Interim Final Field Oversight Report

for

Centredale Manor Restoration Project Superfund Site
Pre-Design Investigation

Submitted to

U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Prepared by

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Under

Contract: W912WJ-12-D-0004
Delivery Order 005

December 2013

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Background

The Centredale Manor Restoration Project Superfund Site (hereafter referred to as the 'Site') is located in North Providence, Rhode Island. The main part of the Site, referred to as the Source Area, consists of two parcels, 2072 and 2074 Smith Street, and is comprised of parking lots, roadways and the Centredale Manor and Brook Village apartment complexes. The Site also includes surface water, sediment and floodplain areas of the Woonasquatucket River from Route 44 south to the Lyman Mill Dam (Figure 1).

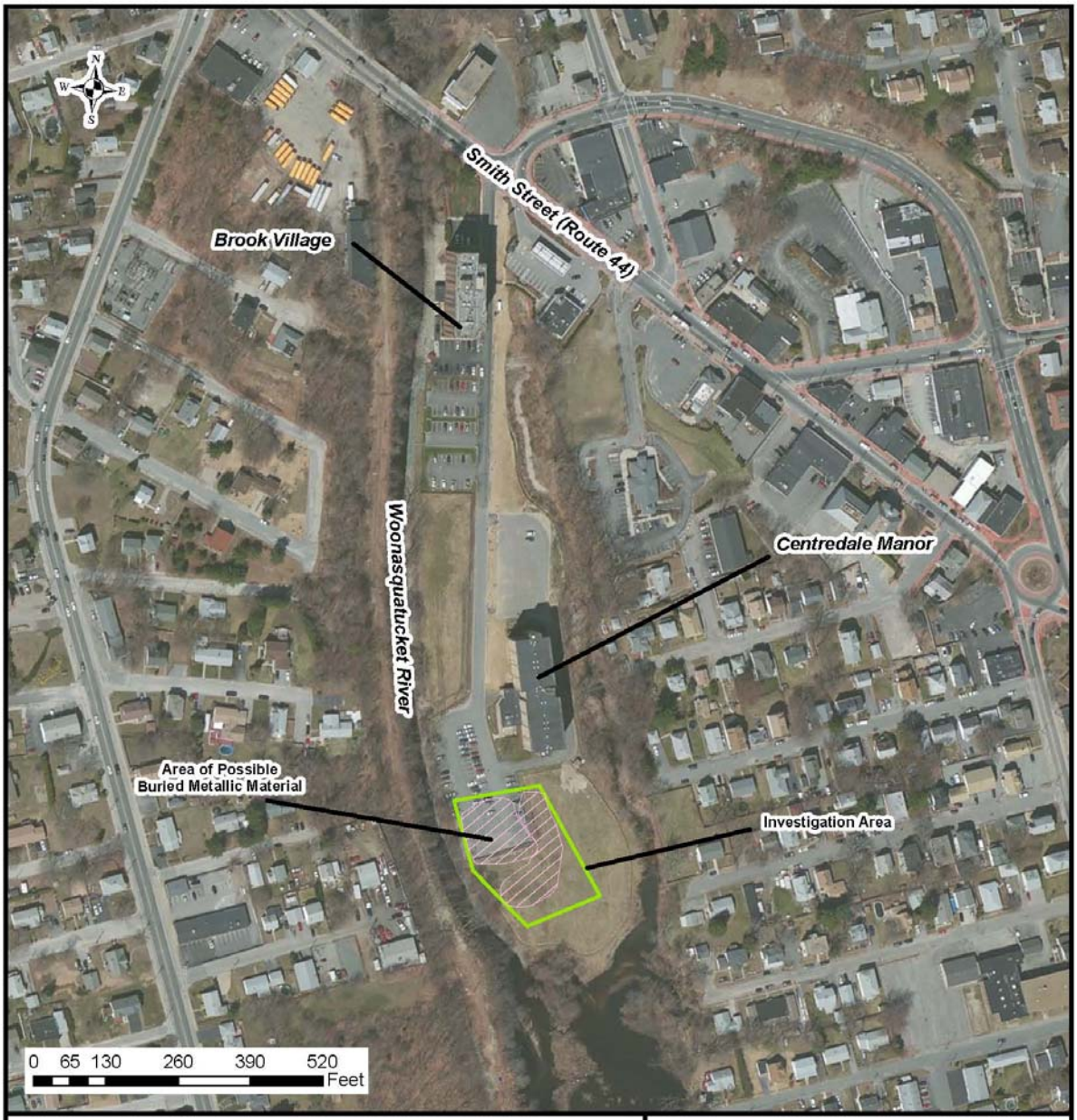
Prior to 1936, the Site was occupied by the Centredale Worsted Mills, a woolens mill, and the Olneyville Wool Combing Company. The Atlantic Chemical Company, a chemical manufacturer, began operating on a portion of the Site in approximately 1943. Atlantic Chemical Company changed its name to Metro Atlantic, Inc., and subsequently to Crown-Metro, Inc. and operated on a portion of the Site until 1968 or later. The New England Container Company (NECC) operated an incinerator-based drum reconditioning facility on a portion of the Site from 1952 until the early 1970s. In 1972, a major fire destroyed most of the structures at the Site. In 1976, Brook Village Associates Limited Partnership purchased 2072 Smith Street and completed construction of an apartment building that provides affordable housing for the elderly. Centredale Manor Associates purchased 2074 Smith Street in 1983 and also built an apartment building that provides affordable housing for the elderly.

Analysis of soil, sediment, surface water and groundwater samples from the Site demonstrate elevated levels of a variety of contaminants, including 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), polychlorinated biphenyls (PCBs or Aroclors), polycyclic aromatic hydrocarbons (PAHs), metals, and several volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The United States Environmental Protection Agency's (EPA's) geophysical surveys in 1999 suggest that buried waste material may still have been present at the southern end of the Source Area.

As part of the initial Removal Actions in 1999-2000, an interim soil cap was placed over the southern end of the Source Area. A wooded wetland area south of the Centredale Manor parking area was clear cut and vegetation was mulched and spread across the area. Grading sand was placed over the mulched vegetation and the area was covered with a geotextile fabric prior to placement of a soil cap. The soil cap extended over the former wetland area up to the Centredale Manor parking lot.

After completion of the Remedial Investigation and Feasibility Study, a Record of Decision was approved on September 28, 2012 for remedial action that includes removal and off-site treatment and/or disposal of potential buried waste material from the Source Area, where the contamination release originally occurred, and installation of a Resource Conservation and Recovery Act (RCRA) cap over remaining contamination in the Source Area.

A pre-design investigation was conducted by Woodard & Curran, subcontracted by NECC Customer Group, in accordance with the requirements of the Scope of Work included in an Administrative Settlement Agreement and Order on Consent (Settlement Agreement) between EPA and the Respondents (NECC Customer Group) entered in August 2013. The primary goals of the pre-design investigation were to identify and sample buried material within the investigation area, evaluate the horizontal and vertical extent of buried material, and perform initial waste characterization to evaluate disposal options and costs.


