

TABLE I.1.1 PETROLEUM HYDROCARBON CHEMISTRY
SYSCO Cooling Pond Sludge
Jacques Whitford Project No. 1000897.03

Sample ID	Sample Date	BTEX Parameters (mg/kg or ppm)				Total Petroleum Hydrocarbons (mg/kg or ppm)				Resemblance
		Benzene	Toluene	Ethyl-Benzene	Xylenes	C6-C10 Gas	C10-C21 Fuel	C21-C32 Lube	Modified TPH	
Comp 1	30-Jun-05	0.027	0.08	0.07	0.2	nd	11000	57000	69000	Lube oil fraction
CP18		n/a	n/a	n/a	n/a	n/a	0.21	0.1	n/a	Fuel oil Range
CP17		n/a	n/a	n/a	n/a	n/a	0.62	0.3	n/a	Fuel oil Range
CP16		n/a	n/a	n/a	n/a	n/a	0.64	0.2	n/a	Fuel oil Range
CP15		n/a	n/a	n/a	n/a	n	0.69	0.1	n/a	Fuel oil Range
EQL		0.025	0.025	0.025	0.050	2.5	15	15	-	n/a
NSEL Landfill		500	2400	240	30000	-	-	-	-	n/a

Notes:

1. EQL = estimated quantitation limit is the minimum concentration that can be reliably reported
2. nd = parameter not detected above EQL
3. mbg = metres below grade
4. - = no guideline available
5. n/a = not applicable
6. Modified TPH = total petroleum hydrocarbons excluding total BTEX
7. **Bolded = Exceeds** applicable guideline.
8. NSEL Landfill = Nova Scotia Environment and Labour *Guidelines for Disposal of Contaminated Solids in Landfills*, Attachment C, March 22, 1994. Updated 2003.

TABLE I.1.2

SEMI-VOLATILE LEACHATE CHEMISTRY
 SYSCO Cooling Pond Sludge
 Jacques Whitford Project No. 1000897.03

