	3,820	8,480	9,960	10,200	4,450	10,300	6,610	6,380	10,800	7,020	
Lead	500	918	8.72	14.0	1060	11.7	13.1	12.5	8.67	4.50	61.2	7.04	6.1	
Molybdenum	160	6.59	0.209 J	0.312 J	18.9	0.837 J	2.08	0.268 J	0.266 J	<0.104	0.427 J	0.306 J	< 0.110	
Nickel	840	7.83	7.64	3.22	8.74	9.15	9.87	2.73	8.66	4.51	3.55	7.43	3.21	
Selenium	310	6.41	<0.175	<0.162	3.75	0.483 J	0.324 J	<0.165	<0.167	0.253 J	0.398 J	< 0.173	< 0.175	
Silver	97	6.09	<0.0973	<0.0898	6.63	<0.108	<0.104	<0.0915	<0.0928	<0.0917	< 0.100	< 0.0959	< 0.0972	
Zinc	9900	445	23.8	22.7	1020	36.1	76.4	22.5	33.7	19.0	43.6	29.7	17.9	
Mercury	2	1.70	<0.0101	<0.0113	1.67	<0.0107	0.0162 J	<0.0103	<0.00964	<0.00889	0.101 J	< 0.0106	< 0.0104	

Notes:

Bolded value = Result exceeds screening limit

TRRP = Total Soil Combined Standard, 30-acre residential site

mg/kg = milligrams per kilogram; mg/L = milligrams per liter

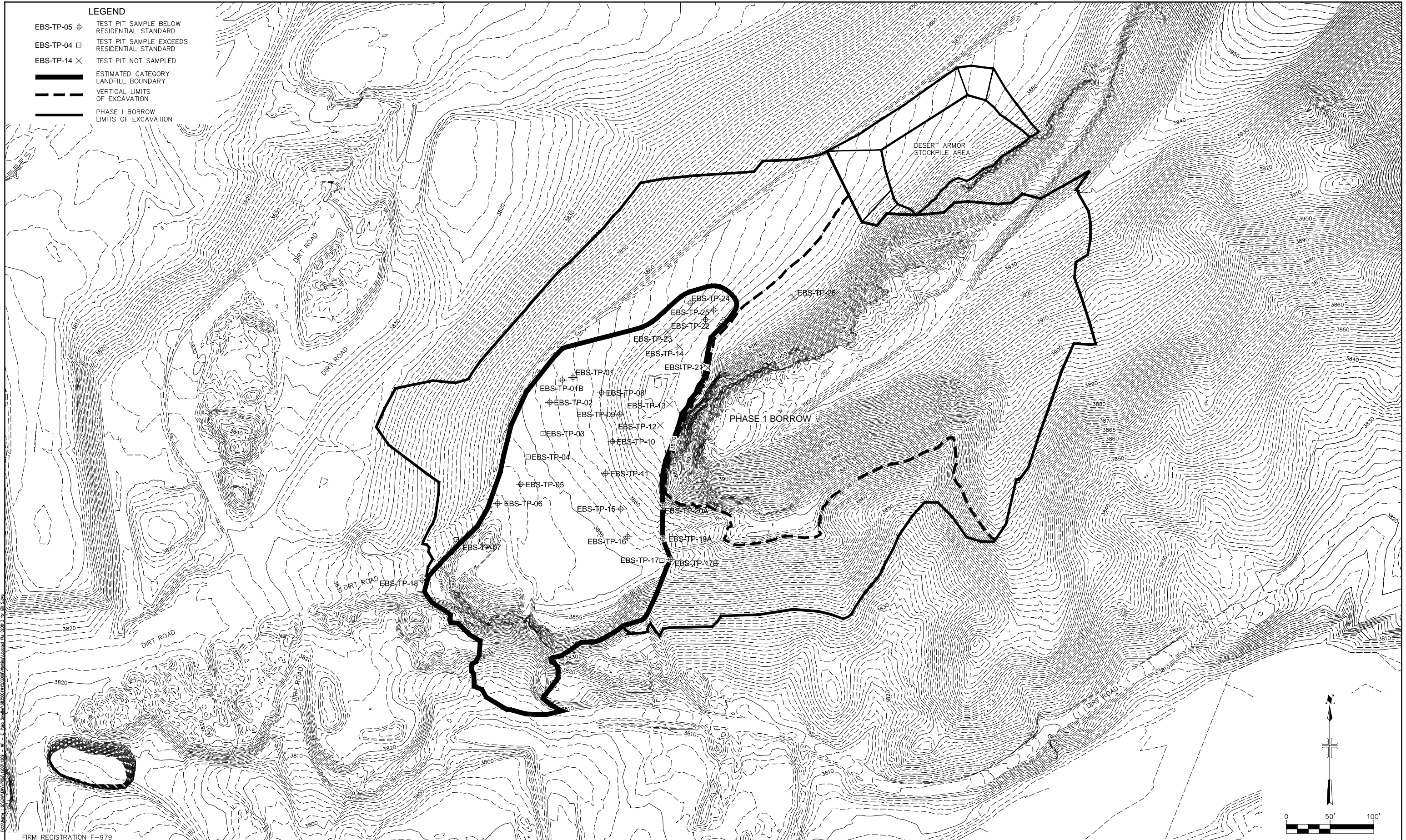
Total = Total Metals Analysis

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- LEGEND**
- EBS-TP-05 ◊ TEST PIT SAMPLE BELOW RESIDENTIAL STANDARD
 - EBS-TP-04 ◻ TEST PIT SAMPLE EXCEEDS RESIDENTIAL STANDARD
 - EBS-TP-14 ✕ TEST PIT NOT SAMPLED
 - ESTIMATED CATEGORY I LANDFILL BOUNDARY
 - - - VERTICAL LIMITS OF EXCAVATION
 - PHASE I BORROW LIMITS OF EXCAVATION



Date/Time : Thu, 23 May 2013 11:21:00am
 File Name : C:\Users\malcolm.pirnie\Documents\Projects\ASARCO\ASARCO_01.dwg
 Acad Version : R12.1 (US) (64-bit)
 User Name : R_KOSCIOLEK

FIRM REGISTRATION F-979



REVISIONS			
NO.	BY	DATE	REMARKS

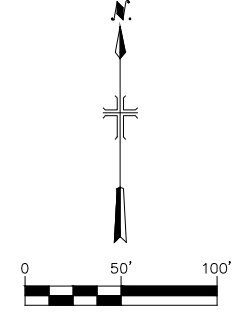
DES R. KOSCIOLEK
 DWN R. KOSCIOLEK
 CKD B. SABATKA

**FORMER ASARCO SMELTER
 EAST CATEGORY I LANDFILL**

CIVIL

TEST PIT LOCATIONS

SCALE: AS NOTED



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 DATE APRIL 2013
C-2 SHEET 1 OF 1
 CAD REF. NO. UPDATED PTS 020813 FOR BILL S.

ATTACHMENT 1
MATERIAL HANDLING PROCEDURES

