Table 1. Contaminants of Potential Concern for the Geddes Brook/Ninemile Creek HHRA

Contaminant	Fish Fillets	Channel Sediments	Floodplain Soils/Sediments	Surface Water
Metals/Inorganics				
Aluminum		•	•	
Antimony		•	•	•
Arsenic (inorganic)	•	•	•	
Cadmium	•			•
Chromium		•	•	•
Copper	•			
Cyanide		•	•	
Iron	•	•	•	
Lead		•	•	•
Manganese		•	•	•
Methylmercury	•	•	•	•
Mercury (inorganic)	NA [1]	•	•	•
Nickel	•			
Selenium	•	•		
Thallium		•	•	•
Vanadium	•			
Zinc	•			
Volatile Organic Compounds				
No VOC COPCs identified in any Geddes Brook/Ninemile Creek medium				
Semivolatile Organic Compounds				
3-Nitroaniline			•	
N-nitroso-di-n-propylamine			•	
Hexachlorobenzene	•	•	•	
Polycyclic Aromatic Hydrocarbons				
Benz(a)anthracene		•	•	
Benzo(a)pyrene		•	•	
Benzo(b)fluoranthene		•	•	
Benzo(g,h,i)perylene			•	
Benzo(k)fluoranthene			•	
Dibenz(a,h)anthracene		•	•	
Indeno(1,2,3-cd)pyrene		•	•	
Phenanthrene		•	•	
Pesticides				
4,4-DDD	•			
4,4'-DDE	•			
4,4'-DDT	•			
Dieldrin	•	•		
Heptachlor Epoxide	•	•		
Polychlorinated Biphenyls				
Aroclor 1248	•		•	
Aroclor 1254	•	•	•	
Aroclor 1260	•	•	•	
Aroclor 1268		•	•	
Total PCBs (sum)	•	•	•	
Dioxins/Furans				
2,3,7,8-TCDD TEQ	•	•	•	•

Notes: • - Specified contaminant identified as a contaminant of potential concern (COPC).
NA - This analyte or parameter group not analyzed in specified exposure area.
Contaminants not listed were not identified as COPCs in any site medium.
[1] - All mercury in fish addressed as methylmercury.

Table 2. Contaminants and Stressors of Concern Selected for Geddes Brook/Ninemile Creek Media in the BERA

Contaminant	Surface Water	Channel Sediments	Floodplain Soils/Sediments	Plants	Fish
Metals/Inorganics					
Arsenic		•	•	•	•
Barium	•				
Cadmium			•		
Chromium			•	•	
Copper		•	•		
Iron			•		
Lead	•	•	•	•	
Manganese	•	•	•		
Mercury/Methylmercury	•	•	•	•	•
Nickel		•	•		
Selenium			•	•	•
Thallium			•	•	
Vanadium			•	•	
Zinc		•	•	•	•
Volatile Organic Compounds					
Dichlorobenzenes (Sum)		•			
Carbon disulfide		•			
Methylene chloride		•			
Semivolatile Organic Compounds					
Bis(2-ethylhexyl)phthalate		•			
Hexachlorobenzene		•	•		
2-Methylphenol		•			
Phenol		•	•		
Polycyclic aromatic hydrocarbons (total)		•	•		
Pesticides/Polychlorinated Biphenyls					
Chlordane isomers		•	•		
DDT and metabolites		•	•		•
Dieldrin			•		
Endrin			•		
Endosulfans (sum)		•			
Heptachlor and heptachlor epoxide		•	•		
Polychlorinated biphenyls (total)		•	•		•
Dioxins/Furans					
PCDD/PCDFs (TEQ)			•		•
Other Substances/Stressors					
Calcite		•			
Chloride	•				
Sodium	•				
Total dissolved solids	•				

Notes: • – Contaminants and stressors of concern assessed in the BERA for the specific media listed.

Table 3. Summary of Channel Sediment Data for Select Parameters from Geddes Brook and Ninemile Creek (1998, 2001)

	Upper Ninemile Creek		Lower Ninemile Creek		Upper Geddes Brook		Lower Geddes Brook	
Parameter	**Maximum Detection**	**Average Detection**	**Maximum Detection**	**Average Detection**	**Maximum Detection**	**Average Detection**	**Maximum Detection**	**Average Detection**
0 to 15 cm								
Arsenic (mg/kg)	5.80	5.20	23.7	6.12	3.30	2.55	6.60	4.44
Benzo(a)pyrene (µg/kg)	180	118	1,100	328	2,100	1,550	2,900	720
Hexachlorobenzene (µg/kg)	ND	ND	2,450	193	3.10	3.10	795	253
Lead (mg/kg)	23.5	18.0	194	39.7	30.3	30.3	114	36.4
Mercury (mg/kg)	0.15	0.10	21.1	3.08	0.36	0.20	15.7	2.62
Methylmercury (µg/kg)	1.89	1.24	6.26	2.48	2.01	1.60	4.83	2.91
Total PAHs (µg/kg)	2,040	1,379	13,981	3,645	24,469	18,009	42,130	8,717
Total PCBs (µg/kg)	ND	ND	1,350	166	ND	ND	150	111
Phenol (µg/kg)	ND	ND	220	142	ND	ND	250	195
15 to 45 cm								
Arsenic (mg/kg)	4.20	4.20	33.2	7.09	3.40	3.40	14.6	6.26
Benzo(a)pyrene (µg/kg)	ND	ND	2,800	460	360	360	480	283
Hexachlorobenzene (µg/kg)	ND	ND	7,100	807	ND	ND	5,500	925
Lead (mg/kg)	9.90	9.90	532	50	35.2	35.2	200	41.4
Mercury (mg/kg)	0.03	0.03	68.6	6.58	0.32	0.27	5.30	1.57
Methylmercury (µg/kg)	0.17	0.17	9.01	2.82	0.59	0.59	4.60	1.37
Total PAHs (µg/kg)	ND	ND	33,915	4,420	4,083	4,083	6,030	2,929
Total PCBs (µg/kg)	ND	ND	1,200	210	52.0	52.0	400	250
Phenol (µg/kg)	ND	ND	1,700	499	ND	ND	120	92.5
45 to 75 cm								
Arsenic (mg/kg)	NA	NA	101	10.1	2.70	2.70	8.30	5.76
Benzo(a)pyrene (µg/kg)	NA	NA	1,600	374	150	150	1,400	557
Hexachlorobenzene (µg/kg)	NA	NA	26,000	2,168	ND	ND	17,500	5,322
Lead (mg/kg)	NA	NA	388	45.8	25.1	25.1	371	127
Mercury (mg/kg)	NA	NA	118	5.33	0.37	0.30	79.0	16.7
Methylmercury (µg/kg)	NA	NA	20.1	4.80	0.27	0.27	8.82	3.04
Total PAHs (µg/kg)	NA	NA	23,685	4,071	1,787	1,787	12,620	5,575
Total PCBs (µg/kg)	NA	NA	2,100	258	37	37	4,500	1,580
Phenol (µg/kg)	NA	NA	940	505	ND	ND	ND	ND
75 to 105 cm								
Arsenic (mg/kg)	NA	NA	101	14.6	3.60	3.60	22.7	10.2
Benzo(a)pyrene (µg/kg)	NA	NA	1,200	251	82	82	3,900	1,123
Hexachlorobenzene (µg/kg)	NA	NA	1,050	372	ND	ND	107,500	27,386
Lead (mg/kg)	NA	NA	374	50.9	14.8	14.8	144	57.6
Mercury (mg/kg)	NA	NA	28.3	3.09	0.42	0.26	3.76	2.79
Methylmercury (µg/kg)	NA	NA	14.9	2.94	0.35	0.35	3.51	2.34
Total PAHs (µg/kg)	NA	NA	17,661	3,296	943	943	55,180	15,785
Total PCBs (µg/kg)	NA	NA	2,500	441	27.5	27.5	133	133
Phenol (µg/kg)	NA	NA	700	401	ND	ND	ND	ND
Below 105 cm								
Arsenic (mg/kg)	NA	NA	37.6	7.69	NA	NA	10.3	9.35
Benzo(a)pyrene (µg/kg)	NA	NA	1,100	418	NA	NA	2,800	1,600
Hexachlorobenzene (µg/kg)	NA	NA	435	228	NA	NA	140,000	73,125
Lead (mg/kg)	NA	NA	321	44.1	NA	NA	115	86.7
Mercury (mg/kg)	NA	NA	30.2	1.57	NA	NA	10.4	8.85
Methylmercury (µg/kg)	NA	NA	4.36	1.10	NA	NA	3.14	3.09
Total PAHs (µg/kg)	NA	NA	15,654	4,867	NA	NA	41,860	23,621
Total PCBs (µg/kg)	NA	NA	475	167	NA	NA	ND	ND
Phenol (µg/kg)	NA	NA	780	285	NA	NA	ND	ND

Notes:
1. NA=Not analyzed
2. ND=Not detected
3. The sediment samples outside of the site limits, as defined in this ROD, are not included in these statistics. These include NM1, NM2, TN-17 and TN-18, which are located upstream of Amboy Dam in upper Ninemile Creek, and GB1, which is located in upper Geddes Brook. These data can be found in the RI report, and the statistics reported for upper Ninemile Creek and upper Geddes Brook in Appendix I of the RI include the data from these stations.

Table 4. Summary of Floodplain Soil/Sediment Data for Select Parameters from Geddes Brook and Ninemile Creek (1998, 2000, 2001, 2002, and 2007)

	Lower Ninemile Creek			Islands in Lower Ninemile Creek			Lower Geddes Brook			Geddes Brook IRM Sampling		
Parameter	Depth Interval (cm)	Maximum Detection	Average Detection	Depth Interval (cm)	Maximum Detection	Average Detection	Depth Interval (cm)	Maximum Detection	Average Detection	Depth Interval (cm)	Maximum Detection	Average Detection
Arsenic (mg/kg)	0 to 15	23.0	5.76	0 to 15	6.40	5.63	0 to 15	7.70	5.85	0 to 15	NA	NA
Benzo(a)pyrene (µg/kg)	0 to 15	14,000	654	0 to 15	320	248	0 to 15	8,000	1,067	0 to 15	780	340
Hexachlorobenzene (µg/kg)	0 to 15	890	91	0 to 15	745	423	0 to 15	1,650	263	0 to 15	880	328
Lead (mg/kg)	0 to 15	466	44.3	0 to 15	42.2	34.4	0 to 15	192	52.5	0 to 15	NA	NA
Mercury (mg/kg)	0 to 15	58.7	2.29	0 to 15	1.90	0.71	0 to 15	14.1	4.33	0 to 15	15.7	3.98
Methylmercury (µg/kg)	0 to 15	27.5	5.83	0 to 15	NA	NA	0 to 15	5.31	4.03	0 to 15	NA	NA
Total PAHs (µg/kg)	0 to 15	173,980	7,756	0 to 15	3,990	3,036	0 to 15	138,363	14,707	0 to 15	8,410	3,738
Total PCBs (µg/kg)	0 to 15	600	70.7	0 to 15	80.0	49.6	0 to 15	450	137	0 to 15	NA	NA
Phenol (µg/kg)	0 to 15	120	91.4	0 to 15	ND	ND	0 to 15	ND	ND	0 to 15	NA	NA
Arsenic (mg/kg)	15 to 30	31.0	5.91	15 to 45	6.00	5.68	15 to 30	8.90	5.82	15 to 30	NA	NA
Benzo(a)pyrene (µg/kg)	15 to 30	20,000	736	15 to 45	400	250	15 to 30	460	282	15 to 30	430	220
Hexachlorobenzene (µg/kg)	15 to 30	1,050	130	15 to 45	165	93	15 to 30	1,360	344	15 to 30	840	394
Lead (mg/kg)	15 to 30	317	36	15 to 45	39.8	35.1	15 to 30	173	50.7	15 to 30	NA	NA
Mercury (mg/kg)	15 to 30	59.5	3.79	15 to 45	4.70	0.99	15 to 30	33.7	11.7	15 to 30	39.1	6.14
Methylmercury (µg/kg)	15 to 30	NA	NA	15 to 45	NA	NA	15 to 30	NA	NA	15 to 30	NA	NA
Total PAHs (µg/kg)	15 to 30	283,060	8,693	15 to 45	4,590	2,976	15 to 30	4,992	2,947	15 to 30	4,720	2,370
Total PCBs (µg/kg)	15 to 30	1,050	143	15 to 45	140	59.1	15 to 30	800	462	15 to 30	NA	NA
Phenol (µg/kg)	15 to 30	66	55	15 to 45	ND	ND	15 to 30	ND	ND	15 to 30	NA	NA
Arsenic (mg/kg)	30 to 60	NA	NA	45 to 75	9.40	6.40	30 to 60	NA	NA	30 to 60	NA	NA
Benzo(a)pyrene (µg/kg)	30 to 60	1,700	298	45 to 75	270	270	30 to 60	NA	NA	30 to 60	4,000	690
Hexachlorobenzene (µg/kg)	30 to 60	6,400	1,006	45 to 75	20	20	30 to 60	NA	NA	30 to 60	8,100	2,840
Lead (mg/kg)	30 to 60	NA	NA	45 to 75	45.9	27.3	30 to 60	NA	NA	30 to 60	NA	NA
Mercury (mg/kg)	30 to 60	76.9	4.16	45 to 75	0.85	0.32	30 to 60	NA	NA	30 to 60	269	14.2
Methylmercury (µg/kg)	30 to 60	NA	NA	45 to 75	NA	NA	30 to 60	NA	NA	30 to 60	NA	NA
Total PAHs (µg/kg)	30 to 60	18,714	3,208	45 to 75	3,092	3,092	30 to 60	NA	NA	30 to 60	40,700	6,363
Total PCBs (µg/kg)	30 to 60	NA	NA	45 to 75	15	15	30 to 60	NA	NA	30 to 60	NA	NA
Phenol (µg/kg)	30 to 60	NA	NA	45 to 75	ND	ND	30 to 60	NA	NA	30 to 60	NA	NA
Arsenic (mg/kg)	60 to 90	NA	NA	75 to 105	5.40	3.95	60 to 90	NA	NA	60 to 90	NA	NA
Benzo(a)pyrene (µg/kg)	60 to 90	1,500	285	75 to 105	200	200	60 to 90	NA	NA	60 to 90	1,800	696
Hexachlorobenzene (µg/kg)	60 to 90	870	256	75 to 105	2	2	60 to 90	NA	NA	60 to 90	93	93
Lead (mg/kg)	60 to 90	NA	NA	75 to 105	34.3	20.1	60 to 90	NA	NA	60 to 90	NA	NA
Mercury (mg/kg)	60 to 90	43.1	2.71	75 to 105	0.28	0.12	60 to 90	NA	NA	60 to 90	156	7.18
Methylmercury (µg/kg)	60 to 90	NA	NA	75 to 105	NA	NA	60 to 90	NA	NA	60 to 90	NA	NA
Total PAHs (µg/kg)	60 to 90	16,404	2,857	75 to 105	2,832	2,832	60 to 90	NA	NA	60 to 90	17,950	7,012
Total PCBs (µg/kg)	60 to 90	NA	NA	75 to 105	ND	ND	60 to 90	NA	NA	60 to 90	NA	NA
Phenol (µg/kg)	60 to 90	NA	NA	75 to 105	ND	ND	60 to 90	NA	NA	60 to 90	NA	NA

Notes:
1. NA=Not analyzed
2. ND=Not detected
3. The floodplain data for Ninemile Creek upstream of the confluence with Geddes Brook and for Geddes Brook upstream of the West Flume were not included in these statistics because these floodplain areas are not within the site limits. These soil data can be found in the RI report, and statistics for upper Ninemile Creek and upper Geddes Brook are reported in Appendix I of the RI. The data from 2007 are reported in Appendix B of the Supplemental FS (Parsons, 2008a). The summary of the 2007 data provided by Parsons was revised by Earth Tech for NYSDEC.

Table 4 cont.

	2007 Geddes Brook			2007 Ninemile Creek OU-1		
Parameter	**Depth Interval (cm)**	**Maximum Detection**	**Average Detection**	**Depth Interval (cm)**	**Maximum Detection**	**Average Detection**
Arsenic (mg/kg)	0 to 30	13.1	9.81	0 to 30	12.3	6.94
Benzo(a)pyrene (µg/kg)	0 to 30	NA	NA	0 to 30	NA	NA
Hexachlorobenzene (µg/kg)	0 to 30	NA	NA	0 to 30	0.10	0.07
Lead (mg/kg)	0 to 30	NA	NA	0 to 30	NA	NA
Mercury (mg/kg)	0 to 30	36.0	5.72	0 to 30	12.0	2.07
Methylmercury (µg/kg)	0 to 30	NA	NA	0 to 30	NA	NA
Total PAHs (µg/kg)	0 to 30	NA	NA	0 to 30	20.3	5.02
Total PCBs (µg/kg)	0 to 30	NA	NA	0 to 30	NA	NA
Phenol (µg/kg)	0 to 30	NA	NA	0 to 30	NA	NA
Arsenic (mg/kg)	----	----	----	----	----	----
Benzo(a)pyrene (µg/kg)	----	----	----	----	----	----
Hexachlorobenzene (µg/kg)	----	----	----	----	----	----
Lead (mg/kg)	----	----	----	----	----	----
Mercury (mg/kg)	----	----	----	----	----	----
Methylmercury (µg/kg)	----	----	----	----	----	----
Total PAHs (µg/kg)	----	----	----	----	----	----
Total PCBs (µg/kg)	----	----	----	----	----	----
Phenol (µg/kg)	----	----	----	----	----	----
Arsenic (mg/kg)	30 to 60	17.4	6.99	30 to 60	11.1	5.91
Benzo(a)pyrene (µg/kg)	30 to 60	NA	NA	30 to 60	NA	NA
Hexachlorobenzene (µg/kg)	30 to 60	NA	NA	30 to 60	0.05	0.04
Lead (mg/kg)	30 to 60	NA	NA	30 to 60	NA	NA
Mercury (mg/kg)	30 to 60	14.7	3.94	30 to 60	3.60	0.69
Methylmercury (µg/kg)	30 to 60	NA	NA	30 to 60	NA	NA
Total PAHs (µg/kg)	30 to 60	NA	NA	30 to 60	8.25	2.83
Total PCBs (µg/kg)	30 to 60	NA	NA	30 to 60	NA	NA
Phenol (µg/kg)	30 to 60	NA	NA	30 to 60	NA	NA
Arsenic (mg/kg)	60 to 90	7.30	3.58	60 to 90	5.40	3.17
Benzo(a)pyrene (µg/kg)	60 to 90	NA	NA	60 to 90	NA	NA
Hexachlorobenzene (µg/kg)	60 to 90	NA	NA	60 to 90	0.01	0.01
Lead (mg/kg)	60 to 90	NA	NA	60 to 90	NA	NA
Mercury (mg/kg)	60 to 90	11.0	1.48	60 to 90	0.72	0.19
Methylmercury (µg/kg)	60 to 90	NA	NA	60 to 90	NA	NA
Total PAHs (µg/kg)	60 to 90	NA	NA	60 to 90	0.89	0.50
Total PCBs (µg/kg)	60 to 90	NA	NA	60 to 90	NA	NA
Phenol (µg/kg)	60 to 90	NA	NA	60 to 90	NA	NA

Table 5. Summary of Surface Water Data for Select Parameters from Geddes Brook and Ninemile Creek (1998)

Parameter	Upper Ninemile Creek		Lower Ninemile Creek		Upper Geddes Brook		Lower Geddes Brook	
	Maximum Detection	Average Detection	Maximum Detection	Average Detection	Maximum Detection	Average Detection	Maximum Detection	Average Detection
Dissolved Arsenic (µg/L-dis)	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Lead (µg/L-dis)	ND	ND	ND	ND	ND	ND	1.2	1.2
Lead (µg/L)	1.8	1.8	1.7	1.7	ND	ND	1.8	1.8
Dissolved Methylmercury (ng/L-dis)	4.2E-02	4.1E-02	3.2E-02	2.1E-02	4.0E-02	2.9E-02	6.1E-02	3.7E-02
Dissolved Total Mercury (ng/L-dis)	ND	ND	ND	ND	ND	ND	1.4	1.4
Total Mercury (ng/L)	2.3	1.8	27	9.2	2.1	2.1	27	22
Hexachlorobenzene (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND
Phenol (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs (µg/L)	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
1. ND=Not detected
2. Data collected during the GB/NMC RI from the West Flume (Station GB4) and the "Unnamed Creek" (Station GB5), both of which discharge to lower Geddes Brook, are not included in this data summary since these streams are outside of the scope of this remedy.
3. The water samples outside of the site limits, as defined in this ROD, are not included in these statistics. These include NM1 and NM2 upstream of Amboy Dam in upper Ninemile Creek, and GB1 in upper Geddes Brook. These data can be found in the RI report, and the statistics reported for upper Ninemile Creek and upper Geddes Brook in Appendix I of the RI include the data from these stations.

Table 6. Concentrations of Select Contaminants in Geddes Brook/Ninemile Creek Fish

Contaminants (only contaminants considered risk drivers are shown)	Units (wet weight)	Target Tissue Concentration Range (mg/kg) [2]		Fish Concentrations (mg/kg) Data from 1990, 1998, 2000, and 2002		
				Arithmetic Mean	95% UCL[4]	Max Detection
Human Health Exposure - Fish Fillets		**RME**				
Mercury (as methylmercury) [5]	mg/kg	0.6		0.55	0.73	2.5
Total PCBs [6]	mg/kg	0.011 to 1.1		0.17	0.45	1.9
PCDD/PCDFs - TEQ as 2,3,7,8-TCDD [7]	mg/kg	1.0E-07 to 1.0E-05		2.3E-06	5.9E-06	1.8E-05
Ecological Exposure - Small Fish (3 to 18 cm) Whole Fish [1, 3]		**NOAEL**	**LOAEL**			
Mercury (as methylmercury)	mg/kg	0.009	0.187	0.28	0.85	0.85
Ecological Exposure - Large Fish (18 to 60 cm) Whole Fish [1, 3]		**NOAEL**	**LOAEL**			
Mercury (as methylmercury)	mg/kg	0.014	0.345	0.56	1.9	1.9

Sources:
-- Human health exposure data (fish fillets) were taken from Table 3.1 of Appendix B of the Geddes Brook/Ninemile Creek Human Health Risk Assessment (HHRA) report.
-- Ecological exposure data (whole fish) were taken from Table I-2 of the Geddes Brook/Ninemile Creek FS report.

-- Target tissue concentrations were taken from Appendix I of the Geddes Brook/Ninemile Creek FS report and from Attachment A-2 of Appendix A of the OU1 Supplemental FS report. Fish tissue PRGs can be found in the text boxes on pages 44 and 45 of the ROD.

Notes:
1. Mercury concentrations were adjusted from fillet to whole body concentrations by multiplying by a factor of 0.7, as developed in the Onondaga Lake Baseline Ecological Risk Assessment.
2. RME = reasonable maximum exposure; NOAEL = no-observed-adverse-effect-level; LOAEL = lowest-observed-adverse-effect-level.
3. NOAELs and LOAELs for small (3 to 18 cm) fish are based on the belted kingfisher and mink. NOAELs and LOAELs for large (18 to 60 cm) fish are based on the great blue heron and river otter.
4. The maximum detected concentration was used as the 95% UCL if it was lower than the calculated UCL.

5. The human health target tissue concentration for mercury (0.6 mg/kg) is based on young child RME (non-cancer effects). The RME target concentration for adults is slightly higher (0.9 mg/kg). See the PRGs in fish tissue text box on page 45 of the ROD.

6. The human health target tissue concentrations for total PCBs based on RME carcinogenic risks at risk targets of 1E-05 and 1E-04 for adults are 0.11 mg/kg and 1.1 mg/kg, respectively. The RME targets based on non-cancer effects of 0.12 to 0.19 mg/kg fall within the range based on the carcinogenic risk target of 1E-05. A target concentration based on the 1E-06 risk level (0.011 mg/kg) is much lower than mean background concentrations in US waters and may not be achievable. See the PRGs in fish tissue text box on page 45 of the ROD.

7. The human health target tissue concentrations for PCDD/PCDFs based on RME carcinogenic risks at risk targets of 1E-05 and 1E-04 for adults are 1E-06 mg/kg and 1E-05 mg/kg, respectively. Non-carcinogenic targets could not be developed for PCDD/PCDFs. A target concentration based on the 1E-06 risk level (1E-07 mg/kg) is much lower than mean background concentrations in US waters and may not be achievable. See the PRGs in fish tissue text box on page 45 of the ROD.

Table 7

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Current/Future
Medium: Lower Ninemile Creek

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concen-tration Units	Statistical Measure
		Min	Max					
Fish Fillet	Arsenic	0.52	1.1	mg/kg-ww	4/26	5.1E-02	mg/kg-ww	95% Chebyshev
	Hexachlorobenzene	2.6E-04	0.11	mg/kg-ww	14/26	3.4E-02	mg/kg-ww	97.5% Chebyshev
	PCBs	0.023	1.89	mg/kg-ww	18/25	4.5E-01	mg/kg-ww	95% Chebyshev
	PCDDs/PCDFs	3.3E-07	1.8E-05	mg/kg-ww	24/25	5.9E-06	mg/kg-ww	95% Chebyshev
	Methylmercury	0.13	2.5	mg/kg-ww	36/36	7.3E-01	mg/kg-ww	H-UCL
	Dieldrin	0.0011	0.02	mg/kg-ww	5/25	5.7E-03	mg/kg-ww	95% Chebyshev
Surface Sediment	Arsenic	NA	23.7	mg/kg-dw	NA	6.7E+00	mg/kg-dw	H-UCL
	Hexachlorobenzene	NA	11	mg/kg-dw	NA	3.2E+00	mg/kg-dw	97.5% Chebyshev
	Benzo(a)pyrene	NA	1.1	mg/kg-dw	NA	5.5E-01	mg/kg-dw	97.5% Chebyshev
Surface Soil	Arsenic	NA	23	mg/kg-dw	NA	7.9E+00	mg/kg-dw	95% Chebyshev
	Benz(a)anthracene	NA	15	mg/kg-dw	NA	1.7E+00	mg/kg-dw	97.5% Chebyshev
	Benzo(a)pyrene	NA	14	mg/kg-dw	NA	1.6E+00	mg/kg-dw	97.5% Chebyshev
	Dibenz(a,h)anthracene	NA	3.1	mg/kg-dw	NA	3.7E-01	mg/kg-dw	97.5% Chebyshev

Key

mg/kg-ww: milligrams per kilogram wet weight
mg/kg-dw: milligrams per kilogram dry weight
NA: Data not available
H-UCL: Data are lognormally distributed
95% Chebyshev: Data are non-parametrically distributed.
97.5% Chebyshev: Data are non-parametrically distributed.