Smith Street (Route 44)
Brook Village
Woonasquatucket River
Centredale Manor
Area of Possible Buried Metallic Material
Investigation Area
0 65 130 260 390 520
Feet
Legend
Inferred Area of Possible Buried Metallic Material (1)
Investigation Area / Provisional Excavation Area for Principal Threat Waste (1)
(1) The Area of Possible Buried Metallic/Waste Material and Excavation Area for Principal Threat Waste are delineated in the Feasibility Study (Battelle 2010). The Pre-Design Investigation Area has been established to be consistent with the provisional Excavation Area for Principal Threat Waste.
Centredale Manor Restoration Project
Superfund Site
North Providence, Rhode Island
FIGURE 1:Centredale Manor Site
WOODARD &CURRAN
SCALE: AS SHOWN
Overall Site Plan.mxd
DATE: 11/04/2013
JOB NO.: 226845
DRAWN BY: KOA

Pre-Design Investigation Activities

Between November 12 and November 22, 2013, Woodard & Curran excavated test pits and trenches over an approximately 1-acre area (designated as the Pre-Design Investigation Area) where buried waste material that requires off-site disposal and treatment may be present. Soil and other solid matrices were sampled, and the samples collected will be analyzed for chemical composition.

EPA and Rhode Island Department of Environmental Management (RIDEM) provided oversight of these activities. Representatives of other Potentially Responsible Parties were also present, with TerraCon representing NECC, collecting split samples for their specific analysis. Battelle supported EPA oversight of the Pre-Design Investigation on November 12–15, 2013. This trip report only summarizes the activities performed and observed by Battelle. Detailed field notes are provided as Appendix A.

Battelle arrived onsite around 12:00 on November 12, when test pit and trench excavation began, and arrived onsite by 8:00 on November 13, 14 and 15. Health and safety tailgate meetings were held prior to beginning investigation activities each day. Excavation and sampling ended by 15:00 on each day to avoid conducting investigation activities after sunset. During oversight of the investigation, Battelle recorded observations including depth of the interim cap, any waste material that was identified, samples that were collected, and any deviations from the Work Plan (Woodard & Curran, November 2013). Activities were also photographed and a subset of the photographs is provided as Appendix B.

Ten-foot long test pits and trenches were excavated at 10-foot intervals along three transects across the Pre-Design Investigation Area (Figure 2) using a small excavator. Soil removed from the cap layer down to the geotextile barrier was placed to the side of the trench directly on the ground. All material below the geotextile barrier was placed on polyethylene sheeting and contained by booms in the event that liquid material was dug up during excavation. The excavator operator was careful to separate grading sand from mulched vegetation and native soil mixed with buried waste. Test pits were generally dug to the depth of the water table, but in some instances went deeper if the lower extent of waste material was not yet determined.

Woodard & Curran collected samples from all but one test pit, focusing on soil associated with buried material that most likely represents contamination within the Pre-Design Investigation Area. After sampling, excavated material was returned to the test pit, the native soil and waste material being returned first, followed by the grading sand. The geotextile fabric was replaced with new geotextile fabric, and the soil cap was backfilled on top.

Test Pit and Trench Excavation and Sample Collection

During the week of November 12, 28 individual samples were collected from 11 10-foot test pits at intervals along Transects 1 and 3. Woodard & Curran indicated that some of the samples would be retained for analysis and others would be held for potential future analysis. A summary of the samples collected is provided in Table 1. Selected photos are also provided as Appendix B. Figure 3 shows where samples were collected.

Deviations and Adjustments

No deviations from the Work Plan prepared by Woodard & Curran and approved by EPA were observed. After the first day of test pit and trench excavation, Woodard & Curran determined that a larger excavator would help speed activities and ensure that the excavator could dig to the depth of the water table, and a slightly larger excavator was used beginning on November 15. Both excavators tore the laid out

polyethylene sheeting during backfilling, resulting in native material falling onto the ground. Surface soil that had come into contact with the excavated native soil was placed in the test pit beneath the restored geotextile fabric. Additional controls implemented for better containment of native soil included placing plywood and a layer of geotextile fabric underneath the polyethylene sheeting. These controls were helpful in preventing the release of previously buried native material to the ground surface.

References

Woodard & Curran. 2013. *Final Pre-Design Investigation Work Plan, Centredale Manor Superfund Site: Pre-Design Investigation, North Providence, Rhode Island.* Prepared for NECC Customer Group. November.


Centredale Manor
Access gates
Erosion control log positioned along curb
Woonasquatucket River
Equipment and materials storage areas (example)
Install sedimentation controls at location of surface water runoff from paved area
Sedimentation controls - establish in limited areas where needed
0 15 30 60 90 120 Feet
Legend
Existing Chain Link Fence
Temporary Fence (6' Chain Link)
Proposed Test Pit/Trench Transects
Limit of Work
Investigation Area
Centredale Manor Restoration Project
Superfund Site
North Providence, Rhode Island
FIGURE 2: Investigation and Staging Plan
WOODARD &CURRAN
SCALE: AS SHOWN
Staging Plan.mxd
DATE: 11/04/2013
JOB NO.: 226845
DRAWN BY: KOA

Table 1. Summary of Samples Collected for the Centredale Manor Restoration Project Pre-Design Investigation

Date	Location	Depth of Cap (to geotextile fabric)	Depth of Grading Sand (to wood chips)	Depth of Wood Chips (to native soil and buried waste material)	Depth to Water Table	Maximum Depth of Digging	Sample Times and Samples Collected	Notes
11/12/2013	Transect 3 0 – 10' section moving east to west	38"	Not recorded	60"	62"	62"	13:00:T3-GRAB-1 (5-5.5') for sample set 1 Composite sample for TCLP	Hydrocarbon odor PID = 4.6 ppm N 281286.45' E 331930.45'
11/13/2013	Transect 3 10 – 20'	47"	Not recorded	6'	6.5'	7'	9:30: T3-GRAB-2 (6-6.5') for sample set 2 9:45: T3-GRAB-3 (6') for sample set 1 Composite sample for TCLP	Metal fragments from drum carcasses; bits of glass and plastic PID = 61.4 and 109 ppm, respectively N 281281.85' E 331928.54'
11/13/2013	Transect 3 20 -30'	41"	54"	70"	6'	6'	None	Hydrocarbon odor
11/13/2013	Transect 3 60 -70'	24"	34"	48"	5.5'	6'	13:40: T3-GRAB-4 (5') for sample set 2 14:10: T3-GRAB-5 (6') (orange substance) for sample set 1 14:40: T3-GRAB-6 (6') for sample set 2	Wood, concrete, metal fragments from drum carcasses; chemical odor; orange spongy substance PID = 30.4 and 28 ppm N 281291.37' E 331876.47' 111.5' elevation

