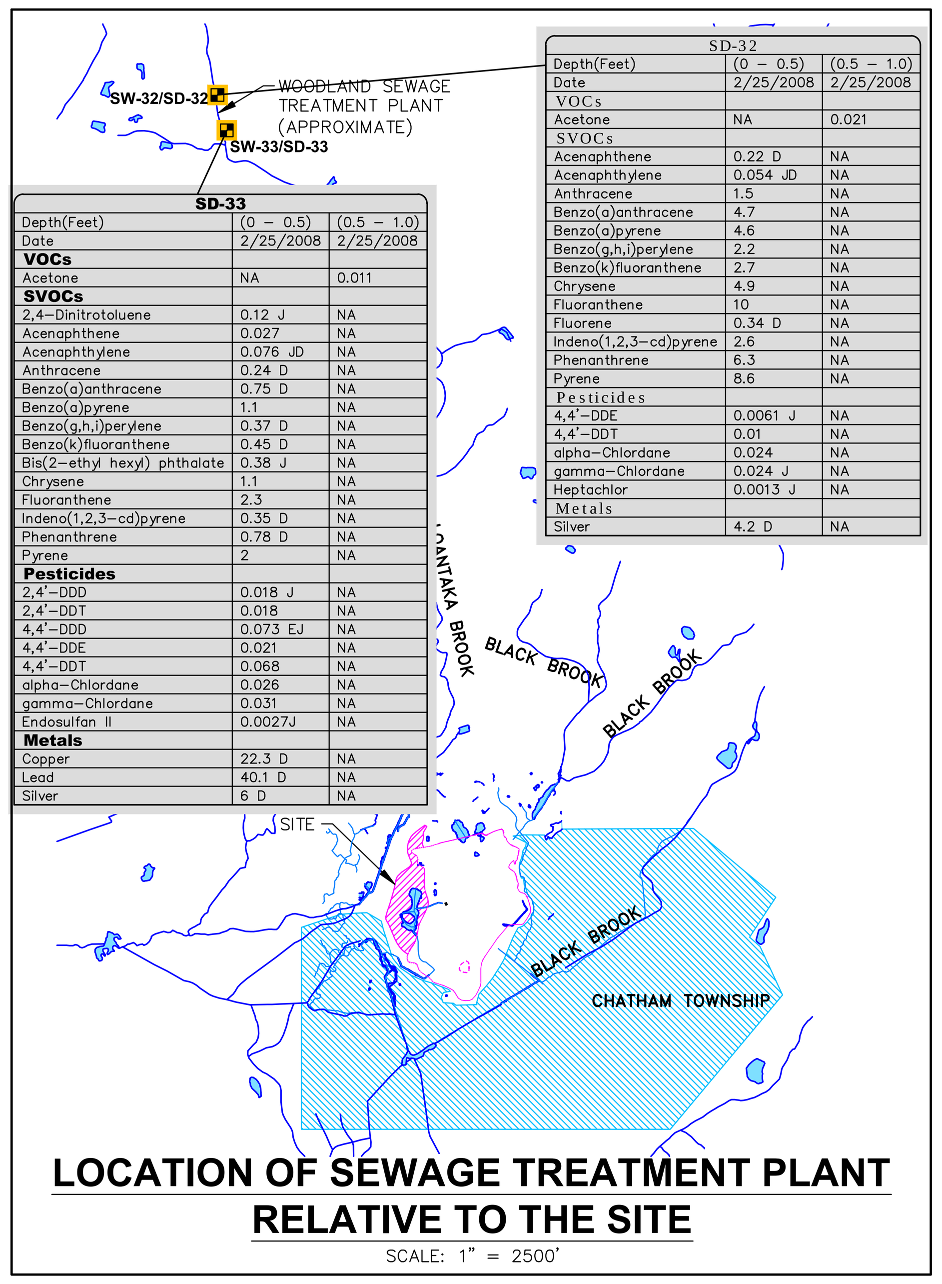


LOCATION OF SEWAGE TREATMENT PLANT RELATIVE TO THE SITE

SCALE: 1" = 2500'

SD-32

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/25/2008	2/25/2008
VOCs		
Acetone	NA	0.021
SVOCs		
Acenaphthene	0.22 D	NA
Acenaphthylene	0.054 JD	NA
Anthracene	1.5	NA
Benzo(a)anthracene	4.7	NA
Benzo(a)pyrene	4.6	NA
Benzo(g,h,i)perylene	2.2	NA
Benzo(k)fluoranthene	2.7	NA
Chrysene	4.9	NA
Fluoranthene	10	NA
Fluorene	0.34 D	NA
Indeno(1,2,3–cd)pyrene	2.6	NA
Phenanthrene	6.3	NA
Pyrene	8.6	NA
Pesticides		
4,4'–DDE	0.0061 J	NA
4,4'–DDT	0.01	NA
alpha–Chlordane	0.024	NA
gamma–Chlordane	0.024 J	NA
Heptachlor	0.0013 J	NA
Metals		
Silver	4.2 D	NA

SD-33

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/25/2008	2/25/2008
VOCs		
Acetone	NA	0.011
SVOCs		
2,4–Dinitrotoluene	0.12 J	NA
Acenaphthene	0.027	NA
Acenaphthylene	0.076 JD	NA
Anthracene	0.24 D	NA
Benzo(a)anthracene	0.75 D	NA
Benzo(a)pyrene	1.1	NA
Benzo(g,h,i)perylene	0.37 D	NA
Benzo(k)fluoranthene	0.45 D	NA
Bis(2–ethyl hexyl) phthalate	0.38 J	NA
Chrysene	1.1	NA
Fluoranthene	2.3	NA
Indeno(1,2,3–cd)pyrene	0.35 D	NA
Phenanthrene	0.78 D	NA
Pyrene	2	NA
Pesticides		
2,4'–DDD	0.018 J	NA
2,4'–DDT	0.018	NA
4,4'–DDD	0.073 EJ	NA
4,4'–DDE	0.021	NA
4,4'–DDT	0.068	NA
alpha–Chlordane	0.026	NA
gamma–Chlordane	0.031	NA
Endosulfan II	0.0027J	NA
Metals		
Copper	22.3 D	NA
Lead	40.1 D	NA
Silver	6 D	NA

