ARCADIS
Infrastructure · Water · Environment · Buildings

Rolling Knolls Landfill Superfund SITE

FIELD CHANGE REQUEST (FCR) FORM

Contract No.:

REQUEST NO: 02

DATE: 12/11/2014 (Revised 12/19/2014) (Revised 12/22/2014)

FCR TITLE: Soil Sample Location Modification

DESCRIPTION:

The Data Gaps Sampling and Analysis Plan (Data Gaps SAP) proposed collection of soil samples at 34 locations (sample locations SS-125 through SS-158). The objective of these soil samples was to further delineate the extent of site constituents at concentrations above the New Jersey Soil Remediation Standards (SRSs) in native soil adjacent to the landfill. Soil sampling locations SS-125 through SS-158 were proposed in native soil near previous soil samples on the landfill where the concentrations of one or more constituents exceeded its SRS.

The Data Gaps SAP indicated sampling at locations SS-125 through SS-158 will be conducted in a step-out manner. Soil samples were proposed in two lines: an inner line approximately 25 feet from the estimated landfill boundary and an outer line approximately 50 feet from the estimated landfill boundary. The estimated landfill boundary presented in the Data Gaps SAP was based on information collected during previous sampling activities. The approximate location of the edge of the estimated landfill boundary is shown in pink in Figure 2 of the Data Gaps SAP. The Data Gaps SAP indicated the landfill boundary will be confirmed based on visual observations at the time of sampling, and that final sample locations may be adjusted if field observations indicate the location of the landfill boundary differs from that shown in Figure 2.

REASON FOR DEVIATION:

Prior to sample collection, visual observations at or near the proposed sample locations indicate the location of the landfill boundary shown in Figure 2 of the Data Gaps SAP should be adjusted, and so the corresponding proposed soil sample locations should also be adjusted. The visual observations included observations of trash or debris at the ground surface. At locations SS-137, SS-138, SS-139, and SS-140, visual observations of trash were observed outside of the original landfill boundary; as a result, samples were moved outward. At locations SS-143, SS-144, SS-145, SS-146, SS-147, SS-148, SS-149, SS-150, SS-157, and SS-158, no visual observations of trash were observed at the original proposed landfill boundary; as a result, samples were moved inward. The approximate distance each sample is moved is included in Table 1.

RECOMMENDED MODIFICATION:

Soil sample locations SS-137, SS-139, SS-143, SS-145, SS-147, SS-149, and SS-157 should be modified to be 25 ft from the landfill boundary as observed in the field rather than the estimated edge of the landfill boundary presented on Figure 2 of the Data Gap SAP. Soil sample locations SS-138, SS-140, SS-144, SS-146, SS-148, SS-150, and SS-158 should be modified to be 50 ft from the landfill boundary as observed in the field rather than the estimated edge of the landfill boundary presented in Figure 2 of the Data Gap SAP. A figure with the revised landfill boundary and the revised sample locations and a table summarizing the revisions is attached to this FCR form.

This figure also shows the locations of test pits excavated during site characterization activities in 2007 and 2008, and indicates where landfilled waste was observed in test pits. The original landfill boundary was developed using visual observations and information from the test pits. The revised landfill boundary includes this same information and refines portions of the boundary using additional visual observations made during implementation of the Data Gaps SAP. The original landfill boundary and the revised landfill boundary both show that all test pits where waste was observed are at or inside the boundary.

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Contract No.:

IMPACT ON PROJECT OBJECTIVES:

The revised sample locations meet the project objective of collecting soil samples in native soil within 25 ft and 50 ft of the landfill boundary to further delineate the extent of site constituents at concentrations above the New Jersey SRSs.

Dated Signatures: Andrew Duthey 12/22/2014
(Field Team Leader)

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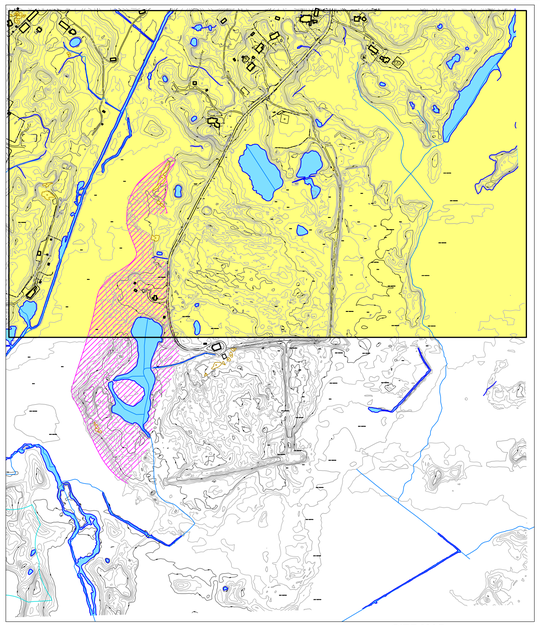
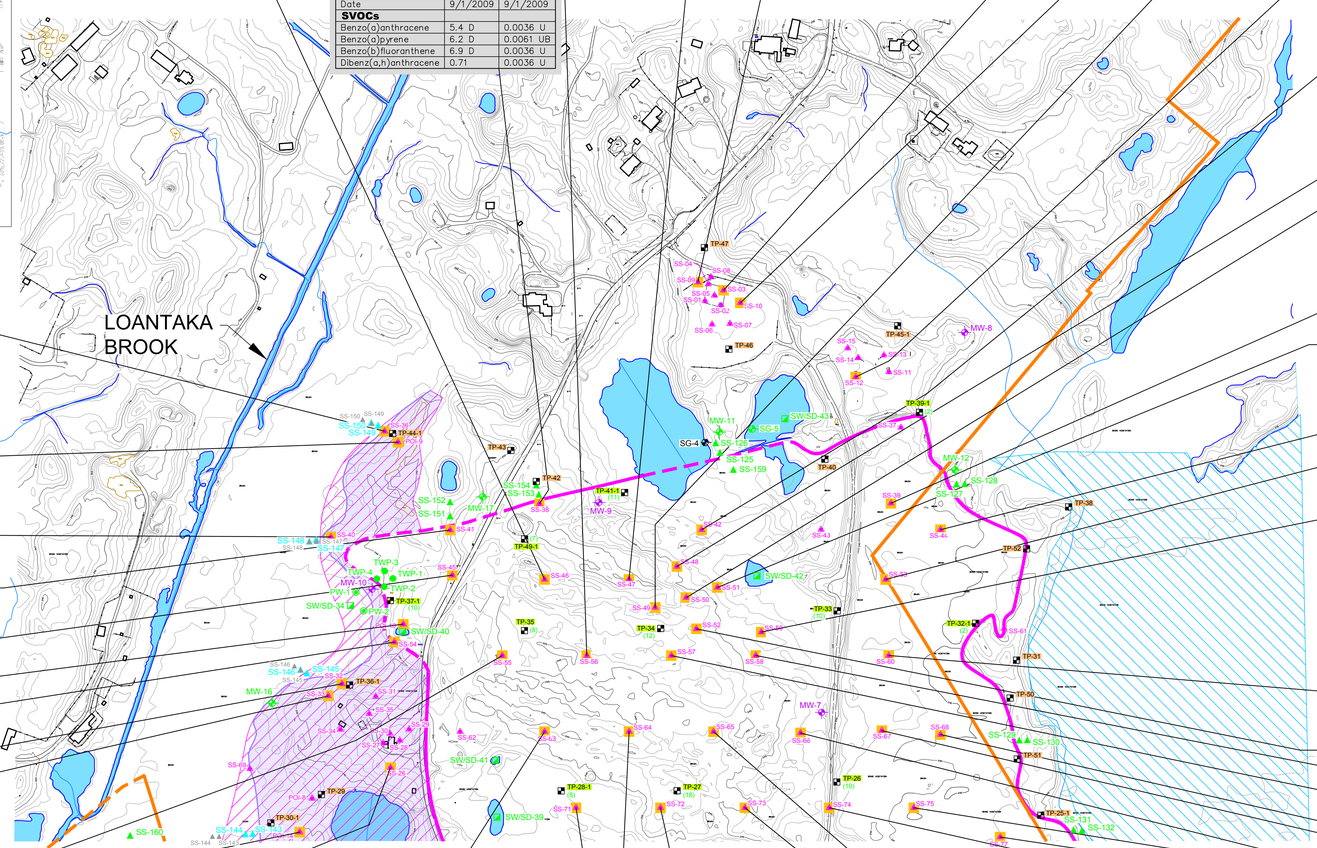
Table 1
Revised Sample Locations
Field Change Request (FCR) Form #02
Rolling Knolls Landfill Superfund Site
Chatham, New Jersey