Table 1. Summary of Samples Collected for the Centredale Manor Restoration Project Pre-Design Investigation

Date	Location	Depth of Cap (to geotextile fabric)	Depth of Grading Sand (to wood chips)	Depth of Wood Chips (to native soil and buried waste material)	Depth to Water Table	Maximum Depth of Digging	Sample Times and Samples Collected	Notes
11/14/2013	Transect 3 85 – 95'	39"	53"	70"	7'	7'	9:30: T3-GRAB-7 (6-7') (from drum carcass) for sample set 2 T3-COMP-1 (6-7') for TCLP 9:55: T3-GRAB-8 (6-7') (from surface of white rubbery material) for sample set 1 10:00: T3-GRAB-9 (6') (black material from roots) for sample set 1	Wood, concrete, metal fragments from drum carcasses @ 6'; faint chemical odor; soft, white rubbery material; black material associated with roots PID = 22.7 and 27.8 ppm N 281297.02' E 331855.96' 113.83 elevation
11/14/2013	Transect 3 120 – 130'	38"	48"	9'	Not recorded	9'	11:30: T3-GRAB-10 (4') (from inside one of crushed drums) for sample set 2 12:10: T3-GRAB-11 (8-9') for sample set 2 12:10: T3-COMP-2	2 compressed drums and geoprobe sleeves pulled up from just beneath geotextile liner; drum lid with "geoprobe tubes 7/15/99" written on it; brick, wood and metal debris; black sandy material; hydrocarbon odor PID = 0.2 and 30.8 ppm N 281305.85' E 331819.33' 113.3' elevation

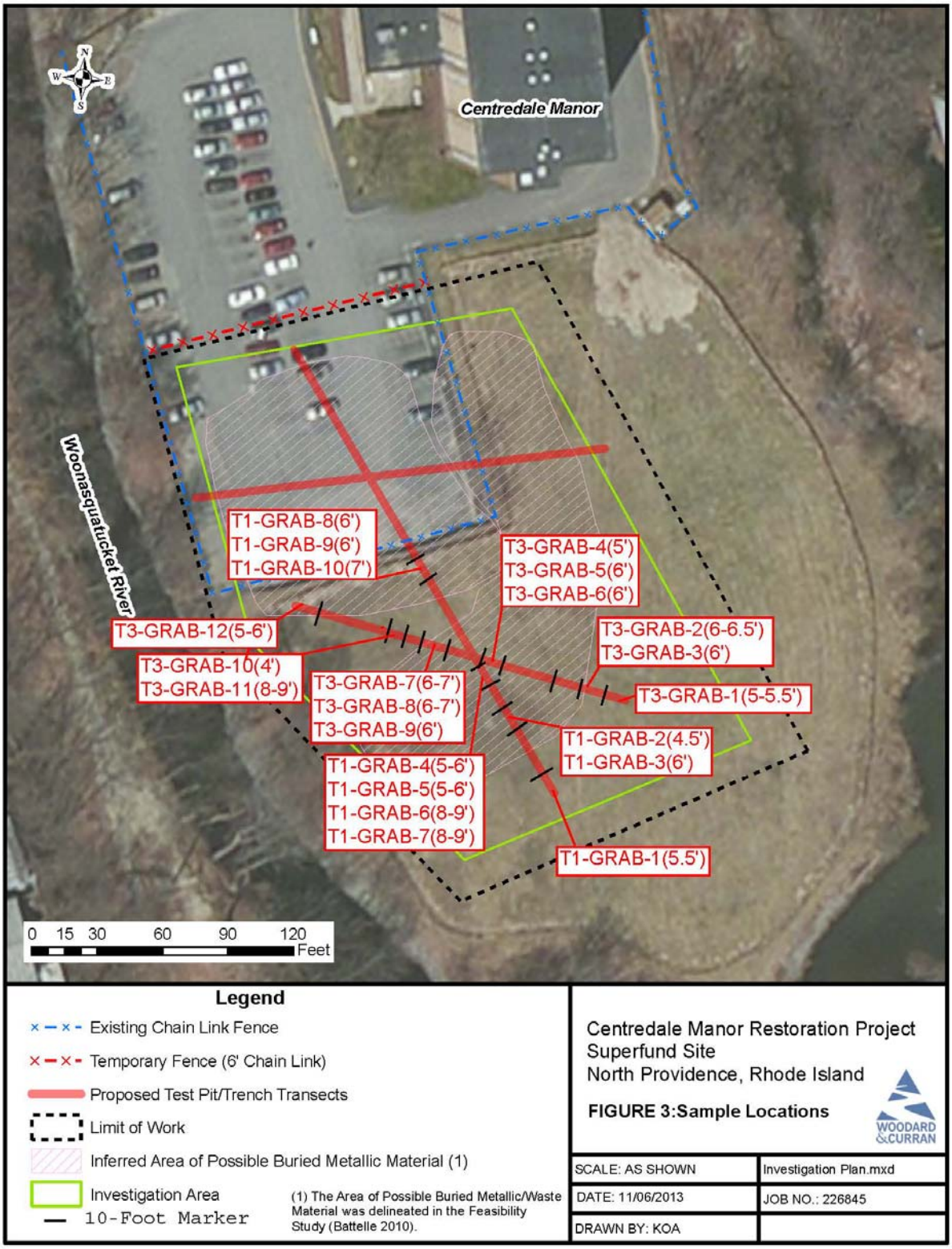
Table 1. Summary of Samples Collected for the Centredale Manor Restoration Project Pre-Design Investigation

Date	Location	Depth of Cap (to geotextile fabric)	Depth of Grading Sand (to wood chips)	Depth of Wood Chips (to native soil and buried waste material)	Depth to Water Table	Maximum Depth of Digging	Sample Times and Samples Collected	Notes
11/14/2013	Transect 3 150 – 160’	28”	Not recorded	58”	7’	7’	13:50: T3-GRAB-12 (5-6’) for sample set 2 Composite sample for TCLP	Small boulders; plastic, dark substance, and pieces of drum carcasses; reddish material that looks like wet powdered brick PID = 0.1 ppm N 281307.68’ E 331787.85’ 108.05’ elevation
11/15/2013	Transect 1 0-10’ moving south to north	50”	60”	Not recorded	8.5’	8.5’	8:50: T1-GRAB-1 (5.5’) (orange substance from plastic bag) for sample set 1	Plastic coated with an orange substance PID = 0.7 ppm N 281242.58’ E 331900.81’ 115.8’ elevation
11/15/2013	Transect 1 30 -40’	29”	39”	Not recorded	64”	7.5’	10:15: T1-GRAB-2 (4.5’) (from surface of plastic bag) for sample set 1 10:58: T1-GRAB-3 (6’) (dark material) for sample set 2 10:30: T1-COMP-1 (4.5-6’) for TCLP	Plastic, metal from drum carcasses, and glass; hydrocarbon odor; dark/black sandy, silty, gravelly material PID = 1.6 and 5.9 ppm N 281266.96’ E 331881.97’ 107.12’ elevation