SD-9

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/25/2008	2/25/2008
VOCs		
Acetone	NA	0.017
SVOCs		
Acenaphthene	0.028 J	NA
Benzo(a)anthracene	0.57	NA
Benzo(a)pyrene	0.79	NA
Benzo(g,h,i)perylene	0.51 J	NA
Benzo(k)fluoranthene	0.44 J	NA
Chrysene	0.79	NA
Fluoranthene	1.6	NA
Indeno(1,2,3–cd)pyrene	0.54 J	NA
Phenanthrene	0.66	NA
Pyrene	1.4	NA
PCBs		NA
Aroclor–1254	0.12	NA
Total PCBs (Aroclors)	0.12	NA
Pesticides		
2,4'–DDT	0.0083 J	NA
4,4'–DDE	0.013	NA
4,4'–DDT	0.014	NA
Methoxychlor	0.033 J	NA
Metals		
Aluminum	42,700	NA
Chromium	55.6 J	NA
Copper	58.3 D	NA
Lead	74.3 D	NA
Nickel	38.1	NA
Silver	7.4	NA
Zinc	224 D	NA

SD-6

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/20/2008	2/20/2008
VOCs		
Acetone	NA	0.13
SVOCs		
2–Methylnaphthalene	0.22 J	NA
Acenaphthene	0.34 J	NA
Fluorene	0.22 J	NA
Naphthalene	1.6 DJ	NA
Pesticides		
2,4'–DDD	0.046 J	NA
4,4'–DDD	0.17	NA
4,4'–DDE	0.18	NA
Metals		
Cadmium	1.1 J	NA
Copper	34.3 J	NA
Lead	146	NA
Nickel	19.3 J	NA
Silver	2.9 J	NA
Zinc	544 J	NA

SD-44

Date	12/4/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	1.2 J B
SVOCs SIM	
Acenaphthene	0.018 J
PCBs (Aroclors)	
Aroclor–1254	0.35
Aroclor–1260	0.064 J
Total PCBs	0.864 J
Pesticides	
2,4'–DDD	0.025 J
2,4'–DDE	0.0092 J P
4,4'–DDD	0.067
4,4'–DDE	0.012 J P
alpha–Chlordane	0.013 J
Dieldrin	0.0034 J P
gamma–Chlordane	0.013 J
Metals	
Arsenic	8.6
Cadmium	3.8
Chromium	40.9
Copper	135
Cyanide	4.5
Lead	160
Mercury	0.89
Nickel	58.3
Zinc	637

SD-35

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	3/3/2008	3/3/2008
VOCs		
Acetone	NA	0.079
SVOCs		
Benzo(a)anthracene	0.63 J	NA
Benzo(a)pyrene	0.69	NA
Benzo(g,h,i)perylene	0.5	NA
Benzo(k)fluoranthene	0.37	NA
Bis(2–ethyl hexyl) phthalate	0.58 J	NA
Chrysene	0.8 J	NA
Fluoranthene	1.5 J	NA
Indeno(1,2,3–cd)pyrene	0.46	NA
Phenanthrene	0.64 J	NA
Pyrene	1.3 J	NA
Pesticides		
2,4'–DDD	0.011	NA
4,4'–DDD	0.024	NA
4,4'–DDE	0.006	NA
Endosulfan I	0.0099 J	NA
Endosulfan II	0.019 J	NA
Metals		
Chromium	26.5	NA
Copper	21.1	NA
Cyanide	0.37 J	NA
Lead	62.9	NA
Silver	3.2	NA
Zinc	128	NA

SD-36

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/27/2008	2/27/2008
VOCs		
Acetone	NA	0.04
SVOCs		
Acenaphthene	0.1 EJ	NA
Acenaphthylene	0.12 EJ	NA
Anthracene	0.42 D	NA
Benzo(a)anthracene	2.1	NA
Benzo(a)pyrene	2.6	NA
Benzo(g,h,i)perylene	0.49 D	NA
Benzo(k)fluoranthene	0.63 D	NA
Chrysene	2.5	NA
Fluoranthene	5.1	NA
Indeno(1,2,3–cd)pyrene	0.54 D	NA
Phenanthrene	2.5	NA
Pyrene	4.4	NA
Pesticides		
4,4'–DDE	0.0071	NA
alpha–Chlordane	0.01 J	NA
Endosulfan I	0.0036 JN	NA
Endrin	0.0068	NA
gamma–BHC (Lindane)	0.005 J	NA
gamma–Chlordane	0.011	NA
Metals		
Copper	32.7 D	NA
Cyanide	0.19 J	NA
Silver	6.9 D	NA
Zinc	125 D	NA

SD-22

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	3/3/2008	3/3/2008
VOCs		
2–Butanone	NA	0.043
Acetone	NA	0.078
PCBs		
Aroclor–1254	0.082 J	NA
Total PCBs (Aroclors)	0.082 J	NA
Pesticides		
2,4'–DDD	0.0088 J	NA
4,4'–DDD	0.012 J	NA
4,4'–DDE	0.006 J	NA
Metals		
Aluminum	36,900	NA
Cadmium	1.4 J	NA
Chromium	40.4	NA
Copper	71.8	NA
Cyanide	0.67 J	NA
Lead	150	NA
Mercury	0.46 J	NA
Nickel	24.3 J	NA
Silver	2.4 J	NA
Zinc	293	NA