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

The table presents the chemicals of concern (COCs) and exposure point concentration for each of the COCs detected in fish tissue, surface sediment and surface soil (*i.e.*, the concentration that will be used to estimate the exposure and risk from each COC in each medium). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the exposure point concentration (EPC), and how the EPC was derived.

Table 8

Non-Cancer Toxicity Data Summary

Ingestion

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorption Efficiency (for Dermal)	Adjusted RfD (for Dermal)	Adjusted Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Arsenic	Chronic	3E-04	mg/kg-day	1	3E-04	mg/kg-day	Skin	3	IRIS	04/08/2003
Hexachlorobenzene	Chronic	8E-04	mg/kg-day	1	8E-04	mg/kg-day	Liver	100	IRIS	04/08/2003
PCBs (highly chlorinated) (as Aroclor 1254)	Chronic	2E-05	mg/kg-day	1	2E-05	mg/kg-day	Immune System	300	IRIS	04/08/2003
PCDD/ PCDFs	Chronic	NA	mg/kg-day		NA	mg/kg-day				
Dieldrin	Chronic	5E-05	mg/kg-day	1	5E-05	mg/kg-day	Liver	100	IRIS	04/08/2003
Methylmercury	Chronic	1E-04	mg/kg-day	1	1E-04	mg/kg-day	Develop.	10	IRIS	04/08/2003
Benz(a)anthracene	Chronic	3E-02	mg/kg-day	1	3E-02	mg/kg-day	Kidney	3000	IRIS/NCEA	04/11/2003
Benzo(a)pyrene	Chronic	NA	mg/kg-day		NA	mg/kg-day				
Dibenz(a,h)anthracene	Chronic	3E-02	mg/kg-day	1	3E-02	mg/kg-day	Kidney	3000	IRIS/NCEA	04/11/2003

Key

NA: No information available
IRIS: Integrated Risk Information System, U.S. EPA

Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern in fish tissue, surface sediments, and surface soils. Two of the COCs have toxicity data indicating their potential for adverse non-carcinogenic health effects in humans, while no data are currently available to evaluate noncancer health effects from exposure to PCDD/PCDFs and benzo(a)pyrene.

Table 9

Cancer Toxicity Data Summary

Ingestion

Chemical of Concern	Oral Cancer Slope Factor	Absorption Efficiency (for Dermal)	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Arsenic	1.5E+00	1	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	04/08/2003
Hexachlorobenzene	1.6E+00	1	1.6E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003
PCBs (highly chlorinated) (as Aroclor 1254)	2.0E+00	1	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003
PCDD/ PCDFs	1.5E+05	1	1.5E+05	$(mg/kg\text{-}day)^{-1}$	B2	HEAST	1997
Dieldrin	1.6E+01	1	1.6E+01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003
Benz(a)anthracene	7.3E-01	1	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003
Benzo(a)pyrene	7.3E+00	1	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003
Dibenz(a,h)anthracene	7.3E+00	1	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	04/08/2003

Key:
NA: No information available
IRIS: Integrated Risk Information System, U.S. EPA
HEAST: Health Effects Assessment Summary Tables

EPA Group:
A - Human carcinogen
B1 - Probable Human Carcinogen - Indicates that limited human data are available
B2 - Probable Human Carcinogen - Indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern in fish tissue. Toxicity data for cancer risks for PCBs are for PCBs as a class; i.e., total PCBs, without differentiation with regard to level of chlorination or molecular weight.

Table 10

Page 1

Risk Characterization Summary – Carcinogens (Reasonable Maximum Exposure)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	Arsenic	3.5E-06	--	--	3.5E-06
			Hexachlorobenzene	2.5E-06	--	--	2.5E-06
			Dieldrin	4.2E-06	--	--	4.2E-06
			PCBs	4.2E-05	--	--	4.2E-05
			PCDD/PCDFs	4.0E-05	--	--	4.0E-05
						Total Risk =	**9.2E-05**

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Sediment	Surface Sediment	Lower Ninemile Creek	Arsenic	7.4E-07	--	3.8E-07	1.1E-06
			Hexachlorobenzene	3.7E-07	--	6.4E-07	1.0E-06
						Total Risk =	**2.1E-06**

Table 10

Page 2

Risk Characterization Summary – Carcinogens (Reasonable Maximum Exposure)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Lower Ninemile Creek	Arsenic	8.7E-07	--	4.5E-07	1.3E-06
			Benzo(a)pyrene	8.5E-07	--	1.9E-06	2.7E-06
						Total Risk =	**4.1E-06**

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	Arsenic	1.1E-06	--	--	1.1E-06
			Dieldrin	1.3E-06	--	--	1.3E-06
			PCBs	1.3E-05	--	--	1.3E-05
			PCDD/PCDFs	1.3E-05	--	--	1.3E-05
						Total Risk =	**2.8E-05**

Table 10

Page 3

Risk Characterization Summary – Carcinogens (Reasonable Maximum Exposure)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	Arsenic	1.5E-06	--	--	1.5E-06
			Hexachlorobenzene	1.1E-06	--	--	1.1E-06
			Dieldrin	1.8E-06	--	--	1.8E-06
			PCBs	1.8E-05	--	--	1.8E-05
			PCDD/PCDFs	1.8E-05	--	--	1.8E-05
						Total Risk =	**4.0E-05**

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Sediment	Surface Sediment	Lower Ninemile Creek	Arsenic	4.8E-07	--	2.1E-06	2.6E-06
			Hexachlorobenzene	2.4E-07	--	3.5E-06	3.8E-06
			Benzo(a)pyrene	1.9E-07	--	3.7E-06	3.9E-06
						Total Risk =	**1.0E-05**

Table 10

Page 4

Risk Characterization Summary – Carcinogens (Reasonable Maximum Exposure)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 to < 18)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Lower Ninemile Creek	Arsenic	5.7E-07	--	2.5E-06	3.0E-06
			Benz(a)anthracene	5.9E-08	--	1.1E-06	1.2E-06
			Benzo(a)pyrene	5.6E-07	--	1.1E-05	1.1E-05
			Dibenz(a,h)anthracene	1.3E-07	--	2.5E-06	2.6E-06
						Total Risk =	**1.8E-05**

Key

— : This route of exposure was not quantitatively evaluated in the baseline human health risk assessment.

Risk Characterization

This table provides carcinogenic risk estimates for the significant routes of exposure for the COCs noted above. These risk estimates are based on a reasonable maximum exposure (RME) and were developed by taking into account various conservative assumptions about the frequency and duration of exposure for each population, as well as the toxicity of the COCs. The COCs contributing most significantly to the risk level for all three populations are arsenic, hexachlorobenzene, dieldrin, PAHs, PCBs (total) and PCDD/PCDFs. The risk levels for these COCs indicate that if no clean-up action is taken, an individual would have a probability that exceeds the acceptable range for developing cancer as a result of site-related exposure to these COCs. Additional information can be found in the text of the ROD and the baseline human health risk assessment.

Table 11

Risk Characterization Summary – Noncarcinogens (Reasonable Maximum Exposure)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Adult (18 and older)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	PCBs	Immune System	3.0	–	--	3.0
							Total Hazard Index =	**3.0**

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	PCBs	Immune System	4.7	--	--	4.7
			Methylmercury	Developmental	1.2	--	--	1.2
							Total Hazard Index =	**5.9**

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Young Child (less than 6)

Scenario Timeframe: Current/Future
Receptor Population: Recreation
Receptor Age: Older Child (6 < 18)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Fish	Fish Tissue	Fish Fillet	PCBs	Immune System	3.3	--	--	3.3
							Total Hazard Index =	**3.3**

Risk Characterization

This table provides hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure. The Risk Assessment Guidance for Superfund (RAGS) states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse noncancer effects. The estimated HIs for the adult, older child, and young child recreators, indicate that the potential for adverse noncancer effects could occur from ingestion of fish fillet tissue containing PCBs for all three age groups and from methylmercury for young children. Additional information can be found in the text of the ROD and the baseline human health risk assessment.

TABLE 12
GEDDES BROOK/NINEMILE CREEK OPERABLE UNIT 1 (REACHES BC AND CD)
SUMMARY OF ALTERNATIVES

	Alternative 1	Alternative 2	Alternative 3	Alternative 4*
Description	Alternative 1 consists of No Action and is retained as a baseline condition per the NCP.	Alternative 2 consists of removal of contaminated Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD where concentrations exceed 1.3 mg/kg mercury (and PRGs for other CPOIs) up to a depth of 3 ft (90 cm) in the channel and 2 ft (60 cm) in the floodplain, placement of an isolation cap or backfill, and placement of a habitat layer.	Alternative 3 consists of removal, placement of an isolation cap or backfill, and placement of a habitat layer. Specific components of this alternative are discussed in the text of the ROD.	Alternative 4 consists of full removal of Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD to a depth to meet criteria (0.15 mg/kg mercury and PRGs for other CPOIs) and placement of backfill and a habitat layer.
Remediated Area (Acres) Total Channel / Floodplain	0	8.4	14.7	14.7
Dredged/Excavated Volume (cy)	0	29,000	59,000 (not including approximately 22,000 cy for potential re-use on site)	73,000
Mercury Mass Removed (Pounds)	0	450	535	670
Construction Time (Years)	0	1	2	3
Total Estimated Cost	$0	$10,300,000	$20,200,000	$30,000,000

* Under this alternative, roadway, bridge, and rail structural stability and safety-related considerations, especially in Reach BC, may impose limitations on excavations in these areas. As a result, some isolation capping might be needed and, therefore, removal of 100 percent of the mass of mercury and other CPOIs may not be achievable.

TABLE 13
GEDDES BROOK/NINEMILE CREEK OPERABLE UNIT 1 RECORD OF DECISION
COST SUMMARY FOR SELECTED REMEDY - NINEMILE CREEK REACHES BC AND CD

CAPITAL COSTS				
DESCRIPTION	**QTY**	**UNIT**	**UNIT COST**	**TOTAL COST**
DIRECT CONSTRUCTION COSTS				
NINEMILE CREEK (Floodplain and Channel)				
Upper Reach CD				
1. Clearing	1.5	ACRE	$18,000	$27,000
2. Temporary roads	9,000	SF	$3	$27,000
3. Dredge channel sediment	7,500	CY	$41	$307,500
4. Build diversion berms (large island area)				
a. Purchase sand berm material	1,700	CY	$20	$34,000
b. Place sand berm material	1,700	CY	$7	$11,900
c. Remove berm sand and stockpile on site	1,700	CY	$7	$11,900
d. Purchase gravel berm material	2,900	CY	$34	$98,600
e. Place gravel berm in water	2,900	CY	$16	$46,400
f. Remove gravel berm and stockpile on site	2,400	CY	$20	$48,000
g. Credit for re-use of berm gravel	2,400	CY	-$34	-$81,600
5. Sheetpile diversion				
a. Rent, install, remove 20' sheets	4,500	SF	$15	$67,500
b. Purchase 40' sheets	6,000	SF	$35	$210,000
c. Install, remove 40' sheets	6,000	SF	$10	$60,000
6. Remove sediment from existing channel	10,300	CY	$16	$164,800
7. Remove floodplain soil/sediment	4,200	CY	$16	$67,200
8. Stockpile and decant channel sediment	7,500	CY	$10	$75,000
9. Stockpile and decant floodplain soil/sediment	14,500	CY	$4	$58,000
10. Excavation dewatering	20	DY	$2,800	$56,000
11. Onsite treatment of water				
a. Capital Costs	0.15	LS	$2,000,000	$300,000
b. O&M Costs	2,200,000	GAL	$0.057	$125,400
12. Install cover materials in existing channel				
a. Purchase 24" sand isolation layer	7,800	CY	$20	$156,000
b. Place 24" sand isolation layer (wet)	3,200	CY	$21	$67,200
c. Place 24" sand isolation layer (dry)	4,600	CY	$9	$41,400
d. Purchase 12" armor layer	3,600	CY	$42	$151,200
e. Place 12" armor layer (wet)	1,300	CY	$21	$27,300
f. Place 12" armor layer (dry)	2,300	CY	$9	$20,700
g. Purchase 12" gravel habitat layer	3,600	CY	$34	$122,400
h Place 12" gravel habitat layer (wet)	1,300	CY	$21	$27,300
i. Place 12" gravel habitat layer (dry)	2,300	CY	$9	$20,700
13. Place backfill within floodplains				
a. Relocate suitable onsite material	8,800	CY	$13	$114,400
b. Purchase topsoil	1,900	CY	$26	$49,400
c. Place topsoil	1,900	CY	$8	$15,200
14. Emergent wetland planting	1	ACRE	$35,000	$17,500
15. Forested floodplain/wetland planting	1.0	ACRE	$70,000	$70,000
16. Local handling, transport and consolidation at LCP	22000	CY	$36	$792,000

TABLE 13
GEDDES BROOK/NINEMILE CREEK OPERABLE UNIT 1 RECORD OF DECISION
COST SUMMARY FOR SELECTED REMEDY - NINEMILE CREEK REACHES BC AND CD

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
Lower Reach CD				
1. Clearing	2.8	ACRE	$18,000	$50,400
2. Temporary roads	10,000	SF	$3	$30,000
3. Dredge sediment under diversions	3,100	CY	$41	$127,100
4. Build berm diversions				
a. Purchase sand berm material	1,700	CY	$20	$34,000
b. Place sand berm material	1,700	CY	$7	$11,900
c. Remove berm sand and place on site	1,700	CY	$7	$11,900
d. Purchase gravel berm material	6,300	CY	$34	$214,200
e. Place gravel berm in water	4,400	CY	$16	$70,400
f. Place gravel berm in dry	1,900	CY	$9	$17,100
g. Remove gravel berm and place on site	6,300	CY	$20	$126,000
h. Credit for re-use of berm gravel	5,300	CY	-$34	-$180,200
5. Sheetpile diversion				
a. Rent, install, remove 20' sheets	10,000	SF	$15	$150,000
b. Purchase 40' sheets	6,000	SF	$35	$210,000
c. Install, remove 40' sheets	6,000	SF	$10	$60,000
6. Excavate new channel	27,500	CY	$11	$302,500
7. Remove floodplain soil/sediment	4,700	CY	$16	$75,200
8. Remove sediment from existing channel	2,100	CY	$16	$33,600
9. Stockpile and decant floodplain soil/sediment	34,300	CY	$4	$137,200
10. Stockpile and decant channel sediments	3,100	CY	$10	$31,000
11 . Excavation dewatering	50	DY	$2,800	$140,000
12. Onsite treatment of water				
a. Capital Costs	0.15	LS	$2,000,000	$300,000
b. O&M Costs	4,400,000	GAL	$0.057	$250,800
13. Install materials in new channel				
a. Purchase sand isolation layer (on lower 200ft of segment)	2,600	CY	$20	$52,000
b. Place sand isolation layer	2,600	CY	$9	$23,400
c. Purchase 12" armor layer	4,700	CY	$42	$197,400
d. Place 12" armor layer	4,700	CY	$9	$42,300
e. Purchase 12" gravel habitat layer	4,700	CY	$34	$159,800
f. Place 12" gravel habitat layer	4,700	CY	$9	$42,300
14. Place backfill within existing channel and floodplain				
a. Relocate suitable onsite materials	21,200	CY	$13	$275,600
15. Place topsoil within existing channel and floodplain				
a. Purchase 12" topsoil layer	4,200	CY	$26	$109,200
b. Place 12" topsoil layer	4,200	CY	$8	$33,600
16. Forested floodplain/wetland planting	2.8	ACRE	$70,000	$196,000
17. Local handling, transport and consolidation at LCP	15,100	CY	$36	$543,600

TABLE 13
GEDDES BROOK/NINEMILE CREEK OPERABLE UNIT 1 RECORD OF DECISION
COST SUMMARY FOR SELECTED REMEDY - NINEMILE CREEK REACHES BC AND CD

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
Reach BC				
1. Clearing	2.7	ACRE	$18,000	$48,600
2. Temporary roads	80,000	SF	$4	$320,000
3. Install temporary culvert channel crossing	1	LS	$150,000	$150,000
4. Dredge channel sediment between bridges	12,800	CY	$41	$524,800
5. Dredge channel sediment under bridges	2,600	CY	$180	$468,000
6. Remove floodplain soil/sediment	6,500	CY	$22	$143,000
7. Stockpile and decant channel sediment	15,400	CY	$10	$154,000
8. Stockpile and decant floodplain soil/sediment	6,500	CY	$4	$26,000
9. Onsite treatment of water				
a. Capital Costs	0.20	LS	$2,000,000	$400,000
b. O&M Costs	2,200,000	GAL	$0.057	$125,400
10. Install cover materials in existing channel				
a. Purchase 24" sand isolation layer	12,200	CY	$20	$244,000
b. Place 24" sand isolation layer	12,200	CY	$21	$256,200
c. Purchase 12" armor layer	6,100	CY	$42	$256,200
d. Place 12" of armor layer	6,100	CY	$21	$128,100
e. Purchase 12" gravel habitat layer	6,100	CY	$34	$207,400
f. Place 12" gravel habitat layer	6,100	CY	$21	$128,100
11. Place backfill within floodplains				
a. Purchase 12" topsoil layer	4,400	CY	$26	$114,400
b. Placement of 12" topsoil layer	4,400	CY	$8	$35,200
12. Emergent wetland planting	2.7	ACRE	$35,000	$94,500
13. Local handling, transport and consolidation at LCP	21,900	CY	$36	$788,400
SUBTOTAL DIRECT CONSTRUCTION COSTS				**$11,897,900**
OTHER CAPITAL COSTS				
1. Indirect Construction Costs (% of direct construction costs)	1	Lot	18%	$2,141,600
2. Contingency (% of direct construction costs)	1	Lot	20%	$2,379,600
3. Engineering, Design & Construction Oversight (% of direct construction costs and contingency)	1	Lot	17%	$2,427,200
SUBTOTAL OTHER CAPITAL COSTS				**$6,948,400**
TOTAL CAPITAL COSTS				**$18,846,000**

TABLE 13
GEDDES BROOK/NINEMILE CREEK OPERABLE UNIT 1 RECORD OF DECISION
COST SUMMARY FOR SELECTED REMEDY - NINEMILE CREEK REACHES BC AND CD

ANNUAL OPERATION, MAINTENANCE, AND MONITORING COSTS

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1. Project Management Administration, and Reporting	1	LS	$15,000	$15,000
2. Water and Sediment Monitoring	1	LS	$15,600	$15,600
3. Cap Maintenance and Sampling (floodplain)	7	ACRE	$750	$5,250
4. Cap Maintenance and Sampling (channel)	7	ACRE	$1,500	$10,500
5. Baseline Maintenance and Monitoring (floodplain)	7	ACRE	$750	$5,175
6. Baseline maintenance and Monitoring (channel)	7	ACRE	$1,500	$10,500
7. Institutional Controls	1	LS	$10,000	$10,000
SUBTOTAL ANNUAL O&M COSTS				**$72,025**
8. Contingency (% of subtotal)	20%			$14,405
9. Technical Support/Troubleshooting (% of subtotal and contingency)	10%			$8,643
TOTAL ANNUAL O&M COSTS				**$95,073**

PERIODIC COSTS

DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1. CERCLA Reviews (once every 5 years)	1	LS	$37,500	$37,500
2. Wetland Monitoring Assessments (Years 1, 3, and 5)	1	LS	$6,000	$6,000
3. Forested Wetland Monitoring Assessment (Years 10, 20, and 30)	1	LS	$18,000	$18,000
TOTAL PERIODIC COSTS				**$61,500**

PRESENT VALUE ANALYSIS

COST TYPE	YEAR	TOTAL COST	TOTAL COST PER YEAR	DISCOUNT FACTOR (7%)	PRESENT VALUE
Capital Cost	0	$18,846,000	$18,846,000	1.000	$18,846,000
Annual OM&M Cost	1-30	$2,852,190	$95,073	12.409	$1,179,765
Periodic Cost	1	$6,000	$6,000	0.935	$5,607
Periodic Cost	3	$6,000	$6,000	0.816	$4,898
Periodic Cost	5	$43,500	$43,500	0.713	$31,015
Periodic Cost	10	$61,500	$61,500	0.508	$31,263
Periodic Cost	15	$43,500	$43,500	0.362	$15,766
Periodic Cost	20	$61,500	$61,500	0.258	$15,893
Periodic Cost	25	$43,500	$43,500	0.184	$8,015
Periodic Cost	30	$61,500	$61,500	0.131	$8,079
TOTAL PRESENT VALUE OF SELECTED REMEDY (NINEMILE CREEK REACHES BC AND CD)					**$20,200,000**

Notes: Costs (excluding Geddes Brook) are based on Table F-1-2 in the OU1 Supplemental FS (Parsons, 2008a) and have a +50%/-30% accuracy with the base year of 2008.
Costs for Geddes Brook IRM, estimated to be $13,200,000, are not included in costs above.

TABLE 14

CHEMICAL-SPECIFIC POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Medium/Authority	Citation	Status	Requirement Synopsis
WATER			
Clean Water Act [Federal Water Pollution Control Act; as amended], 33 USC §§ 1251-1387	40 CFR Part 129	ARAR	Toxic Pollutant Effluent Standards for aldrin/dieldrin, DDT, endrin, toxaphene, benzidene and PCBs.
Clean Water Act	40 CFR Parts 122, 125 and 401	ARAR	Wastewater Discharge Permits; Effluent Guidelines, Best Available Technology and Best Management Practices.
Clean Water Act	40 CFR § 403.5	ARAR	Discharge to Publicly-Owned Treatment Works
Safe Drinking Water Act	40 CFR Parts 144-147	ARAR	Underground Injection Control Program
Safe Drinking Water Act, 42 USC §§ 300f - 300j-26	40 CFR Part 141	ARAR	National Primary Drinking Water Regulations
Toxic Substances Control Act (TSCA), Title 1,15 USC § 2601	40 CFR §§ 761.65 – 761.75	ARAR	TSCA facility requirements: Establishes siting guidance and criteria *for* storage (761.65), chemical waste landfills (761.75), and incinerators (761.70).
USEPA	USEPA Federal Register, Volume 57, No. 246, December 22, 1992	ARAR	Ambient Water Quality Criteria
New York State Environmental Conservation Law (ECL) Article 15, Title 3 and Article 17, Titles 3 and 8	6 NYCRR Part 608	ARAR	Part 608 includes the requirement to obtain a SPDES permit for certain discharges in any navigable waters of the State (6 NYCRR 608.5). The regulations contained in 6 NYCRR Parts 700 – 706 include water quality classifications, standards and guidance values. Note that: • Section 608.6(a) requires development and submission of a sufficiently detailed construction plan with a map); • Section 608.9(a) requires that construction or operation of facilities that may result in a discharge to navigable waters demonstrate compliance with CWA §§ 301 – 303, 306 and 307 and 6 NYCRR §§ 751.2 (prohibited discharges) and 754.1 (effluent prohibitions; effluent limitations and water quality-related effluent limitations; pretreatment standards; standards of performance for new sources.)
	6 NYCRR Part 700	ARAR	Part 700 provides definitions and describes collection and sampling procedures.
	6 NYCRR Part 701	ARAR	Part 701 establishes classifications for surface waters and groundwater.
	6 NYCRR Part 702	ARAR	Part 702 establishes the deviation and use of these standards and guidance values.

Medium/Authority	Citation	Status	Requirement Synopsis
	6 NYCRR Part 703	ARAR	Part 703 establishes surface water and groundwater quality standards and groundwater effluent limitations.
	6 NYCRR Part 704	ARAR	Part 704 establishes criteria for thermal discharges.
	6 NYCRR Part 705	ARAR	Part 705 contains reference sources for related regulations.
	6 NYCRR Part 706	ARAR	Part 706 establishes additional procedures for the derivation of standards and guidance values that are protective of aquatic life from acute and chronic effects.

TABLE 15

CHEMICAL-SPECIFIC POTENTIAL CRITERIA, ADVISORIES AND GUIDANCE TO BE CONSIDERED (TBC)

Medium/Authority	Citation	Status	Requirement Synopsis
BIOTA			
International Joint Commission – United States and Canada	Great Lakes Water Quality Agreement of 1978, as amended	TBC	The concentration of total PCBs in fish tissue (whole fish, wet weight basis) should not exceed 0.1 µg/g for the protection of birds and animals that consume fish. Criterion for mercury is 0.5 µg/g mercury in whole fish [wet weight basis].
NOAA – Damage Assessment Center	Reproductive, Developmental and Immunotoxic Effects of PCBs in Fish: A Summary of Laboratory and Field Studies, March 1999 (Monosson, E.)	TBC	The effective concentrations for reproductive and developmental toxicity fall within the ranges of the PCB concentrations found in some of the most contaminated fish. There are currently an insufficient number of studies to estimate the immunotoxicity of PCBs in fish. Improper functioning of the reproductive system and adverse effects on development may result from adult fish liver concentrations of 25 to 71 ppm Aroclor 1254. PCB Congener BZ #77: 0.3 to 5 ppm (wet wt) in adult fish livers reduces egg deposition, pituitary gonadotropin, and gonadosomatic index, alters retinoid concentration (Vitamin A), and reduces larval survival. 1.3 ppm in eggs reduces larval survival.
DEC Division of Fish and Wildlife	Niagara River Biota Contamination Project: Fish Flesh Criteria for Piscivorous Wildlife, Technical Report 87-3, July 1987, pp. 41-48 and Table 26 (Newell *et al.)*	TBC	Provides a method for calculating concentrations of organochlorines in fish flesh for the protection of wildlife. The fish flesh criterion is 0.11 mg/kg wet wt for PCBs, 3 mg/kg for dioxin/furans, and 0.33 mg/kg for hexachlorobenzene.
SEDIMENT			
EPA Office of Emergency and Remedial Response	Guidance on Remedial Actions for Superfund Sites with PCB Contamination, EP A/540/G- 90/007, August 1990 (OSWER Dir. No. 9355.4-01).	TBC	Provides guidance in the investigation and remedy selection process for PCB-contaminated Superfund sites. Provides preliminary remediation goals for various contaminated media, including sediment (pp. 34-36) and identifies other considerations important to protection of human health and the environment.
NOAA – Damage Assessment Office	Development and Evaluation of Consensus-Based Sediment Effect Concentrations for PCBs in the Hudson River, MacDonald Environmental Services Ltd., March 1999	TBC	Estuarine, freshwater and saltwater sediment effects concentrations for total PCBs: Threshold Effect Concentration: 0.04 mg/kg Mid-range Effect Concentration: 0.4 mg/kg Extreme Effect Concentration: 1.7 mg/kg
NOAA (compilation of other literature sources for Sediment Quality Guidelines [SQGs])	Screening Quick Reference Tables for Organics (SQRTs)	TBC	Tables with screening concentrations for inorganic and organic contaminants.