Table 1. Summary of Samples Collected for the Centredale Manor Restoration Project Pre-Design Investigation

Date	Location	Depth of Cap (to geotextile fabric)	Depth of Grading Sand (to wood chips)	Depth of Wood Chips (to native soil and buried waste material)	Depth to Water Table	Maximum Depth of Digging	Sample Times and Samples Collected	Notes
11/15/2013	Transect 1 50 – 60’	26”	39”	47”	5.5’	9’	12:00: T1-GRAB-4 (5-6’) (from drum lid) for sample set 1 12:10: T1-GRAB-5 (5-6’) (from inside drum carcass) for sample set 1 12:15: T1-GRAB-6 (8-9’) (muck matrix in water table) for sample set 2 12:20: T1-GRAB-7 (8-9’) (blue putty-like material) for sample set 2 12:30: T1-COMP-2 (composite of all 4 samples) for TCLP	Metal from drum carcasses, plywood; black rubbery material adhered to drum lid, caked into some kind of mesh fabric; hydrocarbon odor; sheen on rocks being dug up; blue putty-like material (pigment?); did not reach bottom of waste material layer PID =11.3 – 176 ppm (highest for blue material)
11/15/2013	Transect 1 110 – 120’	18”	Not recorded	29”	7’	7’	14:15: T1-GRAB-8 (6’) (from excavator bucket containing yellow material) for sample set 2 14:30: T1-GRAB-9 (6’) (blue-gray material) for sample set 1 14:50: T1-GRAB-10 (7’) (from around chemical jars) for sample set 2 14:50: T1-COMP-3 (6-7’) (composite of all 3 samples) for TCLP	Plastic and metal debris; drum carcasses; chemical jars without labels; broken chemical jar with bright orange-yellow substance that was once in a granular or powder form; open jar with a viscous white liquid PID = 1.9 – 110 ppm N 281334.25’ E 331840.54’ 119.27’ elevation

Notes: All measurements are depth below ground surface (bgs)
Sample set 1 = PCBs, dioxins, hexachlorophene (HCP) and hexachlroxanthene (HCX)
Sample set 2 = VOCs, SVOCs, PCBs, pesticides, metals, dioxins, HCP & HCX
HCP and HCX sample collected by Terracon and analyzed by ALS in Ontario; all other samples collected by Woodard & Curran


Centredale Manor
Woonasquatucket River
T1-GRAB-8(6')
T1-GRAB-9(6')
T1-GRAB-10(7')
T3-GRAB-4(5')
T3-GRAB-5(6')
T3-GRAB-6(6')
T3-GRAB-12(5-6')
T3-GRAB-2(6-6.5')
T3-GRAB-3(6')
T3-GRAB-10(4')
T3-GRAB-11(8-9')
T3-GRAB-7(6-7')
T3-GRAB-8(6-7')
T3-GRAB-9(6')
T3-GRAB-1(5-5.5')
T1-GRAB-2(4.5')
T1-GRAB-3(6')
T1-GRAB-4(5-6')
T1-GRAB-5(5-6')
T1-GRAB-6(8-9')
T1-GRAB-7(8-9')
T1-GRAB-1(5.5')
0 15 30 60 90 120
Feet
Legend
Existing Chain Link Fence
Temporary Fence (6' Chain Link)
Proposed Test Pit/Trench Transects
Limit of Work
Inferred Area of Possible Buried Metallic Material (1)
Investigation Area
10-Foot Marker
(1) The Area of Possible Buried Metallic/Waste Material was delineated in the Feasibility Study (Battelle 2010).
Centredale Manor Restoration Project
Superfund Site
North Providence, Rhode Island
FIGURE 3:Sample Locations
WOODARD &CURRAN
SCALE: AS SHOWN
Investigation Plan.mxd
DATE: 11/06/2013
JOB NO.: 226845
DRAWN BY: KOA

Appendix A
Field Notes

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CONTENTS

PAGE	REFERENCE	DATE

Location Centredale Manor Date 11/12/2013

Project / Client USACE/USEPA

AM

10:30 Depart Duxbury for Site
11:45 Arrive at Site.
— Sign-in w/ Kyle A & Danc.
— H&S Briefing
Photos 1-8: Site Prep
12:25 Grandbreaking
Photo 9 - First cut
Photo 10 - Digging
Photo 11 - Clean material
12:30 & Photo 13 & 14
— 38" to mesh underneath
— Cap
12:42: Pulling back mesh fabric
— & digging into underlying
— material
Photo 15: Underlying material
12:48: Hit organic material (roots & leaves

Location Centredale Manor Date 11/12/2013

Project / Client USACE/EPA

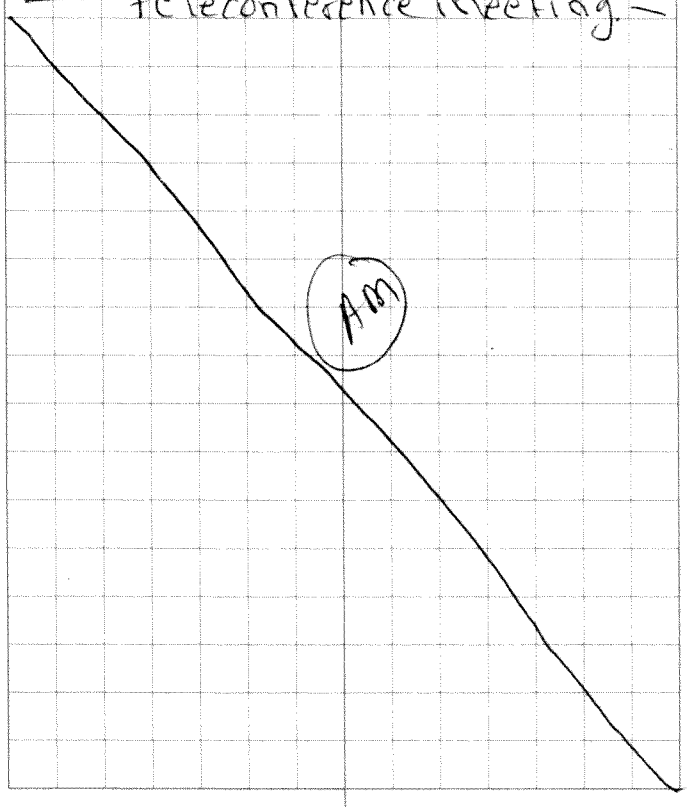
AM

— more distinct hydrocarbon
— odor.
13:00 Sample collected T3-Grab-115-
— 1 8oz amber (¼ full) for head-
— space screening (had been
— exposed for a few minutes.
— Black; sandy
— 1 16-oz. amber - PCBs
— 1 2-oz. clear glass - dioxins
— 1 4-oz. HCX & HCP w/ Terracon
— represent NECC group.
— Photos
— Notes: Could not go down
— in hole; walls unstable &
— trench filling in w/ water
13:28 4.6 ppm - headspace reading
— N 281286.45 Ft
— E 331930.45 ft
— Trench ~ 10 ft. (9 ft.)
13:34 Closing up hole

Location Centredale Manor Date 11/12/2013

Project / Client USACE/EPA

13:45: Fence showed up
14:10: Trench filled in; fence up.
14:30: Site work complete for day
16:30: Depart parking lot after
— teleconference meeting.