SD-23

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/29/2008	2/29/2008
VOCs		
2–Butanone	NA	0.65
Acetone	NA	2
PCBs		
Aroclor–1254	0.16 J	NA
Total PCBs (Aroclors)	0.16 J	NA
Pesticides		
4,4'–DDD	0.017 J	NA
4,4'–DDE	0.0095 J	NA
Endosulfan II	0.0042 J	NA
Metals		
Arsenic	12.2	NA
Cadmium	3.4 J	NA
Copper	102	NA
Cyanide	0.71 J	NA
Lead	242	NA
Mercury	0.84 J	NA
Nickel	35.6 J	NA
Silver	13.7	NA
Zinc	660	NA

SD-43

Date	12/8/2014
Pesticides	
2,4'–DDD	0.1 (0.091 D)
2,4'–DDE	0.023 P (0.022 J P D)
4,4'–DDD	0.43 E (0.39 D)
4,4'–DDE	0.19 (0.16 D)
Metals	
Aluminum	29,100 E
Arsenic	6.2
Chromium	26.2 E
Copper	30.7 E
Cyanide	0.33 J
Lead	50.4

SD-7

Depth(Feet)	(0 – 0.5)
Date	2/25/2008
Metals	
Silver	4 D

SD-8

Depth(Feet)	(0 – 0.5)
Date	2/25/2008
Metals	
Silver	3.8 D

SD-34

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/27/2008	2/27/2008
VOCs		
Acetone	NA	0.04
Pesticides		
4,4'–DDE	0.0092	NA
Metals		
Aluminum	42,600	NA
Arsenic	10.2	NA
Chromium	42.3 J	NA
Copper	28.3	NA
Lead	116	NA
Mercury	0.32	NA
Nickel	22.9	NA
Zinc	135	NA

SD-10

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/25/2008	2/25/2008
VOCs		
Acetone	NA	0.019
SVOCs		
Acenaphthylene	0.088 D	NA
Benzo(a)anthracene	1.4	NA
Benzo(a)pyrene	1.1	NA
Benzo(g,h,i)perylene	0.41	NA
Benzo(k)fluoranthene	0.33	NA
Chrysene	1.4	NA
Fluoranthene	1.6	NA
Indeno(1,2,3–cd)pyrene	0.41	NA
Pyrene	2.2 J	NA
Metals		
Silver	3.5 D	NA

SD-42

Date	12/3/2014
PCBs (Aroclors)	
Aroclor–1254	0.12
Aroclor–1260	0.042 J
Total PCBs	0.332 J
Metals	
Cadmium	3.7
Copper	74.3
Cyanide	3.7
Lead	42.4
Mercury	0.77
Zinc	247

SD-4

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/20/2008	2/20/2008
VOCs		
Acetone	NA	0.017
SVOCs		
Phenol	3.3 J	NA
Pesticides		
4,4'–DDE	0.006 J	NA
beta–BHC	0.0079 J	NA
Metals		
Arsenic	21.7	NA
Copper	40.3	NA
Lead	293	NA
Manganese	715 J	NA
Nickel	23.3 J	NA
Silver	14.1	NA
Zinc	300 J	NA

SD-11

Depth(Feet)	(0 – 0.5)
Date	2/21/2008
Metals	
Silver	1.3 J

SD-12

Depth(Feet)	(0.5 – 1.0)
Date	2/21/2008
VOCs	
Acetone	0.021

SD-34_

Date	12/3/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	1 J B (0.42 J)
SVOCs SIM	
Acenaphthylene	0.028 J
Benzo(a)pyrene	0.46
Benzo(g,h,i)perylene	0.54
Benzo(k)fluoranthene	0.48
Chrysene	0.57
Dibenz(a,h)anthracene	0.17
Indeno(1,2,3–cd)pyrene	0.47
Pyrene	0.85
PCBs (Aroclors)	
Aroclor–1254	0.17 J P
Aroclor–1260	0.047 J
Total PCBs	0.217 J P
Pesticides	
2,4'–DDE	0.0074 J P
4,4'–DDD	0.01 J
4,4'–DDE	0.014 J
alpha–Chlordane	0.05
Dieldrin	0.0093 J P
gamma–Chlordane	0.024 P
Heptachlor	0.001 J P B
Metals	
Arsenic	8.8
Cadmium	4.6
Copper	91.9
Cyanide	0.72
Lead	242
Mercury	0.53
Nickel	30.2
Zinc	807

SD-13

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/21/2008	2/21/2008
VOCs		
Acetone	NA	0.029
SVOCs		
Acenaphthene	0.017 J	NA
Benzo(a)anthracene	0.34 J	NA
Fluoranthene	0.85 J	NA
Phenanthrene	0.6 J	NA
Pyrene	0.68 J	NA
Metals		
Copper	16.6	NA
Silver	2.3	NA

SD-5

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/20/2008	2/20/2008
VOCs		
Acetone	NA	0.032
Metals		
Arsenic	6.2	NA
Copper	18.1	NA
Cyanide	0.23 J	NA
Lead	142	NA
Mercury	0.39	NA
Silver	3.2 J	NA