Medium/Authority	Citation	Status	Requirement Synopsis
EPA Great Lakes National Program Office, Assessment and Remediation of Contaminated Sediments (ARCS) Program	Calculation and Evaluation of Sediment Effect Concentrations for the Amphipod *Hyalella azteca* and the midge *Chironomus riparius,* EPA 905- R96-008, September 1996	TBC	Provides sediment effect concentrations (SECs), which are defined as the concentrations of a contaminant in sediment below which toxicity is rarely observed and above which toxicity is frequently observed.
DEC Division of Fish, Wildlife and Marine Resources	Technical Guidance for Screening Contaminated Sediment, January 1999	TBC	Includes a methodology to establish sediment criteria for the purpose of identifying contaminated sediments. Provides sediment quality screening values for non-polar organic compounds, such as PCBs, and metals to determine whether sediments are contaminated (above screening criteria) or clean (below screening criteria). Also discusses the use of sediment criteria in risk management decisions.
WATER			
International Joint Commission – United States and Canada	Great Lakes Water Quality Agreement of 1978, as amended	TBC	The concentration of total PCBs in fish tissue (whole fish, wet weight basis) should not exceed 0.1 µg/g for the protection of birds and animals that consume fish. Criterion for mercury is 0.5 µg/g mercury in whole fish [wet weight basis].
DEC	DEC TOGS 1.1.2	TBC	New York State Groundwater Effluent Limitations
AIR			
DEC	New York Air Cleanup Criteria, January 1990	TBC	Provides guidance for the control of ambient air contaminants in New York State.

TABLE 16

LOCATION-SPECIFIC POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Medium/Authority	Citation	Status	Requirement Synopsis
Fish and Wildlife Coordination Act	16 USC § 662	ARAR	Whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose, by any department or agency of the United States, such department or agency first shall consult with the United States Fish and Wildlife Service, Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular State in which the impoundment, diversion, or other control facility is to be constructed, with a view to the conservation of wildlife resources by preventing loss of and damage to such resources.
Clean Water Act	33 CFR Parts 320-330	ARAR	Dredge and Fill in Wetlands
Section 404 of the Clean Water Act [Federal Water Pollution Control Act, as amended], 33 USC § 1344	33 CFR Parts 320-329	ARAR	Includes requirements for issuing permits for the discharge of dredged or fill material into navigable waters of the United States. A permit is required for construction of any structure in a navigable water.
National Historic Preservation Act, 16 USC § 470 et seq.	36 CFR Part 800	ARAR	Remedial Actions must take into account effects on properties in or eligible for inclusion in the National Registry of Historic Places.
Clean Water Act Section 401, 33 USC 1341	40 CFR Part 121	ARAR	State Water Quality Certification Program
Clean Water Act, Section 404, 33 USC § 1344	40 CFR Parts 230 and 231	ARAR	No activity which adversely affects an aquatic ecosystem, including wetlands, shall be permitted if a practicable alternative that has less adverse impact is available. If there is no other practical alternative, impacts must be minimized.
New York State ECL Article 11, Title 5	6 NYCRR Part 182	ARAR	The taking of any endangered or threatened species is prohibited, except under a permit or license issued by DEC. The destroying or degrading the habitat of a protected animal likely constitutes a "taking" of that animal under NY ECL § 11-0535.
New York State ECL Article 3, Title 3; Article 27, Titles 7 and 9	6 NYCRR § 373-2.2	ARAR	Establishes construction requirements for hazardous waste facilities within the 100-year floodplain.
New York State ECL Article 15, Title 5, 6 NYCRR Part 608 Use and Protection of Waters	6 NYCRR Part 608	ARAR	Protection of Waters Program

Medium/Authority	Citation	Status	Requirement Synopsis
New York State Freshwater Wetlands Law, Environmental Conservation Law (ECL) Article 24, Title 7	6 NYCRR Parts 662-665	ARAR	Defines procedural requirements for undertaking different activities in and adjacent to freshwater wetlands, and establishes standards governing the issuance of permits to alter or fill freshwater wetlands.

TABLE 17

LOCATION-SPECIFIC POTENTIAL CRITERIA, ADVISORIES AND GUIDANCE TO BE CONSIDERED (TBC)

Medium/Authority	Citation	Status	Requirement Synopsis
EPA Office of Solid Waste and Emergency Response	Policy on Floodplain and Wetland Assessments for CERCLA Actions, August 1985	TBC	Superfund actions must meet the substantive requirements of the Floodplain Management Emergency Executive Order (E.O. 11988) and the Protection of Response 1985 Wetlands Executive Order (E.O. 11990). This memorandum discusses situations that require preparation of a floodplain or wetlands assessment and the factors that should be considered in preparing an assessment for response actions taken pursuant to Section 104 or 106 of CERCLA. For remedial actions, a floodplain/wetlands assessment must be incorporated into the analysis conducted during the planning of the remedial action.
Executive Order No. 11988, 42 Fed. Reg. 26951 (May 25, 1977)	Floodplain Management	TBC	Executive Order describes the circumstances where federal agencies should manage floodplains.
Executive Order No. 11990, 42 Fed. Reg. 26961 (May 25, 1977)	Protection of Wetlands	TBC	Executive Order describes the circumstances where federal agencies should manage wetlands.
Statement of Procedures on Floodplain Management and Wetlands Protection	**http://www.epa.gov/compliance/resources/policies/nepa/floodplain-management-wetlands-statement-pg.pdf**	TBC	Sets forth EPA policy and guidance for carrying out Executive Orders 11990 and 11988. Executive Order 11988: Floodplain Management requires federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid, to the extent possible, adverse effects associated with direct and indirect development of a floodplain. Federal agencies are required to avoid adverse impacts or minimize them if no practicable alternative exists. Executive order 11990: Protection of Wetlands requires federal agencies conducting certain activities to avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands if a practicable alternative exists. Federal agencies are required to avoid adverse impacts or minimize them if nor practicable alternative exists.

TABLE 18

ACTION-SPECIFIC POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Medium/Authority	Citation	Status	Requirement Synopsis
Section 10, Rivers and Harbors Act, 33 USC § 403	33 CFR Parts 320 - 330	ARAR	U.S. Army Corps of Engineers approval is generally required to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of the channel of any navigable water of the United States.
Clean Air Act, 42 USC s/s 7401 et seq. (1970)	40 CFR Part 52	ARAR	Approval and Promulgation of Implementation Plans
Clean Air Act, 42 USC s/s 7401 et seq. (1970)	40 CFR Part 60	ARAR	Standards of Performance for New Stationary Sources
Clean Air Act, 42 USC s/s 7401 et seq. (1970)	40 CFR Parts 61 and 63	ARAR	Part 61- National Emission Standards for Hazardous Air Pollutants. Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories.
Section 402 of the Clean Water Act	40 CFR Parts 121, 122, 125, 401 and 403.5	ARAR	Provisions related to the implementation of the National pollutant Discharge Elimination System (NPDES) program
Safe Drinking Water Act	40 CFR Parts 144 - 147	ARAR	SDWA underground injection control program
Section 404(b) of the Clean Water Act,	40 CFR Part 230	ARAR	Guidelines for Specification of Disposal Sites for Dredged or Fill Material. Except as otherwise provided under Clean Water Act Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Includes criteria for evaluating whether a particular discharge site may be specified.
Section 404©) of the Clean Water Act, 33 USC § 1344(b)	33 CFR Parts 320, 323, 325, 329 and 330	ARAR	These regulations apply to all existing, proposed, or potential disposal sites for discharges of dredged or fill materials into U.S. waters, which include wetlands. Includes special policies, practices, and procedures to be followed by the U.S. Army Corps of Engineers in connection with the review of applications for permits to authorize the discharge of dredged or fill material into waters of the United States pursuant to Section 404 of the Clean Water Act.
Resource Conservation and Recovery Act	40 CFR Part 257	ARAR	Criteria for Classification of Waste Disposal Facilities
Resource Conservation and Recovery Act 42 USC s/s 6901 et seq. (1976) Subtitle C – Wastes	40 CFR Part 261	ARAR	Identification and listing of hazardous waste

Medium/Authority	Citation	Status	Requirement Synopsis
Resource Conservation and Recovery Act 42 USC s/s 6901 et seq. (1976)	40 CFR Part 262	ARAR	Standards applicable to generators of hazardous waste
Resource Conservation and Recovery Act 42 USC s/s 6901 et seq. (1976)	40 CFR § 262.11	ARAR	Hazardous waste determination
Resource Conservation and Recovery Act, 42 USC s/s 6901 et seq. (1976)	40 CFR Part 262.34	ARAR	Standards for Hazardous Waste Generators, 90-Day Accumulation Rule
Resource Conservation and Recovery Act, 42 USC s/s 6901 et seq. (1976)	40 CFR Part 264 and 265, Subparts B-264.10 - .19 F-264.90 - .101 G-264.110 - .120 J-264.190 - .200 S-264.550 - .555 X-264.600 - .603	ARAR	Standards for Owners/Operators of Hazardous Waste Treatment, Storage and Disposal Facilities. B- General Facility Standards F- Releases from Solid Waste Management Units G- Closure and Post Closure J- Tank Systems S- Special Provisions for Cleanup X- Miscellaneous Units
Section 3004 of the Resource Conservation and Recovery Act (Solid Waste Disposal Act, as amended), 42 USC § 6924	40 CFR § 264. 13(b)	ARAR	Owner or operator of a facility that treats, stores or disposes of hazardous wastes must develop and follow a written waste analysis plan.
Resource Conservation and Recovery Act, 42 USC s/s 6901 et seq. (1976)	40 CFR Part 264 and 265, Subparts K-264.220 - .232 L-264.250 - .259 N – 264.300 - .317	ARAR	Standards for Owners/Operators of Hazardous Waste Treatment, Storage and Disposal Facilities. K- Surface Impounds L- Waste Piles – Landfills, Subtitle C
Section 3004 of the Resource Conservation and Recovery Act, as amended, 42 USC § 6924	40 CFR § 264.232	ARAR	Owners and operators shall manage all hazardous waste placed in a surface impoundment in accordance with 40 CFR Subparts BB (Air Emission Standards for Equipment Leaks) and CC (Air Emission Standards for Tanks, Surface Impoundments and Containers).
Resource Conservation and Recovery Act, 42 USC s/s 6901 et seq. (1976)	40 CFR Part 268	ARAR	Land disposal restrictions C- Prohibitions on Land Disposal
Toxic Substances Control Act (TSCA), Title 1,15 USC § 2605	40 CFR Part 761	ARAR	Polychlorinated biphenyls (PCBs) manufacturing, processing, distribution in commerce, and use prohibitions
Hazardous Materials Transportation Act, as amended, 49 USC §§ 5101 – 5127	49 CFR Part 170.	ARAR	Transport of hazardous materials program procedures.
Hazardous Materials Transportation Act, as amended, 49 USC §§ 5101 – 5127	49 CFR Part 171	ARAR	Department of Transportation Rules for Transportation of Hazardous Materials, including procedures for the packaging, labeling, manifesting and transporting of hazardous materials.

Resource Conservation and Recovery Act, 42 USC s/s 6901 et seq. (1976)	62 Fed. Reg. 25997 and 63 Fed. Reg. 65874	ARAR	Subtitle C, Phase IV Supplemental Proposal on Land Disposal of Mineral Processing Wastes (62 FR 25997), and Hazard Remediation Waste Management requirements (63 FR 65874)
New York State ECL Article 17, Title 5	____	ARAR	It shall be unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of applicable standards identified at 6 NYCRR § 701.1.
New York State ECL Article 11, Title 5	NY ECL § 11-0503	ARAR	Fish & Wildlife Law against water pollution. No deleterious or poisonous substances shall be thrown or allowed to run into any public or private waters in quantities injurious to fish life, protected wildlife, or waterfowl inhabiting those waters, or injurious to the propagation of fish, protected wildlife, or waterfowl therein.
New York State ECL Article 19, Title 3 - Air Pollution Control Law. Promulgated pursuant to the Federal Clean Air Act, 42 USC § 7401	6 NYCRR Parts 200, 202, 205, 207, 211, 212, 219, and 257.	ARAR	Air Pollution Control Regulations. The emissions of air contaminants that jeopardize human, plant, or animal life, or is ruinous to property, or causes a level of discomfort is strictly prohibited.
New York State ECL Article 27, Title 7	6 NYCRR Part 360	ARAR	Solid Waste Management Facilities New York State regulations for design, construction, operation, and closure requirements for solid waste management facilities.
New York State ECL Article 27, Title 11	6 NYCRR Part 361	ARAR	Siting of Industrial Hazardous Waste Facilities establishes criteria for siting industrial hazardous waste treatment, storage and disposal facilities. Regulates the siting of new industrial hazardous waste facilities located wholly or partially within New York State. Identifies criteria by which the facilities siting board will determine whether to approve a proposed industrial hazardous waste facility.
New York State ECL Article 27, Title 3	6 NYCRR Part 364	ARAR	Standards for Waste Transportation Regulations governing the collection, transport and delivery of regulated wastes, including hazardous wastes.
New York State ECL Article 27, Title 9	6 NYCRR Parts 370 and 371	ARAR	New York State regulations for activities associated with hazardous waste management.
New York State ECL Article 3, Title 3; Article 27, Titles 7 and 9	6 NYCRR Part 372	ARAR	Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities. Includes Hazardous Waste Manifest System requirements for generators, transporters, and treatment, storage or disposal facilities, and other requirements applicable to generators and transporters of hazardous waste.

New York State ECL Article 3, Title 3; Article 27, Titles 7 and 9	6 NYCRR Part 373	ARAR	Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities. Includes Hazardous Waste Manifest System requirements for generators, transporters, and treatment, storage or disposal facilities, and other requirements applicable to generators and transporters of hazardous waste.
New York State ECL Article 27 Title 13	6 NYCRR Part 375-1,-2	ARAR	Environmental Remediation Programs. Establishes standards for the development and implementation of inactive hazardous waste disposal site remedial programs.
New York State ECL Article 27, Title 9	6 NYCRR Part 376	ARAR	Land Disposal Restrictions. PCB wastes including dredge spoils containing PCBs greater than 50 ppm must be disposed of in accordance with federal regulations at 40 CFR Part 761.
New York State ECL Article 15, Title 5, and Article 17, Title 3	6 NYCRR Part 608	ARAR	Use and Protection of Waters. A permit is required to change, modify, or disturb any protected stream, its bed or banks, or remove from its bed or banks sand or gravel or any other material; or to excavate or place fill in any of the navigable waters of the state. Any applicant for a federal license or permit to conduct any activity which may result in any discharge into navigable waters must obtain a State Water Quality Certification under Section 401 of the Federal Water Pollution Control Act. 33 USC § 1341.
New York State ECL, Article 1. Title 1, Article 3 Title 3, Article 15 Title 3, Article 17 Title 1, 3, and 8	6 NYCRR Part 700-706	ARAR	New York limitations on discharges of sewage, industrial waste or other wastes.
New York State ECL Article 17, Title 8	6 NYCRR Parts 750 – 758	ARAR	New York State Pollutant Discharge Elimination System (SPDES) Requirements Standards for Storm Water Runoff, Surface Water, and Groundwater Discharges, In general, no person shall discharge or cause a discharge to NY State waters of any pollutant without a permit under the New York State Pollutant Discharge Elimination System (SPDES) program.
Local County or Municipality Pretreatment Requirements	Local regulations	ARAR	Local regulations

TABLE 19

ACTION-SPECIFIC POTENTIAL CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (TBC)

Medium/ Authority	Citation	Status	Requirement Synopsis
USEPA	Covers for Uncontrolled Hazardous Waste Sites (EPA/540/2-85-002; September 1985)	TBC	Covers for Uncontrolled Hazardous Waste Sites should include a vegetated top cover, middle drainage layer, and low permeability layer.
USEPA	Rules of Thumb for Superfund Remedy Selection (EPA 540-R-97-013, August 1997)	TBC	Describes key principles and expectations, as well as "best practices" based on program experience for the remedy selection process under Superfund. Major policy areas covered are risk assessment and risk management, developing remedial alternatives, and groundwater response actions.
USEPA	Land Use in the CERCLA Remedy Selection Process (OSWER Directive No. 9355.7-04, May 1995)	TBC	Presents information for considering land use in making remedy selection decisions at NPL sites.
USEPA	Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites (OSWER Directive 9285.6-08, February 2002)	TBC	Presents risk management principles that site managers should consider when making risk management decisions at contaminated sediment sites.
USEPA	Contaminated Sediment Strategy (EPA-823-R-98- 001, April 1998)	TBC	Establishes an Agency-wide strategy for contaminated sediments, with the following four goals: 1) prevent the volume of contaminated sediments from increasing; 2) reduce the volume of existing contaminated sediment; 3) ensure that sediment dredging and dredged material disposal are managed in an environmentally sound manner; and 4) develop scientifically sound sediment management tools for use in pollution prevention, source control, remediation, and dredged material management.
USEPA	Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (OSWER 9355.0-85 December 2005)	TBC	Provides technical and policy guidance for addressing contaminated sediment sites nationwide primarily associated with CERCLA actions.
USEPA	Structure and Components of Five-Year Reviews (OSWER Directive 9355.7-02, May 1991) Supplemental Five-Year Review Guidance (OSWER Directive 9355.7-02A, July 1994) Second Supplemental Five-Year Review Guidance (OSWER 9355.7-03A, December 1995)	TBC	Provides guidance on conducting Five-Year Reviews for sites at which hazardous substances, pollutants, or contaminants remain on-site above levels that allow for unrestricted use and unlimited exposure. The purpose of the Five-Year Review is to evaluate whether the selected response action continues to be protective of public health and the environment and is functioning as designed.
USEPA	40 CFR Part 50	ARAR	Clean Air Act, National Ambient Air Quality Standards
USACE	USACE, Notice on Issuance of Nationwide Permits, 67 Fed. Reg. 2020 (Jan. 15, 2002).	TBC	Reissues Nationwide permits, General Conditions, and definitions with some modifications and one new general condition. Modifications include additional requirements to enhance aquatic protection.

Medium/ Authority	Citation	Status	Requirement Synopsis
DEC	Letter from William R. Adriance, Chief Permit Administrator, to Richard Tomer and Paul G. Leuchner, Chiefs of the New York and Buffalo Districts of USACE, re. *Section 401 Water Quality Certification*, January 15, 2002 Nationwide Permits (Mar. 15, 2002).	TBC	
DEC	New York Guidelines for Soil Erosion and Sediment Control	TBC	
DEC	Air Guide 1 - Guidelines for the Control of Toxic Ambient Air Contaminants, 2000	TBC	Provides guidance for the control of toxic ambient air contaminants in New York State. Current annual guideline concentrations (AGCs) for PCBs are 0.01 µg/m3 for inhalation of evaporative congeners (Aroclor 1242 and below) and 0.002 µg/m3 for inhalation of persistent highly chlorinated congeners (Aroclor 1248 and above) in the form of dust or aerosols.
DEC	Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water	TBC	Provides guidance for ambient water quality standards and guidance values for pollutants
DEC	Technical and Operational Guidance Series (TOGS) 1.2.1 Industrial SPDES Permit Drafting Strategy for Surface Waters	TBC	Provides guidance for writing permits for discharges of wastewater from industrial facilities and for writing requirements equivalent to SPDES permits for discharges from remediation sites.
DEC	Technical and Operational Guidance Series (TOGS) 1.3.1 Waste Assimilative Capacity Analysis & Allocation for Setting	TBC	Provides guidance to water quality control engineers in determining whether discharges to water bodies have a reasonable potential to violate water quality standards and guidance values.
DEC	Technical and Operational Guidance Series (TOGS) 1.3.2 Toxicity Testing in the SPDES Permit Program	TBC	Describes the criteria for deciding when toxicity testing will be required in a permit and the procedures which should be followed when including toxicity testing requirements in a permit.
DEC	Technical and Operational Guidance Series (TOGS) 2.1.1, Guidance on Groundwater Contamination Strategy	TBC	
DEC, Division of Environ-mental Remedi-ation	Technical and Administrative Guidance Memorandum (TAGM) 4031 Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites	TBC	Provides guidance on fugitive dust suppression and particulate monitoring for inactive hazardous waste sites.
DEC	Interim Guidance on Freshwater Navigational Dredging, October 1994	TBC	Provides guidance for navigational dredging activities in freshwater areas.
DEC Division of Fish, Wildlife and Marine Resources	Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA), October 1994	TBC	Provides rationale and methods for sampling and evaluating impacts of a site on fish and wildlife during the remedial investigation and other stages of the remedial process
DEC TAGM 3028	"Contained-In Criteria for Environmental Media (November 30, 1992).	TBC	Provides "contained-in" concentrations/ action levels for environmental media and the basis for these criteria.

Administrative Record Index
Operable Unit 1 of the Geddes Brook/Ninemile Creek Site

APPENDIX III

(New York State Inactive Hazardous Waste Disposal Site #7-34-030)

RI/FS Activities	Documents *
Remedial Investigation/Feasibility Study Work Plans	Citizen Participation Plan for the Onondaga Lake National Priority List Site (1996) New York State's Revision of the Sampling and Analysis Part of the Geddes Brook/Ninemile Creek Remedial Investigation Work Plan (Bein 1998) Letter from A.J. Labuz to Timothy Larson containing additional data (Labuz 1998) New York State's Revision of the Geddes Brook/Ninemile Creek Remedial Investigation Work Plan (NYSDEC 2000) Ninemile Creek/ Geddes Brook Sediment IRM Sampling Plan (BBL 2000) Ninemile Creek Supplemental Sampling Program - Floodplain Sampling and Analysis Work Plan (O'Brien & Gere 2002) Work Plan for Young of Year Fish Collection in Ninemile Creek (TAMS 2002) Interim Remedial Measure Work Plan for the Geddes Brook Site (Parsons 2003)

Remedial Investigation Reports	Ninemile Creek/Geddes Brook Sediment IRM Investigation Report (BBL 2001) New York State's Revision of the Geddes Brook/Ninemile Creek Remedial Investigation Report (TAMS 2003c) New York State's Revision of the Geddes Brook/Ninemile Creek Baseline Ecological Risk Assessment (TAMS 2003b) New York State's Revision of the Geddes Brook/Ninemile Creek Human Health Risk Assessment Report (TAMS 2003a) New York State Department of Law.003. State of New York's Determinations Disapproving and Revising Honeywell's Remedial Investigation, Baseline Ecological Risk Assessment, and Human Health Risk Assessment Reports for the Geddes Brook/Ninemile Creek Site (Spiegel/Gershon [Office of the Attorney General] and Larson [NYSDEC], July 31, 2003)

Feasibility Study	Geddes Brook/Ninemile Creek Feasibility Study Report (Parsons 2005) Email from Tim Larson regarding comments (1st wave) on Draft Geddes Brook/Ninemile Creek Operable Unit 1 Supplemental Feasibility Study Report (September 29, 2008) Email from James O'Loughlin regarding responses to Tim Larson's September 29, 2008 (1st wave) email Email from Tim Larson regarding comments (2nd wave) on Draft Geddes Brook/Ninemile Creek Operable Unit 1 Supplemental Feasibility Study Report (October 3, 2008) Email from Tim Larson regarding comments (3rd wave) on Draft Geddes Brook/Ninemile Creek Operable Unit 1 Supplemental Feasibility Study Report (October 6, 2008, 12:53PM) Email from Tim Larson regarding comments (4th wave) on Draft Geddes Brook/Ninemile Creek Operable Unit 1 Supplemental Feasibility Study Report (October 6, 2008, 5:29PM) Email from Shane Blauvelt regarding responses to Tim Larson's email dated as follows: October 3, 2008 (2nd wave); October 6, 2008, 12:53PM (3rd wave); and October 6, 2008, 5:29PM (4th wave) [October 20, 2008] Draft Final Geddes Brook/Ninemile Creek Operable Unit 1 Supplemental Feasibility Study Report (Parsons 2008)** Memo from Robert Nunes regarding Contaminated Sediment Risk Management Principles - Geddes Brook/Ninemile Creek Subsite/Onondaga Lake NPL site (January 21, 2009)

Proposed Plan Released Start of Public Comment Period	Email from Lindsay Speer to Kenneth Lynch containing comments on a draft Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Plan (October 29, 2008) Letter from Joseph Heath to Kenneth Lynch containing comments on a draft Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Plan (November 5, 2008) Email from Donald Hesler to Lindsay Speer containing responses to comments contained in Joseph Heath November 5, 2008 letter to Kenneth Lynch containing comments on a draft Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Plan (December 9, 2008) Email from Donald Hesler to Lindsay Speer containing responses to comments contained in Joseph Heath November 5, 2008 letter to Kenneth Lynch containing comments on a draft Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Plan (April 29, 2009) Email from Donald Hesler to Lindsay Speer containing responses to comments contained in email from Lindsay Speer to Kenneth Lynch containing comments on a draft Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Plan (April 29, 2009) Proposed Plan (November 2008) Notice of Public Meeting and Opportunity to Comment (November 20, 2008) Notice to Extend the Public Comment Period

Public Meetings Held	Documentation and Transcript of December 10, 2008 Public Meeting (Attached to the Record of Decision as Appendix VI) Written Comments on Selected Remedy (Attached to the Record of Decision as Appendix V)

Record of Decision Issued	Record of Decision and Responses to Comments (Responsiveness Summary) - April 29, 2009

Enforcement Documents	RI/FS Consent Decree for the Onondaga Lake Sediments (March 16, 1992) Stipulation and Order Amending Consent Decree (January 22, 1998) Stipulation and Order Amending Consent Decree (July 12, 2000) Order on Consent - Ninemile Creek/Geddes Brook Sampling Plan (November 10, 2000) Stipulation and Order Amending Consent Decree (March 19, 2001) Stipulation and Order Amending Consent Decree (May 30, 2002) Amendment to Order on Consent - Geddes Brook IRM (July 22, 2002) Stipulation and Order Amending Consent Decree (May 28, 2004) Stipulation and Order Amending Consent Decree (November 23, 2004) Stipulation and Order Amending Consent Decree (August 2, 2005) Stipulation and Order Amending Consent Decree (May 12, 2006) Stipulation and Order Amending Consent Decree (January 10, 2007) Stipulation and Order Amending Consent Decree (June 14, 2007)

* Data are summarized in several of these documents. The actual data, QA/QC, chain of custody, etc. are compiled at various NYSDEC office locations and can be made available at the NYSDEC Region 7 office upon request. References listed in these documents and in this Record of Decision are incorporated by reference into the Administrative Record. Many of the references listed in the documents are publicly available and readily accessible. Most of the guidance documents referenced in the documents are available on EPA or NYSDEC websites. If copies of the referenced documents cannot be located, contact the NYSDEC Project Manager (Timothy J. Larson, 518-402-9676). Copies of administrative record documents that are not available in the administrative record files in the NYSDEC Region 7 office or at Atlantic States Legal Foundation can be made available at one of those locations upon request.