Location Centredale Date 11/13/2013

Project / Client USACE/EPA

AM

7:45 Arrive onsite.
8:30 HQS Tailgate meeting
— Ted Bazenas onsite.
8:41: Begin excavating
8:54: Reached mesh fabric @
— 47"; 7 ft. long
9:05: Reached native soil, strong
— hydrocarbon odor; 6 ft deep.
— Collected a head space
— sample.
9:14: Hit metal, including a piece
— of a drum ring. Metal is
— degraded & has holes. No
— labels identified.
— No reading on PID
— Sandy peat w/ leaves & roots
9:34: Collect VOC samples from
— center of bucket
— Collected soil sample from
— center of bucket.
— Depth 6-6.5 ft.

Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

AM

Sample headspace measurement
— 61.4 ppm after 15 min.
— Time = 9:30
— sample T3-Grab-2 6-6.5 ft.
— 4 oz. amber for HCX & HCP
— for Terracon (Shelly)
— 2 oz. Clear glass for dioxin
— 8 oz. amber glass (½ full)
— for PCBs, metals, pesticides, SVOCs
— Note: bits of glass & plastic
— in sample
— Note: All samples initials D.C.
— for Dan Clinton. Kyle A.
— collection assistant.
— 1 gal. ziploc for Tclip
— composite
9:44: Collection from drum for
— PCBs & dioxins (inside of
— drum) T3-Grab-3 6 ft.
— Also collected sample for
— Terracon (HCB & HCX)

A-3

Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

AM

9:52: Hit water table at 6.5 ft
Grab 293 { N 281281.85 ft. E 331928.54 ft. 113.5 ft MSL
— T3-Grab-2 6-6.5 headspace
— 109 ppm
10:00 Begin next stretch of trenching
10:04: Stopped to backfill to
— avoid migration of the
— water table.
— Tear in the polyethylene
— Filled hole higher than
— mesh fabric cap
— Ted Bazenas suggested
— putting geotextile fabric
— under the poly
11:07: Done backfilling & restoring
— cap; begin excavating
— next trench (20-30 foot length
11:19 Hit geotextile 41' deep
— 10' ft. long.
11:28 Hit ground up trees below

Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

AM

— grading material at 54"
11:36: Native material at 6'
— (looked like 70's)
— hydrocarbon odor
— water table at 6'
11:43 No sample because have
— more of the same materi
— Began backfilling
— Plan to backfill the
— dirty material & backfill
— all of the clean material
— at the end.
12:10 Break for lunch. Peter Nangeroni arrives.
13:00: Return from lunch
— Decision to jump to ~~80-90~~ 60 70 ft. Sect.
13:20 Reached geotextile at 24"
13:25 Reached wood chips at 34"
13:36: Reached wood & concrete
— at 48"
— ~~Piece of metal~~ AM 11/13
13:39 Piece of metal brought up.

Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

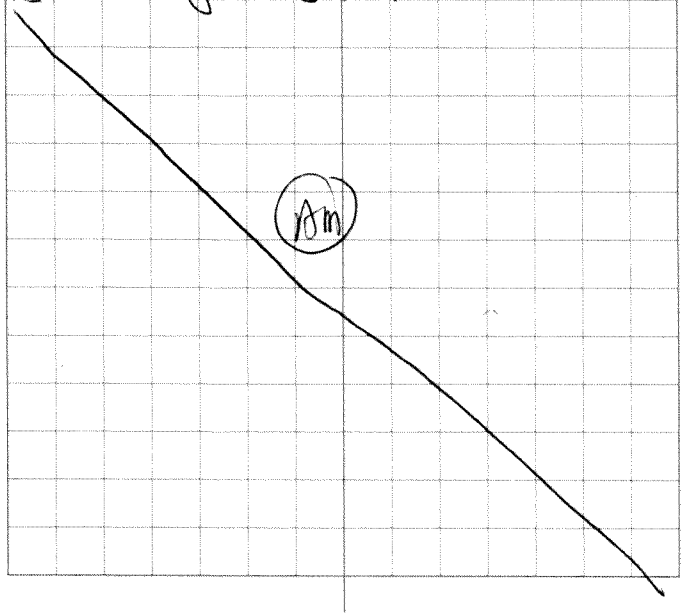
AM

13:40 T3-Grab-4(5')
— 3 syringes for VOC
— 8 oz. amber for PCBs, metals,
— pesticides & SVOCs
— 4 oz. clear glass for dioxins
— 2 oz. amber glass for HCP
— & HCX
— Different chemical odor
— 5.5' to water table
14:08 Sampled orange spongy
— material found in the debris
— T3-Grab-5 (6') - analysis
— for PCBs & dioxins
— T3-Grab-4 - 0.9 ppm PDI
14:30 T3-Grab-6 (6') (time = 14:40
— T3-Grab-5 (5') PID = 30.4 ppm
— T3-Grab-6 (6')
— 2 oz. clear glass for dioxin
— 8 oz. amber for PCBs, TCLP
— metals pesticides
— 4 oz for HCP & HCX (Terracon)

Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

— T3-Grab-6 - PID-28 ppm
— N 281291.37 - 111.50 ft elevation
— E 331876.47
15:00 Began backfilling;
— returned debris to
— trench
— HCX & HCP going ALS
— in Ontario.
15:30 Depart site.



Location Centredale Manor Date 11/13/2013

Project / Client USACE/EPA

AM AM 11/14

8:00 Arrive onsite.

8:26 H&S meeting; stronger warnings about sidewall collapse. Jeremy W. from W&C, site health & safety coordinator, is onsite to observe. Shelly Frost is the woman from Terracon.

8:39 Begin digging at Transect 3, 85-95 feet across transect.

8:49 Reached geotextile fabric at 39".

8:56 Pulled poly sheeting up to edge and started digging into grading material. Since 1st trench yesterday (11/13) an effort has been made to keep the grading material separate from the mulched material and native soil.

8:59 Reached wood chips at 53".

Location Centredale Manor Date 11/14/2013

Project / Client USACE/EPA

AM

Trying to make sure to keep wood chips separate from grading material.

9:06 Reached native material. 70"

9:11 Started digging up construction debris. (wood, concrete, small pieces of metal that could be from drums) at about 6' deep.

Joe Guarnaccia from BASF

Dug up plastic sheeting, a severely deteriorated drum, drum rings, and more wood debris.

Faint chemical smell.

9:19 Reached water table at 7'.

Trench is 10 ft. long.

Kyle collected sample from surface of drum.