SD-40

Date	12/3/2014
SVOCs	
2–Methylnaphthalene	0.079 J B
Bis(2–ethyl hexyl) phthalate	0.13 J B (0.32 J)
SVOCs SIM	
Acenaphthene	0.017 J
Acenaphthylene	0.082 J
Benzo(a)anthracene	0.52
Benzo(a)pyrene	0.82
Benzo(g,h,i)perylene	1.3
Benzo(k)fluoranthene	0.76
Chrysene	0.63
Dibenz(a,h)anthracene	0.37
Indeno(1,2,3–cd)pyrene	1.2
Pyrene	0.76
PCBs (Aroclors)	
Aroclor–1254	0.42 P
Aroclor–1260	0.073 J
Total PCBs	0.566 P
Pesticides	
2,4'–DDD	0.015 P
2,4'–DDE	0.01 P
4,4'–DDD	0.052
4,4'–DDE	0.0051 J P
alpha–Chlordane	0.011 P
gamma–Chlordane	0.013
Metals	
Copper	39.8
Cyanide	0.26 J
Lead	360
Mercury	0.28 J
Zinc	172

SD-1

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/18/2008	2/18/2008
VOCs		
2–Butanone	NA	0.07 J
Acetone	NA	0.3
Metals		
Aluminum	48,000	NA
Cadmium	7.7 J	NA
Chromium	85.2 J	NA
Copper	410	NA
Lead	217	NA
Manganese	3,330 J	NA
Mercury	0.55 J	NA
Nickel	93.4 J	NA
Silver	10.1 J	NA
Zinc	2,720 J	NA

SD-14

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/21/2008	2/21/2008
VOCs		
Acetone	NA	0.015
Pesticides		
4,4'–DDE	0.01 J	NA
Aldrin	0.0033 J	NA
gamma–Chlordane	0.0084 J	NA
Metals		
Aluminum	28,700	NA
Chromium	42.4 J	NA
Copper	57.3	NA
Cyanide	0.44 J	NA
Manganese	1,240 J	NA
Nickel	24.3	NA
Silver	2.1 J	NA
Zinc	192 J	NA

SD-16

Depth(Feet)	(0.5 – 1.0)
Date	2/20/2008
VOCs	
Acetone	0.016

SD-15

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/21/2008	2/21/2008
VOCs		
Acetone	NA	0.044
Pesticides		
4,4'–DDE	0.016 J	NA
gamma–Chlordane	0.0092 J	NA
Metals		
Arsenic	6.4	NA
Chromium	41.4 J	NA
Copper	69.7	NA
Lead	64.3	NA
Manganese	778 J	NA
Nickel	38.9	NA
Silver	6.7	NA
Zinc	255 J	NA

SD-2

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/19/2008	2/19/2008
VOCs		
2–Butanone	NA	0.12 [0.07]
Acetone	NA	0.05 [0.26]
SVOCs		
2–Methylnaphthalene	0.34 J [0.089 J]	NA
Acenaphthene	0.13 UJ [0.066 J]	NA
Acenaphthylene	0.26 J [0.11 J]	NA
Anthracene	0.29 J [0.13 J]	NA
Benzo(a)anthracene	1.2 J [0.42 J]	NA
Benzo(a)pyrene	1.7 DJ [0.64 J]	NA
Benzo(g,h,i)perylene	1.2 J [0.42 J]	NA
Benzo(k)fluoranthene	0.79 J [0.31 J]	NA
Chrysene	1.4 DJ [0.54 J]	NA
Fluoranthene	1.9 DJ [0.57 J]	NA
Indeno(1,2,3–cd)pyrene	1.1 J [0.42 J]	NA
Naphthalene	0.2 J [0.071 UJ]	NA
Phenanthrene	1 J [0.31 J]	NA
Pyrene	2.3 DJ [0.81 EJ]	NA
PCBs		
Aroclor–1254	0.35 J [0.092 J]	NA
Total PCBs (Aroclors)	0.35 J [0.092 J]	NA
Pesticides		
4,4'–DDD	0.072 J [0.21 U]	NA
4,4'–DDE	0.38 U [0.017 J]	NA
beta–BHC	0.033 J [0.11 U]	NA
Endosulfan II	0.024 J [0.21 U]	NA
Metals		
Aluminum	30,900 J [8,990 J]	NA
Cadmium	5.9 J [2.5 J]	NA
Chromium	57.9 J [17.6 J]	NA
Copper	295 [96.6]	NA
Lead	2,750 J [907 J]	NA
Manganese	2,790 J [749 J]	NA
Mercury	2.6 J [1.2 J]	NA
Nickel	82 J [39 J]	NA
Silver	66.4 [32.5]	NA
Zinc	2,560 J [1,680 J]	NA

SD-3

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/19/2008	2/19/2008
VOCs		
2–Butanone	NA	0.23 J
Acetone	NA	0.89
SVOCs		
Dibenz(a,h)anthracene	0.092 J	NA
Pesticides		
4,4'–DDE	0.011 J	NA
gamma–BHC (Lindane)	0.027 J	NA
Metals		
Aluminum	33,800	NA
Cadmium	1.9 J	NA
Chromium	54.2 J	NA
Copper	137	NA
Lead	278	NA
Manganese	747 J	NA
Mercury	0.66 J	NA
Nickel	61.7 J	NA
Silver	8.9 J	NA
Zinc	979 J	NA

SD-29

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/28/2008	2/28/2008
VOCs		
Acetone	NA	0.02
Metals		
Copper	18.1	NA
Cyanide	0.18 J	NA
Lead	59.5	NA
Silver	1.1 J	NA