**The November 2008 "Draft Final" Supplemental Feasibility Study (SFS) was the primary source of information utilized by the NYSDEC in drafting the Record of Decision (ROD). The document was designated as "Draft" since a feasibility study is never deemed to be complete until a ROD is issued for a site, due to the fact that there may be a need to supplement or correct information contained in the FS up until the time that the ROD is issued. Accordingly, the November 2008 SFS document represents the final version of the FS even though it carries a "Draft" designation. Earlier FS documents and comment letters are included in the record since the final version of the FS was prepared by Honeywell and its consultants and there were certain earlier comments which NYSDEC and EPA had submitted which were not adequately addressed to NYSDEC and EPA's satisfaction in the November 2008 SFS document or certain statements in the document with which NYSDEC and/or EPA did not agree. Notwithstanding any continued disagreements with respect to such comments or statements, NYSDEC determined that the information contained in the final FS was sufficient for it to develop the ROD. Earlier FS documents are included in the Administrative Record for the purpose of clarifying NYSDEC and EPA findings with respect to specific issues that may not be adequately expressed in the November 2008 SFS. The ROD is based upon all documents which are included in the Administrative Record.

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Appendix IV

Record of Decision

Geddes Brook/Ninemile Creek OU1
Onondaga Lake Superfund Site

Statement of Findings: Floodplains and Wetlands

Need to Affect Floodplains and Wetlands

Geddes Brook/Ninemile Creek Operable Unit 1 (OU1) soil and sediments are currently contaminated with mercury and other contaminants. OU1 lies within the 100-year floodplain; therefore, cleanup of the contaminated soil and sediments, which pose a risk both to human and ecological receptors, will involve extensive remedial work within the floodplain. The floodplain also contains federal wetlands and a State Class II wetland, Wetland SYW-18, which is located in the area around the confluence of Geddes Brook and Ninemile Creek.

NYSDEC and EPA have determined that there is no practicable alternative that is sufficiently protective of human health and the environment which would not result in the removal of contaminated soil/sediment. Consequently, since remedial action is necessary, any remedial action that might be taken would necessarily affect floodplains and wetlands associated with the OU1 portion of the Geddes Brook/Ninemile Creek site. The following four remedial alternatives were considered:

- Alternative 1 – “No Action”.

- Alternative 2 – Removal of contaminated Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD where concentrations exceed 1.3 mg/kg mercury (and PRGs for other chemical parameters of interest [CPOIs]) down to a depth of 3 ft (90 cm) in the channel and 2 ft (60 cm) in the floodplain, placement of an isolation cap or backfill, and placement of a habitat layer.

- Alternative 3 – Removal, placement of an isolation cap or backfill, and placement of a habitat layer.

- Alternative 4 – Full removal of Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD to a depth to meet criteria (0.15 mg/kg mercury and PRGs for other CPOIs) and placement of backfill and habitat layer.

The No-Action alternative does not entail removal or capping/backfilling of contaminated soil/sediment; under this alternative, no remedial actions would take place within delineated floodplains or wetlands. Under this alternative, contaminated soil/sediment at the site would remain in place and would continue to be a potential source of contamination to Ninemile Creek and the wetlands and floodplains. Consequently, the No-Action alternative would not be protective of human health and the environment. The implementation of any of the action alternatives would be more

protective of human health and the environment than the no-action alternative (since they would, to varying degrees, meet the RAOs and cleanup levels for the site and would result in residual risks which would be less than residual risks under the no-action alternative); all action alternatives would involve substantial actions within floodplains and wetlands.

The selected remedy, Alternative 3, for the Ninemile Creek portion of OU1, along with the Geddes Brook Interim Remedial Measure (IRM), addresses the remedial action objectives (RAOs) and cleanup levels by removing mercury, arsenic, lead, hexachlorobenzene, phenol, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and dioxins/furans from Geddes Brook and Ninemile Creek. Implementing the selected remedy will also control an existing source of contamination to Onondaga Lake and allow for remediation of the lake to proceed consistent with a Court-ordered schedule for the Lake Bottom Subsite. The selected remedy addresses all areas of the Ninemile Creek portion of OU1 such that concentrations of mercury and other CPOIs following remediation are expected to be below the New York State Department of Environmental Conservation's sediment criteria (including the "Lowest Effects Level" of 0.15 milligrams per kilogram [mg/kg] for mercury) in the top 2 feet of channel sediments and 6 NYCRR Part 375 unrestricted use soil cleanup objectives (including the objective of 0.18 mg/kg for mercury) in the top 2 feet in floodplain areas. The selected remedy will also attain a 0.8 mg/kg site-specific bioaccumulation-based sediment quality value (BSQV) for mercury in sediments for protection of wildlife consumption of fish and 0.6 mg/kg site-specific BSQV for mercury in floodplain soils for protection of wildlife consumption of terrestrial invertebrates. The selected remedy is also expected to achieve fish tissue mercury concentrations ranging from 0.1 mg/kg, which is for protection of ecological receptors, to 0.3 mg/kg, which is based on EPA's methylmercury National Recommended Water Quality criterion for the protection of human health from the consumption of organisms.

The selected remedy includes the dredging/excavation and removal of contaminated channel sediments and floodplain soils/sediments in lower Ninemile Creek. Where dredging/excavating results in the removal of all significant contamination in the stream or floodplain, the area will be backfilled to bring the sediment or ground surface up to the designed elevation, if needed, and a habitat layer will be placed. Restoration of the stream bed and banks, wetlands, and habitats will be performed following sediment and soil removal and placement of an isolation cap or backfill, where needed. This will include placement of a habitat layer with appropriate substrate types and thicknesses, as well as plantings of appropriate species of wetland and upland vegetation. The details of habitat restoration will be developed during the remedial design.

Effects of Proposed Action on the Natural and Beneficial Values of Floodplains and Wetlands

The RAOs for OU1 include the elimination or reduction, to the extent practicable, of further transport of sediments and soils containing mercury and other CPOIs from the channel and floodplain of lower Geddes Brook and lower Ninemile Creek to Geddes Brook, Ninemile Creek, and, ultimately, Onondaga Lake. Since the selected remedy is expected to achieve the RAOs, sediments and soils contaminated with mercury and other contaminants will no longer function as a source of contamination to the wetlands and floodplains associated with OU1. Furthermore, backfilling and capping activities will not significantly alter the capacity of the floodplain or channel, and should not result in any increase in downstream flooding events. Any short-term negative impacts to the natural or beneficial values associated with the OU1 soils and sediments will be more than compensated for by the long-term benefits to the Geddes Brook/Ninemile Creek ecosystem once these soils and sediments are removed. Further, it is anticipated that no long-term adverse effects to floodplain

resources will result due to implementation of the selected remedy.

In order to facilitate remedy implementation, the selected remedy includes realignment of a reach of lower Ninemile Creek. The realignment will result in the relocation of the channel to an area where the soils at depth are anticipated to be uncontaminated and will eliminate or minimize the need for an isolation cap. It will also result in the creation of a vegetated buffer between the Creek and the wastebeds, improved connectivity between the Creek and floodplain, and allow for the creation of diverse habitats (*e.g.,* vernal pools, forested floodplains). The selected remedy also includes wetland restoration. Any wetland habitat that is damaged or removed as a result of remedial action will be restored where feasible. In instances where restoration is not feasible, actions such as wetland mitigation will be required. It should be noted that a small portion (0.31 acres) of the delineated wetland SYW-18 consists of forested wetlands and that the restoration of these wetlands may take several years. However, the overall improvements as discussed above resulting from the implementation of the remedy will create opportunities to provide appropriate mitigation. Details related to the wetland mitigation will be developed during the remedial design, as part of a habitat restoration plan for the Geddes Brook/Ninemile Creek site.

Implementation of the Geddes Brook IRM will also result in improvements with respect to wetlands and floodplains, as the response action includes the removal of contaminated sediments and soil from the Geddes Brook channel and the adjacent floodplain. The response action also includes the realignment of Geddes Brook. Realignment of the Brook will provide opportunities to increase its sinuosity and connectivity with the floodplain, and provide a buffer between it and the State Fair Landfill.

Compliance with Applicable State or Local Floodplains Protection Standards

The primary location-specific ARARs applicable to the remediation are ECL Article 24 Freshwater Wetlands, ECL Article 15 Use and Protection of Waters, and Clean Water Act (CWA) Section 404. For freshwater wetlands, 6 NYCRR Part 663 regulates activities conducted in or adjacent to regulated wetlands. Article 15 is implemented by 6 NYCRR Part 608 which regulates alterations to beds and banks of streams such as dredging and filling.

The primary New York State standard for protection of freshwater wetlands applicable to the remediation is Environmental Conservation Law (ECL), Article 24, and Title 7. For freshwater wetlands, 6 NYCRR Parts 662 through 665 regulates activities conducted in or adjacent to regulated wetlands. The selected remedy will comply with this standard.

Although not applicable or relevant and appropriate requirements, the selected remedy will also comply with Executive Order 11988: Floodplain Management; Executive Order 11990: Protection of Wetlands, and EPA's Statement of Procedures on Floodplains Management & Wetlands Protection. Accordingly, draft floodplains and wetlands assessments have already been developed for the Geddes Brook/Ninemile Creek site; these assessments will be refined as necessary during the remedial design process.

Measures to Mitigate Potential Harm to the Floodplains and Wetlands

Implementation of the selected remedy will entail removal and, where needed, capping or backfilling of Ninemile Creek soil/sediment, resulting in temporary physical disturbances to the wetlands and floodplains. Measures to minimize potential adverse impacts that cannot be avoided will be

evaluated as part of and incorporated into the remedial design. Common practices include field demarcation of wetland/floodplain areas and implementation of soil/sediment erosion and/or re-suspension control measures (*e.g.,* installation of silt fencing, hay bales, hay/straw mulch, jute matting) to minimize impacts from construction activities.

Measures will also be employed during capping and dredging activities to prevent creek sediments that are resuspended during remediation activities from being transported to downstream areas during flooding events (100-year and 500-year storms). For example, energy barriers such as sheet piles and/or silt curtains could be used during dredging activities to minimize the transport of resuspended sediments from the areas being dredged to downstream areas. To minimize potential short-term adverse effects due to peak flow events, an isolation cap, where needed, will be constructed in segments and armored immediately as each segment is completed. Measures will be implemented, as needed, to ensure even placement of the cap (*i.e.,* minimize mounding) and to limit resuspension and loss of impacted sediment into the water column or emerging cap layer.

Monitoring will occur during both dredging and capping operations. Monitoring of surface water in the vicinity of the work zones will be conducted to measure potential exceedances of ambient water quality criteria due to resuspension as a result of dredging and capping operations. Should this monitoring indicate that elevated levels of suspended sediments are being generated by dredging or capping activities, operations will be modified so as to reduce those levels. Possible actions that could be taken in this regard include slowing down the rate of sediment removal, changing the depth of the dredge cut, modifications to movement of the dredge or capping equipment, and cessation of dredging/capping activities.

A fully engineered cap would not be necessary in areas where, after sediment removal, mercury and other CPOI concentrations in the remaining sediments would be below the selected cleanup levels for a specific reach. In these areas, backfill may be used to restore the pre-remediation bathymetry and satisfy certain basic functions in the stream. Backfilled areas would include a minimum of 1 foot of suitable habitat material with a suitable amount of organic material. The negative ecological effects would be limited temporarily (it is expected that benthic recolonization would take less than three years) and be offset by the positive long-term effects of clean cover system materials for benthic habitat.

GEDDES BROOK/NINEMILE CREEK SITE OPERABLE UNIT 1
RESPONSIVENESS SUMMARY

Table of Contents

Please note that a list of acronyms/abbreviations and the references for this Responsiveness Summary are contained on page xv of this Record of Decision.

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Attachments

Attachment 1 Comment and Response Index

Attachment 2 Letters and Email Submitted During the Public Comment Period and Oral Comments Made During the Public Meeting

GEDDES BROOK/NINEMILE CREEK SITE
OPERABLE UNIT 1 REMEDIAL INVESTIGATION/FEASIBILITY STUDY AND PROPOSED PLAN
RESPONSIVENESS SUMMARY

PUBLIC REVIEW PROCESS

INTRODUCTION

This Responsiveness Summary (RS) provides a summary of comments and concerns received during the public comment period related to the Geddes Brook/Ninemile Creek Operable Unit 1 Site remedial investigation and feasibility study (RI/FS) and the Proposed Plan, and provides the responses of the New York State Department of Environmental Conservation (NYSDEC)/United States Environmental Protection Agency (EPA) to those comments and concerns. The RI/FS reports (TAMS, 2003a,b,c; Parsons, 2005,2008) describe the nature and extent of the contamination at the site and evaluate remedial alternatives to address this contamination. The Proposed Plan (NYSDEC and EPA, 2008) identifies NYSDEC's preferred remedy and the basis for that preference.

Public involvement in the review of Proposed Plans is stipulated in Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and Sections 300.430(f)(3)(i)(F) and 300.430(f)(5)(iii)(B) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). These regulations provide for active solicitation of public comment.

All public comments received are addressed in this RS, which was prepared following guidance provided by EPA in EPA 540-R-92-009 and the Office of Solid Waste and Emergency Response (OSWER) in OSWER 9836.0-1A. The comments presented in this document have been considered in NYSDEC and EPA's final decision in the selection of a remedy to address the contamination at the Geddes Brook/Ninemile Creek Site Operable Unit 1.

The text of this RS explains the public review process and how comments were responded to. In addition to this text, there are two attachments:

Attachment 1	The Comment and Response Index, which contains summaries of every comment received and NYSDEC/EPA's response.
Attachment 2	Comments provided during the public comment period, including letters, e-mails, and oral statements. This attachment contains copies of every comment received.

PUBLIC REVIEW

NYSDEC and EPA rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the Proposed Plan for the Geddes Brook/Ninemile Creek Operable Unit 1 Site, Onondaga County, New York was made available to the community on November 19, 2008. A fact sheet was released with the Proposed Plan and both documents are available at NYSDEC's website (http://www.dec.ny.gov/chemical/37558.html).

The complete Administrative Record file, which contains the information (including the Geddes Brook/Ninemile Creek RI, Human Health Risk Assessment [HHRA], Baseline Ecological Risk Assessment [BERA], FS and Supplemental FS) upon which the selection of the remedy has been based, is available at the locations listed in the text box below.

Information Repositories for the Geddes Brook/Ninemile Creek Operable Unit 1 Site Administrative Record

Atlantic States Legal Foundation
658 West Onondaga Street
Syracuse, NY 13204-3711
(315) 475-1170
Please call for hours of availability

NYSDEC, Region 7 Office
615 Erie Boulevard West
Syracuse, NY 13204-2400
(315) 426-7400
Hours: M – F, 8:30 a.m. – 4:45 p.m.
Please call for an appointment

NYSDEC Central Office
625 Broadway
Albany, NY 12233-7013
(518) 402-9767
Hours: M – F, 8:30 a.m. – 4:45 p.m.
Please call for an appointment

Onondaga County Public Library
Syracuse Branch at the Galleries
447 South Salina Street
Syracuse, NY 13204-2494
Hours: M, Th, F, Sat, 9:00 a.m. – 5:00 p.m.;
Tu, W, 9:00 a.m. – 8:30 p.m.
Phone: (315) 435-1800

PUBLIC COMMENT PERIOD AND PUBLIC MEETING

The public comment period is intended to gather information about the views of the public regarding both the remedial alternatives and general concerns about the site. A notice of the commencement of the public comment period, the public meeting date, the preferred remedy, contact information, and the availability of above-referenced documents was provided in a fact sheet distributed to the public on November 19, 2008 and published in the *Syracuse Post-Standard* on November 20, 2008.

The public comment period for the Geddes Brook/Ninemile Creek RI/FS and Proposed Plan commenced on November 20, 2008 and continued until January 19, 2009. During that period a public meeting was held on December 10, 2008 at the New York State Fairgrounds in Syracuse, New York. Approximately 50 people, including residents, local business people, university students, media, and state and local government officials, attended the public meeting. A question-and-

answer session followed the formal presentation at the public meeting. A complete transcript of the public meeting can be found in Appendix VII of the ROD.

RECEIPT AND IDENTIFICATION OF COMMENTS

Public comments on the RI/FS and the Proposed Plan were received in several forms, including:

- Written comments submitted to NYSDEC via e-mail.
- Written comments mailed to NYSDEC.
- Oral comments made at the public meeting.

Each written submission received a commenter number (e.g., Commenter 1) in the order of when the submission was received. Oral comments made during the December 10, 2008 public meeting, which were not answered during the public meeting, were assigned an oral comment number (e.g., OC1) in the order of when the oral comment occurred during the public meeting. These numbers were assigned for the convenience of readers and to assist in the organization of this RS; there was no priority or special treatment given to one commenter over another in the responses to comments.

In addition to being summarized in the Comment and Response Index (Attachment 1), copies of all written submissions have been included in Attachment 2. The commenter number associated with each written submission is marked at the top of the first page of each letter and the sub-numbers of the individual comments are marked in the margin next to the text that begins the comment.

In addition to being summarized in the Comment and Response Index (Attachment 1), all oral comments received during the public meeting are contained in the public meeting transcript included in Attachment 2.

NYSDEC and EPA carefully considered each comment received and made every effort to be fully responsive.

ORGANIZATION OF THE COMMENT AND RESPONSE INDEX

The Comment and Response Index (Attachment 1) contains a complete listing of all comments and NYSDEC and EPA's responses. The index allows readers to find answers to specific questions they have raised and is organized as follows:

- The first column lists the name of the commenter.
- The second column identifies the alphanumeric file code assigned to each comment (e.g., 1.a., OC1.a.).
- The third column provides a summary of the comment.
- The fourth column provides the response to the comment.

Example:

Name/Agency	Comment Code	Comment Summary	Response
Onondaga County Water Authority (OCWA)	1.a.	The commenter expressed concerns related to the remedy's potential impact on its 8-inch water main which runs parallel to State Fair Boulevard and crosses under Ninemile Creek.	Efforts will be taken during the remedial design and construction to ensure that the water main is not impacted.

In a few instances, a commenter may appear in the Comment and Response Index more than once, because he/she sent letters that were different from their oral statements, or made different oral statements. If an individual spoke for a group and then wrote a letter in his/her own name (or vice-versa), the submissions were coded separately and each appears in the Comment and Response Index.

RESPONSIVENESS SUMMARY

ATTACHMENT 1

Comment and Response Index

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Onondaga County Water Authority (OCWA)	1.a.	The commenter expressed concerns related to the remedy's potential impact on its 8-inch water main which runs parallel to State Fair Boulevard and crosses under Ninemile Creek.	Efforts will be taken during the remedial design and construction to ensure that the water main is not impacted.
John A. DeFrancisco State Senator	2.	The commenter supports the process being made to address upland sites and the restoration of Onondaga Lake.	A letter responding to State Senator DeFrancisco's letter was generated by NYSDEC Commissioner Grannis (follows comment letter). Commissioner Grannis' letter states that remediation of upland sites such as Geddes Brook/Ninemile Creek is needed in order to eliminate impacts to Onondaga Lake.
Onondaga County Federation of Sportmen's Club	3.a.	The commenter supports implementation of the selected remedy.	The comment is acknowledged.
	3.b.	The commenter inquired as to whether the selected remedy will meet EPA's water quality standards such that fish are edible by people and wildlife.	EPA's National Recommended Water Quality Criterion for methylmercury, as measured in fish tissue, is 0.3 mg/kg and is a Remediation Goal (as identified in the Geddes Brook/Ninemile Creek OU1 ROD).

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
David Stott Onondaga County Legislator	4.a.	The commenter noted that the Salina Landfill site is currently implementing a remedy which includes capping of the landfill although a cap was constructed at the site in the 1980s. The commenter supports removal of contaminated soil/sediments from the Geddes Brook/ Ninemile Creek site in lieu of a remedy which utilizes capping so as to preclude the possibility that any further work may be needed.	The remedy for the Site has been selected in accordance with Superfund regulations and guidance which require that candidate remedies be assessed on the basis of nine criteria. All remedies must meet the threshold criteria for protection of human health and the environment, and compliance with applicable or relevant and appropriate requirements. Those alternatives that meet the threshold criteria are subject to further analysis using the other seven criteria (*i.e.*, long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; implementability; short-term effectiveness; cost; state acceptance; and community acceptance) to determine the remedy that provides the best balance among these criteria. This process was conducted for the selection of the remedy for the Site and the selected remedy was determined by NYSDEC and EPA to meet all the remedial action objectives for the Site and to provide the best balance among the evaluation criteria. In addition, the selected remedy has been structured to minimize the need for an isolation cap over most of the site. In those areas where capping will be utilized, an erosion protection layer will be installed to protect the cap. An inspection and O & M Plan to ensure cap integrity and effectiveness will be developed during remedial design.
William H. Meyer, Jr. Onondaga County Legislature, Chairman	5.a.	The commenter indicated that he supports the Agencies' efforts in the clean up Onondaga Lake.	The comment is acknowledged.
	5.b.	The commenter suggested that the upgrading of the METRO wastewater treatment plant and the remediation of Onondaga Lake work in tandem.	Coordination between the Agencies, Honeywell, and Onondaga County will continue to ensure that both efforts complement each other.
	5.c.	The commenter requested that the selected remedy be implemented without delay or unnecessary extensions to the lake cleanup process.	NYSDEC and EPA will continue to oversee remedial activities to ensure that the remediation of Geddes Brook and Ninemile Creek are implemented such that the remediation of Onondaga Lake is not adversely impacted.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Atlantic States Legal Foundation	6.a.	The commenter suggested that the Sediment Containment Area (SCA) that will be constructed as part of the Onondaga Lake Bottom remedy be considered for the disposal of contaminated sediments and soils removed as part of this project.	Contaminated sediments and soils removed from the Ninemile Creek portion of the site and the associated floodplain will be disposed of at Honeywell's LCP Bridge Street subsite containment system or the SCA that will be constructed at Wastebed 13 as part of the remediation of the Onondaga Lake Bottom subsite. A decision as to the specific disposal location will be made during the design phase. This decision will consider various factors including the design and construction schedules for the Ninemile Creek OU1 remedy as well as the SCA so that remediation of Ninemile Creek is not unnecessarily delayed. Contaminated sediments and soils removed as part of the Geddes Brook IRM will be disposed of at Honeywell's LCP Bridge Street subsite containment system since the SCA, that will be constructed at Wastebed 13 as part of the remediation of the Onondaga Lake Bottom subsite, will not be constructed in time to receive sediment or soil associated with the Geddes Brook IRM remediation.
	6.b.	The commenter suggested that the LCP Bridge Street site containment facility is not a suitable site for the placement of contaminated sediment and soil from the remediation of the Geddes Brook/Ninemile Creek Site.	The LCP site containment facility was designed with the capability to receive sediment and soil from the remediation of the Geddes Brook/Ninemile Creek OU1 Site. The facility includes a subsurface barrier wall which was installed around the facility to contain site-impacted shallow and deep groundwater. The barrier wall was installed to a depth of approximately 55 feet and is keyed into low-permeability glacial till. A temporary low-permeability cap has been installed at the facility and the final cap will be constructed after the placement of sediments from the Geddes Brook/Ninmeile Creek site has been completed. To ensure that total containment is achieved, groundwater extraction wells were installed and are being pumped at a rate sufficient to result in an inward and upward gradient. Long-term monitoring of groundwater, surface water, sediment, and biota is being conducted to ensure the effectiveness of the remedy. This facility can adequately contain the contaminated materials from the Geddes Brook/Ninemile Creek OU1 site and be protective of public health and the environment.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Atlantic States Legal Foundation (Continued)	6.c.	The commenter stated that the complete removal of contaminated sediments and floodplain soils under the Geddes Brook IRM is completely appropriate.	The comment is acknowledged.
	6.d.	The commenter stated that the uncorrected injuries to the environment must be addressed under Natural Resources Damage Assessment.	NYSDEC is the State-designated Natural Resource Trustee for the State of New York. Other Natural Resource Trustees include the Onondaga Nation and the Department of Interior whose technical representative is the U.S. Fish and Wildlife Service (USFWS). The Natural Resource Trustees are coordinating their efforts to pursue a natural resource damage assessment and plan restoration activities related to the Onondaga Lake NPL site.
	6.e.	The commenter states that EPA has established a water quality criterion for mercury in fish which should be used as a cleanup objective.	EPA's National Recommended Water Quality Criterion for methylmercury, as measured in fish tissue, is 0.3 mg/kg and is a Remediation Goal (as identified in the Geddes Brook/Ninemile Creek OU1 ROD).
	6.f.	The commenter states that there appears to be an overall assumption that the cleanup of mercury will result in the cleanup of other contaminants.	The selected remedy will result in a long-term reduction in the toxicity, mobility, and volume of the contaminants of concern in Geddes Brook and Ninemile Creek, namely, mercury, arsenic, lead, hexachlorobenzene, phenol, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDD/PCDFs).