Location	Approximate Distance Moved	Basis for Relocation
Landfill boundary at SS-137	15.3 ft	Visual observation of trash outside original landfill boundary; samples were moved outward.
SS-137	11.0 ft	
SS-138	10.5 ft	
Landfill boundary at SS-139	25.2 ft	Visual observation of trash outside original landfill boundary; samples were moved outward.
SS-139	34.9 ft	
SS-140	34.4 ft	
Landfill boundary at SS-143	117.5 ft	Trash was not observed at the original proposed landfill boundary; samples were moved inward.
SS-143	115.0 ft	
SS-144	113.0 ft	
Landfill boundary at SS-145	24.1 ft	Trash was not observed at the original proposed landfill boundary; samples were moved inward.
SS-145	23.3 ft	
SS-146	24.2 ft	
Landfill boundary at SS-147	11.4 ft	Trash was not observed at the original proposed landfill boundary; samples were moved inward.
SS-147	6.3 ft	
SS-148	0.1 ft	
Landfill boundary at SS-149	15.3 ft	Trash was not observed at the original proposed landfill boundary; samples were moved inward.
SS-149	23.5 ft	
SS-150	31.6 ft	
Landfill boundary at SS-157	95.8 ft	Trash was not observed at the original proposed landfill boundary; samples were moved inward.
SS-157	119.6 ft	
SS-158	70.7 ft	



SITE MAP

0 500' 1000'
GRAPHIC SCALE



SS-46		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	9/1/2009	9/1/2009
SVOCs		
Benzo(a)pyrene	0.54 J	0.25 EJ
PCBs (Aroclors)		
Aroclor–1242	16 DJ	0.054 U
Aroclor–1254	12 DJ	1.2 D
Aroclor–1260	1.2 J	0.14
Aroclor–1268	2.8 J	0.067
Total PCBs (Aroclors)	32 J	2.03
PCBs (Congeners)		
Total PCBs (Congeners)	95 J	NA
Metals		
Arsenic	7 J	24.5 J
Lead	665	1,460

SS-56		
Depth(Feet)	(0 – 1)	(2 – 3)
Date	8/26/2009	8/26/2009
PCBs (Aroclors)		
Aroclor–1242	3 D	4.1 D
Aroclor–1254	7.2 D	4 D
Aroclor–1260	1.2	0.97
Total PCBs (Aroclors)	11.4	9.07
Pesticides		
Dieldrin	0.3 D	0.041 J
Metals		
Arsenic	14.6 J	20.6 J
Lead	2,060 J	1,120 J

SS-38		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	9/1/2009	9/1/2009
SVOCs		
Benzo(a)anthracene	5.4 D	0.0036 U
Benzo(a)pyrene	6.2 D	0.0061 UB
Benzo(b)fluoranthene	6.9 D	0.0036 U
Dibenz(a,h)anthracene	0.71	0.0036 U

SS-47		
Depth(Feet)	(0 – 1)	(8 – 9)
Date	8/31/2009	8/31/2009
SVOCs		
Benzo(a)pyrene	0.2 J	0.21 J
PCBs (Aroclors)		
Aroclor–1254	3 D	0.61
Aroclor–1260	1.5 D	0.13
Total PCBs (Aroclors)	5.35	1.47 J
Metals		
Arsenic	23.1	5.5 J
Lead	7,140	835

SS-03	
Depth(Feet)	(0 – 1)
Date	9/19/2007
SVOCs	
Benzo(a)pyrene	0.92

SS-10	
Depth(Feet)	(0 – 1)
Date	9/20/2007
SVOCs	
Benzo(a)pyrene	0.74 D

SS-09	
Depth(Feet)	(0 – 1)
Date	9/20/2007
SVOCs	
Benzo(a)pyrene	1

SS-49	
Depth(Feet)	(0 – 1)
Date	8/31/2009
SVOCs	
Benzo(a)pyrene	1.7
Benzo(b)fluoranthene	2.4
Dibenz(a,h)anthracene	0.25 EJ
PCBs (Aroclors)	
Aroclor–1248	1.6 D
Aroclor–1254	2.7 D
Aroclor–1260	1.3 D
Total PCBs (Aroclors)	5.6
Metals	
Arsenic	21.1
Lead	1,010

SS-12	
Depth(Feet)	(0 – 1)
Date	9/20/2007
SVOCs	
Benzo(a)pyrene	0.77 D

SS-42	
Depth(Feet)	(0 – 1)
Date	8/28/2009
PCBs (Aroclors)	
Aroclor–1254	1.3 D
Total PCBs (Aroclors)	1.84

SS-48	
Depth(Feet)	(0 – 1)
Date	8/28/2009
SVOCs	
Benzo(a)pyrene	0.27 EJ
PCBs (Aroclors)	
Aroclor–1248	1.4 D
Aroclor–1254	2.4 D
Total PCBs (Aroclors)	4.4
Metals	
Lead	1,300

SS-50	
Depth(Feet)	(0 – 1)
Date	8/28/2009
PCBs (Aroclors)	
Aroclor–1254	2.3 D
Aroclor–1260	1.1
Total PCBs (Aroclors)	3.4
Metals	
Arsenic	19.1 J

SS-39	
Depth(Feet)	(0 – 1)
Date	9/16/2009
SVOCs	
Benzo(a)pyrene	0.41
PCBs (Aroclors)	
Aroclor–1242	6.1
Aroclor–1254	6.2
Total PCBs (Aroclors)	12.3
PCBs (Congeners)	
Total PCBs (Congeners)	100 J
Metals	
Lead	1,050

SS-51	
Depth(Feet)	(0 – 1)
Date	8/28/2009
SVOCs	
Benzo(a)pyrene	0.44
PCBs (Aroclors)	
Aroclor–1248	1.6 D
Aroclor–1254	3 D
Total PCBs (Aroclors)	5.45
Metals	
Lead	2,200

SS-44	
Depth(Feet)	(0 – 1)
Date	9/1/2009
PCBs (Aroclors)	
Aroclor–1254	1.1 D
Total PCBs (Aroclors)	1.83
Metals	
Lead	1,580

SS-53	
Depth(Feet)	(0 – 1)
Date	9/17/2009
SVOCs	
Benzo(a)pyrene	0.57
PCBs (Aroclors)	
Aroclor–1242	4.1
Aroclor–1254	5.6
Aroclor–1260	1.2
Total PCBs (Aroclors)	10.9
Metals	
Lead	1,110 J

SS-59	
Depth(Feet)	(0 – 1)
Date	8/27/2009
PCBs (Aroclors)	
Aroclor–1242	6.5 D
Aroclor–1254	2.7 D
Total PCBs (Aroclors)	10
Metals	
Lead	1,250 J