Parameter	Units	EQL	NSEL Landfill Guidelines	Sample ID					
				CYLINDER #5	CP 18	CP 17	CP 16	CP 16 Lab-Dup	CP 15
Sample Date									
Acenaphthene	ug/L	0.8	10 ^b	nd	1.6	4.6	5	5.5	7.3
Acenaphthylene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Acridine	ug/L	8	10 ^b	nd	nd	nd	nd	nd	nd
Anthracene	ug/L	0.8	10 ^b	nd	nd	nd	1.1	1.1	1.7
Benzo(a)anthracene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Benzo(a)pyrene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Benzo(b)fluoranthene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Benzo(g,h,i)perylene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Benzo(k)fluoranthene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
1-Chloronaphthalene	ug/L	4	10 ^b	nd	nd	nd	nd	nd	nd
2-Chloronaphthalene	ug/L	2	10 ^b	nd	nd	nd	nd	nd	nd
Chrysene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Dibenzo(a,h)anthracene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Fluoranthene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Fluorene	ug/L	0.8	10 ^b	nd	nd	3.3	3.3	3.7	5.2
Indeno(1,2,3-cd)pyrene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
1-Methylnaphthalene	ug/L	0.8	10 ^b	nd	3.7	11.8	12.2	13.4	14.7
2-Methylnaphthalene	ug/L	0.8	10 ^b	nd	3.1	18.9	21	21.6	21.1
Naphthalene	ug/L	0.8	10 ^b	30	26.5	120	136	141	135
Phenanthrene	ug/L	0.8	10 ^b	nd	nd	2.5	2.6	3	4.2
Pyrene	ug/L	0.8	10 ^b	nd	nd	nd	nd	nd	nd
Quinoline	ug/L	8	10 ^b	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
Hexachlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
Pentachlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
1,2,3,5-Tetrachlorobenzene	ug/L	2	500	n/a	nd	nd	nd	nd	nd
1,2,4,5-Tetrachlorobenzene	ug/L	2	500	n/a	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	ug/L	2	500	n/a	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
1,3,5-Trichlorobenzene	ug/L	2	500	n/a	nd	nd	nd	nd	nd
2-Chlorophenol	ug/L	1	200	nd	nd	nd	nd	nd	nd
4-Chloro-3-Methylphenol	ug/L	2	200	nd	nd	nd	nd	nd	nd
m/p-Cresol	ug/L	2	-	n/a	nd	nd	nd	nd	nd
o-Cresol	ug/L	2	-	n/a	nd	nd	nd	nd	nd
1,2,3,4-Tetrachlorobenzene	ug/L	2	500	n/a	nd	nd	nd	nd	nd
2,3-Dichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,4-Dichlorophenol	ug/L	1	200	nd	nd	nd	nd	nd	nd
2,5-Dichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,6-Dichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
3,4-Dichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
3,5-Dichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,4-Dimethylphenol	ug/L	2	200	nd	nd	nd	nd	nd	nd
2,4-Dinitrophenol	ug/L	8	100	nd	nd	nd	nd	nd	nd
4,6-Dinitro-2-methylphenol	ug/L	8	100	nd	nd	nd	nd	nd	nd
2-Nitrophenol	ug/L	2	100	nd	nd	nd	nd	nd	nd
4-Nitrophenol	ug/L	6	100	nd	nd	nd	nd	nd	nd
Pentachlorophenol	ug/L	4	200	nd	nd	nd	nd	nd	nd
Phenol	ug/L	2	100	nd	nd	nd	nd	nd	nd
2,3,4,5-Tetrachlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,3,4,6-Tetrachlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,3,5,6-Tetrachlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,3,4-Trichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,3,5-Trichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,3,6-Trichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,4,5-Trichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
2,4,6-Trichlorophenol	ug/L	2	200	nd	nd	nd	nd	nd	nd
3,4,5-Trichlorophenol	ug/L	2	200	n/a	nd	nd	nd	nd	nd
Benzyl butyl phthalate	ug/L	2	-	nd	nd	nd	nd	nd	nd
Biphenyl	ug/L	2	-	n/a	nd	2	3	3	3
Bis(2-chloroethyl)ether	ug/L	2	500	nd	nd	nd	nd	nd	nd
Bis(2-chloroethoxy)methane	ug/L	2	500	nd	nd	nd	nd	nd	nd
Bis(2-chloroisopropyl)ether	ug/L	2	500	nd	nd	nd	nd	nd	nd
Bis(2-ethylhexyl)phthalate	ug/L	8	500	nd	nd	nd	nd	nd	nd
4-Bromophenyl phenyl ether	ug/L	1	-	nd	nd	nd	nd	nd	nd
p-Chloroaniline	ug/L	4	-	n/a	nd	nd	nd	nd	nd
4-Chlorophenyl phenyl ether	ug/L	2	500	nd	nd	nd	nd	nd	nd
3,3'-Dichlorobenzidine	ug/L	2	-	nd	nd	nd	nd	nd	nd
Di-N-butyl phthalate	ug/L	8	-	n/s	nd	nd	nd	nd	nd
Diethyl phthalate	ug/L	4	-	nd	nd	nd	nd	nd	nd
Dimethyl phthalate	ug/L	4	-	nd	nd	nd	nd	nd	nd
Di-N-octyl phthalate	ug/L	3	-	n/a	nd	nd	nd	nd	nd
2,4-Dinitrotoluene	ug/L	2	2400	nd	nd	nd	nd	nd	nd
2,6-Dinitrotoluene	ug/L	2	2400	nd	nd	nd	nd	nd	nd
Diphenyl Ether	ug/L	1	-	n/a	nd	nd	nd	nd	nd
Hexachlorobutadiene	ug/L	2	-	nd	nd	nd	nd	nd	nd
Hexachlorocyclopentadiene	ug/L	8	-	nd	nd	nd	nd	nd	nd
Hexachloroethane	ug/L	2	500	nd	nd	nd	nd	nd	nd
Isophorone	ug/L	2	-	nd	nd	nd	nd	nd	nd
Nitrobenzene	ug/L	2	500	nd	nd	nd	nd	nd	nd
Nitrosodiphenylamine/Diphenylamine	ug/L	4	-	nd	nd	nd	nd	nd	nd
N-Nitroso-di-n-propylamine	ug/L	2	-	nd	nd	nd	nd	nd	nd

Notes:

- EQL = estimated quantitation limit for routine analysis
- <(0)= parameter not detected above EQL
- = no guideline available
- nd = not detected

5. **Bolded** = exceeds applicable guideline

6. NSEL Landfill = Nova Scotia Environment and Labour *Guidelines for Disposal of Contaminated Solids in Landfills*, Attachment C, March 22, 1994. Updated 2003.