SD-30

Depth(Feet)	(0 – 0.5)
Date	2/28/2008
Metals	
Silver	1.9

SD-28

Depth(Feet)	(0.5 – 1.0)
Date	2/21/2008
VOCs	
2–Butanone	0.13 J
Acetone	0.29

SD-36_

Date	12/5/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.36 J
PCBs (Aroclors)	
Aroclor–1260	0.039 J
Total PCBs	0.082 J P
Pesticides	
4,4'–DDE	0.0086 J
Dieldrin	0.0031 J
Heptachlor	0.00095 J P B
Metals	
Arsenic	11.6
Cadmium	3.4
Chromium	39.8
Copper	118
Cyanide	0.47
Lead	294
Mercury	1.0
Nickel	34.1
Zinc	541

SD-27

Depth(Feet)	(0 – 0.5)
Date	2/29/2008
SVOCs	
4–Methylphenol	0.077 J [0.46 U]
Metals	
Cadmium	0.63 J [0.56 J]
Copper	23.8 [28.7]

SD-35_

Date	12/5/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.32 J B (0.41 J)
PCBs (Aroclors)	
Aroclor–1254	0.082 J P
Aroclor–1260	0.058 J
Total PCBs	0.16 J P
Pesticides	
4,4'–DDD	0.022
4,4'–DDE	0.013 J
Heptachlor	0.0014 J P B
Metals	
Arsenic	8.2
Cadmium	2.6
Copper	79.9
Cyanide	0.74
Lead	167
Mercury	0.78
Nickel	22.0
Zinc	365

SD-26

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/28/2008	2/28/2008
VOCs		
2–Butanone	NA	0.14 J
Acetone	NA	0.32
SVOCs		
Acenaphthylene	0.052 J	NA
Chrysene	0.35	NA
Fluoranthene	0.76	NA
Pyrene	0.82	NA
Pesticides		
Endosulfan II	0.0023 J	NA
Heptachlor	0.0063 JP	NA
Metals		
Copper	19.1 J	NA
Mercury	0.26 J	NA

SD-37

Date	12/5/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.24 J B [0.2 J]
PCBs (Aroclors)	
Aroclor–1260	0.026 J [0.024 J]
Pesticides	
Heptachlor	0.00058 J P B [0.00084 J P B]
Metals	
Arsenic	4.2 [6.2]
Cadmium	1.4 [1.6]
Copper	37.4 [45.2]
Cyanide	0.43 [0.55]
Lead	90.9 [74.0]
Mercury	0.42 [0.21]
Nickel	12.4 [17.5]
Zinc	185 [226]

SD-25

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/29/2008	2/29/2008
VOCs		
2–Butanone	NA	0.043 J
Acetone	NA	0.081
SVOCs		
4–Methylphenol	0.66 J	NA
Pesticides		
4,4'–DDE	0.0052 J	NA
Metals		
Arsenic	9.1 J	NA
Cadmium	1.9 J	NA
Chromium	26.7	NA
Copper	61.3	NA
Lead	117	NA
Mercury	0.41 J	NA
Nickel	23.1 J	NA
Silver	2.7 J	NA
Zinc	333	NA

SD-39

Date	12/8/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.71 J B
SVOCs SIM	
2–Methylnaphthalene	0.31
Acenaphthene	0.041 J
Benzo(a)anthracene	0.44
Benzo(a)pyrene	0.45
Benzo(g,h,i)perylene	0.52
Benzo(k)fluoranthene	0.41
Chrysene	1.1
Dibenz(a,h)anthracene	0.12 J
Fluoranthene	0.8
Indeno(1,2,3–cd)pyrene	0.29
Naphthalene	0.27 B
Phenanthrene	1.1 B
Pyrene	0.8
PCBs (Aroclors)	
Aroclor–1254	0.066 J P
Aroclor–1260	0.026 J
Total PCBs	0.092 J P
Pesticides	
2,4'–DDD	0.18 (0.20 D)
2,4'–DDE	0.01 J P (0.012 J P D)
4,4'–DDD	0.66 E (0.73 D)
4,4'–DDE	0.03 J (0.033 J D)
alpha–Chlordane	0.0073 J (0.0098 J D)
gamma–Chlordane	0.0067 J P (0.0077 J P D)
Heptachlor	0.0011 J P B (0.0015 J P B D)
Metals	
Cadmium	5.5
Copper	145 E
Cyanide	1.6
Lead	1,310
Mercury	0.46
Nickel	34.3 E
Zinc	1,950 E

SD-24

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/29/2008	2/29/2008
VOCs		
2–Butanone	NA	0.35
Acetone	NA	1
Pesticides		
4,4'–DDD	0.011 J	NA
4,4'–DDE	0.0062 J	NA
Endosulfan II	0.0021 J	NA
Metals		
Arsenic	7.9 J	NA
Cadmium	3.2 J	NA
Copper	94.8	NA
Cyanide	0.69 J	NA
Lead	208	NA
Mercury	0.84 J	NA
Nickel	39.8 J	NA
Silver	24.9	NA
Zinc	497	NA

SS-163

Date	1/9/2015
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.66 J B
Metals	
Arsenic	14.5
Cadmium	1.4
Copper	36.2
Lead	81.1
Mercury	0.53
Zinc	156

SD-41

Date	12/4/2014
VOCs	
1,4–Dichlorobenzene	0.49 J B
Methylene Chloride	0.17 J B
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.84 J B
Diethyl phthalate	0.4 J B
SVOCs SIM	
Acenaphthene	0.0089 J
PCBs (Aroclors)	
Aroclor–1254	0.21 J P
Aroclor–1260	0.078 J P
Total PCBs	0.708 J P
Pesticides	
4,4'–DDD	0.019 J
4,4'–DDE	0.023 J
gamma–BHC (Lindane)	0.0045 J
Heptachlor	0.00061 J P B
Metals	
Arsenic	14.2
Cadmium	9.8
Copper	174
Cyanide	1.1
Lead	335
Mercury	0.61
Nickel	50.3
Zinc	1,550