SS-60	
Depth(Feet)	(0 – 1)
Date	9/18/2009
PCBs (Aroclors)	
Aroclor–1248	1.2 J
Aroclor–1254	3.6 J
Aroclor–1260	1.2 J
Total PCBs (Aroclors)	6 J
Pesticides	
Dieldrin	0.29 DJ
Metals	
Lead	974

SS-52	
Depth(Feet)	(0 – 1)
Date	8/31/2009
SVOCs	
Benzo(a)anthracene	2.7
Benzo(a)pyrene	3.2 J
Benzo(b)fluoranthene	4.2 J
Dibenz(a,h)anthracene	0.58 EJ
PCBs (Aroclors)	
Aroclor–1242	9.4 D
Aroclor–1254	5.3 D
Total PCBs (Aroclors)	15.4
PCBs (Congeners)	
Total PCBs (Congeners)	12.4 J
Metals	
Lead	2,850

SS-58	
Depth(Feet)	(0 – 1)
Date	8/28/2009
PCBs (Aroclors)	
Aroclor–1248	67 D
Aroclor–1254	57 D
Aroclor–1260	1.7
Total PCBs (Aroclors)	126
PCBs (Congeners)	
Total PCBs (Congeners)	157 J
Pesticides	
Aldrin	0.27 DJN
Metals	
Lead	927

SS-36	
Depth(Feet)	(0 – 1)
Date	8/31/2009
SVOCs	
Benzo(a)anthracene	2.2
Benzo(a)pyrene	2.3
Benzo(b)fluoranthene	3.1
Dibenz(a,h)anthracene	0.51 EJ
PCBs (Aroclors)	
Aroclor–1254	1.5 DJ
Total PCBs (Aroclors)	2.06 J
Metals	
Lead	2,910

SS-40	
Depth(Feet)	(0 – 1)
Date	8/31/2009
SVOCs	
Benzo(a)pyrene	0.25 J
PCBs (Aroclors)	
Aroclor–1254	1.3 D
Total PCBs (Aroclors)	1.56
Pesticides	
alpha–Chlordane	2.5 D
gamma–Chlordane	2.3 D
Metals	
Lead	825

POI-10	
Depth(Feet)	(0 – 1)
Date	8/26/2009
PCBs (Aroclors)	
Aroclor–1254	3.6 JN
Aroclor–1260	88 D
Total PCBs (Aroclors)	91.6 J
PCBs (Congeners)	
Total PCBs (Congeners)	2.05 J
Metals	
Copper	49,900 J
Lead	1,510 J

SS-32	
Depth(Feet)	(0 – 1)
Date	11/6/2007
SVOCs	
Benzo(a)pyrene	1 J

SS-55		
Depth(Feet)	(0 – 1)	(2 – 3)
Date	9/1/2009	9/1/2009
SVOCs		
Benzo(a)pyrene	0.3 J	0.17 J
PCBs (Aroclors)		
Aroclor–1248	1.5 DJ	0.049 U
Aroclor–1254	1.4 D	0.73
Total PCBs (Aroclors)	3.54 J	1.81
Metals		
Antimony	1,960 J	2.8 J
Arsenic	529 J	8.4 J
Lead	16,500	934

POI-9	
Depth(Feet)	(0 – 1)
Date	8/27/2009
SVOCs	
Benzo(a)anthracene	30 DJ
Benzo(a)pyrene	33 DJ
Benzo(b)fluoranthene	42 DJ
Benzo(k)fluoranthene	24 DJ
Dibenz(a,h)anthracene	5 J
Indeno(1,2,3–cd)pyrene	13 J
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.97 J
Metals	
Lead	7,900 J

SS-41	
Depth(Feet)	(0 – 1)
Date	8/27/2009
SVOCs	
Benzo(a)pyrene	0.26

SS-45		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	8/31/2009	8/31/2009
SVOCs		
Benzo(a)pyrene	0.77	0.006

SS-54	
Depth(Feet)	(0 – 1)
Date	8/31/2009
SVOCs	
Benzo(a)pyrene	0.22 [0.24]

SS-33	
Depth(Feet)	(0 – 1)
Date	11/6/2007
SVOCs	
Benzo(a)pyrene	0.39

POI-14	
Depth(Feet)	(0 – 1)
Date	8/24/2009
Metals	
Arsenic	31.7 J
Lead	9,210 J

SS-26	
Depth(Feet)	(0 – 1)
Date	11/5/2007
SVOCs	
Benzo(a)pyrene	0.23 J

SS-63		
Depth(Feet)	(0 – 1)	(3.5 – 4.5)
Date	8/26/2009	8/26/2009
SVOCs		
Benzo(a)pyrene	0.26	0.19 EJ
PCBs (Aroclors)		
Aroclor–1242	0.24 U	2.8 D
Aroclor–1248	7.7 DJ	0.074 U
Aroclor–1254	5.3 DJ	4 D
Total PCBs (Aroclors)	13.9 J	7.44
PCBs (Congeners)		
Total PCBs (Congeners)	44.1 J	NA
Metals		
Arsenic	19.3 J	24.3 J
Lead	2,020 J	2,520 J

SS-71	
Depth(Feet)	(0 – 1)
Date	8/26/2009
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.1 J
Metals	
Lead	1,070 J
Vanadium	6,140

SS-72		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	8/25/2009	8/25/2009
PCBs (Aroclors)		
Aroclor–1242	0.11 U	1.8
Aroclor–1248	2.5 D	0.11 U
Aroclor–1254	3.3 D	3.9 D
Total PCBs (Aroclors)	7.07 J	6.09
PCBs (Congeners)		
Total PCBs (Congeners)	8.65 J	NA
Metals		
Arsenic	26 J	12.6 J
Lead	1,750 J	950 J

SS-65		
Depth(Feet)	(0 – 1)	(5 – 6)
Date	8/27/2009	8/27/2009
SVOCs		
Acetophenone	18 D	0.05 J
Benzo(a)anthracene	66 D	0.86
Benzo(a)pyrene	51 D	0.88
Benzo(b)fluoranthene	49 D	1.2
Benzo(k)fluoranthene	51 D	1.3
Dibenz(a,h)anthracene	4.8 J	0.44 EJ
Indeno(1,2,3–cd)pyrene	12 J	0.15 J
PCBs (Aroclors)		
Aroclor–1242	0.065 U	4.2 DJ
Aroclor–1248	1.8 D	0.15 U
Aroclor–1254	1.5 DJ	3 D
Total PCBs (Aroclors)	3.68 J	7.73 J
Metals		
Lead	1,560 J	3,380 J

SS-75	
Depth(Feet)	(0 – 1)
Date	9/15/2009
PCBs (Aroclors)	
Aroclor–1248	1.3
Aroclor–1254	2.3
Total PCBs (Aroclors)	4.17
Metals	
Arsenic	32.3
Lead	1,360

SS-77	
Depth(Feet)	(0 – 1)
Date	9/17/2009
PCBs (Aroclors)	
Aroclor–1248	1.7
Total PCBs (Aroclors)	2.16 J

SS-66	
Depth(Feet)	(0 – 1)
Date	8/28/2009
SVOCs	
Benzo(a)pyrene	0.28
PCBs (Aroclors)	
Aroclor–1248	15
Aroclor–1254	55 D
Aroclor–1260	8.1
Total PCBs (Aroclors)	78.1
PCBs (Congeners)	
Total PCBs (Congeners)	9.66 J
Metals	
Arsenic	21.9
Lead	2,100