A-10

Location Centre Dale Manor Date 11/14/2013

Project / Client USACE/EPA

9:30 Collected Sample T3-Grab-7(6')
— 1 8oz. glass amber PCBs, pesticides,
— TCLP, metals & SVOCs
— 1 2oz. glass (clear) for dioxins
— 3 VOC vials (plugs taken from
— material adhered to drum
— carcass
— 1 4oz. clear glass for HCPq
— HCX for Shelly (Terracon)
9:32 Collected soil for head space
— reading
— N 281297.02 ft
— E 331855.96 ft.
— 113.83 ft. elevation
9:42 Collected material for T clip
— sample.
— Call sample Camp I
— Sample collected on 11/12
— was collected at a potential
— composite for the whole
— transect.

Location Centre Dale Manor Date 11/14/2013

Project / Client USACE/EPA

9:51: Collected a sample from the
— surface of a soft, white
— chunk of rubbery material.
— Collected T3-Grab-8 (6-7)
— 4oz. clear glass for Shelly
— (Terracon) for HCPq HCX
— 8oz glass amber for PCBs
— 4oz. clear glass for dioxin.
— T3-Grab-7 headspace
— reading 227 ppm
9:55 Talked to Bill (excavator
— operator) and he feels like
— he reached the lower limit
— of the debris.
10:00 Shelly from Terracon collected
— an additional sample of
— black material seemingly
— associated w/ roots for
— HCPq HCX T3-Grab-9(6)
— Kyle also collected a
— sample for PCBs & dioxin

Location Centredale Manor Date 11/14/2013

Project / Client USACE / EPA

10:05 Began backfilling — Kyle indicated that they will not be analyzing all samples and will choose which samples will be analyzed at the end. I asked about the samples not selected, and he said they would likely be disposed of onsite in the trench. I asked if any would be held for potential further analysis, and he said that was possible. The approach is consistent with the Work Plan.

10:38 Headspace reading on T3-Grab-9 27.8 ppm

11:00 Finished closing up the trench

11:10 Start digging at Trench 3

Location Centredale Manor Date 11/14/2013

Project / Client USACE / EPA

section 120-130'

11:21 Reach geotextile at 38"

11:28 Drum pull up from right underneath the geotextile fabric at 48"

Drum found within the layer of grading material, and it looks like grading material inside.

Sample collected from inside & out of the drum

Drum is compressed but not very deteriorated

11:34 Dug up acetate sleeves that look similar to geoprobe liners. Second drum, compressed but relatively intact

Lid from drum pulled up. Lid say "geo ~~textile~~ probe tubes" 7/15/99

11:53 Digging up bricks, metal & wood debris

A-9

Charcoal-looking material &
Black, sandy material.
12:10 Collected sample; black
sandy material
T3-Grab-~~10 (4')~~ 11 (8'-9')
4 oz. clear glass dioxin
8 oz. Amber glass for
PCBs, pesticides, SVOCs &
metals
4 oz. clear glass for Shelly's
HCP & HCX
Hydrocarbon odor
PID = 30.8 ppm
Note: at 11:30, a sample was
collected from inside the
drum - T3-Grab-10 (4')
jars collected for full suite
of analyses; probably won't analyze.
TCLP (Tclp) collected
called Grab Composite 2
PID for T3-Grab-10 (4') = 0.2 ppm

N 281305.85 ft
E 331819.33 ft.
113.3 ft. elevation
12:40 Broke for lunch
13:15 Back onsite. ~~Begin test~~ pit Still backfilling test pit.
Started to backfill clean
sal before putting geotextile
fabric down. Had to dig
some clean material out and
put geotextile down before
completing backfilling.
Additional Notes from the
morning: Contacted Ted
Bazenas as soon drums &
geoprobe liners were dug up.
Contact Anna Krasko immediately
after and left her a voice
message.
Contacted Deirdre Dahlen at
lunch to fill her in.

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13:25 Begin trenching at Transect 3, 150-160'

13:29 Reached geofabric at 28"

13:35 Hit larger rocks; rocks look similar to what might be used to stabilize a bank. These are mixed in with sandy material.

11:41 Pulled out a mesh & plastic bags. Reached darker material & a rusted out drum. Black, light, clay like material fell out of the drum. 58" BGS.

13:50 Collected T3-Grab-12 (5-6')
- 8 oz. glass amber for PCBs, metals, SVOCs & pesticides
- 4 oz. clear glass for dioxin
- 4 syringes for 3 VOC vials
- 4 oz. clear glass for HCP & HCX

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- 5' x 10' long x 6' deep pit
- At 7' deep, soil is back to brown
- Can still see metal at the end of the test pit closest to the Woonsquatucket R.
- Grabbed a sample of a reddish material that looks like degraded brick
- Water table at 7'
- T3-Grab-12 (5-6') PID = 0.1 ppm
- Bagged same sample for TCLP

15:00 Depart site

T3-Grab-12

N 281307.68
E 331787.85
108.05 ft.

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7:45 Arrive onsite.

8:20 Health and safety meeting.

8:25 Groundbreaking along Transect 1, 0-10 foot length.

8:35 Reached geotextile fabric 50"

8:38 Reached darker, black material at 60"; also wood chips

— Digging up orange plastic.

— Collected orange material

— off of the plastic

8:48 Reached water table at 8.5'

— Trench is 7' x 12'

8:50 Sample T1-GRAB-1(5.5')

— 8oz. glass amber for PCBs

— 4oz. clear glass for dioxin

— 4oz. Clear glass for HCYQ HCP

— PID=0.7 ppm

8:57 Began backfilling.

— Note from last night: A flock

— of Canada geese were using

— the grassy area to overnight,

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— Every morning there have been

— a pair of kingfishers at

— the end of the peninsula.

— N 28,242.58

— E 331900.81

— 115.8 ft. elevation

— T1-Grab-1 coordinates

— Also noted over the past two

— days a juvenile red-tailed

— hawk.

— Additional note: W&C has

— switched to a larger excavator

— this morning. Work is progressing

— more rapidly & the trenches

— are deeper. The bigger bucket

— also resulted in more tearing

— of the poly sheeting and

— underlying geotextile fabric.