SD-38

Date	12/4/2014
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.37 J B (0.99)
PCBs (Aroclors)	
Aroclor–1254	0.69 P
Aroclor–1260	0.24
Total PCBs	1.3 P
Pesticides	
2,4'–DDE	0.017 J P
4,4'–DDD	0.15
4,4'–DDE	0.029 P
alpha–Chlordane	0.012 P
beta–BHC	0.023 P B
Dieldrin	0.017 J P
gamma–BHC (Lindane)	0.0034 J P
gamma–Chlordane	0.012
Heptachlor	0.0011 J P B
Metals	
Arsenic	9.7
Cadmium	20.2
Chromium	103
Copper	618
Cyanide	4.5
Lead	845
Mercury	4.4
Nickel	70.2
Silver	5.4
Zinc	2,270

SS-162

Date	1/9/2015
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.61 J B (0.52 J B)
PCBs (Aroclors)	
Aroclor–1260	0.018 J
Metals	
Arsenic	8.2
Cadmium	1.2
Copper	49.7
Cyanide	0.13 J
Lead	73.6
Mercury	0.65

SS-164

Date	1/9/2015
SVOCs	
Bis(2–ethyl hexyl) phthalate	0.57 J B (0.54 J B)
PCBs (Aroclors)	
Aroclor–1260	0.025 J
Pesticides	
4,4'–DDE	0.0057 J
Heptachlor	0.00079 J B
Metals	
Arsenic	8.6
Cadmium	1.3
Copper	35.7
Cyanide	0.076 J
Lead	101
Mercury	0.55

SD-21

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	3/3/2008	3/3/2008
VOCs		
2–Butanone	NA	0.2
Acetone	NA	0.29
SVOCs		
4,6–Dinitro–2–methylphenol	0.19 J	NA
4–Methylphenol	0.33 J	NA
Benzo(a)anthracene	0.41 D	NA
Benzo(a)pyrene	0.62 D	NA
Benzo(g,h,i)perylene	0.44 D	NA
Benzo(k)fluoranthene	0.28	NA
Bis(2–ethyl hexyl) phthalate	0.73 J	NA
Chrysene	0.69 D	NA
Fluoranthene	2	NA
Indeno(1,2,3–cd)pyrene	0.32	NA
Pyrene	1.1 D	NA
Pesticides		
4,4'–DDD	0.011 J	NA
4,4'–DDE	0.0079 J	NA
Dieldrin	0.0079 J	NA
Endosulfan I	0.0046 J	NA
Metals		
Aluminum	31,900	NA
Arsenic	33.7	NA
Cadmium	1.8 J	NA
Chromium	58.6	NA
Copper	267	NA
Lead	161	NA
Manganese	1,240	NA
Mercury	0.73 J	NA
Nickel	30.8 J	NA
Silver	5.3 J	NA
Zinc	470	NA

SD-17

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/27/2008	2/27/2008
VOCs		
Acetone	NA	0.031
SVOCs		
Acenaphthene	0.51 D	NA
Anthracene	0.91 D	NA
Benzo(a)anthracene	4.3	NA
Benzo(a)pyrene	4.7	NA
Benzo(g,h,i)perylene	2.1	NA
Benzo(k)fluoranthene	2.7	NA
Chrysene	5	NA
Fluoranthene	10	NA
Fluorene	0.57 D	NA
Indeno(1,2,3–cd)pyrene	2.5	NA
Phenanthrene	6.7	NA
Pyrene	8.8	NA
Pesticides		
4,4'–DDE	0.0073 J	NA
4,4'–DDT	0.01 J	NA
alpha–Chlordane	0.01 J	NA
gamma–BHC (Lindane)	0.0034 JN	NA
gamma–Chlordane	0.0091 JN	NA
Endosulfan I	0.0043 JN	NA
Metals		
Copper	27.1 D	NA
Silver	7.8 D	NA
Zinc	146 D	NA