**East Borrow Source (EBS) Material Handling Procedures for Interim Channel
Backfill and East Category I Landfill Removal Plan
(2/25/2013)**

Objective: The objective of the plan is to provide project team members the necessary information required to identify the difference between the different types of materials within the EBS and the proper handling procedures of each.

Material Types:

- Category I Material
- Impacted “Desert Armor”
- Clean Borrow Soils

Handling Instructions:

- Category I Materials – For purposes of this work all materials within the Category 1 area as well as all non-native materials (i.e., bricks, railroad ties, concrete, metals) should be considered **Category I material and should not be moved from within its current location without approval** from Site Superintendant (Luther Keyes) and Lead Construction Quality Manager (Bill Sabatka).
- Impacted “Desert Armor” – For purposes of this work all materials excavated from the top 12-inches of the EBS should be considered Impacted “Desert Armor” and should be stockpiled in the designated stockpile area located in the northeast corner of the EBS. **Before any material below the initial 12-inch layer is excavated, laboratory confirmation results must be obtained to determine if material beneath the initial 12-inches is impacted or clean.**
- Clean Borrow Soils – For purposes of this work **native** materials outside of the two materials named above are considered clean borrow soils. At no time should clean borrow soils come into contact with the materials identified above. In the event that these materials do come in contact with each other “Stop Work” should be enforced and the site supervisor and lead construction quality manager should be contacted.

Site Superintendant
Luther Keyes 585.261.4264

Lead Construction Quality Manager
Bill Sabatka 915.249.8658