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Atlantic States Legal Foundation (Continued)	6.g.	The commenter suggested that there is too much reliance on capping.	As a result of its deeper removals (up to a depth of 16 feet into the sediments), the full removal alternative, Alternative 4, would require installation and removal of significantly (around ten times) more sheet pile than will the selected remedy. The need to use sheet piles would result in the potential for resuspension of contaminated sediment caused by the physical disturbance of installing and removing the sheet piles, and would contribute added short-term risks of potential adverse water quality impacts and temporary loss of aquatic and upland habitats within and near work areas. In addition, the cost for the full removal alternative is about 50% greater and would take longer to implement than the selected remedy. Also, see response to Comment # 4.a.
	6.h.	The commenter suggested that the use of three feet as a delimiting depth for floodplain soil removal is arbitrary.	Three feet is not a limiting factor in the selected remedy with respect to removal of floodplain soil at the site. The amount of floodplain soil being removed varies throughout the site and takes into account contaminant concentration and physical features, such as the armoring stone along Reach BC, which cannot be removed without potentially destabilizing roadways and bridges. Also, as discussed on page 92 of the Proposed Plan, the remedy also includes removal of select hot spots in the channel and floodplain in Reach CD to depths greater than 3 feet with the final depth to be based on data to be gathered during the pre-design investigation, as suggested in the comment. The selected remedy also has clean soil being placed over all of the floodplains within the defined remedial area.
Ninemile Creek Conservation Council	7.a.	The commenter indicates that the Council supports the selected remedial alternative since it is protective of, and conducive for, wildlife and aquatic species.	The comment is acknowledged. Under the selected remedy wildlife and aquatic species will be protected and will have suitable habitat.
	7.b.	The commenter expressed a preference for deep removal and not capping.	See response to Comment # 6.g.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Ninemile Creek Conservation Council (Continued)	7.c.	The commenter expressed concern that the remedy only addresses mercury and not other contaminants.	See response to Comment # 6.f.
	7.d.	The commenter noted that there is no bottom liner at the LCP Bridge Street facility and believes that the SCA at Wastebed 13 would be superior.	See response to Comment # 6.a. and 6.b.
Citizens Campaign for the Environment	8.a.	The commenter indicated that the group, in general, supports the clean-up plan.	The comment is acknowledged.
	8.b.	The commenter suggested that long -term monitoring of the LCP Bridge Street site containment facility be conducted.	Long-term monitoring of the LCP Bridge Street site containment facility is a component of the remedy for that site.
	8.c.	The commenter expressed concern about additional contamination from Wastebeds 9 and 10 and suggested that long-term monitoring and reporting be a part of the final cleanup plan.	The remedial programs for Geddes Brook/Ninemile Creek and Watebeds 9-10 will be coordinated. Insofar as the closure program for Wastebeds 9-10 may result in waste remaining at the site, long term monitoring (and reporting) to help ensure that closure measures are protective will be a component of the remedial program. Furthermore, the selected remedy for the remediation of Geddes Brook/Ninemile Creek OU-1 also includes requirements for long-term monitoring and reporting.
	8.d.	The commenter suggested that the chemical parameters of interest be tracked.	The comment refers to the statement that no chemical concentration data is available during peak flows recorded during periods of spring snowmelt or spring runoff. Although the OU1 Proposed Plan states that limited high flow data exist, it is not significant with respect to the selected remedy since all of OU1 is being remediated and clean sediment and clean soil are being placed throughout the remedial footprint.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Citizens Campaign for the Environment (Continued)	8.e.	The commenter inquired as to why the unnamed tributary is not being remediated.	The unnamed tributary is a drainage channel which historically received overflows from Wastebeds 12 through 15 when they were used as settling basins. The tributary, which discharges to lower Geddes Brook just upstream of the culvert under the railroad tracks, will be investigated this summer by Honeywell with DEC oversight.
	8.f.	The commenter suggested that the Geddes Brook/Ninemile Creek site be included in the Onondaga Lake Bottom Subsite Citizen Participation Plan.	The appropriateness of including the Geddes Brook/Ninemile Creek Site in the Onondaga Lake Bottom Subsite Citizen Participation Plan will be considered.
	8.g.	The commenter suggested that a World Wide Web-based document repository be developed.	NYSDEC currently uses the web to provide access to numerous documents related to the Onondaga Lake site. NYSDEC is currently evaluating the development of a web-based document repository for the Onondaga Lake Bottom Subsite and will consider including the Geddes Brook/Ninemile Creek Site.
	8.h.	The commenter suggested that signage should be placed along and near all project sites including, but not limited to, the Geddes Brook/Ninemile Creek projects and the Onondaga Lake shore.	Public outreach is always a part of the site remediation and may include signage to provide information about progress on site cleanup and, where appropriate, to ensure public safety. Therefore, the posting of signage will be considered during the remedial design.
Dan Gaffel	p. 34	The commenter asked what is the thickness of the clay layer and what is the extent of contamination within and below it.	A clay unit appears to underlie the entire Geddes Brook floodplain and the western portion of the Reach CD floodplain south of the small islands. Contaminant levels at the top of the clay are low or not detectable near the surface of the clay layer. Although the depth of the clay unit and the degree of contamination within and beneath it have not been determined, contaminants would not be expected to be present at levels of concern within or below the clay unit given the low or non-detect levels at its surface.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Dan Gaffel (Continued)	P. 82	The commenter asked if contaminants can move from groundwater from the site and migrate toward and into the lake.	Groundwater at the site is not considered to be a medium requiring remediation, since both Geddes Brook and Ninemile Creek below Amboy Dam are gaining streams (*i.e.*, groundwater flows upward, discharging into these water bodies). Any groundwater contamination beneath or near the Site would be from upland sites, which are and/or will be investigated separately, as appropriate.
Jack Ramston	p. 36	The commenter asked what is the capacity of the LCP Bridge Street disposal facility and what would be the increase in elevation at the site after receiving materials removed from the Geddes Brook/Ninemile Creek site.	The LCP Bridge Street facility has sufficient capacity to receive materials from the Geddes Brook/Ninemile Creek site. The increased elevation of the site following implementation of the actions for the Geddes Brook IRM and OU1 of the Geddes Brook/Ninemile Creek site would be approximately five feet. (See also response to Comment # 6.a.)
Les Monostory	p. 38	The commenter asked if the treatment for materials removed from the Geddes Brook/Ninemile Creek site would be similar to treatment of dredged material removed from Onondaga Lake.	The contaminated sediments that will be removed from Geddes Brook and Ninemile Creek will be managed in a similar manner as the sediments dredged from Onondaga Lake. The sediments that are removed from both sites will be dewatered prior to disposal. The water that will be generated as a result of the dewatering will be treated to meet permissible discharge requirements.
Sarah Eckel	OC1.a.	The commenter requested that the off-site disposal facilities that were considered be identified.	The off-site landfills considered were High Acres Landfill and the Ontario County Landfill. Both of these facilities are located near Rochester, New York.
	OC3.a.	The commenter suggested that public outreach, including signage, be part of the remediation plans.	See response to Comment # 8.h.
Sarah Eckel (Continued)	OC3.b.	The commenter suggested that the clean-up efforts for all of the subsites should be included in the Onondaga Lake Bottom Subsite Citizen Participation Plan.	The appropriateness of including other subsites in the Onondaga Lake Bottom Subsite Citizen Participation Plan will be considered.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
	OC3.c.	The commenter suggested that a web-based document repository be developed.	NYSDEC currently uses the web to provide access to numerous documents related to the Onondaga Lake site. NYSDEC is currently evaluating the development of a web-based document repository for the Onondaga Lake Site and will consider including the Geddes Brook/Ninemile Creek Site.
Jim Corbit Onondaga County Legislator	p. 30	The commenter asked if the floodplain adjacent to Geddes Brook will be connected to Ninemile Creek to enhance opportunities for trout.	The Geddes Brook IRM calls for changing the deeply incised, channelized stream to a shallow, sinuous channel, which would run through a restored wetland, with the potential to meander through that wetland, before entering Ninemile Creek. This will result in increased length of the channel and better connectivity with the floodplain, which will enhance the ecological value of both the wetland and the stream.
	OC2.a.	The commenter questioned why one would consider taking the sediment and soil from the site to a location other than the LCP site containment facility.	The OU1 Proposed Plan evaluated disposal at the LCP Bridge Street site containment facility, as well as off-site disposal, to determine which alternative was the better approach. Based upon an evaluation of the options, it was determined that the LCP site containment facility is the most appropriate.
Don Hughes	p. 32	The commenter asked why the site was broken up into segmented actions.	The actions were separated since the Geddes Brook channel and floodplain sediment and soil removal IRM is advancing more quickly than the rest of the Geddes Brook/Ninemile Creek remedial work. NYSDEC has entered into a Consent Order with Honeywell to perform the channel and floodplain sediment and soil removal IRM. Since the design of the sediment and soil removal IRM has already started, this effort is much further along than design for OU1 of the Geddes Brook/Ninemile Creek site. Rather than delay the IRM, the actions have been separated.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Don Hughes (Continued)	P. 69	The commenter requested clarification on the mercury cleanup levels associated with the different alternatives.	Alternative 2 consists of removal of contaminated Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD where concentrations exceed 1.3 mg/kg mercury (and PRGs for other CPOIs) up to a depth of 3 ft (90 cm) in the channel and 2 ft (60 cm) in the floodplain, placement of an isolation cap or backfill, and placement of a habitat layer. Alternative 4 consists of full removal of Ninemile Creek channel sediments and floodplain soils/sediments in Reaches BC and CD to a depth to meet criteria (0.15 mg/kg mercury and PRGs for other CPOIs) and placement of backfill and a habitat layer. Alternative 3 consists of removal, placement of an isolation cap or backfill, and placement of a habitat layer. Alternative 3 provides for more removal of contaminated channel sediment and floodplain soil at generally a greater depth, and a greater footprint based on steep banks (remedial area), than Alternative 2. Alternative 3 addresses all areas of the site such that the top two feet of sediments and soils would consist of clean material. The mercury cleanup goal for this clean material is less than, or equal to, 0.15 mg/kg in sediment and 0.18 mg/kg in soil.
	OC4.a.	The commenter suggested that the SCA that will be constructed as part of the Onondaga Lake Bottom remedy be considered for the disposal of contaminated sediments and soils removed as part of this project.	See response to Comment # 6.a.
	p. 83	The commenter expressed concern that the remedy focuses on addressing mercury only.	See response to Comment # 6.f.

Name/Agency	Comment Code or Transcript Page No.	Comment Summary	Response
Fred Miller	p. 79	The commenter asked how the remedial project will improve the trout population in the Ninemile Creek corridor.	In addition to removal and/or isolation of contaminated soil and sediment at the site, the selected remedy, in conjunction with the Geddes Brook IRM, will result in improved habitat conditions in and near Geddes Brook and Ninemile Creek. The combined actions will provide an enhanced emergent wetland community in the Geddes Brook floodplain, improve the connectivity of Geddes Brook and Ninemile Creek with their floodplains, improve wetland function and value, and allow for opportunities to create diverse habitats (*e.g.* vernal pools, forested floodplains). It should also be noted that a habitat restoration plan for Onondaga Lake is under development. One of the goals of the plan is to provide guidance in developing habitats that will meet general restoration goals for the lake and adjacent areas, including increasing the diversity of species in and around the lake. More information about this plan will become available as the design for the lake remedy moves forward.

RESPONSIVENESS SUMMARY

ATTACHMENT 2

Letters/Email Submitted During the Public Comment Period and Oral Comments Received During the Public Meeting

Commenter 1

Central New York's Water Authority

200 NORTHERN CONCOURSE
P.O. BOX 9
SYRACUSE, NY 13211-0009

PHONE: (315) 455-7061
FAX: (315) 455-8510

December 3, 2008

DEC 5 - 2008

Mr. Timothy Larson, P.E.
Project Manager
NYSDEC
625 Broadway, 12th Floor
Albany, NY 12233-7013

RE: Proposed plan for Operable Unit 1 of
The Geddes Brook / Nine Mile Creek Site
Onondaga Lake Superfund Site

Dear Mr. Larson:

We are in receipt of your proposed remedial alternatives being considered for the cleanup of the contamination source to Onondaga Lake. For your information, we have enclosed mapping related to our water facilities in the area of your project. 1.a.

An existing 8" CICL water main runs parallel to State Fair Boulevard and crosses under Nine Mile Creek. Our primary concern with your proposed work would be any permanent reduction of cover over that water main as it crosses the creek.

If you need further detailed information regarding that pipeline, please let us know. We stand ready to assist you with any issues or questions you may have.

Very truly yours,

OCWA

Patrick Sherlock
Water Systems Construction Engineer

PS:sa

Encl: mapping

Cc: Misc. Eng.
M.E. Hooker

E:\WORD\ENG\PS\larson-DEC-12308.doc

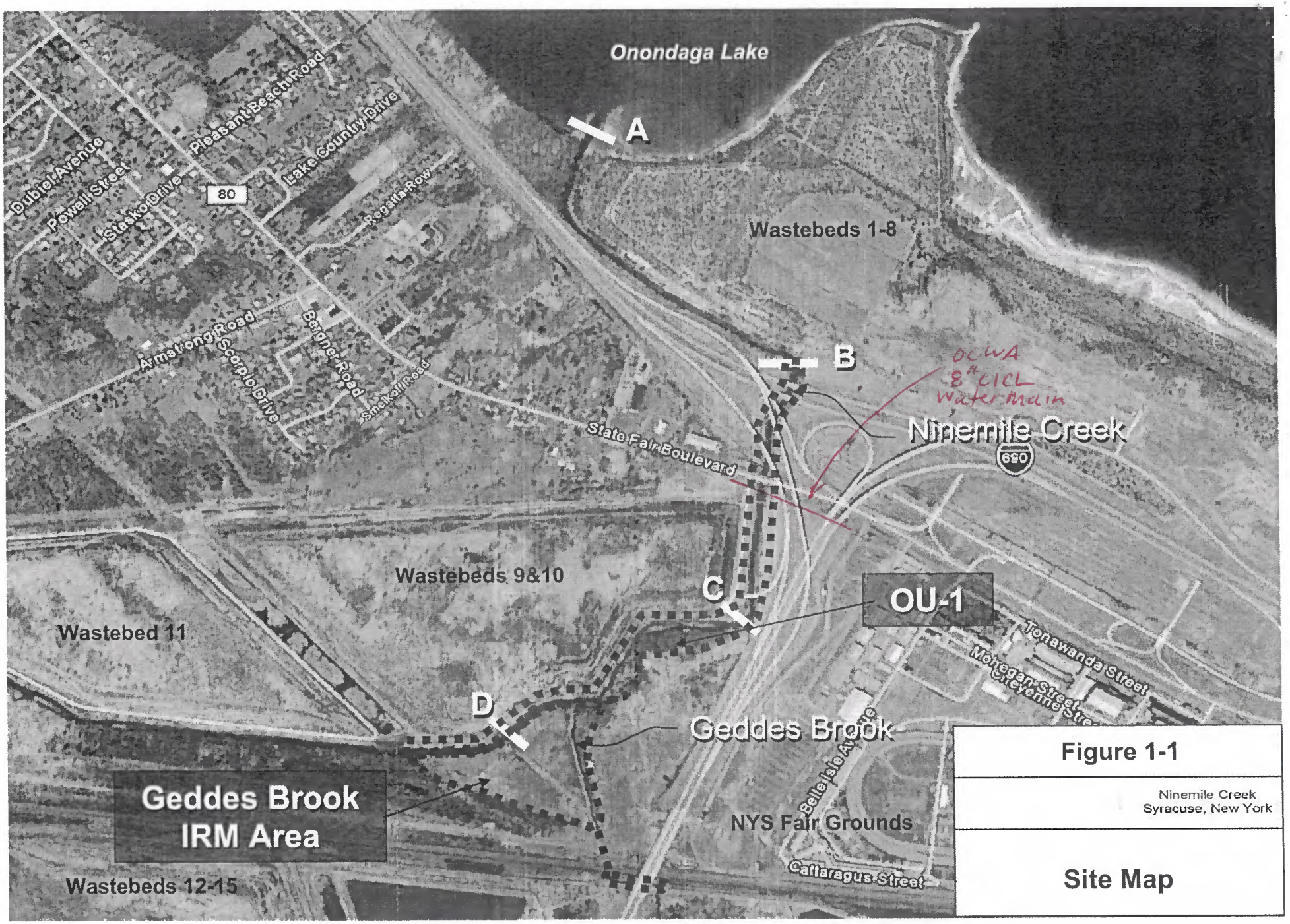
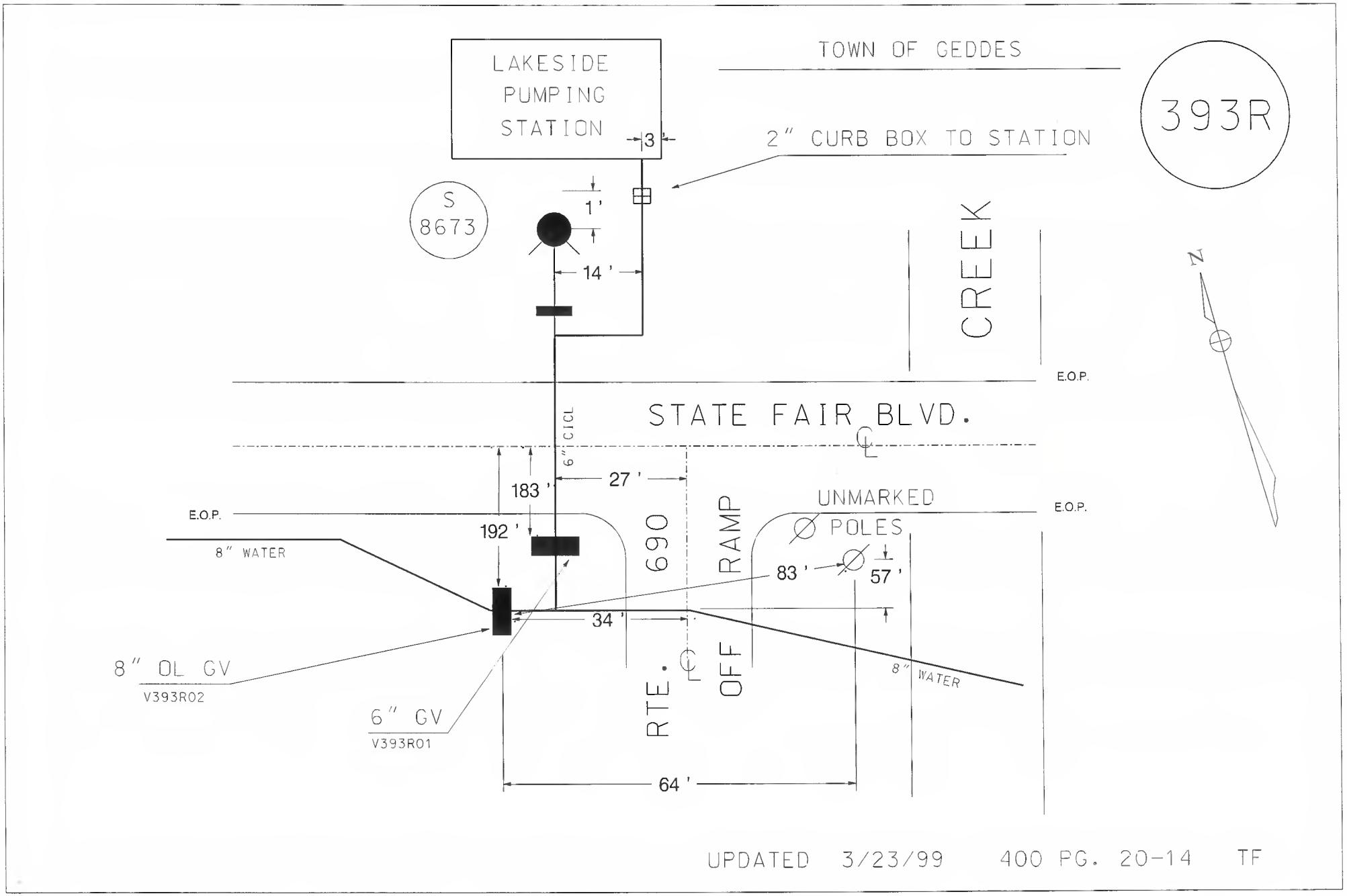


Figure 1-1

Ninemile Creek
Syracuse, New York

Site Map


LAKESIDE PUMPING STATION
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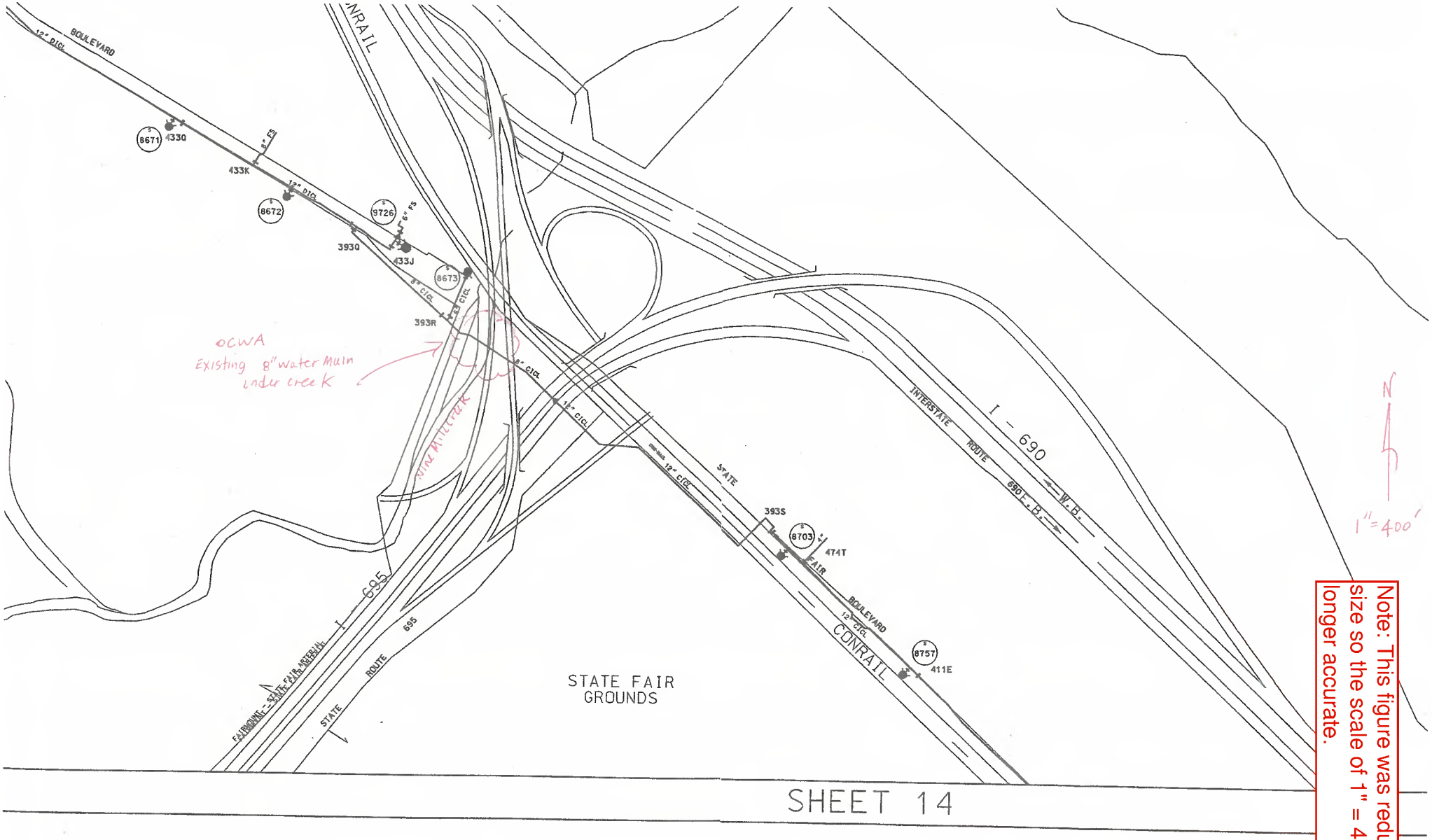
TOWN OF GEDDES
393R
2" CURB BOX TO STATION
S 8673
1'
14'
CREEK
N
E.O.P.
STATE FAIR BLVD.
6" CICL
27'
183'
192'
E.O.P.
8" WATER
690
RAMP
UNMARKED POLES
E.O.P.
83'
57'
34'
8" OL GV
V393R02
6" GV
V393R01
RTE.
OFF
8" WATER
64'
UPDATED 3/23/99 400 PG. 20-14 TF



Note: This figure was reduced in size so the scale of 1" = 400' is no longer accurate.

Commenter 2

THE SENATE
STATE OF NEW YORK

CHAIRMAN
JUDICIARY
COMMITTEE ASSIGNMENTS
BANKS
CODES
ENERGY & TELECOMMUNICATIONS
FINANCE
HEALTH
TOURISM RECREATION
& SPORTS DEVELOPMENT
DEPUTY MAJORITY LEADER FOR
INTERGOVERNMENTAL AFFAIRS

JOHN A DeFRANCISCO
SENATOR 50TH DISTRICT

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SYRACUSE NEW YORK 13202
315-428-7632

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jdefranc@senate state ny us
website
www senatordefrancisco org

December 9, 2008

Mr. Pete Grannis
Commissioner
Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1011

Dear Commissioner Grannis:

I am writing today to express my support for the restoration of Onondaga Lake. This project is of vital importance to our constituents.

Significant progress has been made to date to remediate the source of mercury flow into the lake at the former LCP plant and to create an emergent wetland. The next step in the remediation of the upland sites, Geddes Brook/Ninemile Creek, brings the opportunity to continue the progress at the upland sites and prevent contamination from reaching the lake.

Once the restoration project has been completed Onondaga Lake can once again be a major attraction for this region. This is a critical project and it has my full support.

If you have any questions please contact my Syracuse office. I wish you and your staff Happy Holidays.

Very truly yours,

John A. DeFrancisco
State Senator

JAD/cjm

DAVID A. PATERSON
GOVERNOR

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

ALEXANDER B. GRANNIS
COMMISSIONER

DEC 2 9 2008

Honorable John A. DeFrancisco
New York State Senate
State Office Building - Room 800
333 East Washington Street
Syracuse, New York 13202

Dear Senator DeFrancisco:

Thank you for your letter regarding the restoration of Onondaga Lake and the proposed remedial plan for Geddes Brook/Nine Mile Creek. The Department appreciates your interest in the Lake project and we agree that significant progress has been made to date.

As you are aware, the Geddes Brook/Nine Mile Creek remedial plan has been released for public comment and we will accept comments through January 19, 2009. DEC staff will review all public comments, prepare a responsive summary and issue a Record of Decision (or final remedial plan) on or before April 30, 2009. To the extent warranted, the proposed plan will be amended to address public comments and concerns.

Upon issuance of the final plan, remedial design and cleanup work can commence, which will be another significant step in the restoration of Onondaga Lake. As you stated, addressing upland sites such as Geddes Brook/Nine Mile Creek is needed in order to eliminate impacts to Onondaga Lake. In addition, these upland areas will become healthy environments for recreation, wildlife habitat and other beneficial uses. As we address these upland sites, we are continuing to work with Honeywell as it designs and ultimately implements the final plan for the Lake itself.

The Department is confident that the water quality and environmental improvements we have documented in the Lake will continue to progress as projects such as the Geddes Brook/Nine Mile Creek cleanup move forward.

Please call me at (518) 402-8540 if you have any questions.