SD-18

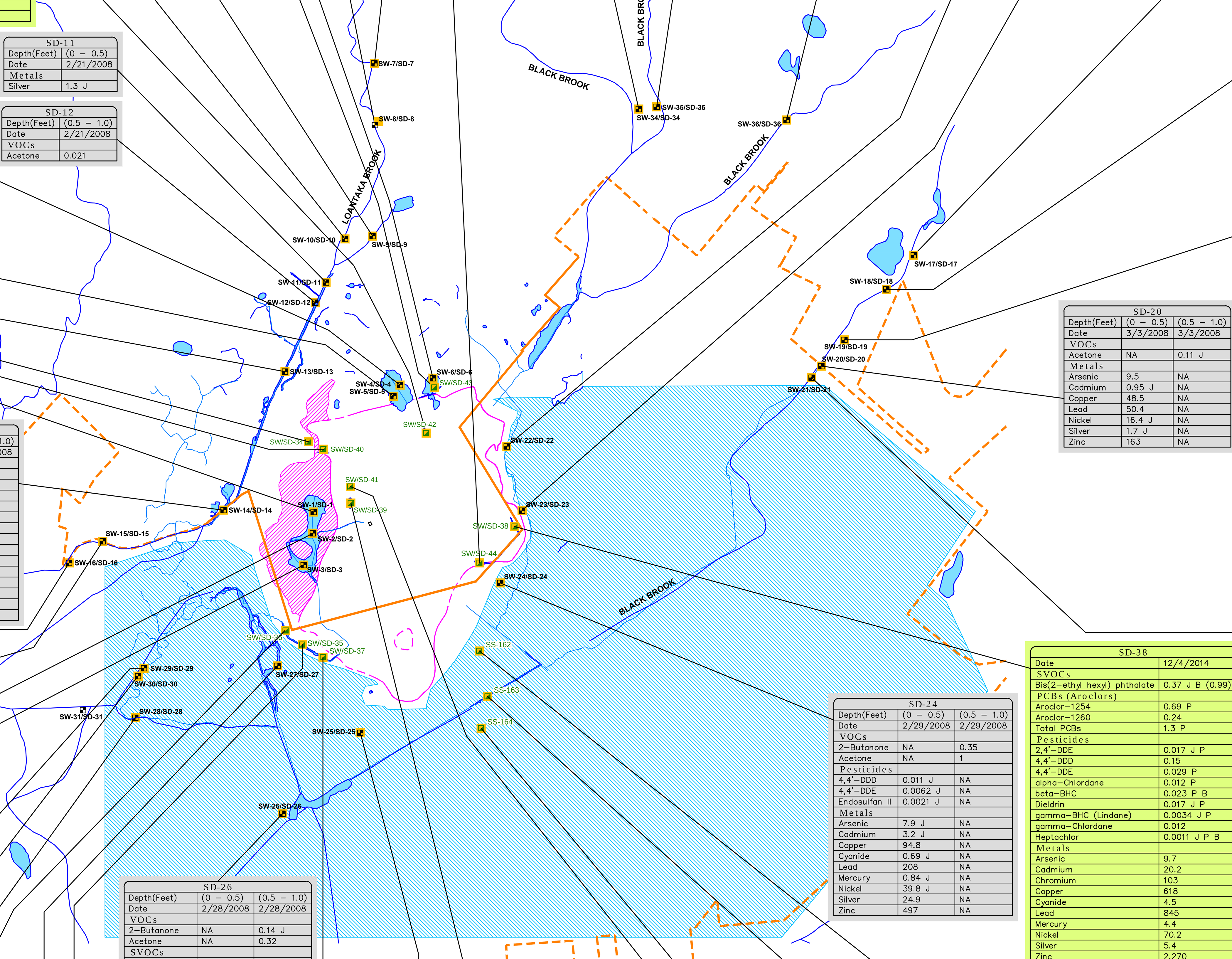
Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/27/2008	2/27/2008
VOCs		
Acetone	NA	0.043
SVOCs		
Acenaphthene	0.25	NA
Anthracene	0.46	NA
Benzo(a)anthracene	1.5	NA
Benzo(a)pyrene	1.7	NA
Benzo(g,h,i)perylene	0.88	NA
Benzo(k)fluoranthene	0.88	NA
Chrysene	1.7	NA
Fluoranthene	3.4	NA
Fluorene	0.25 J	NA
Indeno(1,2,3–cd)pyrene	0.91	NA
Phenanthrene	2.2	NA
Pyrene	2.9	NA
Metals		
Arsenic	6.3	NA
Copper	24.6 D	NA
Silver	6 D	NA

SD-19

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	2/27/2008	2/27/2008
VOCs		
2–Butanone	NA	0.043
Acetone	NA	0.16
SVOCs		
Acenaphthene	0.072	NA
Acenaphthylene	0.094	NA
Anthracene	0.24	NA
Benzo(a)anthracene	1.1 EJ	NA
Benzo(a)pyrene	1.6 J	NA
Benzo(g,h,i)perylene	1.2 J	NA
Benzo(k)fluoranthene	1.1 EJ	NA
Chrysene	1.5 J	NA
Fluoranthene	3.4	NA
Indeno(1,2,3–cd)pyrene	1.2 J	NA
Phenanthrene	1.1 J	NA
Pyrene	2.6	NA
Pesticides		
4,4'–DDE	0.015 J	NA
4,4'–DDT	0.013 J	NA
alpha–Chlordane	0.024 J	NA
Endrin	0.0054 J	NA
gamma–Chlordane	0.019 J	NA
Metals		
Arsenic	42.4	NA
Cadmium	1.7 J	NA
Chromium	40.4 J	NA
Copper	201	NA
Lead	78.6	NA
Manganese	989	NA
Mercury	0.44 J	NA
Nickel	23.8	NA
Silver	5.8	NA
Zinc	335	NA

SD-20

Depth(Feet)	(0 – 0.5)	(0.5 – 1.0)
Date	3/3/2008	3/3/2008
VOCs		
Acetone	NA	0.11 J
Metals		
Arsenic	9.5	NA
Cadmium	0.95 J	NA
Copper	48.5	NA
Lead	50.4	NA
Nickel	16.4 J	NA
Silver	1.7 J	NA
Zinc	163	NA



LEGEND:

- OPEN WATER
- EDGE OF LANDFILLED WASTES OBSERVED DURING TEST PIT ACTIVITIES (DASHED WHERE APPROXIMATE)
- GREAT SWAMP NATIONAL WILDLIFE REFUGE PROPERTY BOUNDARY (FROM CHATHAM TOWNSHIP TAX MAP)
- GREAT SWAMP NATIONAL WILDLIFE REFUGE PROPERTY BOUNDARY (APPROXIMATE)
- SURFACE–WATER/SEDIMENT SAMPLING LOCATION
- DATA GAP SURFACEWATER/SEDIMENT SAMPLING LOCATION
- 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
- SEDIMENT SAMPLING LOCATION WITH DETECTED CONCENTRATIONS GREATER THAN ECOLOGICALLY–BASED SCREENING LEVELS
- DATA GAP SAMPLING LOCATION
- SAMPLES COLLECTED PRIOR TO DATA GAP SAMPLING

