Table III-22: Results of PAH Analysis for Blind Mixtures of NRC Canada Certified Reference Materials

Sample	ESG SRM-23		ESG SRM-23	
Composition	50% HS-3/ 50% SES-1		33.3% HS-3/ 66.7% SES-1	
Dry Weight	5.99 g/ 6.00 g		4.01 g/ 8.03 g	
Compounds	Determined ppb (ng/g)	**Certified Value**	Determined ppb (ng/g)	**Certified Value**
Naphthalene	4700	**5350**	3400	**4120**
Acenaphthylene	250	-	180	-
Acenaphthene	2100	**2540**	1400	**1900**
Fluorene	4800	**7080**	3200	**4900**
Phenanthrene	55000	**43020**	34000	**29000**
Anthracene	3200	**6720**	2100	**4480**
Fluoranthene	44000	**30680**	27000	**20880**
Pyrene	24000	**20700**	16000	**14580**
Benz(a)anthracene	6500	**7560**	4100	**5200**
Chrysene	8700	**7600**	5900	**5420**
Benzofluoranthenes	9300	-	7000	-
Benzo(e)pyrene	2800	-	1900	-
Benzo(a)pyrene	2700	-	1800	-
Perylene	770	-	530	-
Dibenz(ah)anthracene	960	**960**	880	**840**
Indeno(1,2,3-cd)pyrene	2500	**3100**	1800	**2340**
Benzo(ghi)perylene	2200	**2840**	1700	**2120**

Table III-23: Summary of PAH Results for Sediment Internal Standard (N.I.S.T. Marine Reference Sediment HS-6)

Compounds ppb (ng/g)	Mean (n=3)	Std. Dev.	Certified Value
Naphthalene	4833	± 58	**4100 ± 100**
Acenaphthylene	190	±10	**190 ± 50**
Acenaphthene	127	± 6	**230 ± 70**
Fluorene	330	± 20	**470 ± 120**
Phenanthrene	3567	± 58	**3000 ± 600**
Anthracene	873	± 42	**1100 ± 400**
Fluoranthene	3667	±153	**3540 ± 650**
Pyrene	2900	± 0	**3000 ± 600**
Benz(a)anthracene	1567	± 58	**1800 ± 300**
Chrysene	2500	± 100	**2000 ± 300**
Benzofluoranthenes	5200	± 300	**4230 ± 750**
Benzo(e)pyrene	1900	± 141	
Benzo(a)pyrene	1667	± 58	**2200 ± 400**
Perylene	450	±14	
Dibenz(ah)anthracene	407	± 6	**490 ± 160**
Indeno(1,2,3-cd)pyrene	2033	± 115	**1950 ± 580**
Benzo(ghi)perylene	1633	± 58	**1780 ± 720**

Table III-24: Analytical Blanks for PAHs in Soils

Sample Code	PH-S-BLK618i	PH-S-BLK 662	PH-S-BLK 663
Sample Wt.	8.55 g	7.0 g dry	7.00 g dry
Compounds		ppb (ng/g)	
Naphthalene	NDR(0.8)	1.1	1.1
Acenaphthylene	<0.1	<0.07	NDR(0.08)
Acenaphthene	<0.1	<0.1	<0.04
Fluorene	NDR(0.2)	<0.05	0.19
Phenanthrene	1.0	0.21	0.33
Anthracene	NDR(0.1)	<0.07	NDR(0.17)
Fluoranthene	0.6	<0.06	NDR(0.2)
Pyrene	NDR(0.2)	<0.06	0.16
Benz(a)anthracene	<0.08	<0.11	<0.34
Chrysene	<0.09	<0.11	NDR(0.55)
Benzofluoranthenes	<0.1	<0.12	<0.51
Benzo(e)pyrene	<0.1	<0.12	<0.5
Benzo(a)pyrene	<0.1	<0.14	<0.6
Perylene	<0.1	<0.13	<0.54
Dibenz(ah)anthracene	<0.5	<0.44	<2.2
Indeno(1,2,3-cd)pyrene	<0.3	<0.23	<1.0
Benzo(ghi)perylene	<0.3	<0.18	<0.84