SS-57		
Depth(Feet)	(0 – 1)	(4 – 5)
Date	8/27/2009	8/27/2009
SVOCs		
Benzo(a)pyrene	2.3	0.38 J
Benzo(b)fluoranthene	3.6	0.58 J
Dibenz(a,h)anthracene	0.17 J	0.69 EJ
PCBs (Aroclors)		
Aroclor–1248	2.8 D	4.2 D
Aroclor–1254	2.7 DJN	4.6 D
Aroclor–1260	7 D	3.3 D
Total PCBs (Aroclors)	12.5 J	12.1
Pesticides		
Heptachlor epoxide	RX	0.33 DJN
Metals		
Lead	795 J	1,060 J

SS-64		
Depth(Feet)	(0 – 1)	(5 – 6)
Date	8/27/2009	8/27/2009
SVOCs		
Dibenz(a,h)anthracene	0.21 EJ	0.49 EJ [0.36 EJ]
PCBs (Aroclors)		
Aroclor–1242	0.061 U	0.061 U [2.6 D]
Aroclor–1248	2.1 D	3.2 DJ [0.11 U]
Aroclor–1254	1.5 D	2.3 DJ [4.9 D]
Total PCBs (Aroclors)	3.99	6.32 J [8.24]
Metals		
Lead	1,930 J	1,020 J [1,130 J]

SS-73		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	8/25/2009	8/25/2009
SVOCs		
Benzo(a)pyrene	0.12 EJ	0.24 J
PCBs (Aroclors)		
Aroclor–1242	0.11 U	1.7
Aroclor–1248	1.3	0.19 U
Aroclor–1254	2.5 D	1.3 J
Total PCBs (Aroclors)	4.49	3.16 J
Metals		
Lead	1,880 J	3,020 J

SS-74		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	8/24/2009	8/24/2009
SVOCs		
Benzo(a)anthracene	1	2.2
Benzo(a)pyrene	1.1	2.7
Benzo(b)fluoranthene	1.2	3.8 D
Dibenz(a,h)anthracene	0.3 EJ	0.76 EJ
PCBs (Aroclors)		
Aroclor–1254	0.039 U	1.3 D
Total PCBs (Aroclors)	0.211 J	2.17

SS-67	
Depth(Feet)	(0 – 1)
Date	9/3/2009
SVOCs	
Benzo(a)pyrene	0.49
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.32 J
Metals	
Lead	1,580

SS-68		
Depth(Feet)	(0 – 1)	
Date	9/2/2009	
SVOCs		
Benzo(a)pyrene	0.32 [0.18 EJ]	
PCBs (Aroclors)		
Aroclor–1248	1.2 DJ [1.3 DJ]	
Aroclor–1254	3.2 D [2.6 D]	
Total PCBs (Aroclors)	4.99 J [4.41 J]	
PCBs (Congeners)		
Total PCBs (Congeners)	4.91 J [9.46 J]	
Metals		
Lead	1,320 [1,150]	

LEGEND:

- OPEN WATER
- EDGE OF LANDFILLED WASTES OBSERVED DURING TEST PIT ACTIVITIES (DASHED WHERE APPROXIMATE)
- GREAT SWAMP NATIONAL WILDLIFE REFUGE PROPERTY BOUNDARY (DASHED WHERE APPROXIMATE)
- REVISED LANDFILL BOUNDARY AND OR WASTE AND DEBRIS OBSERVED ON GROUND SURFACE
- WASTE AND DEBRIS OBSERVED ON GROUND SURFACE BUT NOT OBSERVED OR ANTICIPATED TO BE BELOW GROUND SURFACE
- AREAS WHERE SURFACE WATER FLOW DOES NOT EXHIBIT TYPICAL BED AND BANK MORPHOLOGY
- REVISED WASTE AND DEBRIS OBSERVED ON GROUND SURFACE BUT NOT OBSERVED OR ANTICIPATED TO BE BELOW GROUND SURFACE
- SOIL SAMPLING LOCATION
- SOIL SAMPLING LOCATION WITH DETECTED CONCENTRATIONS GREATER THAN NJDEP NONRESIDENTIAL SOIL REMEDIATION STANDARDS
- PROPOSED MONITORING WELL
- EXISTING MONITORING WELL
- PROPOSED TEMPORARY WELL POINT
- PROPOSED SOIL SAMPLE (PREVIOUS LOCATIONS SHOWN IN GREY)
- REVISED SOIL SAMPLE LOCATION
- PROPOSED SURFACE WATER AND SEDIMENT SAMPLE
- PROPOSED POREWATER SAMPLE
- EXISTING STREAM GAUGE
- PROPOSED STREAM GAUGE
- COMPLETED TEST PIT LOCATION
- TP-1 TEST PIT LOCATION WITH LANDFILLED WASTES
- TP-1 TEST PIT LOCATION WITHOUT LANDFILLED WASTES
- (8) DEPTH OF LANDFILLED WASTES

Nonresidential Soil Remediation Standards	
Constituent	Value
VOCs	
Carbon Tetrachloride	2
Chloroform	2
SVOCs	
Acetophenone	5
Benzo(a)anthracene	2
Benzo(a)pyrene	0.2
Benzo(b)fluoranthene	2
Benzo(k)fluoranthene	23
Dibenz(a,h)anthracene	0.2
Indeno(1,2,3–cd)pyrene	2
PCBs	
Aroclor–1242	1
Aroclor–1248	1
Aroclor–1254	1
Aroclor–1260	1
Aroclor–1262	1
Aroclor–1268	1
Total PCBs (Aroclors)	1
PCBs (Congeners)	
Total PCBs (Congeners)	1
Pesticides	
Aldrin	0.2
alpha–Chlordane	1
Dieldrin	0.2
gamma–Chlordane	1
Heptachlor	0.7
Heptachlor epoxide	0.3
Metals	
Antimony	450
Arsenic	19
Cadmium	78
Copper	45,000
Lead	800
Manganese	5,900
Mercury	65
Vanadium	1,100

DATA NOTES:

UNITS = MILLIGRAMS PER KILOGRAM

[] = DUPLICATE SAMPLE

PCBS = POLYCHLORINATED BIPHENYLS

SVOCS = SEMIVOLATILE ORGANIC COMPOUNDS

VOCS = VOLATILE ORGANIC COMPOUNDS

NA = NOT ANALYZED

D = CONCENTRATIONS IDENTIFIED FROM ANALYSIS OF THE SAMPLE AT A SECONDARY DILUTION.

E = THE COMPOUND WAS QUANTITATED ABOVE THE CALIBRATION RANGE.

J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

JN = THE ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICATION. THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

U = THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.

RX = THE SAMPLE RESULTS ARE REJECTD DUE TO MATRIX INTERFERENCE.