NJDEP Ecologically-Based Screening Levels

Constituent	Value
VOCs	
1,4–Dichlorobenzene	0.318
Methylene Chloride	0.159
SVOCs	
2,4–Dinitrotoluene	0.0144
2–Methylnaphthalene	0.07
Acenaphthene	0.016
Acenaphthylene	0.044
Anthracene	0.22
Benzo(a)anthracene	0.32
Benzo(a)pyrene	0.37
Benzo(g,h,i)perylene	0.17
Benzo(k)fluoranthene	0.24
Bis(2–ethyl hexyl) phthalate	0.182
Chrysene	0.34
Dibenz(a,h)anthracene	0.06
Diethyl phthalate	0.295
Fluoranthene	0.75
Fluorene	0.19
Indeno(1,2,3–cd)pyrene	0.2
Naphthalene	0.16
Phenanthrene	0.56
Phenol	0.0491
Pyrene	0.49
Total PAH	4
PCBs	
Aroclor–1254	0.06
Aroclor–1260	0.005
Total PCBs (Aroclors)	0.07
Pesticides	
2,4'–DDD	0.008
2,4'–DDE	0.005
2,4'–DDT	0.008
4,4'–DDD	0.008
4,4'–DDE	0.005
4,4'–DDT	0.008
Aldrin	0.002
alpha–Chlordane	0.007
beta–BHC	0.005
Dieldrin	0.002
Endrin	0.003
gamma–BHC (Lindane)	0.003
gamma–Chlordane	0.007
Heptachlor	0.0006
Methoxychlor	0.0136
Metals	
Aluminum	25,500
Arsenic	6
Cadmium	0.6
Chromium	26
Copper	16
Cyanide	0.0001
Lead	31
Manganese	630
Mercury	0.2
Nickel	16
Silver	1
Zinc	120

DATA NOTES:

UNITS = MILLIGRAMS PER KILOGRAM

[] = DUPLICATE SAMPLE

() = RESULTS OF SECONDARY ANALYSIS

NA = NOT ANALYZED

PCBS = POLYCHLORINATED BIPHENYLS

SVOCS = SEMIVOLATILE ORGANIC COMPOUNDS

B = FOR ORGANICS THE ANALYTE WAS FOUND IN THE ASSOCIATED BLANK, AS WELL AS THE SAMPLE.

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

E = FOR ORGANICS THE COMPOUND WAS QUANTITATED ABOVE THE CALIBRATION RANGE.

E = FOR INORGANICS THE REPORTED VALUE IS ESTIMATED DUE TO INTERFERENCE RESULTING FROM SERIAL DILUTIONS.

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

J = FOR INORGANICS THE SAMPLE RESULT IS GREATER THAN THE MDL BUT BELOW THE CRDL.

JN = FOR ORGANICS 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.

P = DUAL COLUMN ANALYSIS RESULTED IN GREATER THAN 25% DIFFERENCE FOR DETECTED CONCENTRATIONS BETWEEN THE TWO COLUMNS.

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

UJ = THE COMPOUND WAS NOT DETECTED ABOVE THE REPORTED SAMPLE QUANTITATION LIMIT. HOWEVER, THE REPORTED LIMIT IS APPROXIMATE AND MAY OR MAY NOT REPRESENT THE ACTUAL LIMIT OF QUANTITATION.

NOTES:

1. ANALYTICAL RESULTS GIVEN IN MILLIGRAMS PER KILOGRAM FOR SEDIMENT SAMPLES WITH DETECTED CONCENTRATIONS GREATER THAN ECOLOGICALLY–BASED SCREENING LEVELS (OBTAINED FROM NJDEP'S ECOLOGICAL SCREENING CRITERIA TABLE, DATED MARCH 2009).
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. THE EDGE OF THE LANDFILL WAS REFINED BASED ON OBSERVATIONS PRESENT IN THE FIELD CHANGE REQUEST (FCR–02) APPROVED BY USEPA ON DECEMBER 29, 2014.
3. 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.
4. DATA GAP SEDIMENT SAMPLES WERE COLLECTED FROM A DEPTH OF 0.5 – 1.0 FEET WITH EXCEPTION OF THE VOC FRACTION WHICH WAS COLLECTED FROM A DEPTH OF 0 – 0.5 FEET.
5. DATA GAP ANALYTICAL RESULTS HAVE NOT BEEN VALIDATED.

SOURCES:

1. BASEMAP FROM JAMES M. STEWART INC., LAND SURVEYORS, PHILADELPHIA, PA., (ELECTRONIC FILE: 292406.DWG DATED: 6/30/06)
2. AERIAL IMAGE COURTESY OF NJ IMAGE WAREHOUSE (HTTP://NJGIN.NJ.GOV/OIT_IW/INDEX.JSP)

0 800' 1600'
GRAPHIC SCALE

ROLLING KNOLLS LANDFILL SUPERFUND SITE
CHATHAM, NEW JERSEY

DATA GAP INTERIM REPORT

SEDIMENT ANALYTICAL RESULTS GREATER THAN NJDEP ECOLOGICALLY-BASED SCREENING LEVELS

ARCADIS

FIGURE 1

CITY: CRANBURY-NJ DIV/GROUP: ENVCAD DB: TFATTO LD:T.FATTO PIC: PM: L.MARTINEAU TM:S.WALLS LYR: ON=*;OFF=*REF*
C:\ENVCAD\CRANBURY\ACT\B0033203\0004\00004\USEPA_REPORT\B0033203C06.DWG LAYOUT: 1 SAVED: 2/17/2015 10:18 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/17/2015 10:19 AM BY: FATTO, TRACEY
XREFS: 33203X01 B0033203X16 B0033203X15 B0033203X0E IMAGES: PROJECTNAME: ----