NDR = Peak detected but did not meet quantification criteria

Table III-25: PAH Results for Soil and Sediment Analytical Replicates

Sample Concentrations in ppb (ng/g)	L6004		Relative Std. Dev.	L5901A		Relative Std. Dev.	**Average (n=2)**	**Std. Dev.**
Compound								
Naphthalene	2.8	3.9	23.2	55	68	14.9	**19.1**	**± 5.8**
Acenaphthylene	0.12	NDR(0.17)	-	4.0	4.4	6.7	**6.7**	
Acenaphthene	NDR(0.13)	0.25	-	9.0	5.5	34.1	**34.1**	
Fluorene	0.52	0.45	10.2	15	11	21.8	**16.0**	**± 8.2**
Phenanthrene	3.1	2.9	4.7	170	150	8.8	**6.8**	**± 2.9**
Anthracene	0.76	NDR(0.56)	-	32	25	17.4	**17.4**	
Fluoranthene	4.0	3.3	13.6	170	160	4.3	**8.9**	**± 6.6**
Pyrene	4.5	3.9	10.1	110	100	6.7	**8.4**	**± 2.4**
Benz(a)anthracene	2.7	1.8	28.3	42	35	12.9	**20.6**	**± 10.9**
Chrysene	3.5	2.6	20.9	120	120	0.0	**10.4**	**± 14.8**
Benzofluoranthenes	5.2	NDR(3.9)	-	130	130	0.0	**0.0**	
Benzo(e)pyrene	NDR(2.5)	NDR(1.8)	-	51	52	1.4	**1.4**	
Benzo(a)pyrene	2.0	NDR(1.0)	-	38	36	3.8	**3.8**	
Perylene	NDR(0.33)	<0.31	-	7.8	7.1	6.6	**6.6**	
Dibenz(ah)anthracene	NDR(1.0)	<1.5	-	NDR(7.3)	NDR(7.0)	-	-	
Indeno(1,2,3-cd)pyrene	NDR(1.5)	NDR(0.99)	-	35	NDR(36)	-	-	
Benzo(ghi)perylene	NDR(1.9)	NDR(1.5)	-	30	31	2.3	**2.3**	

NDR = Peak detected but did not meet quantification criteria

Table III-26: Determination of Pesticides in Internal Spiked Reference Material for Soils

Compounds ppb (ng/g)	Mean (n=2)		Expected	% Recovery
HCB	5.4	±0.1	5.6	96
alpha BHC	5.1	±0.1	5.6	91
beta BHC	7.7	±0.2	8.2	93
gamma BHC	4.8	±0.3	5.4	89
Heptachlor	6.4	±0.8	5.8	109
Aldrin	3.5	±0.6	3.6	97
Oxychlordane	5.5	±0.4	5.0	109
trans-Chlordane	3.2	±0.4	3.2	100
cis-Chlordane	4.4	±0.1	4.8	91
o,p'-DDE	4.8	±0.3	5.7	84
p,p'-DDE	4.8	±0.6	5.4	88
trans-Nonachlor	4.2	±0.1	4.1	101
cis-Nonachlor	4.2	±0.2	4.2	99
o,p'-DDD	4.9	±0.9	5.6	87
p,p'-DDD	6.0	±0.9	6.2	96
p,p'-DDT	5.8	±0.2	6.2	93
Mirex	5.7	±0.4	5.4	105
Heptachlor Epoxide	3.3	±0.9	4.1	79
alpha-Endosulphan	3.6	±0.1	4.0	89
Dieldrin	4.6	±0.1	4.2	108
Endrin	11.0	±0.0	11	100
Methoxychlor	29.0	±4.2	25	116

Table III-27: Analytical Blanks for Pesticides in Soils

Sample	CL-S-BLK 452	CL-S-BLK 453*	CL-S-BLK 477
Compounds	Concentrations in ppb (ng/g)		
HCB	0.03	<0.03	<0.05
alpha BHC	<0.04	<0.02	<0.02
beta BHC	<0.05	<0.03	<0.07
gamma BHC	<0.04	<0.02	<0.03
Heptachlor	<0.03	<0.02	<0.1
Aldrin	<0.01	<0.01	NDR(0.44)
Oxychlordane	<0.11	<0.05	NDR(0.09)
trans-Chlordane	<0.04	<0.03	<0.03
cis-Chlordane	<0.05	<0.04	<0.04
o,p'-DDE	<0.09	<0.07	<0.13
p,p'-DDE	<0.1	<0.07	<0.06
trans-Nonachlor	<0.05	<0.04	<0.08
cis-Nonachlor	<0.03	<0.03	<0.03
o,p'-DDD	<0.07	<0.06	<0.06
p,p'-DDD	<0.07	<0.06	<0.05
p,p'-DDT	<0.08	<0.09	<0.21
Mirex	<0.06	<0.06	<0.08
Heptachlor Epoxide	<0.05	<0.03	<0.05
alpha-Endosulphan	<0.06	<0.04	<0.06
Dieldrin	<0.06	<0.04	<0.06
Endrin	<0.12	<0.07	<0.1
Methoxychlor	<0.39	<0.22	<0.21

NDR = Peak detected but did not meet quantification criteria
* Analyzed by HRGC/HRMS