NOTES:

1. ANALYTICAL RESULTS GIVEN IN MILLIGRAMS PER KILOGRAM FOR SOIL SAMPLES WITH DETECTED CONCENTRATIONS GREATER NEW JERSEY NONRESIDENTIAL SOIL REMEDIATION STANDARDS (DATED OCTOBER 2011).
2. THE EDGE OF LANDFILLED WASTES OBSERVED DURING TEST PIT ACTIVITIES IS DRAWN BASED ON OBSERVATIONS OF MATERIALS EXCAVATED DURING TEST PIT ACTIVITIES CONDUCTED FROM JULY 26, 2007 TO SEPTEMBER 6, 2007 AND MARCH 26, 2008.
3. THE PORTION OF THE GREAT SWAMP NATIONAL WILDLIFE REFUGE (GSNWR) PROPERTY BOUNDARY ON THIS FIGURE WITHIN CHATHAM TOWNSHIP, NJ WAS OBTAINED FROM CHATHAM TOWNSHIP TAX PARCEL DATA PROVIDED BY CIVIL SOLUTIONS. THE PORTION OF THE GSNWR PROPERTY BOUNDARY ON THIS FIGURE OUTSIDE OF CHATHAM TOWNSHIP IS APPROXIMATE AND WAS OBTAINED FROM THE UNITED STATES FISH AND WILDLIFE SERVICE (GEOGRAPHIC INFORMATION SYSTEMS AND SPATIAL DATA).
4. BLOCK 48.20, LOTS 184 AND 189 ARE OWNED BY ROBERT J. MIELE AS TRUSTEE FOR THE TRUST CREATED BY THE LAST WILL AND TESTAMENT OF ANGELO J. MIELE. BLOCK 48.20, LOT 189.01 IS OWNED BY THE GREEN VILLAGE FIRE DEPARTMENT.
5. THE EXTENT OF AREAS WHERE SURFACE WATER FLOW DOES NOT EXHIBIT TYPICAL BED AND BANK MORPHOLOGY IS BASED ON FIELD OBSERVATIONS MADE THROUGHOUT THE PERIOD OF INVESTIGATION ACTIVITIES. THE EXTENT OF THE AREA SHOWN IS APPROXIMATE.
6. ONLY SOIL ANALYTICAL RESULTS GREATER THAN NEW JERSEY NON–RESIDENTIAL SOIL REMEDIATION STANDARDS ARE POSTED.

SOURCES:

1. BASEMAP FROM JAMES M. STEWART INC., LAND SURVEYORS, PHILADELPHIA, PA., (ELECTRONIC FILE: 292406.DWG DATED: 6/30/06)
2. TAX PARCEL DATA FOR CHATHAM TOWNSHIP WAS PROVIDED BY CIVIL SOLUTIONS.

0 200' 400'
GRAPHIC SCALE

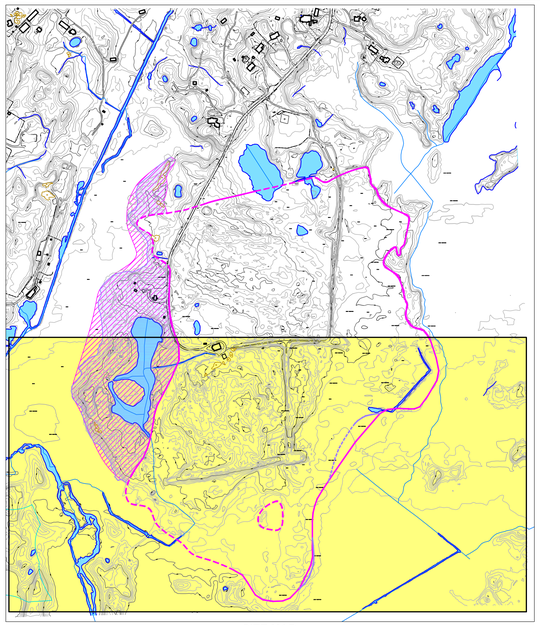
ROLLING KNOLLS LANDFILL SUPERFUND SITE
CHATHAM, NEW JERSEY
DATA GAPS SAMPLING AND ANALYSIS PLAN

PROPOSED SAMPLE LOCATIONS - NORTH

ARCADIS

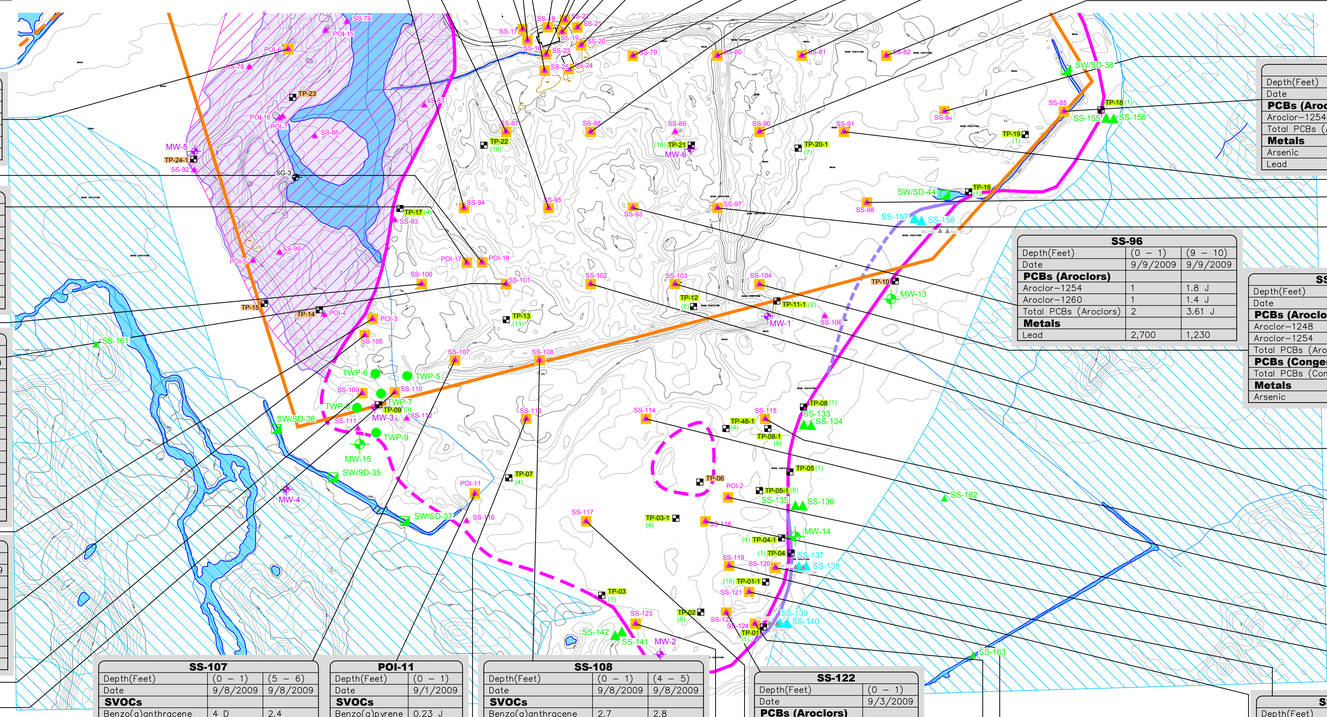
FIGURE
3a

CITY: CRANBURY,NJ DIVGROUP:ENVCAD DB:T.FATTO LD:T.FATTO PIC:(OH) PM:K.ROHANE TM:LHYATT LYR:ON=*;OFF=*REF*
G:\ENVCAD\CRANBURY\ACT\B0033203\00940\00003\B0033203P01.DWG LAYOUT:3A SAVED: 12/19/2014 9:31 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/19/2014 11:33 AM BY: MEYER, JULIE
XREFS: 33203X01 33203X10 IMAGES: PROJECTNAME: ----



SITE MAP

0 500' 1000'
GRAPHIC SCALE



SS-17	
Depth(Feet)	(0 – 1)
Date	11/2/2007
SVOCs	
Benzo(a)pyrene	1.2
Metals	
Lead	901 DJ