All surface soil that became contaminated was moved into the pit before covering w/ the

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— geotextile & clean fill material.
9:48 Began digging Transect 1,
— 30-40 foot section
9:53 Reached geotextile fabric at 29"
— Started digging into wood chips
— at 39"
8:56 Hit large roots & branches
— More of the same plastic
— from the 0-10 foot section.
— Metal debris, vintage, coke
— bottle.
— Metal debris is from drums
10:04 Reached water table at 5'4"
Plastic retrieved from about
4.5'
10:05 Collected sample from surface
— of plastic.
— Dug deeper & pulled up more
— metal drum debris
— Hydrocarbon odor
— Below water table (7.5') black

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— sandy, gravelly material
— brought up.
10:15 Collected VOC samples from drum
— lid.
10:15 T1-GRAB-2 (4.5')
— 4oz. clear glass for dioxin
— 4oz. clear glass for HCP & HCX
— 8 oz amber glass for PCBs
10:15 T1-GRAB-3 (6')
— 4oz. clear glass for dioxin
— 4oz. clear glass for HCP & HCX
— 8oz. amber glass for PCB,
— metals, SVOCs, pesticides.
— Material from both samples
— was composited and saved
— for TCLP. Each time a TCLP
— sample is collected, smaller
— bits of metal & plastic are
— retained for the analysis.
10:30 Sample called T1-COMP-1(4.5-6

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10:34 Began backfilling
— Shelly Frost (Terracon) also
— collected a sample for TCP & HCX
— from T1-Comp-1 (4.5-6')
— T1-GRAB-2 (4.5') — 1.6 ppm (PID)
~~T1-GRAB-3 (6')~~
— N 281266.96 ft
— E 331881.97 ft
— Elevation: 107.12 ft
— T1-GRAB-3 (6') PID = 5.9 ppm
— at 10:58
11:10 Ground breaking at Transect 1
— 50-60 foot segment. This shares
— a corner with the Transect 3
— 60-70 foot segment.
11:14 Reached geotextile fabric
— at 26"
11:17 Reached wood chips at 39"
11:19 Reached debris at 47"
— Metal, plywood,
— Drum carcass pulled up at 50"

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— There was a black, rubbery
— material adhered to the
— drum lid. The material was
— caked into some kind of fabric
— Two samples were collected:
— 1. Soil from inside of drum
— 2. Black material from lid.
— Hydrocarbon odor.
— Deeper than the drum, wood
— debris being brought up.
— Water table at 5'5".
— Sheen on rocks dug up.
— Blue plastic
— Dug down to 9' (approximately)
— and still brought up debris.
11:48 Decision made by Dan Clinton
— to stop digging further because
— backfilling will get too sloppy
— Will collect some of the
— wetter material for analysis.
— Collected blue, gooey material

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— that we thought was —
— plastic. —
12:00 TI-GRAB-4(5-6)-from lid —
— 8 oz. amber glass-PCBs —
— 4 oz. clear glass-dioxin —
— 4 oz. clear glass-1,1CP & 1,1CX
— PID=22.7 ppm —
12:10 TI-GRAB-5(5-6)-from inside
— drum —
— 8 oz. amber glass for PCBs
— 4 oz. clear glass for dioxin
— 4 oz. clear glass for 1,1CP & 1CX
— PID=11.3 ppm —
12:15 TI-GRAB-6 (8-9')-mucky material
— from within the water table
— (sandy, gravely, black, w/high
— sheen)
— 8 oz. amber glass for PCBs
— metals, SVOCs & pesticides
— VOC vials (3)
— 4 oz. clear glass for dioxin
— PID=59.9 ppm

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— 4 oz. clear glass for 1,1CP & 1CX
12:20 TI-GRAB-7 (8-9')-blue materia
— goey, possibly pigment?
— 3 VOC vials
— 8 oz. glass amber for PCBs,
— metals, SVOCs & pesticides
— 4 oz. clear glass for dioxins
— 4 oz. clear glass for 1,1CP & 1CX
— PID=176 ppm
12:30 TI-COMP-2 (composite of
— all four samples) for
— TCLP
11:45 Lou Maccarone showed up
— and Kyle A. left.
12:15-12:35 - Talked to Lou M. about
— information I have been
— collecting and significant
— observations.
12:35 Break for lunch
13:25 Begin trench at Transect 1,
110'-120' section.

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13:30 Reached geotextile liner at
— 18"

13:34 Reached rocks & parent material
— at 29"; this location is about
— 5' from the paved parking
— area.

13:38 Digging up plastic & metal
— debris at 60"
— Some of same blue putty-like
— material can be observed in
— the bottom of the trench.
— Piece of white plastic w/ light
— blue ~~light~~ AM writing that says
— "Jack" and has a picture
— of a boy and girl on it.
— Rubber gaskets, light,
— gray-colored putty material
— similar to what was
— sampled from drum yesterday
— drum carcasses, gaskets
— Jars, some filled w/ clear liquid,

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— others filled w/ white substance
— up to 6' deep.
— 6' - broken jar w/ bright
— orange-yellow substance
— that was once either crystal
— or granular.
— White material in one of
— the jars seems to be a
— thick liquid

14:07 Collected VOCs from bucket.

14:15 T1-GRAB-8(6') - from excavator
— bucket w/ yellow chemical
— material PID = 21.5 ppm
— 8oz. amber glass for PCBs, SVOCs
— metals & pesticides
— 4oz clear glass for dioxin
— 4oz. clear glass for HCPd HCX
— 3 VOCs

14:30 T1-GRAB-9(6') - collected
— from blue gray material
— that is similar to what

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— was found
— 8 oz. glass amber jar for PCB,
— 4 oz. clear glass for dioxin
— 4 oz. clear glass for HCP & HCX
— PID = 1.9 ppm

14:50 T1-GRAB-10(7') Sample collected
— from in and around the
— chemical jars
— 3 VOCs
— 8 oz. amber glass for PCBs,
— metals, pesticides & SVOCs
— 4 oz. clear glass for dioxin
— 4 oz. clear glass for HCP & HCX
— PID = 1.0 ppm

Note: Did not dig further because
— of concerns regarding pulling
— up more chemical jars.
— Did not reach groundwater,
— but did see some water
— starting to weep into the
— trench at 7' deep.

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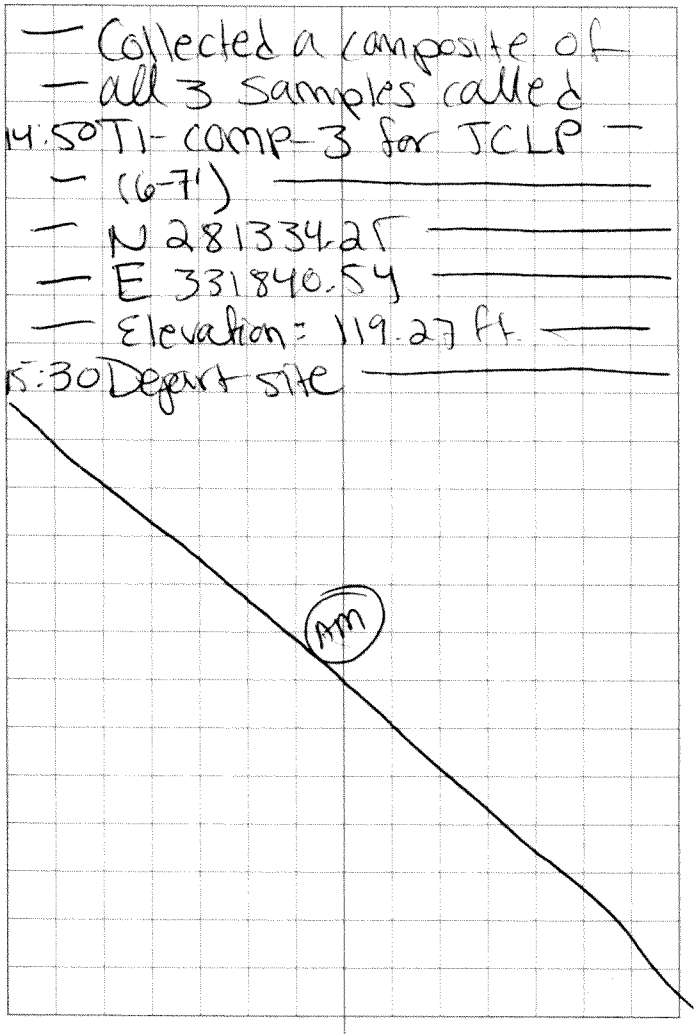
— Collected a composite of
— all 3 samples called
14:50 T1-COMP-3 for JCLP
— (6-7')
— N 281334.25
— E 331840.54
— Elevation = 119.27 ft.
15:30 Depart site