7. Combined total PAH must not exceed 10 ug/L

8. Individual parameters must not exceed 10ug/L; Total PAH must not exceed 50ug/L.

9. n/a = not applicable

Table I.1.3 METALS LEACHATE CHEMISTRY
 SYSCO Cooling Pond Sludge
 Jacques Whitford Project No. 1000897.03

Parameter	Units	EQL	NSEL Landfill	Sample ID									
				FLY ASH 1	SLAG 1	Comp 1 (pre-treatment)	Cylinder 5 (post-treatment)	CP 18	CP 17	CP 16	CP 15	CP 1	
Sample Date				27-Sep-05	27-Sep-05	30-Jun-05	28-Sep-05						13 Feb. 06
Aluminum (Al)	ug/L	100	500000	22000	nd	630	430	310	530	470	180	110	
Antimony (Sb)	ug/L	20	--	26	nd	64	60	28	27	28	23	nd	
Arsenic (As)	ug/L	20	5000	110	nd	56	24	nd	nd	nd	nd	nd	
Barium (Ba)	ug/L	50	100000	380	nd	260	650	700	560	600	860	790	
Beryllium (Be)	ug/L	20	10000	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Boron (B)	ug/L	500	500000	15000	nd	nd	580	nd	nd	nd	nd	nd	
Cadmium (Cd)	ug/L	3	500	22	nd	3.5	nd	nd	nd	nd	nd	nd	
Total Chromium (Cr)	ug/L	20	5000	310	nd	nd	nd	nd	nd	nd	nd	nd	
Cobalt (Co)	ug/L	10	5000	52	nd	100	nd	nd	nd	nd	nd	nd	
Copper (Cu)	ug/L	20	100000	230	nd	68	140	210	140	140	180	29	
Iron (Fe)	ug/L	500	--	650	nd	150000	nd	nd	nd	nd	nd	nd	
Lead (Pb)	ug/L	5	5000	nd	nd	2800	nd	210	nd	nd	190	49	
Lithium (Li)	ug/L	20	--	450	nd	nd	47	nd	nd	nd	nd	30	
Manganese (Mn)	ug/L	20	--	1800	nd	1000	nd	nd	nd	nd	nd	nd	
Mercury (Hg)	ug/L	0.01	100	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Molybdenum (Mo)	ug/L	20	5000	910	nd	nd	nd	26	21	20	25	nd	
Nickel (Ni)	ug/L	20	20000	1700	nd	nd	140	100	88	97	83	nd	
Selenium (Se)	ug/L	20	1000	120	nd	1200	24	nd	nd	nd	nd	nd	
Silver (Ag)	ug/L	5	5000	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Strontium (Sr)	ug/L	50	--	1900	3700	nd	nd	2900	1300	1500	3000	3100	
Thallium (Tl)	ug/L	1	--	1	nd	61	1600	nd	nd	nd	nd	nd	
Tin (Sn)	ug/L	20	2000	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Uranium (U)	ug/L	1	10000	43	nd	nd	nd	nd	nd	nd	nd	nd	
Vanadium (V)	ug/L	20	500000	13000	nd	1.5	nd	nd	nd	nd	nd	nd	
Zinc (Zn)	ug/L	20	250000	540	nd	nd	520	nd	nd	nd	nd	51	

Notes:

1. EQL = estimated quantitation limit for routine analysis
2. <(0)= parameter not detected above EQL
3. -- = no guideline available
4. **Bolded = exceeds** applicable guideline
5. NSEL Landfill = Nova Scotia Environment and Labour *Guidelines for Disposal of Contaminated Solids in Landfills* Attachment C, March 22, 1994. Updated 2003.
6. nd = not detected
7. n/a = not applicable