Sincerely,

Pete

Alexander B. Grannis

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REMEDIAL BUREAU B

Onondaga County Federation of Sportsmen's Clubs

Commenter 3

December 15, 2008

Mr. Timothy Larson, P.E., Project Manager
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7016

R.E.: Proposed Remedial Plan for the Geddes Brook/Ninemile Creek Site (Operable Unit 1) in the Town of Geddes

Dear Mr. Larson:

The Onondaga County Federation of Sportsmen's Clubs represents over 5,000 members in over 38 Sporting Organizations throughout Central New York (DEC Region 7).

The Onondaga County Federation of Sportsmen's Clubs has attended meetings and has viewed presentations on the remedial alternatives proposed to remove contaminated sediments from the lower Geddes Brook and Ninemile Creek sites (Operable Unit 1) in the Town of Geddes.

The Sportsmen's Federation is aware that both Geddes Brook and Nine Mile Creek contain heavily contaminated sediments due to past mercury discharges from the former LCP Plant, and additional contaminants, including benzenes, phenols, PCB's, etc. discharged from the former Allied Chemical plant operations.

The OCFSC is committed to the Clean Water Act goal of achieving 'fishable' waters in Onondaga Lake and its tributary streams, including the attainment of reduced contaminant levels that will allow for eventual consumption of resident populations of panfish and game fish.

Four principal alternative plans have been proposed by the NYS Department of Environmental Conservation and the US Environmental Protection Agency, in consultation with the NYS Department of Health, for remediation of the contaminated sediments and floodplain soils along lower Geddes Brook and Ninemile Creek.

We have reviewed the proposed remedies for dredging & excavation of contaminated channel sediments and the floodplain soils/sediments over an area of approximately 15 acres in Operable Unit 1, and the proposed transport and disposal of contaminated soils at Honeywell's LCP Bridge Street containment site.

Stephen Wowelko | 5829 Augsburg Circle | East Syracuse, NY 13057 | (315) 506-2117 | wowelko@juno.com

The proposed plan includes measures for restoration of the stream bed and banks, wetland habitat improvements, and placement of an isolation cap or backfill in the dredged or excavated areas, where needed.

The Onondaga County Federation of Sportsmen's Clubs supports implementation of the preferred remedy selected by NYSDEC and USEPA, which would remove approximately 64,000 cubic yards of contaminated sediments over a 2-year period at an estimated cost of $20 million dollars. 3.a.

It is our understanding that the preferred remedy is intended to meet EPA's water quality standards to achieve fish tissue mercury concentrations supportive of wildlife consumption, as well as for the protection of sportsmen and other residents who may wish to consume fish taken from Onondaga Lake and its tributaries. 3.b.

Very truly yours,

Stephen Wowelko, President
Onondaga County Federation of Sportsmen's Clubs

Les Monostory, Vice President

Cc: Kenneth Lynch, Regional Director
NYS Department of Environmental Conservation

Stephen Wowelko | 5829 Augsburg Circle | East Syracuse, NY 13057 | (315) 506-2117 | wowelko@juno.com

Commenter 4

Tim Larson - Geddes 9-miles clean up

From: "David Stott" <dstott@datacomsystems.com>
To: derweb@gw.dec.state.ny.us; tjlarson@gw.dec.state.ny.us
Date: 12/29/2008 2:13 PM
Subject: Geddes 9-miles clean up

DEC,

I'm writing regarding the December 10th, DEC public hearing where I testified in support of the remediation of the contamination that has plagued Onondaga Lake for decades. Much progress has been since the lake cleanup began and we are at a critical point in the decision making process where a choice must be made. In my opinion, the only two realistic options to effectively remove and/or contain the contaminated sediment from the Geddes 9-mile site will cost Honeywell Corporation $18.9 million to $29.2 million. The first option is to remove 59,000 cubic yards (cy) and the second, 73,000cy of the contaminated sediment.

When I look at the proposed solutions, I can't help but think back to the 1982 decision when the Town of Salina Landfill was capped at a cost of nearly $20 million. The DEC and elected officials back then must have been confident that they had an effective plan that would contain the contaminants. Twenty-six years later the Town is facing a DEC mandate to recap the landfill at a cost close to $25 million. In my opinion, this is in part additional justification for removal of the additional 14,000cy of contaminated sediment. The DEC states that both options provide the same overall protection to human health and the environment and comply with State and Federal regulations. The precedent of the need to recap the Salina Landfill led me to challenge the logic of capping the remaining 14,000cy of contaminated sediment. Despite the nature of mercury and how it rests in the sediment, removing it and other contaminants would remove the "what ifs" from future discussions. Rather than doing just what is required by current "regulations", let's do it right the first time! The community deserves nothing less. 4.a.

My interest here is to protect the current and future interest of our community. A significant number of residents that I represent live along the north half of Onondaga Lake in the Village of Liverpool, along Old Liverpool Road and Route 370.

Thank you,

David M. Stott
4th District Onondaga County Legislator

Commenter 5

Onondaga County Legislature

William H. Meyer, Jr.
Chairman
401 Montgomery Street · Court House · Room 407 · Syracuse, New York 13202
Phone (315) 435-2070 · Fax (315) 435-8434

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REMEDIAL BUREAU D

January 16, 2009

Timothy Larson, PE
Project Manager
NYS Department of Environmental Conservation
625 Broadway
12th Floor
Albany, New York 12233-7013

Dear Mr. Larson:

I am writing to offer my support and urge that your department continue your efforts in the clean up of Onondaga Lake. Currently, our County is in the middle of a multi-year Amended Consent Judgment (ACJ) to upgrade the METRO treatment plant and provide treatment for the combined sewer overflows into Onondaga Lake. These operations are meeting or exceeding the requirements set forth in the ACJ and we are receiving reports from the experts that the water quality is the best they've reported in decades. Great taxpayer expense has been invested in this project which will pay off in a tremendous community resource for future generations. 5.a.

On a separate, but related project, Honeywell is taking responsibility and addressing industrial contamination on the lake bottom and upland properties as a result of their predecessor company's former manufacturing operations. I am pleased to hear great progress is being made at remediating these sites, including the former LCP site and construction of the barrier wall along the lake's southwest corner in Geddes, both of which are effectively stopping additional contamination from reaching the lake.

These two separate projects must work in tandem if this community is to realize a clean Onondaga Lake. The cleanup of Onondaga Lake is one of the most important projects to the people of Central New York and will have terrific positive lasting benefits to this region's quality of living. I look forward to the day this community will be able to experience a clean lake which will provide for a variety of recreational activities including bird watching, fishing, boating and eventually swimming. 5.b.

I commend the Department of Environmental Conservation for your extensive efforts in developing innovative, effective solutions through all facets of this complex project and ensuring the remediation plans will protect the community's health and environment. I also commend you for bringing in the top national experts who have provided their knowledge and expertise in the consultation process. I urge your Department to continue its efforts and proceed with implementing the next step of the lake cleanup by issuing a decision on Remedial Alternative Three for Geddes Brook/ Ninemile Creek as recommended without delay or unnecessary extensions to the lake cleanup progress.

5.c.

Let us continue to work together to finally return this valuable asset to the community. Should you have any further questions or concerns, please do not hesitate to contact me.

Sincerely,

Bill

William H. Meyer, Jr.
Chairman

Commenter 6

ATLANTIC STATES LEGAL FOUNDATION, INC.

16 January 2009

Tracy Smith
Geddes Brook Interim Remedial Measure – Public Comment
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Re: Geddes Brook Interim Remedial Measure Comments

Dear Tracy Smith:

The attached comments represent Atlantic States Legal Foundation's formal submittal to the hearing record for the PRAP for Geddes Brook/Ninemile Creek Site Subsite of the Onondaga Lake Superfund Site.

The comments submitted have been prepared by Atlantic States Legal Foundation with the assistance of our technical consultants Hughes Consulting. Financial support for employing these technical consultants is acknowledged from the EPA TAG program.

If our comments require further clarification or elaboration, we will be happy to provide supplemental materials to you.

Very truly yours,

Samuel H. Sage, President

Cc: Robert Nunes
Donald Hesler
Timothy Larson

658 West Onondaga St. Syracuse, NY 13204-3711 (315) 475-1170 FAX (315) 475-6719 Atlantic.States@aslf.org

Submission to the New York State Department of Environmental Conservation
Comments on Operable Unit 1 of the Geddes Brook/Ninemile Creek Site, Onondaga County, New York
Comments Prepared by Donald Hughes, Hughes Consulting Services on Behalf Atlantic States Legal Foundation, Inc., January 2009

These comments specifically address Operable Unit 1 in Geddes Brook/Ninemile Creek (GB/NMC), including the IRM for Geddes Brook.

Atlantic States Legal Foundation, Inc. (ASLF) applauds the efforts of the NYSDEC and Honeywell Inc. to clean up the extensive contamination that exists in Geddes Brook and Ninemile Creek. This cleanup effort is long overdue as these tributaries have suffered from decades of abuse from both the Wastebeds and discharges from the LCP facility. In addition, runoff from numerous landfills and other industrial operations combined with the above mentioned sources have resulted in extensive deposits of Solvay waste, extensive calcite precipitation, and contamination from a host of substances including hexachorobenzene, mercury and other toxic metals, PCBs, PAHs, and chlorinated dioxins and furans. The latter two groups of substances are among the most notoriously toxic substances known. The tributaries and wildlife that frequent them, and people who live near, drive by and recreate there have paid a terrible price for these many decades of abuse.

COMMENT 1. The SEDIMENT CONTAINMENT AREA (SCA) should be considered for disposal of contaminated sediments and soils removed as part of this project. 6.a.

The Proposed Plan for OU-1 makes a comparison of two disposal options: an off-site landfill located in Rochester, NY, and the former LCP site. The Proposed Plan fails to consider the third option, namely disposal at the Sediment Containment Area (SCA) to be constructed on Wastebed 13. ASLF requests the NYSDEC, with the concurrence of the USEPA, to re-evaluate the Proposed Plan with disposal of excavated soils and sediments from OU-1 and the Geddes Brook IRM into the SCA. The total volume of material to be removed is:

OU-1 sediments + soils	59,000 – 73,000 cy
Geddes Brook IRM sediments	4,700 cy
Geddes Brook IRM soils	62,000 cy

Thus, the total volume is under 150,000 cy. This amount represents a miniscule amount in comparison to the estimated 2.65 million cubic yards of sediments to be dredged from

Onondaga Lake. The hydraulically dredged lake sediments will occupy a considerably larger volume when discharged as a slurry into the SCA. Thus, the addition of Geddes Brook and Ninemile Creek soils and sediments would have negligible impact on the SCA design.

The SCA offers numerous advantages for disposal:

1. It is close by so transportation costs and environmental impacts will be minimal.
2. The site is already designed to contain sediments from Onondaga Lake. These sediments are similar to GB/NMC sediments (high calcite and Solvay waste content) and contain similar contaminants.
3. The SCA sits on top of an existing wastebed. Thus, no additional real estate is sacrificed for waste disposal.
4. The underlying Solvay Waste, on the order of 60 feet thick, serves as additional long-term protection against potential leakage of contaminants in the future.

ASLF recognizes that this facility is nearing the end of the design phase. With proper planning, it should be possible to coordinate sediment and soil removal activities with construction of the SCA. Consideration should be given to construction of an intermediate staging facility if the SCA is not ready in time to accept sediment and soils from this cleanup effort.

COMMENT 2: The former LCP chlor-alkali facility, despite its status as a remediated site, is NOT a suitable disposal site. 6.b.

The sediments to be removed from Geddes Brook and Ninemile Creek contain numerous contaminants. In addition to total mercury, the sediments contain:

methyl mercury	up to 20 ppb
arsenic	up to 100 ppm
copper	up to 189 ppm
lead	up to 357 ppm
nickel	up to 109 ppm

hexachlorobenzene	up to 140,000 ppb
polyaromatic hydrocarbons	up to 55,000 ppb
(floodplain soils contain even higher concentrations of PAHs)	
PCBs	up to 2,000 ppb
chlorinated dioxins and furans	up to 218 ng/kg as TEQ for humans & mammals

This wide variety of toxic contaminants—none of which breakdown quickly if at all--needs to be handled with great care, and disposed of in a facility that is designed to completely contain them for the long term. Such as facility is being constructed on Wastebed 13 to contain sediments dredged from Onondaga Lake. These sediments contain a similar suite of chemicals. (see Comment 1 above.)

LCP site is not a permitted hazardous waste facility. It is a remediated chemical plant which still contains copious amounts of mercury, as well as residual PCBs in soils and sediments. It is ***not*** lined. Containment of environmental contaminants depends on a slurry wall and continuously pumping and treating site groundwater indefinitely into the future. This is not a sustainable solution. It makes no sense from a policy or environmental engineering point of view to add contamination to this site. Not only would the selected remedy for OU-1 and the Geddes Brook IRM ***increase*** the amount of mercury and PCBs at the LCP site, it would also add contaminants not currently found at the LCP site, such as hexachlorobenzene and chlorinated dioxins and furans.

At the time that the Proposed Remedial Action Plan for the LCP Bridge St. subsite was proposed, David Coburn, Director of the Onondaga County Office of Environment offered the following comments on behalf of Onondaga County:

"The County does not believe the creation of a permanent mercury waste landfill on the shores of Onondaga Lake is desirable. While it is time for action, the County cautions that it would be foolhardy to assume that the proposed remedy represents a complete, final or lasting solution to the gross contamination at this site."

Mr. Coburn went on to cite the New York State DEC's reasons for rejecting, for a second time, Allied-Signal's Remedial Investigation report:

"The Remedial Investigation Report is inadequate because of substantial deficiencies in its description of contamination at and near the Site and substantial deficiencies in its assessment of the risks to human health and the biological community posed by such contamination. The Remedial Investigation Report did not accurately and conservatively assess risks to human health, underestimated potential risks to the biological community, and did not provide adequate information for remedy selection and design."

At the present time, to the best our knowledge, this lack of "adequate information for remedy selection and design" has never been corrected. Thus, the State, together with Allied-Signal (now Honeywell), relied on insufficient data on which to create a remediation plan. Reliance on a slurry wall, groundwater treatment, and a yet-to-be-constructed cap for permanent containment of mercury wastes is foolhardy indeed. To ***add*** contamination to this site adds insult to injury.

The Proposed Plan makes the claim that disposal at the LCP site would be compliant with "location-specific and action-specific ARARs." ***ASLF contends that this assertion is not true, and that therefore, this disposal option fails to meet the "threshold criteria" specified under CERCLA.***

As noted above, the LCP site is not lined, and therefore *does not* comply with the requirements for a landfill as provided in the NYSDEC Part 360 and Part 370 regulations. These regulations require a composite liner, leachate collection system, as well as an engineered cap. The cap is the only component which will be constructed at the LCP site.

As noted on the NYSDEC website:
"The liner required for an industrial/commercial waste monofill landfill is a double composite liner with primary and secondary leachate collection and removal systems. Alternative liner system designs will be considered if the applicant demonstrates that the proposed alternative liner will prevent a negative impact on groundwater."

Nowhere do NYSDEC regulations state that an ***unlined landfill*** is an appropriate method of managing industrial waste.

COMMENT 3. The complete removal of contaminated sediments and floodplain soils under the Geddes Brook IRM is completely appropriate. 6.c.

ASLF endorses the proposed IRM as a means of eliminating contamination in and around Geddes brook. In addition, the restoration of meanders and creation of wetlands will be a positive step towards restoring this badly degraded waterway. ASLF recommends that the wetland creation be done in such a manner that the wetland habitat is permanently restored with native wetland plant species. Care should be taken to eliminate invasive species such as phragmites, not only within the project area, but also in adjacent areas. Failure to remove invasive species in a large contiguous area will only guarantee their return in the near future.

COMMENT 4. Uncorrected injuries to the environment must be addressed under Natural Resources Damage Assessment (NRDA). 6.d.

The State and USEPA must recognize that this remediation effort will not correct many injuries inflicted on Geddes Brook and Ninemile Creek. In particular, meanders that were destroyed due to construction of Wastebeds 1-8, followed by Wastebeds 9-11, will not be restored under the proposed Remedy. While ASLF applauds the creation of habitat along Geddes Brook, this does not compensate for the loss of significant wetlands and stream sinuosity in Ninemile Creek. This loss should be compensated through the NRDA.

Comment 5. USEPA has established a water quality criterion of 0.3 ppm (mg/kg) mercury in fish tissue. This should be considered a specific cleanup objective. 6.e.

The USEPA issued a unique water quality criterion for mercury and methylmercury — one which is based on the concentration of these substances in fish tissue. The Proposed Plan states that the preferred remedy is intended to achieve fish tissue mercury concentrations ranging from 0.1 (ecological goal) to 0.3 mg/kg (USEPA water quality criterion). It is not clear from the plan whether these targets are actually enforceable. ALSF recommends that these targets be established as enforceable goals for the cleanup of these two waterways.

Comment 6. The Preferred Remedy for OU-1 —Alternative 3 — appears to be a reasonable compromise in terms of environmental protection versus cost. However, ASLF cautions against several components of this Alternative.

a. There appears to be an overall assumption that cleanup of mercury will result in cleanup of other contaminants. While this may be true in many locations, the data indicate that it is not always true. Hexachlorobenzene (HCB) occurs at alarmingly high concentrations in the sediments of both Geddes Brook and Ninemile Creek. HCB is above the Wildlife bioaccumulation criteria of 252 µg/kg in many cores, especially at depths greater than 75 cm (see Figure 5-10, GB/NMC RI; TAMS, July 2003). The ***human health criterion of 3.15 µg/kg is exceeded in every sample, at all depths. ASLF recommends that HCB be used, in addition to mercury, as a primary indicator of whether portions of the site are adequately cleaned up.*** 6.f.

b. There is too much reliance on capping. Capping should be used only as a last resort, because it is subject to erosion, and therefore requires maintenance. Additional data gathered during the Pre-design Investigation (PDI) should be used to determine where, for example, some additional dredging could be used to eliminate capping. It does not make sense to place a 2-foot thick cap if only 1-foot of contamination remains. 6.g.

c. The use of 3-feet as a delimiting depth for the removal of floodplain soils appears to be based simply on the fact that deeper soils were not sampled. The depth of soil removal should not be fixed, but rather should vary depending on the results of the PDI. 6.h.

Commenter 7

From: derf mil <derfmil@yahoo.com>
To: <tjlarson@gw.dec.state.ny.us>
Date: 1/20/2009 4:54 PM
Subject: Geddes Brook-9 Mile Creek Site,Comments on Operable Unit 1

Nine Mile Creek Conservation Council,Inc.
P.O. Box 2501
Liverpool,NY 13089-2501
www.ninemileccc.org

Responses on matter to:
Fred Miller,President
7730 Apricot Lane
Liverpool,New York 13090
315-622-9400
January 18,2009

Mr. Timothy J.Larson,P.E.
Project Manager
N.Y.State Department of Environmental Conservation
625 Broadway
12th Floor
Albany,New York 12233-7013
518-402-9789
tjlarson@gw.dec.state.ny.us

Re:Public Comment Submission to NYSDEC re:Comments Operable Unit 1
of Geddes Brook/Nine Mile Creek Site,Onondaga County,New York.

Dear Mr. Larson:

The Nine Mile Creek Conservation Council,Inc.(NMCCC)is a river conservation group serving Nine Mile Creek and associated tributaries.The organization is involved with a variety of river and watershed conservation and protection issues within our watershed.

The NMCCC welcomes the plans to remediate the Geddes-Nine Mile sectors.NMCCC supports OU-1,Alternative 3.Our focus and concerns in this plan would be: 7.a.

a)the maximal clean-up allowing wildlife and aquatic species to proliferation including the re-establishment of species eliminated due to industrial activities at the site.

b)the maximal restoration,width dimensions and vegetative plantings to create a thriving riparian buffer and wildlife corridor.The riparian buffer also serves as a viewshed background to the 9 Mile Creek Canoe and Kayak water trail.

c)the preservation of open space to link together exisitng areas and new ones as the Honeywell sites are remediated in the years ahead.

The NMCCC would also support Alternative 3 but with a design and policy for digging deeply as possible to remove as many contaminants as possible and,secondly,preferring the deep removal engineering instead of an over-reliance upon capping sediment. 7.b.

NMCCC recognizes that mercury is not the only contaminant at the site.There is a

complicated mixture of many contaminants beyond mercury itself.Hexachlorobenzene(pesticide compound)is among one of the most toxic within the contaminant cake mix.There appears to be a public perception the removal of mercury alone solves contamination problems.While the levels can vary from location to location,all contaminants must be addressed specifically rather than any convenient averaging. 7.c.

NMCCC also holds some concerns with the LCP site.LCP is an unlined site and former industrial chemical plant.We have concerns with adding more contaminants to this already contaminated site and the pumping of ground water forever.Based upon monitoring various clean up proposals over the years we think Wastebed #13 to be a superior site with added engineering improvements and provides a more sensible site selection for the GB-NMC waste.This would be in the long-term interest and protection of our community. 7.d.

We thank DEC for holding the public plan presentation December 10th,2008.NMCCC is a continuing partner in this process.Submitted for the NMCCC by NMCCC president.

Sincerely,
Fred Miller,President NMCCC

Tim Larson - Geddes Brook/Ninemile Creek PP Comments

From: Sarah Eckel <seckel@citizenscampaign.org>
To: <DERweb@gw.dec.state.ny.us>
Date: 1/21/2009 2:49 PM
Subject: Geddes Brook/Ninemile Creek PP Comments
Attachments: GB.NMC.OU1.CCE.final011909.doc

These were returned to my mail box so I am attempting to resubmit again.

Thanks,
Sarah Eckel
--
Sarah Eckel
Program Coordinator
Citizens Campaign for the Environment
466 Westcott St. 2nd Floor
Syracuse, NY 13210
o: 315-472-1339
c: 202-486-9007
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Empowering Communities, Advocating Solutions.

January 19, 2009

Commenter 8

Timothy Larson
Geddes Brook/ Ninemile Creek Site- Public Comments
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7016

RE: Geddes Brook/Ninemile Creek Operable Unit 1 Proposed Clean-up Plan

Citizens Campaign for the Environment (CCE) is an 80,000 member non-profit, non-partisan environmental advocacy organization that works to empower communities and advocate solutions that protect public health and the natural environment. CCE has 4,000 members in Onondaga County and continues to educate our members on the progress of the overall Onondaga Lake clean-up.

CCE commends the New York State Department of Environmental Conservation (DEC) for moving forward with upland remediation and creating actionable plans that provide clear remediation efforts for the overall remediation of Onondaga Lake. In general, CCE supports the clean-up plan proposed by the DEC and Honeywell for Geddes Brook/Ninemile Creek Operable Unit 1. CCE offers the following specific comments in relation to the clean-up and methods for communicating those plans and results to the public. 8.a.

1. **Long-Term Monitoring of Dredge/Waste Materials**- During the public hearing for the Geddes Brook/Ninemile Creek Operable Unit 1 some expressed concern on the dredge/waste materials being stored at the LCP site. CCE supports the dredge/waste materials being stored at the LCP site, for the express purpose of continuing to hold Honeywell accountable for the contamination of those materials. However, in order to adequately address public concern over the storage and long-term control of those materials, CCE recommends regular testing and reporting of the areas around the deposited dredge materials in order to alleviate this concern. 8.b.
2. **Long-Term Monitoring and Reporting of Floodplain Remediation-** Additionally, with the creation of the floodplain between Ninemile Creek and Wastebeds 9-10 (p.9), CCE is concerned about additional contamination from wastebeds 9-10. CCE recommends long-term monitoring and reporting should be a part of the final clean-up plan in order to address public concern about the effectiveness of remediation. 8.c.

3. **Tracking and Reporting Chemical Parameters of Interest-** In the proposed plan (p. 36) the DEC states that there is no data on the transportation and fate of the Chemical Parameters of Interest (CPOIs). CCE firmly believes that while Honeywell has operated in good faith and moved forward with plans for remediation, it is imperative that the clean-up be complete and all forms of contamination are addressed. 8.d.
4. **Tributary Remediation-** CCE is concerned that tributaries are not being remediated (p.24)- The unnmaed tributary runs next to wastebeds 12-15, however there is neither a stated action for remediation, nor evidence that such remediation is not necessary. The primary reason being that it is not a part of this project. CCE recommends that future actions or additional projects be at least referenced in final/proposed plans in order to alleviate concerns from the uncertainty of remediation actions. 8.e.
5. **Geddes Brook/Ninemile Creek inclusion in the Citizen Participation Plan-** The Citizen Participation Plan gives Honeywell, the DEC, and the citizens of Onondaga County a directed forum to address the questions that will arise from these multiple projects. The inconsistency that naturally arises from having multiple projects dealing with one overall remediation, the clean-up of Onondaga Lake, leads CCE to strongly recommend that all Honeywell remediation projects related to Onondaga Lake should be incorporated in the Citizen Participation Plan. 8.f.
6. **Web-based Repository of Historical/Pertinent Documents-** Records of Decision, proposed plans, and final decisions should all be posted- from the Onondaga Lake bottom to the West Flume project. These documents should be housed with project updates and deadlines for public comment. As this long and tedious overall clean-up plan moves forward it is imperative that the DEC provides a clear overall picture of the projects that are impacting the health of Onondaga Lake and provide a clearer understanding of the reason why smaller projects are being done before the larger project of the remediation of Onondaga Lake. CCE recommends, for the purposes of consistency and ease of communication, Honeywell and the DEC construct a comprehensive web-based document repository. 8.g.
7. **Signage-** CCE recommends that signage be placed along and near all project sites including but not limited to the Geddes Brook/Ninemile Creek projects and the Onondaga Lake shore. Again, this will solidify the whole of the actions and incorporate all the work being done in the area to clean-up Onondaga Lake, as all these are connected to the full health and restoration of the Lake. 8.h.

In closing, CCE applauds the DEC and Honeywell for choosing an alternative that remediates Geddes Brook and Ninemile Creek as well as the adjacent floodplain. CCE also thanks the DEC for its thoughtful consideration of our comments.

Best Regards,

Sarah Eckel
Central New York Program Coordinator

PARSONS ENGINEERING OF NEW YORK

NYSDEC/EPA Public Meeting

December 10, 2008

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[START DEC12102008]

MS. DIANE CARLTON: Would everyone please take your seats. We'd like to get the meeting started, so we can get going on time and get you all home on time. Weather's not the greatest thing out there this evening. I'd like to welcome everyone to the Geddes Brook Nine Mile Creek meeting. My name is Diane Carlton. I'm with the New York State DEC here in Syracuse, New York, and I just want to lay out for you, so you have some idea of how the meeting's going to happen tonight. So you're not sitting there in your seats wondering when you're gonna get a chance to speak. The first thing we're going to do is we're gonna have a short PowerPoint presentation that Tim Larson from our DER Division in Albany is going to present, then we're going to open it up to public comments. By public comments that's for those you who filled in these

neat little cards. We only have six of them, so after we finish with the six comments if there's anyone else who has a brainstorm and would like to say something strictly in a comment sense, we will certainly open the floor up for that. And after the comment period, then we're going to open it up for questions and answers. That's when there's a discourse back and forth between us. Couple of ground rules for those of you who don't know where the bathrooms are. The exits are obviously well marked. The bathrooms are up here and off to you left, and the other thing that you should know is that this meeting is being taped this evening, so for those of you that are getting up and speaking on the public record. When your name is called, if you would you please spell your last name if it's an unusual spelling or your first name if it's an unusual spelling, so that the stenographer who's

recording it can make sure that it's properly recorded. With that we're gonna open the meeting up and I would like to introduce Tim Larson from our division of Environmental Remediation, who is going to make our PowerPoint presentation on Geddes Brook Nine Mile Creek. Tim.