Appendix B
Photodocumentation

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Figure B-1. Setup of Exclusion Zone

Figure B-2. Transect Markings

Figure B-3. Separation of Excavated Material from Above and Below the Geotextile Barrier

Figure B-4. Test Pit at Transect 3, 0 – 10 Feet, Showing Cap, Geotextile Barrier, Grading Sand and Soil at the Water Table

Figure B-5. Buried Construction Debris from Test Pit at Transect 3, 60 – 70 Feet

Figure B-6. Plastic Coated with Orange Substance from Test Pit at Transect 3, 60 – 70 Feet

Figure B-7. Drum Carcasses from Test Pit at Transect 3, 85 – 95 Feet

Figure B-8. Potential Investigation Derived Waste Collected from Test Pit at Transect 3, 110 – 120 Feet

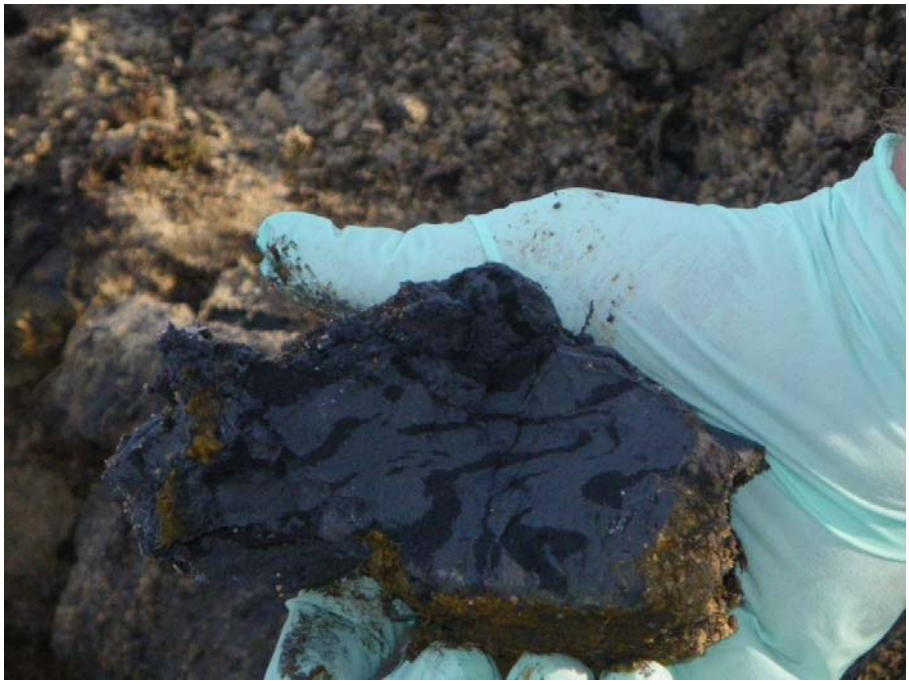

Figure B-9. Blue-Gray Light Rubbery Substance from Drums from Test Pit at Transect 3, 150 – 160 Feet

Figure B-10. Blue Putty-Like Substance from Test Pit at Transect 1, 50 – 6- Feet

Figure B-11. Chemical Jars from Test Pit at Transect 1, 110 – 120 Feet

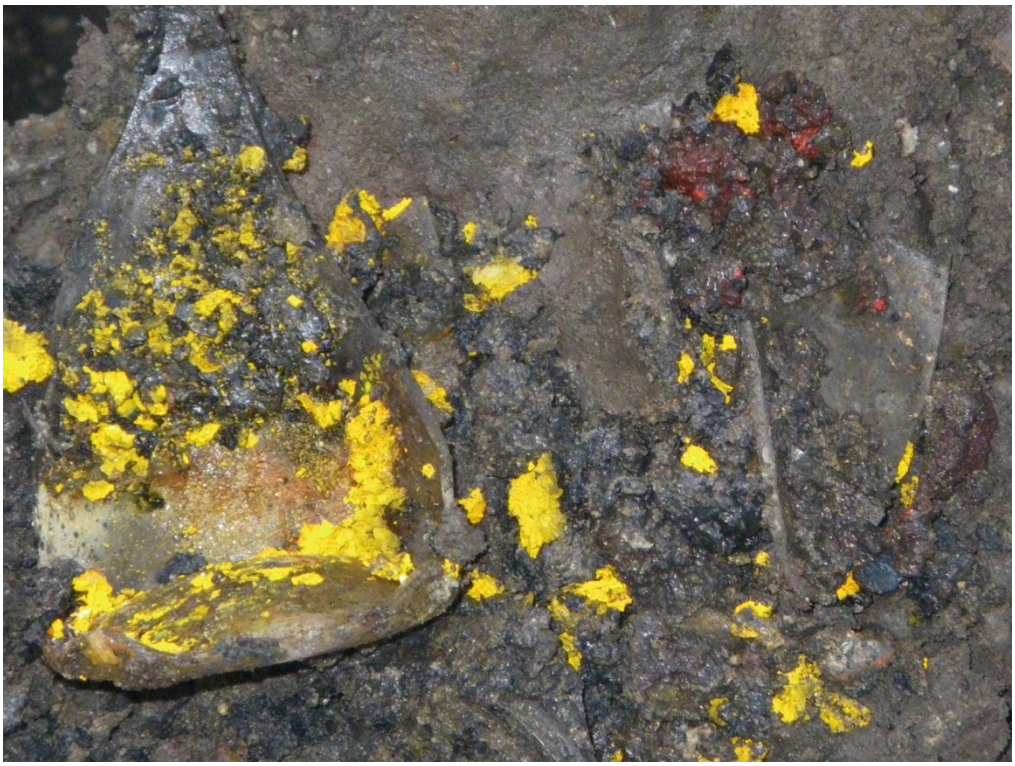

Figure B-12. Chemical Jars from Test Pit at Transect 1, 110 – 120 Feet