SS-16	
Depth(Feet)	(0 – 1)
Date	11/1/2007
SVOCs	
Benzo(a)pyrene	1.1 EJ

SS-25	
Depth(Feet)	(0 – 0.85)
Date	11/5/2007
SVOCs	
Benzo(a)pyrene	0.21

SS-18	
Depth(Feet)	(0 – 1)
Date	11/1/2007
SVOCs	
Benzo(a)pyrene	0.77 J

SS-23	
Depth(Feet)	(0 – 1)
Date	6/21/2007
SVOCs	
Benzo(a)pyrene	0.75

SS-22	
Depth(Feet)	(0 – 1)
Date	6/21/2007
SVOCs	
Benzo(a)anthracene	2.3 [3.3]
Benzo(a)pyrene	2.3 J [3.1]
Benzo(b)fluoranthene	3.3 J [4.5]

SS-19	
Depth(Feet)	(0 – 0.8)
Date	11/2/2007
SVOCs	
Benzo(a)anthracene	2.9
Benzo(a)pyrene	2.9
Benzo(b)fluoranthene	4.4
PCBs (Aroclors)	
Aroclor–1254	2.8 D
Total PCBs (Aroclors)	2.8
PCBs (Congeners)	
Total PCBs (Congeners)	6.41 J
Metals	
Lead	1,090 DJ

SS-24	
Depth(Feet)	(0 – 1)
Date	11/5/2007
SVOCs	
Benzo(a)pyrene	0.65 J
PCBs (Aroclors)	
Aroclor–1248	2.6 D
Aroclor–1260	2.1 D
Total PCBs (Aroclors)	4.7
PCBs (Congeners)	
Total PCBs (Congeners)	6.89 J
Metals	
Lead	1,080 DJ

SS-95		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	9/10/2009	9/10/2009
PCBs (Aroclors)		
Aroclor–1254	1.7 J	2.1
Total PCBs (Aroclors)	2.46 J	3.73 J
Metals		
Lead	1,550	1,110

SS-87		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	9/10/2009	9/10/2009
SVOCs		
Benzo(a)pyrene	0.28	0.36
PCBs (Aroclors)		
Aroclor–1254	7.3 J	0.52 J
Aroclor–1260	1.4 J	0.23 J
Aroclor–1268	0.92 U	2.3 J
Total PCBs (Aroclors)	8.7 J	3.26 J
Metals		
Arsenic	22.6	28.2
Lead	1,640	886

SS-94		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	9/9/2009	9/9/2009
SVOCs		
Benzo(a)pyrene	0.077 EJ	0.22 EJ
PCBs (Aroclors)		
Aroclor–1248	1.3 J	0.16 J
Aroclor–1254	2.9 J	0.38
Total PCBs (Aroclors)	5.03 J	0.67 J
Metals		
Arsenic	16.9	22.7
Lead	1,400	1,040

SS-21	
Depth(Feet)	(0 – 1)
Date	6/21/2007
SVOCs	
Benzo(a)anthracene	4.3
Benzo(a)pyrene	4.3 J
Benzo(b)fluoranthene	6.2 J
Indeno(1,2,3–cd)pyrene	2.6 J

SS-20	
Depth(Feet)	(0 – 1)
Date	11/2/2007
SVOCs	
Benzo(a)anthracene	2.7
Benzo(a)pyrene	2.4
Benzo(b)fluoranthene	3.4

SS-79	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Aroclor–1254	2.7 J
Total PCBs (Aroclors)	4 J
Metals	
Lead	1,900

SS-88		
Depth(Feet)	(0 – 1)	(7 – 8)
Date	9/9/2009	9/9/2009
SVOCs		
Benzo(a)pyrene	0.51 J [0.72 J]	0.88 J
Dibenz(a,h)anthracene	0.21 EJ [0.54 EJ]	0.23 EJ
PCBs (Aroclors)		
Aroclor–1248	1.1 J [0.42 JN]	0.26 U
Aroclor–1254	4.8 J [2.4]	1.6
Total PCBs (Aroclors)	7.29 J [3.39 J]	2.01
Metals		
Arsenic	17.7 [19.8]	17.1
Lead	1,630 [2,370]	1,440

SS-80		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	9/2/2009	9/2/2009
SVOCs		
Benzo(a)anthracene	11 D	5.1 D
Benzo(a)pyrene	11 D	5.8 D
Benzo(b)fluoranthene	13 DJ	6 D
Dibenz(a,h)anthracene	1.1 J	0.48 J
Indeno(1,2,3–cd)pyrene	2.5 J	1.5 J
PCBs (Aroclors)		
Aroclor–1254	0.32	1.5
Total PCBs (Aroclors)	0.407	3.18
Metals		
Lead	2,490	1,010

SS-81	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Aroclor–1242	0.6 U [3.1]
Aroclor–1248	1.7 J [0.6 U]
Aroclor–1254	5 [3.8]
Aroclor–1260	1.1 [0.87]
Total PCBs (Aroclors)	7.8 J [7.77]
Metals	
Lead	2,290 [3,190]

SS-90		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	9/8/2009	9/8/2009
SVOCs		
Benzo(a)pyrene	0.082 J	0.49
PCBs (Aroclors)		
Aroclor–1242	2.4 U	1.3
Aroclor–1248	17 J	0.6 U
Aroclor–1254	12 J	2.3
Aroclor–1262	2.4 U	3.9
Total PCBs (Aroclors)	29 J	7.5
Metals		
Lead	1,540	1,620 J

SS-82	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Aroclor–1254	2.3
Total PCBs (Aroclors)	3.1 J
Metals	
Arsenic	22.4 J
Lead	4,010

SS-84	
Depth(Feet)	(0 – 1)
Date	9/2/2009
SVOCs	
Benzo(a)pyrene	0.47 J
PCBs (Aroclors)	
Aroclor–1254	9.4 D
Aroclor–1260	1.2
Total PCBs (Aroclors)	10.6
PCBs (Congeners)	
Total PCBs (Congeners)	125 J
Metals	
Lead	4,510

SS-85	
Depth(Feet)	(0 – 1)
Date	9/2/2009
PCBs (Aroclors)	
Aroclor–1254	2.2
Total PCBs (Aroclors)	3.74
Metals	
Arsenic	22.8 J
Lead	2,360

SS-91	
Depth(Feet)	(0 – 1)
Date	9/17/2009
SVOCs	
Benzo(a)pyrene	0.59
PCBs (Aroclors)	
Aroclor–1254	3.1
Total PCBs (Aroclors)	4.58 J

SS-98	
Depth(Feet)	(0 – 1)
Date	9/18/2009
PCBs (Aroclors)	
Aroclor–1248	2.4 J
Aroclor–1254	4.6
Total PCBs (Aroclors)	7.51 J
Metals	
Arsenic	25.7
Lead	2,710

POI-6	
Depth(Feet)	(0 – 1)
Date	8/25/2009
SVOCs	
Benzo(a)pyrene	0.28 J
Metals	
Lead	2,570 J

POI-18	
Depth(Feet)	(5 – 6)
Date	1/14/2010
PCBs (Aroclors)	
Aroclor–1248	1.1 DJ
Aroclor–1254	2.5 D
Total PCBs (Aroclors)	4.07 J
Metals	
Arsenic	21.2 J
Lead	1,540

POI-17	
Depth(Feet)	(5 – 6)
Date	1/13/2010
PCBs (Aroclors)	
Aroclor–1254	2.1 D [3.1 D]
Aroclor–1260	3.2 D [0.86 J]
Total PCBs (Aroclors)	5.67 [5.15 J]
Metals	
Arsenic	41.9 J [57.7 J]
Lead	1,900 [1,940]

SS-100	
Depth(Feet)	(0 – 1)
Date	9/10/2009
PCBs (Aroclors)	
Aroclor–1254	2.6
Total PCBs (Aroclors)	4.06 J
Metals	
Lead	2,650