MR. TIM LARSON. Thank you, Diane and thank you everybody for coming tonight. I'm going to be going through a presentation like Diane said on Geddes Brook and Nine Mile Creek. There's a lot of information to be presented and also hopefully a lot of people had a chance to take a look at the poster boards that we have that show a lot of information as well about the site. And as I go through the presentation I'm gonna go relatively quickly. There's a lot of information and basically don’t want to turn this into an incredibly lengthy presentation, but also there's valuable information I want to

make sure that we convey to people. Probably—hopefully anyway a lot of your questions will be answered as we go through the presentation. Just as far as perspective goes, the site we're talking about is Geddes Brook and Nine Mile Creek, which is located right here and as far as the big picture we have the Onondaga Lake site that's being remediated. And it's being remediated as part of an NPL site, National Priority List. That's EPA listing of the most significant sites in the country. Onondaga NPL site is one of those sites and it's broken up into sub sites as we call it. There's various sub sites. There's two General Motors sites. The town of Salina Landfill, Waste Bed B Harbor Brook, Willis Avenue, Semet Residue Ponds, LCP Bridge Street, and we have Geddes Brook and Nine Mile Creek. The lake itself is called the Lake Bottom, so there's basically eight sub sites that

comprise the NPL site. As far as coming in a little bit closer as far as the site goes. We have Nine Mile Creek going all the way up to Amboy Dam following all the way down to the lake, and then we basically have Geddes Brook and Bridge Street. And the majority of the contamination that impacted Geddes Brook and Nine Mile Creek that's the purpose of today's discussion came from Bridge Street, and you basically have the State fair grounds, the waste beds, which most people are probably familiar with as well as far as just a little geographic information. As far as this discussion tonight we're going to be talking about the remedial investigation, and the remedial investigation was where we actually went out and collected samples of soil, sediment, surface water, and these are samples we basically collect to help us give a picture of the contamination

that exists at the site. There's feasibility studies, and the feasibility studies take the information we gathered as part of a remedial investigation and compiles it into remedial alternative, clean up measures if you will. The feasibility study is where various clean up measures were actually evaluated. The proposed plan and that's one of the focuses of our discussion tonight is a selection of a few of those alternatives and where DEC and EPA actually presents their preferred remedial alternative for cleaning up the site. Another part of the presentation will be towards the end of the presentation will be a discussion about the Geddes Brook interim remedial measure. There was an engineering evaluation cost analyst, which was done as part of that, and I'll get into the IRM in a little bit and distinguish that from the operable unit 1 overall concept. The

engineering evaluation focused on this disposal options associated with Geddes Brook. The proposed response action actually documented the preferred means of disposing of those materials. Operable Unit one encompasses this entire area of Geddes Brook and Nine Mile Creek. Nine Mile Creek is the major tributary to Onondaga Lake, and Geddes Brook the IRM I just spoke of is this portion right here and it includes channel sediments of Geddes Brook as well as flood plains on either side of the channel. Nine Mile Creek part of Operable Unit 1 is broken up into two portions Reach CD and Reach BC, and I'll get into details as far as remediation of those sections in a little bit. And there's another Operable unit associated with Nine Mile Creek, which is not the focus of today's discussion, but it's the second piece that will take place after Operable Unit 1 is dealt with and

this portion picks up at the bottom of Operable Unit 1 and goes actually to the mouth of Nine Mile Creek where it enters Onondaga Lake. The Geddes Brook remedial investigation basically started in 1998 and samples were collected for the year 2002 and samples collected included sediments, surface water, flood plains, soils, and fish. The most prevalent contaminant found at the site was Mercury. And once again the primary source of that Mercury was the LCP Bridge Street facility contamination flowing down the West Flume Geddes Brook into Nine Mile Creek. Other contaminants found included arsenic, lead, PAHs, PCBs, hexachlorobenzene, and phenol. And part of the remedial investigation are two components are human health risk assessment and an ecological risk assessment, and those documents determined that it was unacceptable risk to both humans, mainly fish consumption and wild

life. There's a handout—everybody should have a copy of the handout but if they don't, there should be some on the front table, and I would encourage you to jot down any kind of questions or comments you may have as we go through these various slides. Unfortunately, the size of some of the slides makes it very difficult in those handouts for you to actually read in any great detail and it's difficult to basically see the slide as well. However, we do have a poster board, and I would encourage people to basically take a look at that at the end of the presentation after the presentation, if they have not already done so. But the next few slides layout starting with Geddes Brook and moving downstream contamination that we found in both the channel sediments as well as flood plains. And the scale goes with the red being the highest concentrations down to the blues and the

purples being the lowest concentrations. This basically shows the various depths 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet, the contamination that was found in various locations. As we move downstream from Geddes Brook into Nine Mile Creek, this is a similar figure. Once again for Mercury—Mercury once again as I said before is the most prevalent contaminant. It’s not the only contaminant there but for the most part where we have Mercury we have other contaminants as well. This basically shows Reach CD where it goes in front of waste beds. There's a large island and two smaller islands here, which will be more significant and I'll talk about the remedy in a few moments. Once again 0 to 1 foot, 1 to 2 feet, and 2 to 3 feet, and this basically shows as we're migrating from Geddes Brook down the upper part of Nine Mile Creek. And this shows basically the last part of Operable Unit

1. It's Reach BC. It's a relatively straight channel as you can see here. There's various bridge abutments and such that go over this particular reach of Nine Mile Creek. There's also a poster board, which basically shows both sides of this particular reach are heavily armored by the Department of Transportation—New York State Department of Transportation as protection for the roadways and bridge structures. And once again this basically shows in flood plains and the channel sediment contamination at various depths. There is two feasibility studies that were done associated with Geddes Brook and Nine Mile Creek. The original one was done in 2005, and there was various alternatives that were evaluated at that point in time, and it was determined that there was some additional information as far as samples that we thought if we collected would give us an easier time of refining the

particular alternatives and we did additional sampling and evaluation's took place between 2005 and November of 2008 when the supplemental feasibility study was issued. And the supplemental feasibility study broke the site up into the two Operable units, which I showed before. The remedial boundaries—aerial boundaries were better defined through this additional sampling that took place and also we mainly based on those refined site boundaries created different remedial alternatives. The preferred alternative that we actually have in the supplemental feasibility study and in the proposed plan is a new alternative that was actually not in the 2005-feasibility study either. As I said before the feasibility study evaluates remedial alternative. And these criteria we have are the criteria that are used to evaluate and compare the various alternatives. The primary criteria are

protection of human health and the environment, compliance with ARARs. Those are very significant criteria that have to be met for the alternatives to kind of move forward in the process. We also have long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, Short-term effectiveness, ease of implementation. How easily can you actually construct the remedy? Cost, support agency acceptance and community acceptance, and this last one is the primary reason we're here today. To present the preferred alternative to you and to hear your comments associated with that. And there is an ongoing public comment period as well associated with a proposed plan, The RI and the associated documents. So sincerely we're very interested in hearing what you have to say about the alternatives and our preferred

alternative. Geddes Brook and Nine Mile Creek Operable Unit 1 there was two disposal options that were evaluated. Option A consolidation of contaminant, sediment and soil within Honeywell's containment system at the LCP Bridge Street site and there's a nice photograph behind me, which basically shows relatively currently what that facility looks like. Option B is disposal of contaminated and floor plain soil at an existing offsite, non-local, permitted landfill in Rochester. The preferred disposal option was Option A, consolidation and containment at the LCP Bridge Street site. The technology and construction of that particular facility is proven and reliable technology for sediment and waste management and is protective of human health and the environment. The remainder of the proposed plan, evaluated alternatives and

there was four alternatives. Alternative 1 no action, and this is an alternative that basically is required by regulation to be carried forward in feasibility studies and the proposed plan. It's the alternative in essence that the other ones are compared against. Alternative 2, which was limited removal and primarily a capping alternative. Alternative 3, which once again is the preferred alternative, which focuses on removal and has capping mainly in Reach BC. And Alternative 4, which is extensive removal and limited capping. And I'll be getting into those alternatives in more detail. Once again for points of comparison, Alternative 1 where basically no action is taking place. The numbers are basically zero as far as volumes and the various cost, capital cost, initial cost. This is average operation and maintenance, annual cost, present worth, and construction time as

far as duration and these various factors are consistent with the other alternatives as well. Alternative 2, which is limited removal and capping, has the dredge-excavated volume of approximately 29,000 cubic yards. The footprint area being remediated 8.4 acres, capita cost 9.2 million and the other numbers are as such. Construction time approximately one year and the figure once again between all the various alternatives the remediation for Geddes Brook is consistent and consists of full removal of sediments, contaminated sediments from the channel, and the flood plains on either side of the channel are being remediated down to a clay layer which is approximately three feet below the surface. And that alternative once again for Geddes Brooke is consistent between the action specific alternatives 2, 3, and 4. As we move down to the Reach CD and BC, they're primarily capping

alternatives. This alternatives has a primary clean up number of 1.3 parts per million for Mercury and that basically drives vertically and horizontally the clean up. Alternative 3, once again the preferred alternative, has a dredge volume of 59,000 cubic yards, area remediated 14.7. Capital cost 18.9. Present worth 20.2 million. Construction time two years. So with alternative 3 we get more volume, area being remediated is greater, cost is greater, construction time increases from one year to two years. This figure depicts the details of alternative 3 and once again Geddes Brook is consistent with alternative 2, and it's consistent with alternative 4. I spoke earlier about three islands. There's a large island and two smaller islands. This part of this alternative the channels actually being moved away from the waste beds into a relatively clean flood plain

area. It's probably difficult to see the dotted line. There is the figure behind me that basically shows this, but the new channel in essence goes through this area. As part of this alternative as well we have hot spot removal area that's depicted in brown here, and as far as removal area that’s where you have elevated concentrations that material is being removed to a point where the concentrations that will be left behind are comparable to the surrounding areas. Reach—excuse me. Reach CD is a primary objective of this alternative is to do removal to point where an isolation cap would not be necessary. Factors that would impact that would be if the removal gets to a point where the remedy changes extensively such as an extensive amount of sheeting would be needed to go deeper, dewatering significantly more complicated, then under those circumstances and those

are basically the limit of circumstances capping would be considered in this area, but however, once again the primary objective is to do a removal in the channel, so a cap would not be effective—effected. Flood plains, soils being removed, being replaced with approximately 2 feet of clean material, and that's a very important point I want to portray as far as alternative 3 goes. Over the entire footprint and the footprint of the area being remediated for Alternative 3 and Alternative 4 are the same. Geddes Brook, the channel and sediments Reach CD and the channel in flood plains—channel of flood plain of CD and channel flood plains of BC. It's all going to be remediated, and there's gonna be clean material at the surface. You're gonna have at least two feet of material over these areas when all is said and done. This is likely gonna be an emerging wetland where the water

surface is going to be slightly above elevation, so there's gonna be clean material there on top of the clay. As I said earlier, there is heavy armoring of both sides of Reach BC, soil on top of the heavy armoring is gonna be removed and it's gonna to be replaced with clean material, and once again the channels over the entire reach are going to have clean material placed in them as well. Moving on associated with Alternative 3 in Reach BC primarily the alternative is capping in this particular area. However, in order to install a cap, there's concerns that exist with not increasing any kind of flooding potential, making sure that the cap is able to be constructed to a point where it's effective and there's no elevated concentrations below it that would impede that effectiveness. Also there's concerns as far as under low flow fish passage. There's also concerns with

canoe access. This is obviously used now as far as canoe access goes. And that's primarily it as far as Alternative 3. The last alternative we have 73,000 cubic yards being dredged excavated, area remediated 14.7, once again the area being remediated is the same between Alternative 3 and Alternative 4. The various costs, present worth capital costs $30 million. Construction time three years. So it's basically a year longer than Alternative 2. And this basically shows Alternative 4. Once again Geddes Brook is the similar as far as remediation goes, complete remediation of channel and flood planes down to clay with respect to Reach CD and Reach BC. The removal is to 0.15 ppm for Mercury. However, there are probably limitations associated with the structures with bridges and such in this area to a point where full removal in Reach BC may in essence not be practical. And in the

beginning of the presentation I talked about them possibly having to be limited capping in Reach BC. That would be a possible scenario around some of these bridge structures and abutments. There maybe capping necessary in order to protect those structures. The preferred remedial alternative is 3, removal and capping. Alternative 3 has the same overall protection of human health and the environment and compliance with State and federal Regulations or ARARs as Alternative 4, but at significantly less cost 20.2 million versus $30. And Alternative 3 is more protective of human health and the environment than both Alternative 1 the no action alternative and Alternative 2, which is remediation to 1.3 ppm for Mercury. As far as next steps for Geddes Brook the public comment period originally was going to be concluding the end of December. It has been extended to

January 19th and the ROD Record of Decision for Operable Unit 1 is scheduled to be released on April 30th of 2009. And the Record of Decision is where we actually take into account public comment and document what the actual remedy will be for Operable Unit 1. Operable Unit 2, which is downstream of Operable Unit 1 and continues to the mouth of Nine Mile Creek where it enters Onondaga Lake the proposed plan for that is scheduled for May 19th. The public comment period would open shortly after the proposed plan being released and the Record of Decision for Operable Unit 2 is scheduled for October 30th of 2009. The other part of the presentation is the Geddes Brook IRM. Administratively Geddes Brook IRM is being handled differently. It's under a consent order. Don't have to really get bogged down with that. If people have specific questions as far as the differences, I'll

gladly get into that during the question and answer period, but Geddes Brook is the IRM is part of an Administrative consent order and the rest of Nine Mile Creek is being handled under consent decree. As part of the Geddes Brook IRM, there's like I said full removal of sediments within lowers Geddes Brook, 4700 cubic yards, contaminated flood plain soils, 62,000 cubic yards removed and once again I spoke of the underlying clay layer that is a significant component of the IRM. And following sediments soil removal; the Geddes Brook channel would be realigned. That's something I really didn’t focus in on. It shows on some of the figures behind me, but what's called the sinuosity or the curvature of the channel in Geddes Brook is going to be changed as part of the remedy as well rather than the straight channel like currently exists. Both the channel and the wetland would be

restored. As part of the Geddes Brook IRM, there was an engineering evaluation cost analysis, which took place. I spoke about that briefly in the beginning of the presentation and that's primarily focused on disposal of contaminated soil and sediment from the bridge streets or from the IRM. And the options that were evaluated were removal to Bridge Street or an offsite commercial landfill. The proposed response action document, similar to the proposed plan for the various remedial alternatives where the proposed plan documents what the department and EPA's preferred alternative, the proposed response action does that for the IRM. And as it says indicates DEC's and EPA's preferred disposal action. And that was disposal at LCP Bridge Street site. And once again I referred to this before; this is a figure actually showing the LCP Bridge Street site where the majority of

the contamination from Geddes Brook and Nine Mile Creek originated. This is the area of the containment system. There's a wall—containment wall that goes around it. There's wells on the outside of the wall to basically pump and keep the material contained within the wall. There's a temporary cover placed on top of this because it was anticipated that more material would in fact be placed here. If it's ultimately decided consistent with our preferred alternative, then the material disposed of here; a final engineered cap would be placed on this facility. You can basically see West Flume and actually goes under here and basically ties into Geddes Brook and Nine Mile Creek. It's not really shown clearly on this figure, but this figure shows a very nice job, I think, of the area that's remediated at the LCP Bridge Street site. Geddes Brook IRM next step. Close the

public comment period and that coincides with the close of the public comment period for the proposed plan, January 19th. Issuance of a decision document much like the ROD issues the decision as far as the remedy for Operable Unit 1. The decision document for the IRM will determine exactly what's going to happen as far as disposal goes, and it's anticipated it will be issued on or before April 30th. And the remedial design for the IRM, which is, in fact, ongoing will proceed. That actually was you know a brief presentation, went through it kind of quick. I'm sure there's probably a lot of questions, so at this point in time, Diane, I guess we'll turn it over for comments and then we'll get into the question and answer period.

MS. CARLTON: Okay. Just so everyone is clear when we start off on this. I know you probably have lots of

questions that you want ask, but we're gonna do the public comment questions first, and the public comments are where you actually have something that you want to tell us based on the plans that Tim has outlined tonight. And we're going to take those into the consideration. They're gonna be recorded, then we'll open it up for questions and answers back and forth discourse. So I have a number of cards. We're gonna go with the cards first as I said. If we have other people that would like to make public comments. We'll take those afterwards before going into the questions. So the first name that I have here is County Legislator Jim Corbit [phonetic]. Mr. Corbit if you could please—Steph, where are you with the microphone? Would you come down here with it?

MALE VOICE: - -.

MS. CARLTON: I would leave that

up to Tim. Tim, the gentleman in the back there said he would prefer if we do questions first and then comments. That's totally your call?

MR. LARSON: Okay.

MS. CARLTON: Okay. We'll change it around then, and we'll do questions first.

MALE VOICE: - -.

MS. CARLTON: I'm sorry.

MALE VOICE: - -.

MS. CARLTON: Sure. Go ahead.

MR. JIM CORBIT: I probably should have looked up there first, but in the final change of Geddes Brook or Geddes where the channel is curved and then it goes down into it's—right now it’s just basically a flood plain. Will it at any time be connected to Nine Mile thinking more of the opportunity for Trout?

MR. LARSON: Basically when we're done with Geddes Brook, it's definitely

gonna be connected. In essence what we're doing is gonna be—let's see we have another—we're moving it over. It's still going to be connected upstream in Geddes Brook and it's gonna be connected definitely into Nine Mile Creek, so when all is said and done, you're basically gonna have all the features you currently have and probably it is gonna be restored, so it's gonna be in a better situation as far as for habitat. I would say as far as—yeah, basically habitat. I don't really know if Geddes Brook is used that much for canoeing. I think it's mainly Nine Mile Creek. But we're not gonna lose anything between now and when we're actually done with remediation. Did that answer your question?

3: Yeah.

MR. LARSON: Okay.

MS. CARLTON: Okay. Next question. If someone wants to raise

their hand, we'll call on questions as we see hands in the air. Yes.

MR. HUGHES: - -.

MS. CARLTON: We're coming around with a mic, so if you just hold on a sec, so everyone can hear.

MR. DON HUGHES: My name is Don Hughes, and I'm asking why have you segmented the actions the way you have? You've got this IRM that's focused on Geddes Brook, and then you have Operable Unit, which if I understand it right covers both Geddes Brook and Nine Mile Creek?

MR. LARSON: That's a good question, Don. That's a fair question. The IRM basically was discussed—there were various IRMs that were discussed with Honeywell historically and the Geddes Brook IRM is one that actually materialized to fruition to a point where there was actually like I said a consent

order that was signed associated with that. The Geddes Brook IRM is advancing quicker than the rest of the particular projects so the short answer and I'll get into a little bit more detail is to kind of expedite the overall process. So the fact we have an IRM for Geddes Brook that is moving ahead quicker. That's actually is in design and that’s farther than the rest of Operable Unit 1. Operable Unit 1 being broken off from Operable Unit 2. There's some challenges, which we're working through, and I think we've pretty much over come them associated with where Operable Unit 2 ends and the ongoing investigation and ultimate remediation of waste beds one through eight takes place. So there is some additional information we needed associated with Operable Unit 2, which caused us to kind of slow that down a little bit. So Operable Unit 2 is lagging a little bit behind Operable Unit

1. So it's, Don, basically one of convenience to basically be able to expedite the various pieces. However, they are definitely related, and we're taking into account items such as hydrology and impact associated with that, so although we're advancing them at different paces they're obviously connected and related. And we're taking that into account as well. Okay.

MS. CARLTON: Another hand. Yes, just wait for Stephanie to come around with the mic.

MR. DAN GAFFEL: Dan Gaffel. I have a question about the clay layer underneath that you're dredging down to. How thick is that and is there—have you done any investigation into whether contaminants have gone into—excuse me—gone into the clay layer and any investigation as to whether any contaminants have gone through the clay layer?

MR. LARSON: Right that's a fair question. And what we have done is we have not actually investigated to the point where we've gone through the clay layer and tried to find out if there's contamination below, but quite honestly the reason why we haven't done that is we haven't seen the need to do that because there's been a very clear drop off with contamination goes as soon as we hit the top of that clay layer to a point where you go into it at all the concentrations literally drop off to almost non-detect. So if the contaminations are dropping off at non-detect at the top of the clay layer, there's no reason—once again, it's continuous. There's no reason to believe that it would have gone below it, so we haven't done that quite honestly because we haven't seen the need to do that.

MR. GAFFEL: - -.

MR. LARSON: We don't know. We

don't know. So well, I'll actually throw that out. I mean do we have any information on that? I'm not aware that we've actually gone through to determine the actual thickness of the clay layer. That's something we can take a look into. There might be some information we have. Off the top of my head, I'm not aware that we have anything where we've actually gone through to determine how thick it is, but once again there's a very clear break off once you get into the clay where the contamination drops off.

MS. CARLTON: Next question. Oh, I think I saw the gentleman in the back first.

MR. JACK RAMSTON: Jack Ramston. What's the capacity on the Bridge Street Site? Is there a danger of forty-foot mountain there at some point or has that been explored?

MR. LARSON: Five feet I believe

would be the increase in elevation over the footprint of the containment facility at Bridge Street if we basically were to take this material from this particular remediation, so it’s not like we're gonna have a pyramid when we're done. It's not a dramatic increase in elevation at all.

MS. CARLTON: I think I saw Les's hand there?

MR. LES MONTESTORI: Les Montestori I've got a question about the disposal of the contaminants at the LCP Bridge Street Site. Now, my understanding is that the sediments that are gonna be dredged from the Onondaga Lake bottom site are going to the waste bed and those sediments are going to be treated in some way to collect or remove Mercury; is that correct?

MR. LARSON: Why don't you continue, Les? Was that the rest of your question?

MR. MONTESTORI: No, my question is is there going to be a similar treatment for the contaminants removed from Geddes Brook and Lower Nine Mile Creek?

MR. LARSON: Okay. Actually, Les, what's happening with the sediments that are being removed from the lake, they're probably gonna be hydraulically pumped through a pipeline up to the sediment containment area, and the sediment containment area is lined, and what's gonna happen the sediments are gonna be pumped in what are called geo tubes and I can get into a more detail description of that after, but what they are is a geo textile fabric that's permeable and they're these big in essence, like sausages approximately 30 feet in diameter, they can be 100 feet, 200 feet long. Sediment is pumped into that and then it's dewatered. So there's no actual

treatment, Les, that's taking place of the sediments that, are being brought up there. What's taking place with the sediments is the sediments are being allowed to dewater. The water that comes off of the sediments is going to a treatment plant and that will be treated. So as far as the soils and sediment from Geddes Brook and Nine Mile Creek, that are being remediated not really sure if they're gonna be pumped to the pipeline to Bridge Street or actually trucked. I think currently the thought is being trucked up there, but it would basically have to be dewatered right in the immediate area where it's being removed and then basically brought up there and placed. So I would say it's similar. The LCP Bridge Street containment area structure is different than the SCA, but in essence that's what's taking place. There's no significant treatment. Like I

said, Les, as far as the sediments go from the lake other than in essence the dewatering taking place within the SCA. Okay?

MS. CARLTON: I think I saw another hand just as Les's went up. Yes.

MS. SARA ECHEL: My name is Sara Echel, and I was wondering you had mentioned there's another hazardous waste landfill site that you were considering for disposal. You said it's outside of Rochester, and I was just wondering where that was?

MR. LARSON: I don't have that off the top of my head, but if you can stop up after I can get you the specific location.

MS. ECHEL: Okay. Thanks.

MR. LARSON: No problem. I'll tell you maybe what we can do at this point in time, since the people who actually wanted to make statements have

been pretty patient, maybe we can take care of some of those, and we can come back to question and answers after.

MS. CARLTON: Okay. That sounds good. Let's go back then to County Legislature Jim Corbit from—also representing the Region 7 Fish & Wildlife Management Board.

MR. CORBIT: Thank you. I am wearing two or three different hats. I've lived in this area all my life and I currently am the legislator that represents Geddes and Solvay and a good portion of Camillus, and I'd like to say kind of factiously I'm the only legislator that has all of the waste beds in Onondaga County in his district so. I have been involved with this even before I got involved in politics because this is where I lived and it was just part of my life living by the lake, but I'm glad you said about the Fish & Wildlife Management

Board. I've been involved with that also for ten years. Currently the Vice Chair and part of our charge is to find and to seek out areas for public access. Public access can be for hiking, for fishing, for hunting, bird watching, but it's the availability to get into lands that we can no longer get into or have been blocked over the years, and what is—what I see is what is going to be coming forth with this, could give tremendous opportunity for the public down the road to be able to enjoy this where it is stopped. After looking at all this, I'm looking at probably Option Number 3 is the best alternative when LCP was being worked on when they did the—I call it the big Mercury Washer over there. I was asking and I wanted to go in and see what the operation looked like. It was an amazing thing what was being done. How they took that out of there, and over the course of

the time, and how they built it, I pulled out some of my old paperwork. There is somewhere around five stories deep, I think, you said that there's one section and then another section around that goes down over 70 feet. There's 15 pumping stations in there. There are all types of—there's all types of safe guards. It was designed when this was being done, one of the questions I had is why are you going to such a degree with this and even back then it was anticipated that there could be a use for that area of containment, and the use would be Geddes and Nine Mile. As an aside Geddes Brook is a tremendous trout stream for those of you who aren't aware of it and pretty happy that our nice—there's a very nice pool—I don't fish. I'm an archer. I don't fish, but there's a tremendous trout pool right at the edge of our daughter's backyard and the grandkids will go down

and just watch the fish. There's some—if you—when you see some of those being released out of our fish hatchery and they happen to work down past, which is amazing, Wagmans. We have a suburban paradise over here that we need to keep going with and keep working on, but so that site was built to safely accept everything that comes out of there. You said about the Rochester site. There is a site over there. Again as Chairman of Environmental Protection there are a number of places now that take it up there. I cannot see or couldn't in good conscience to the people I represent say why do we need to take approximately 17,000 loads travel up the throughway, when you got someplace that is the state-of-the-art facility less than three miles away? So I think it would be only not just good business, but good judgment to do it. That's about it on my comments. I

appreciate it very much. I applaud the work that's been done here. We need—there still needs a lot of be done and I know Honeywell has really come up to the plate and been non-adversarial in the way that they're attacking this. Thank you.

MS. CARLTON: Thank you. Onondaga County legislator from the Fourth District David Stott.

MR. DAVID STOTT: Thank you. I actually am here primarily to say thank you to each and every one of you that are here that—not that other people don't care, but you guys cared enough to come here. Whether you're calling—or coming rather to ask questions or in the process or have been in the process and thank you to Honeywell as well. I represent if you're not familiar with the Fourth District, basically if you cut the lake in half like a sub roll, I represent the side that the park is on, and I'm 36 years old.

This lake's been polluted since long before I was born, and I've gone to this lake and to see that article in the newspaper, gosh, what three, four weeks ago that the progress that's been made and we're still not even anywhere near this is extremely exciting to myself, to the residents of this community, not just in my district. Now, Mr. Corbit spoke very eloquently and he knows a heck of a lot more about this than I do. He's been in legislature longer than I have. I'm actually in my first year, but as a Town Councilman for four years representing Salina, I saw the issues that we're still going through in the town of Salina with having to recap the dump that was capped and it kind of makes me scratch my head as a County legislator when I look at options Alternative 3 and Alternative 4, we're looking at the same remediation area, but a significantly larger volume to be

remediated; is that the correct term? I guess.

MS. CARLTON: Uh-huh.

MR. STOTT: Can you explain to me why treating more is not better? You know my interest, as a representative is to see the most thorough job. I don't want to see in 30—30 years this discussion coming up again, when we could have just spent a little bit more and done a better job, so if I can just put down the mic for a second have some sort of answer to that?

MS. CARLTON: It's totally up to you.

MR. LARSON: Once again I think that's a good question. As regulators we're obligated to basically follow the various laws and guides and such that we have, and as I listed on the board a while ago there's various criteria that we have to go through and evaluate. We actually compare the various alternatives, and as I

said in the alternative where I basically summarize why we selected three over Alternative 4, we feel it basically equally protective of public health and the environment and basically costs less. So based on those factors, we're pretty much obligated to say that's our preferred alternative. It basically in essence is equally protective, as 4, but it's basically cost less. So that's what we did. I mean if we remove more, there's other issues associated with that. You have a lot more truck traffic. You'll have a lot more material that basically has to go someplace else and we went through our evaluation. It just didn't weigh out as far as being effective to actually increase the truck traffic, increase the material that would have to either go to Bridge Street or another place. There really wasn't in essence the bang for the buck, if you will.

MR. STOTT: Okay. I'm—like I said there's a lot more people in the room that know a lot more about this than I, but when I was elected I was the one that said I would be he one to stand up and say I don't necessarily agree with that, but I'm just gonna throw this out there that the standards that are currently in place are what are being followed correct? The criteria, the standards whatever? There's a word normal that's been thrown out there for years, and it's really a subjective term as our standards and you know we have as a Town Councilman we had some drainage wells that were put in in a new development and the standard, the criteria has changed two or three times since that development has gone in and the residents are still miserable. I would just caution that if there is a better way to do this, a more thorough way that if in fact and I do realize it costs a little bit more, but

if in fact Option 4 is better with any unforeseen just keeping in mind that there is the possibility of the—we don't necessarily know coming up in the decades after this is done that another year and another $10 million is a small price to pay for doing something properly, and I would hope that we would weigh that as well because I'm willing to go through an additional year and additional money. And I realize it's a tough statement to make these days, but we're cleaning up Onondaga Lake, which is something that I'm looking forward to jumping into someday. So thank you.

MS. CARLTON: Thank you. Matt Webber representing the Izaak Walton League and, sorry, Project Watershed as well.

MR. MATT WEBBER: Thank you. Hello Everyone. I appreciate this opportunity to speak. As she mentioned

I'm Project Watershed Central New York Coordinator and as the Izaak Walton League program we have a five county area that we work with. We bring environmental education and community outreach to kids, high school, middle school, and college kids in the area, and also adult volunteers. And we do that by monitoring water quality in conserving local streams. I’m here as an individual, however to, because for long while I've been concerned of course with the lake's conditions as have all of you. And I’m now very excited about the ongoing efforts to bring this lake back into good shape. Not just for myself, but because of my occupation and my interests and also for the community and in particular the young people of the community who will have such a wonderful natural resource for education and enjoyment into the future. I apologize for bringing this analogy up. I don’t know

it's probably been brought up in this regard before or not, but in thinking of this situation I can't help but think of a person's who being rushed to the hospital in bad shape. Once he's there he's diagnosed as having a heart attack. Those people in charge of his care do everything they can to stabilize him as quickly as they can and as efficiently as they can and once that's done then they start looking down the road in the months ahead to ways to stabilize that person and make his life better. They do that by making him quit smoking, making him lose weight, by changing his diet, putting him on medications, making a whole life change for that person as best they can. And so doing hopefully that person will come out of the other end with having a very viable healthy life and happy life. Now, by switching over with my analogy to the lake—Onondaga Lake, I see this as being

the heart of the watershed. The lake being the heart of the overall body of the watershed, and we can see obviously as spoken before that the lake is on its own with the efforts of everyone here being already seeing a lot better conditions. Taking it from that—in other words, it's been stabilized. Taking it from that point then we should then start looking at the whole watershed, the arteries the streams, the wetlands, and this is just one example of the effort that all you fine people are doing in working on bringing the whole back to health and having said that though, a heart attack's a heart attack, there's—damage has been done and you're never gonna get that heart back to 100% of what it was. And the lake is the same; it's been years and years and years of terrible travesty of being abused by all sorts of aspects of our culture and society. And whatever efforts we do are

not going to make this lake and its surroundings of the watershed 100% pristine again. And we have to take this with common sense and I would love to see as all of you a lake this pristine as it was 200 and 300 years ago, but we're not going to have the situation arise. And it has been pointed out this—I've had the privilege of seeing this presentation that's happened earlier tonight three times, and I've heard a lot—a whole lot of other questions asked bringing up some concerns that I've had as well. And what hasn't been brought up tonight is the remediation effort that you see here is in an area that isn't pristine. It's pretty much boxed in by a couple of roadways and railroad tracks and various other infrastructures that just can't be changed. And what's being proposed here in Option 3 to me seems to be a phenomenally thoughtful way of dealing

with this and bringing it back to as best a condition we can and my hat is off to all of you that are working in this regard and with Project Watershed, we actually do work with kids on Geddes Brook and to see that this is taking place and the wetland work that's taking place is to me very inspiring and keep up the good work. And thanks for the opportunity to speak tonight.

MS. CARLTON: Thank you. Sara Eckel, Citizens Campaign for the Environment.

MS. ECKEL: Hi, my name is Sara Eckel. I'm Central New York Program Coordinator with Citizens Campaign for the environment, and CCE represents 80,000 members in New York and Connecticut, 4,000 here in Onondaga County. And I also want to thank you all for the opportunity to comment today on the Operable Unit 1 and also for extending the public comment

period to January 19th. CCE commends the DEC, the EPA, Honeywell and all the other stakeholders for cleaning up the sites upstream from Onondaga Lake. Before full-scale lake bottom remediation taking into account that a coordinated approach to cleaning up the watershed is obviously the best way to approach this. CCE again recognizes the technical limitations to removing 100% of the contamination and understands the physical constraints and in general CCE supports the DEC's alternative plan with just a few caveats. As additional sediments removal is triggered at the action plan for contaminants of concern are detected as a remedial action plan moves forward. CCE again strongly asserts public education and outreach should be a part of the remediation plans specifically signage should be placed around Nine Mile Creek and Geddes Brook, access points to one of

Human health risks associated with fish consumption and recreational activities. Signage will also aid in public understanding of the current process and what progress has been made. Clean up efforts for sub site should be included in the citizen participation working groups and the citizen participation plan to further advance public understanding of the clean up process and long term monitoring should be established to ensure that no contamination from the surrounding waste beds is affecting the tributaries to Onondaga Lake. And finally again CCE's echoing it's call for a web-based repository to house all documents, notifications, reports, newsletters, relevant scientific studies and other pertinent information to be readily available for the public. Thank you.

MS. CARLTON: Charlotte Holstein FOCUS Greater Syracuse.

MS. CHARLOTTE HOLSTEIN: Can I come up there?

MS. CARLTON: Sure. If you want to use this mic?

MS. HOLSTEIN: Thank you. I'm Charlotte "Chucky" Holstein, and it's nice to see so many familiar faces here. People who have participated in our organization, which is, call FOCUS Greater Syracuse, and FOCUS stands for Forging Our Communities United Strength. And we started our project with a visioning ten years ago. We ended up about seeing about 4,000 or more people. Citizens in Onondaga County and some of the surrounding counties gave us their ideas for their visions and their dreams for their community for our community, and then we had a vision fair, and at the vision fair people were allowed to vote on what they preferred as something they really wanted to improve the quality of

their life. And in these preferences the number three goals that hit almost the top was cleaning Onondaga Lake. And subsequently FOCUS has done number of citizen strategic plans, but one of those strategic plans we did was on water and waterways. There are several people here in the room who helped us work on that. As a matter of fact, Les you kept mentioning Nine Mile Creek and my eyes glassed over, but now I know what you mean and why Nine Mile Creek was so important for cleaning Onondaga Lake. Thank you for educating me and others at that time. We're starting a new visioning. It's ten years now since we did that first citizens visioning, and we have a survey instrument and we're going to be looking at three areas. Progress on the goals that were given to us ten years ago. The importance of each of those goals to the individual and what people have in mind for new

goals. During these ten years, we really—FOCUS has followed the progress of the clean up the lake, and we now the importance of the watershed, the Nine Mile Creek and the Geddes Brook. We followed the reports and we realize now how important the watershed is to making sure the lake is cleaned up, and I was particularly impressed with your presentation tonight. Thank you that educates the citizen who really didn't know what the word remediation meant until recently, so thank you very much. That was an excellent presentation. We're excited and delighted with front-page news articles that talk about the processes of cleaning up the lake. And that the lake is ahead of schedule. We're encouraged and as we anticipate the next phases we'll also be ahead of schedule, so I'm here to kind of push you to make you move along as fast as you possibly can. I mentioned the

new survey. It's for everyone. We're reaching out to young people first and I have a mini report to give you tonight about what young people feel about the future of the lake. We feel that the teenagers today are really the future of our community and we talk about sustainability. We really need to talk to them because they're going to be the ones that are going to be carrying on hopefully these sustainable ideas that we all come up with. We met—I met with 17 teens. These are teenagers who write articles for the Post Standard and they write on the page called Voices if you've not looked at it, please do. These kids are writing fabulous articles. They have an editor and his name is Chris Ivan. Chris invited me to meet with these young people. I can't call them kids, they're teens. And what I learned first of all is they—I was blown away. They're much more

sophisticated than I ever was as a teenager and certainly more so than even my own children. They want to be involved in decision making in Central New York. They want their voices heard, and they want to be involved, so I gave them the survey. They were the first ones to see the survey that we're going to be using to get our ideas from the citizens as many as possible. The 17 teens that completed the survey said certain things. They said for one thing when they rated the progress on Onondaga Lake, five said that they believe that there was some progress; five said that there was substantial or outstanding progress. That's the good news. However, seven responded that they believed there was little or no progress on lake clean up. Yet all seven of them said the Onondaga Lake clean up was very important to them. So obviously they either don't know what's going on and they ought to be

informed and I would like to see that happen, and they also obviously said the clean up of the lake was very important to them. And I want to report that all the respondents in some way or another said the lake—the clean up of the lake was either somewhat important, important, or substantially important to them. A few weeks ago FOCUS submitted a letter to the editor in response to that front-page story that we loved about the lake clean up, and I just want to read you small parts of it because—and I really want for the record as well that's why I'm doing this. Here's what the letter said in essence. The Sunday story by Mark Weiner on the Spectacular progress in Onondaga Lake is an enormous boost to restoring pride in our community. Congratulations and thanks to Onondaga County and Honeywell for their efforts to clean the lake, and for producing such a positive

result. For years the citizens of Onondaga County felt shame about the pollution of Onondaga Lake. A serious blight on our community and it was a source of despair and I must say a lot of pessimism. Just ten years ago when the citizens had the opportunity to voice their concerns and their vision for the future of Syracuse and Onondaga County through FOCUS and our extensive vision progress, they gave top preference to the clean up of Onondaga Lake and Onondaga Creek. We're on our way to a successful restoration of this incredible asset to our city and county months ahead of the court ordered schedule. Not only do scientists marvel at this spectacular progress at Onondaga Lake, but citizens too can once again feel an enormous sense of pride in the clean up of our beautiful lake. And in closing I too will say that I will respond to one of those surveys and

I think this is what my vision is going to say. In my lifetime and I'm pretty old I would like to see Onondaga Lake a place to go swimming, fishing for fish we can eat, boating and sailing, biking and hiking, bird watching and I am a birder, observation of the restored native plants, recreation areas and people of all ages and all abilities using the multiple spaces and places for recreation and enjoyment of a great quality of life. We must do whatever it takes to make this happen, and I'm encouraged to see that tonight there is movement. It is going to happen and we are going to find that we have a beautiful lake that is fed by clean watersheds and we will all be very happy. And before I leave the microphone I want to say that I'm so proud to see several of our Citizens Academy members here. FOCUS operates the Citizens Academy which is all about government and to see them here at a

government meeting is thrills my heart, so it's good to see you. Thank you.

MS. CARLTON: Oh, Chucky, you took my notes. I think we have a little time. We've got one more speaker. See my notes are a little skewed here. Frank Moses representing the Montezuma Autobahn Center.

MR. FRANK MOSES: Thank you. The Montezuma Autobahn Center is in Savannah, New York. It's a brand new center built about two years ago. It's actually the center itself the building is owned by the New York State DEC, but it's operated by Autobahn. We are the closest field office of the National Autobahn Society to Central New York and the centers are geared towards being conservation hubs through advocacy, education and science. So we hope to be committed citizens to the central New York region because of our locale and also our interest, but also

personally I grew up on Otisco Lake probably the start of Onondaga Lake and then went to school in Marcellus along Nine Mile Creek and then finished at ESF, so kind of flowed along and here I am tonight and I'm gonna read a letter that we will be submitting. It says Dear New York State Department of Environmental Conservation representative. The Montezuma Autobahn Center operated under Autobahn New York a state program under the national Autobahn Society is pleased that the proposed remediation plan for Geddes Brook and Nine Mile Creek considers the upland and wetland habitat needs for birds and other wildlife. The removal of harmful evasive species such as phragmities coupled with the enhancement of the native plants desired by birds and other wildlife is crucial for the enhancement of the integrity of our eco system. We look forward to future

initiatives that address the improvement of Onondaga Lake and its surrounding watershed. The Montezuma Autobahn Center's committed to being a resource to the New York State DEC, Honeywell, and other stakeholders concerning reaching conservation goals in the Central New York region. Thank you for the opportunity to comment. Sincerely Frank Moses, Montezuma Autobahn Center Director. Thanks.

MS. CARLTON: Thank you. Dan Hughes representing the Atlanta States Legal Foundation.

MR. HUGHES: It's Don.

MS. CARLTON: Don. Oh, yeah. You want to use this. Sure.

MR. HUGHES: I'm gonna steal your notes.

MS. CARLTON: No.

MR. HUGHES: Okay. I won't steal your notes. So I guess I want to start off by saying this is a good thing to take

contaminated sediments out of the creek, supportive of that, and I guess my comments—I want to precede my comments with a question, and that's about he clean up levels. Tim, can you distinguish between the different alternatives as far as the clean up levels. You mentioned 1.3 parts per million Mercury for I think it was Alternative 2. Alternative 3 and 4 are presumably lower? That’s the only question I have as far as that goes. Okay. So I'm not gonna comment on clean up levels. I want express some disappointment in the fact that the only disposal sites looked at for the sediments were a landfill in Rochester and the LCP site. I think there's a third alternative which seem kind of obvious to me and that's the sediment containment area, which Honeywell will be constructing on waste bed 13. That's a facility that will be—is designed, engineered to hold

contaminated sediments, why not put these sediments there? The LCP site I have to differ with Mr. Corbit's assessment is not a state-of-the-art facility. It is an old abandoned industrial site that's been contained to some extent artificially with a slurry wall and with a set of pumping systems which will go on literally for, well, for some unknowable amount of time, could be hundreds of years. That is not an engineered facility. It has no liner. We're counting on the glacial till which underlies the facility—that area at depth of 55 or so feet and hoping that it's integral, and it's gonna contain the stuff and maintaining a negative gradient by continuing to pump and treat the ground water. This is a classic—classic case of a non-sustainable alternative. It makes much more sense to me to take the sediments—the contaminated sediments out of Nine Mile Creek, which as very similar

to the contaminated sediments in Onondaga Lake and put them in the same facility, and I would urge DEC to step back, reevaluate that alternative. Include that as an option. I don't have—at this point given that I don’t know what the difference is in the clean up standards are, I don't really have much to offer as a preference for option 3 versus option 4 other than to say that I would tend to agree that it's better to get it all now than to get most of it and hope that the rest of it stays where it is. Rivers are dynamic places, floods happen, global warming is accelerating, extreme weather, and it probably is prudent to take as much as you can get of the contamination out of the creek. Thank you.

MS. CARLTON: Okay.

MR. LARSON: All right. Don, your question was associated with the clean up levels associated with the various

remedies. I quickly went over that, but I'll go over it again. For Alternative 2 the clean up number primarily 1.3 parts per million for Mercury, for Alternative 4, the clean up number is .15 ppm for Mercury, and for Alternative 3, it's basically leaning towards Alternative 4 in that like I said in Reach CD we're looking to remove contamination to a point where we don't need any kind of isolation cap. For Alternative 2 where the clean up number is 1.3 a large portion of that remedy is, in fact, an isolation cap. The unknown we currently have associated with Alternative 3 is what the contaminates are exactly at particular depths. We're gonna be collecting some more data as part of pre-design and depending on what concentrations we have, how extensive it is, and what the depth is, is gonna dictate whether it makes sense to leave any of it behind. If you basically have a

concentration of say .5 near the surface that's coming out. You have a concentration of .5 ppm for Mercury but it's buried down eight feet and has eight feet of clean material on top of it, then the likelihood of any exposure from that material is significantly less. So that's in essence the difference between Alternative 2, 3, and 4. For Alternative 3 we're looking at basically driving it down to a point it's primarily removal in Geddes Brook and Reach CD, not in Reach BC primarily a removal alternative where we won't have to get the, have to have any kind of cap. But we need some more information for that. So are we cleaning up to a specific number like we are in Alterative 4? No, it's not specifically a number such as 1.3 for Alternative 2 or .15 for 4, but once again we're driving it down very far to get the number very low and any contamination that's being left

behind we're gonna make sure is that sufficient depth to a point where there's a minimal chance of that being exposed in the future. Does that basically help you out Don as far as explaining alternatives? And if it doesn't, I'll be around after and you can stop up and we can talk about it more. Thank you. Hold on a second. Can we Don a mic?

MR. HUGHES: Is there a maximum depth of excavation under Alternative 3?

MR. LARSON: Alternative 3? I got into it a little bit briefly before. Once again what we're looking to do is basically drive the remediation to a point where we can basically get out the contamination we don't need a cap. The place where things may change a little bit like I said before is if we get down to a depth—I don't know exactly what that is Don. I would imagine it is probably gonna be five plus feet somewhere around

in that range to a point where we're gonna have to install sheeting to maintain stable banks for doing removal, dewatering is gonna be a lot more extensive and things like that. Those are some factors that may limit in essence how far we go and those are factors that may actually require us to install a cap. Based on the data we have, we think we have a very good shot at basically doing a remedy in Reach CD to a point where we really don't need a cap. We're not positive. We got to go out and collect some more data.

MR. HUGHES: Okay.

MS. CARLTON: Okay. Is there anyone else who has comments? Not questions, but comments, then we'll wrap up the comment period and we'll open it up for more questions so anybody who has last comments they want to make. Yes, sir.

MR. FRED MILLER: My name is Fred Miller. I’m on the board and current

president of the Nine Mile Creek Conservation Group. I founded the group about 15 years ago. It's a nonprofit. We partner with many other groups in the area. I'm not speaking on behalf of the Council itself because our board hasn't made any decision on anything or had an opportunity to discuss anything at this point, but we're active in the Camillus Valley and we partner with several other groups in the area who are interested in the environment of Nine Mile Creek. Just among a few of our things that we have been able to accomplish over the years have been really monitoring from a grassroots level some of the areas of residential development which is rampant in the town of Camillus right now, so that has an extremely important and sometimes negative impact on the tributaries which flow into Nine Mile Creek. We have developed the first true water trail canoe

and kayak water trail in Onondaga County and we have also worked with not only DEC, but Honeywell has been a grantor in some of those cases for us to have the funding along with other companies in the Syracuse market area and some out side of that area nationally. Several—well, back in 1996 we instituted the first float stocking program utilizing Canoes to disperse trout throughout Nine Mile Creek. I shouldn't say throughout, but essentially from Camillus down to about the airport road bridge and within that vicinity or at least the Amboy Dam. We partnered with other groups in the area, Trout Unlimited, Carpenter's Brook Fish Hatchery, friends of Carpenter's Brook Fish Hatchery and so forth. And this program has been ongoing since 1996 successfully. The reason for that we saw some potential for that type of program and when I founded the group I recognized that maybe we should—everybody

was involved in myopic vision. I said well let’s kind of vertically integrate this and get everybody on board. So with that in mind with trout and trout fishing I learned over the years is very popular and so is sporting outdoors and we have the support of many people in the community for that type of activity. It ties in nicely with the canoe and kayak trail, ties in nicely with the going to be restored Camillus Erie Canal Aqueduct and there was a mention that about habitat restoration has come up frequently at Nine Mile, so we'll kind of take the rifle shot at the site areas for improvement. I'm no expert in the area. There are some people at ESF over the years who have gotten to know or I've had their input into connectivity through wildlife corridors, habitats and so forth. There are people quite expert in that who can speak to those specific points if it necessary, but

in terms of habitat for trout, I'm just wondering—Tim, you had mentioned that there would be habitat restoration and I would assume that would mean trout habitat restoration and restoration in the river. I just wonder as a layperson and for the future the type of structural aspects to the remediation within the river channel at this point. Would that be a lasting improvement into the decades ahead that would facilitate building off of to enhance trout introduction into that entire section of Nine Mile from Airport Road Bridge right down to the Lake? Such as the aquatic species that are required invertebrates to keep a healthy trout population as well as a vibrant riparian buffer which we found that people know that is an important to trout fishing. So I was just wondering how that might—what you see from your perceptive and knowledge base on that for trout sustenance into the

decades ahead through this project? Thank you.

MR. LARSON: I wish I had a very specific answer to your very specific question. Unfortunately I don't. One thing as we go forward and we're taking a look at is what exact habitat we're gonna implement and trout is obviously one. Obviously as you know streams and tributaries are used for spawning by fish as well, so I think there's a multitude of different species of fish that we're taking into account. When we say habitat, we're not just talking aquatic. We're talking terrestrial that may come down into the waterway as well. I think when all said and done as far as both the channel and the flood plain, we're looking to have a lot more connectivity between the two, and have it be better overall habitat. So I can't give you any specifics right now as far as exactly what

we're gonna do until I can prove the trout habitat, but the improvements we're looking at making we're looking at basically having them be sustained over a period of time once we basically install them. It's not like we're basically remediating and going to install the habitat and walk away. There's gonna be monitoring as well that takes place to make sure that these improvements in essence stay there—these restorations stay there. So like I said I wish I could give you more specific answer, but it's in process.

MS. CARLTON: Okay. Let's try and go back to comments before we go on to questions. Anybody else with comments, strictly comments? No more comments. Okay. Then free to open it up with questions. Other questions that have been raised by the presentation or things that others in the room have said this evening?

Yes.

MR. GAFFEL: Dan Gaffel again. I think it's a good idea to address sites upstream of the Lake first, but my question relates to the Alternatives 3 versus 4. If some sediments perhaps of relatively high concentration of contaminates are left at depth in Alternative 3, have there been any studies as to whether or not contaminates can move via groundwater toward the lake and into the lake from that site?

MR. LARSON: If I understand the question correctly could contaminants at depth stay in the channels or flood plains or for that fact?

MR. GAFFEL: Right. That's right.

MR. LARSON: Wind up being a source through ground water—

MR. GAFFEL: To the lake.

MR. LARSON: I would say no.

Based on the concentrations we have. I mean once again we talked about the remediation that took place at Bridge Street, and I think it was mentioned earlier where there actual globules of Mercury that you could see. We don't have anywhere near those types of concentrations. Sediments we have in the lake we have what's called NAPL Non Aqueous Phase Liquids, concentrations of contaminates. We don't have those in Geddes Brook and Nine Mile Creek as well, so I think it's a degree of magnitudes so personally not necessarily speaking for anybody else, I think the likelihood of that is infinitesimal.

MR. HUGHES: The assumptions—this is Don Hughes again. The assumption is that if you clean up the Mercury, you'll clean up everything else, and I'm wondering how well is that assumption been tested in terms of what's the correlation

between Mercury and say Dioxin or hexachlorobenzene and have you looked at sediment criteria as opposed to just concentrations?

MR. LARSON: That's a good question, Don, and once again I apologize if I mislead people that we're only looking at Mercury. We're not. Basically what I had hoped to convey when I was talking about the remedial investigation for the most part where we find Mercury, we find the other contaminates. So we felt it was a pretty good surrogate for indicating where contamination is. As we go forward and collect additional samples part of the pre-design, we're not just analyzing from Mercury. We're looking for other contaminates as well, and they're basically factoring into the remediation as well. It's not just a Mercury remediation, Don.

MS. CARLTON: Other questions?

Going once, going twice, third time. Okay. We will be here to take questions individually or if someone has some long questions as was alluded to before, we're glad to stay a little bit later and talk about this as well. I want to thank everyone for coming out this evening. I know it's a busy holiday season, and you probably have a lot of other things you'd rather do, but we appreciate your time and attendance and your interests. Thanks.

MR. LARSON: Thank you. And in case anybody wants there's forms over on the table where you can actually fill out any comments you may have. You can either mail them into us or leave them there. Also up on the screen basically shows how you can also submit comments. And once again thank you, everybody, for coming out.

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