SS-101		
Depth(Feet)	(0 – 1)	(4 – 5)
Date	9/9/2009	9/9/2009
SVOCs		
Benzo(a)pyrene	0.21 EJ	0.16 J
PCBs (Aroclors)		
Aroclor–1242	1.4	0.63 U
Aroclor–1248	0.61 U	1.9 J
Aroclor–1254	4.4	3.4 J
Aroclor–1260	1.5	2.7 J
Total PCBs (Aroclors)	7.3	8 J
PCBs (Congeners)		
Total PCBs (Congeners)	10.6 J	NA
Metals		
Arsenic	19.5	13
Lead	1,380	3,010

POI-3		
Depth(Feet)	(0 – 1)	(0.5 – 1)
Date	8/25/2009	8/25/2009
VOCs		
Carbon Tetrachloride	NA	4.4
Chloroform	NA	4.5 D
SVOCs		
Benzo(a)pyrene	0.22 J	NA
Metals		
Arsenic	29.3 J	NA
Lead	1,720 J	NA
Manganese	13,600 J	NA
Mercury	85.1	NA

SS-105	
Depth(Feet)	(0 – 1)
Date	8/26/2009
PCBs (Aroclors)	
Aroclor–1248	4.6 D
Aroclor–1254	4.4 D
Total PCBs (Aroclors)	9.31
PCBs (Congeners)	
Total PCBs (Congeners)	22.7 J
Metals	
Lead	1,070 J

SS-110	
Depth(Feet)	(0 – 1)
Date	9/1/2009
SVOCs	
Benzo(a)pyrene	0.83
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.28 J

SS-109	
Depth(Feet)	(0.5 – 1)
Date	8/31/2009
VOCs	
Chloroform	1,900 DJ

SS-107		
Depth(Feet)	(0 – 1)	(5 – 6)
Date	9/8/2009	9/8/2009
SVOCs		
Benzo(a)anthracene	4 D	2.4
Benzo(a)pyrene	3.6 D	2.7
Benzo(b)fluoranthene	4.2 D	3.1 D
Dibenz(a,h)anthracene	0.69 EJ	0.16 J
Metals		
Lead	792	1,070

POI-11	
Depth(Feet)	(0 – 1)
Date	9/1/2009
SVOCs	
Benzo(a)pyrene	0.23 J

SS-108		
Depth(Feet)	(0 – 1)	(4 – 5)
Date	9/8/2009	9/8/2009
SVOCs		
Benzo(a)anthracene	2.7	2.8
Benzo(a)pyrene	3.1	2.9
Benzo(b)fluoranthene	4.5 DJ	3.4 DJ
Dibenz(a,h)anthracene	0.27 J	0.24 J
PCBs (Aroclors)		
Aroclor–1254	0.29	2.5 DJ
Aroclor–1260	0.12	4.8 D
Total PCBs (Aroclors)	0.481	7.81 J
Metals		
Arsenic	9.8 J	28.3 J
Lead	6,270	3,340

SS-113	
Depth(Feet)	(0 – 1)
Date	9/16/2009
PCBs (Aroclors)	
Aroclor–1254	1.4
Total PCBs (Aroclors)	2.29 J
PCBs (Congeners)	
Total PCBs (Congeners)	3.55
Metals	
Antimony	881 J
Arsenic	33.9
Lead	2,280

SS-122	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.28
Metals	
Lead	1,270

SS-117	
Depth(Feet)	(0 – 1)
Date	9/17/2009
PCBs (Aroclors)	
Aroclor–1254	1.8 J
Total PCBs (Aroclors)	2.66 J
Metals	
Arsenic	28.5
Lead	1,420 J

SS-123	
Depth(Feet)	(0 – 1)
Date	9/15/2009
PCBs (Aroclors)	
Aroclor–1254	1.3
Aroclor–1260	1.2
Total PCBs (Aroclors)	3.15
Metals	
Lead	1,370

SS-96		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	9/9/2009	9/9/2009
PCBs (Aroclors)		
Aroclor–1254	1	1.8 J
Aroclor–1260	1	1.4 J
Total PCBs (Aroclors)	2	3.61 J
Metals		
Lead	2,700	1,230

SS-104	
Depth(Feet)	(0 – 1)
Date	9/2/2009
PCBs (Aroclors)	
Aroclor–1248	3.3 D
Aroclor–1254	1.9 D
Total PCBs (Aroclors)	5.57 J
PCBs (Congeners)	
Total PCBs (Congeners)	5.83 J
Metals	
Arsenic	22 J

SS-97		
Depth(Feet)	(0 – 1)	(6 – 7)
Date	9/4/2009	9/4/2009
SVOCs		
Benzo(a)pyrene	0.31 D	0.042 D
PCBs (Aroclors)		
Aroclor–1242	5.7	20 J
Aroclor–1254	10	4.8
Total PCBs (Aroclors)	15.7	24.8 J
PCBs (Congeners)		
Total PCBs (Congeners)	50.2 J	NA
Metals		
Arsenic	8.4 J	28.4 J
Lead	1,430	648

SS-103		
Depth(Feet)	(0 – 1)	(4 – 5)
Date	9/2/2009	9/2/2009
PCBs (Aroclors)		
Aroclor–1248	1.9 DJ	2.3 D
Aroclor–1254	3.1 D	4.1 D
Total PCBs (Aroclors)	5.55 J	7.01
Metals		
Arsenic	20.4 J	15 J
Cadmium	38.1 J	22,500 J
Lead	13,800	951

SS-102		
Depth(Feet)	(0 – 1)	(9 – 10)
Date	9/10/2009	9/10/2009
PCBs (Aroclors)		
Aroclor–1254	2.5	2.1
Total PCBs (Aroclors)	4.22 J	3.75
Metals		
Lead	1,870	4,700

SS-115	
Depth(Feet)	(0 – 1)
Date	9/14/2009
SVOCs	
Benzo(a)pyrene	1.5
Dibenz(a,h)anthracene	0.29 EJ
Metals	
Arsenic	33
Lead	6,170

SS-114	
Depth(Feet)	(0 – 1)
Date	9/14/2009
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.17
Metals	
Lead	2,540

SS-120	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Aroclor–1254	1.8
Aroclor–1260	1.6
Total PCBs (Aroclors)	3.4
Metals	
Arsenic	25.3 J
Lead	1,310

SS-121	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Aroclor–1254	1.7 J
Aroclor–1260	6.9 J
Total PCBs (Aroclors)	8.6 J
PCBs (Congeners)	
Total PCBs (Congeners)	12.3 J
Metals	
Arsenic	30.2 J
Lead	1,340

SS-124	
Depth(Feet)	(0 – 1)
Date	9/15/2009
PCBs (Aroclors)	
Total PCBs (Aroclors)	1.48 J

POI-2	
Depth(Feet)	(0 – 1)
Date	9/3/2009
PCBs (Aroclors)	
Total PCBs (Aroclors)	2.18
Metals	
Lead	1,490

SS-119	
Depth(Feet)	(0 – 1)
Date	9/3/2009
SVOCs	
Benzo(a)pyrene	1.5
Benzo(b)fluoranthene	3.2
Dibenz(a,h)anthracene	0.33 EJ
PCBs (Aroclors)	
Aroclor–1254	1.3
Total PCBs (Aroclors)	2.3
Pesticides	
Heptachlor	1.1 D
Metals	
Lead	1,070

SS-118	
Depth(Feet)	(0 – 1)
Date	9/15/2009
SVOCs	
Benzo(a)pyrene	0.4 D
PCBs (Aroclors)	
Aroclor–1242	11 J
Aroclor–1254	7.7 J
Aroclor–1260	4.3 J
Total PCBs (Aroclors)	23 J
Metals	
Lead	2,560

LEGEND:

- OPEN WATER
- EDGE OF LANDFILLED WASTES OBSERVED DURING TEST PIT ACTIVITIES (DASHED WHERE APPROXIMATE)
- GREAT SWAMP NATIONAL WILDLIFE REFUGE PROPERTY BOUNDARY (DASHED WHERE APPROXIMATE)
- REVISED LANDFILL BOUNDARY AND OR WASTE AND DEBRIS OBSERVED ON GROUND SURFACE
- WASTE AND DEBRIS OBSERVED ON GROUND SURFACE BUT NOT OBSERVED OR ANTICIPATED TO BE BELOW GROUND SURFACE
- AREAS WHERE SURFACE WATER FLOW DOES NOT EXHIBIT TYPICAL BED AND BANK MORPHOLOGY
- REVISED WASTE AND DEBRIS OBSERVED ON GROUND SURFACE BUT NOT OBSERVED OR ANTICIPATED TO BE BELOW GROUND SURFACE
- SOIL SAMPLING LOCATION
- SOIL SAMPLING LOCATION WITH DETECTED CONCENTRATIONS GREATER THAN NJDEP NONRESIDENTIAL SOIL REMEDIATION STANDARDS
- PROPOSED MONITORING WELL
- EXISTING MONITORING WELL
- PROPOSED TEMPORARY WELL POINT
- PROPOSED SOIL SAMPLE (PREVIOUS LOCATIONS SHOWN IN GREY)
- REVISED SOIL SAMPLE LOCATION
- PROPOSED SURFACE WATER AND SEDIMENT SAMPLE
- EXISTING STREAM GAUGE
- COMPLETED TEST PIT LOCATION
- TP-1 TEST PIT LOCATION WITH LANDFILLED WASTES
- TP-1 TEST PIT LOCATION WITHOUT LANDFILLED WASTES
- (6) DEPTH OF LANDFILLED WASTES

Nonresidential Soil Remediation Standards	
Constituent	Value
VOCs	
Carbon Tetrachloride	2
Chloroform	2
SVOCs	
Acetophenone	5
Benzo(a)anthracene	2
Benzo(a)pyrene	0.2
Benzo(b)fluoranthene	2
Benzo(k)fluoranthene	23
Dibenz(a,h)anthracene	0.2
Indeno(1,2,3–cd)pyrene	2
PCBs	
Aroclor–1242	1
Aroclor–1248	1
Aroclor–1254	1
Aroclor–1260	1
Aroclor–1262	1
Aroclor–1268	1
Total PCBs (Aroclors)	1
PCBs (Congeners)	
Total PCBs (Congeners)	1
Pesticides	
Aldrin	0.2
alpha–Chlordane	1
Dieldrin	0.2
gamma–Chlordane	1
Heptachlor	0.7
Heptachlor epoxide	0.3
Metals	
Antimony	450
Arsenic	19
Cadmium	78
Copper	45,000
Lead	800
Manganese	5,900
Mercury	65
Vanadium	1,100

DATA NOTES:

UNITS = MILLIGRAMS PER KILOGRAM

[] = DUPLICATE SAMPLE

PCBS = POLYCHLORINATED BIPHENYLS

SVOCS = SEMIVOLATILE ORGANIC COMPOUNDS

VOCS = VOLATILE ORGANIC COMPOUNDS

NA = NOT ANALYZED

D = CONCENTRATIONS IDENTIFIED FROM ANALYSIS OF THE SAMPLE AT A SECONDARY DILUTION.

E = THE COMPOUND WAS QUANTITATED ABOVE THE CALIBRATION RANGE.

J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

JN = THE ANALYSIS INDICATES THE PRESENCE OF A COMPOUND FOR WHICH THERE IS PRESUMPTIVE EVIDENCE TO MAKE A TENTATIVE IDENTIFICATION. THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.

U = THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE ASSOCIATED VALUE IS THE COMPOUND QUANTITATION LIMIT.

RX = THE SAMPLE RESULTS ARE REJECTD DUE TO MATRIX INTERFERENCE.

NOTES:

1. ANALYTICAL RESULTS GIVEN IN MILLIGRAMS PER KILOGRAM FOR SOIL SAMPLES WITH DETECTED CONCENTRATIONS GREATER NEW JERSEY NONRESIDENTIAL SOIL REMEDIATION STANDARDS (DATED OCTOBER 2011).
2. THE EDGE OF LANDFILLED WASTES OBSERVED DURING TEST PIT ACTIVITIES IS DRAWN BASED ON OBSERVATIONS OF MATERIALS EXCAVATED DURING TEST PIT ACTIVITIES CONDUCTED FROM JULY 26, 2007 TO SEPTEMBER 6, 2007 AND MARCH 26, 2008.
3. THE PORTION OF THE GREAT SWAMP NATIONAL WILDLIFE REFUGE (GSNWR) PROPERTY BOUNDARY ON THIS FIGURE WITHIN CHATHAM TOWNSHIP, NJ WAS OBTAINED FROM CHATHAM TOWNSHIP TAX PARCEL DATA PROVIDED BY CIVIL SOLUTIONS. THE PORTION OF THE GSNWR PROPERTY BOUNDARY ON THIS FIGURE OUTSIDE OF CHATHAM TOWNSHIP IS APPROXIMATE AND WAS OBTAINED FROM THE UNITED STATES FISH AND WILDLIFE SERVICE (GEOGRAPHIC INFORMATION SYSTEMS AND SPATIAL DATA).
4. BLOCK 48.20, LOTS 184 AND 189 ARE OWNED BY ROBERT J. MIELE AS TRUSTEE FOR THE TRUST CREATED BY THE LAST WILL AND TESTAMENT OF ANGELO J. MIELE. BLOCK 48.20, LOT 189.01 IS OWNED BY THE GREEN VILLAGE FIRE DEPARTMENT.
5. THE EXTENT OF AREAS WHERE SURFACE WATER FLOW DOES NOT EXHIBIT TYPICAL BED AND BANK MORPHOLOGY IS BASED ON FIELD OBSERVATIONS MADE THROUGHOUT THE PERIOD OF INVESTIGATION ACTIVITIES. THE EXTENT OF THE AREA SHOWN IS APPROXIMATE.
6. ONLY SOIL ANALYTICAL RESULTS GREATER THAN NEW JERSEY NON–RESIDENTIAL SOIL REMEDIATION STANDARDS ARE POSTED.

SOURCES:

1. BASEMAP FROM JAMES M. STEWART INC., LAND SURVEYORS, PHILADELPHIA, PA., (ELECTRONIC FILE: 292406.DWG DATED: 6/30/06)
2. TAX PARCEL DATA FOR CHATHAM TOWNSHIP WAS PROVIDED BY CIVIL SOLUTIONS.

0 200' 400'
GRAPHIC SCALE

ROLLING KNOLLS LANDFILL SUPERFUND SITE
CHATHAM, NEW JERSEY
DATA GAPS SAMPLING AND ANALYSIS PLAN

PROPOSED SAMPLE LOCATIONS - SOUTH

ARCADIS

FIGURE
3b

CITY: CRANBURY NJ DIV/GROUP: ENVCAD DB: T.FATTO LD: T.FATTO PIC/Opt: PM: K.ROMANIE TM: L.HYATT LYR: ON*;OFF=*REF* PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/19/2014 11:39 AM BY: MEYER, JULIE
G:\ENVCAD\CRANBURY\ACT\60033203\00\04\00003\60033203P02.DWG LAYOUT: 3B SAVED: 12/19/2014 9:37 AM ACADVER: 18.1S (LMS TECH)
XREFS: 33203X01 33203X10 IMAGES: PROJECTNAME: ----