Table III-28: Pesticide Results for Soil Analytical Replicates

Sample	L6049		Relative	L5903		Relative
Compounds			Std. Dev.			Std. Dev.
Concentration in ppb (ng/g)						
HCB	NDR(0.09)	NDR(0.06)	-	<1.1	<1.5	-
alpha BHC	<0.03	<0.03	-	<0.35	<0.59	-
beta BHC	<0.02	<0.02	-	<0.47	<0.78	-
gamma BHC	0.04	<0.04	-	<0.38	<0.64	-
Heptachlor	<0.02	<0.02	-	<0.47	<0.52	-
Aldrin	<0.01	<0.008	-	<0.2	<0.31	-
Oxychlordane	<0.05	<0.04	-	<0.39	<0.83	-
trans-Chlordane	<0.04	<0.04	-	<0.52	<0.79	-
cis-Chlordane	<0.04	<0.04	-	<0.56	<0.85	-
o,p'-DDE	<0.05	<0.05	-	0.41	0.28	27
p,p'-DDE	NDR(0.09)	NDR(0.14)	-	3.3	2.6	17
trans-Nonachlor	<0.04	<0.04	-	<0.6	<0.92	-
cis-Nonachlor	<0.03	NDR(0.02)	-	<0.34	<0.88	-
o,p'-DDD	NDR(0.1)	<0.06	-	3.8	3.1	14
p,p'-DDD	NDR(0.35)	0.35	-	8.8	7.7	9.4
p,p'-DDT	<0.40	0.98	-	58	52	7.7
Mirex	<0.04	<0.04	-	<0.1	<0.27	-
Heptachlor Epoxide	<0.05	<0.04	-	<0.19	<0.2	-
alpha-Endosulphan	<0.06	<0.05	-	0.55	0.6	6.1
Dieldrin	0.1	0.11	6.7	<0.22	<0.23	
Endrin	<0.11	<0.1	-	<0.4	0.47	-
Methoxychlor	<0.34	<0.3	-	<1.3	<1.3	-

NDR = Peak detected but did not meet quantification criteria

Table III-29: Determination of Acid/Base/Neutral Extractables (ABNs) in Soil Analytical Replicates

Sample	L5902	
Compound (concentration in µg/g or ppm)		
Bis(2-chloroethoxy) methane	<0.06	<0.06
Bis(2-chloroethyl) ether	<0.06	<0.06
Bis(2-chloroisopropyl) ether	<0.05	<0.05
4-Bromophenyl phenyl ether	<0.03	<0.03
2-Chloronaphthalene	<0.07	<0.07
4-Chlorophenyl phenyl ether	<0.04	<0.04
2,4-Dinitrotoluene	<0.07	<0.07
2,6-Dinitrotoluene	<0.2	<0.2
Isophorone	<0.1	<0.1
Nitrobenzene	<0.09	<0.09
N-Nitrosodi-n-propylamine	<0.2	<0.2
N-Nitrosodiphenylamine	<0.03	<0.03
Hexachlorobenzene	<0.04	<0.04
Hexachlorobutadiene	<0.2	<0.2
Hexachlorocyclopentadiene	<1	<1
Hexachloroethane	<0.8	<0.8
1,2,4-Trichlorobenzene	<0.05	<0.05
2,4-Dimethylphenol	<0.2	<0.2
4,6-Dinitro-o-cresol	<1	<1
2,4-Dinitrophenol	<1	<1
2-Nitrophenol	<0.2	<0.2
4-Nitrophenol	<0.2	<0.2
Phenol	<0.07	<0.07
2-Chlorophenol	<0.07	<0.07
4-Chloro-3-methylphenol	<0.1	<0.1
2,4-Dichlorophenol	<0.07	<0.07
2,4,6-Trichlorophenol	<0.1	<0.1
2,4,5-Trichlorophenol	<0.07	<0.07
Pentachlorophenol	<0.2	<0.2
Naphthalene	<0.06	<0.06
Acenaphthylene	<0.07	<0.07
Acenaphthene	<0.04	<0.04
Fluorene	<0.04	<0.04
Phenanthrene	<0.5	<0.5
Anthracene	<0.3	<0.3
Fluoranthene	<0.5	<0.5
Pyrene	<0.5	<0.5
Benz(a)anthracene	<0.3	<0.3
Chrysene	<0.4	<0.4
Benzofluoranthenes	<1.1	<1.1
Benzo(a)pyrene	<0.5	<0.5
Dibenz(ah)anthracene	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	<0.5	<0.5
Benzo(ghi)perylene	<0.5	<0.5
3,3-Dichlorobenzidine	<3	<3
1,3-Dichlorobenzene	<0.09	<0.09
1,4-Dichlorobenzene	<0.09	<0.09
1,2-Dichlorobenzene	<0.08	<0.08
Dimethyl phthalate	<0.06	<0.06
Diethyl phthalate	<0.03	<0.03
Dibutyl phthalate	<30	<30
Butyl-Benzyl phthalate	<9	<9
Bis(2-ethylexyl)phthalate	<8	<8
Di-N-Octyl phthalate	<0.8	<0.8

Table III-30: Determination of Polychlorinated Dibenzo-P-Dioxin / Furan in Internal Spiked Reference Material

Type Sample I.D.	Sediment SSPM437			Sediment SPM 489			Tissue TSPB 491			Average (n=3)
	Determined pg/g or ppt	Expected	Recovery %	Determined pg/g or ppt	Expected	Recovery %	Determined pg/g or ppt	Expected	Recovery %	
Dioxins										
T4CDD - Total										
2,3,7,8	1.7	2.2	77	1.8	1.8	100	1.7	1.8	94	**91 ±12**
P5CDD - Total										
1,2,3,7,8	5.5	6.3	87	4.6	5.0	92	4.9	5.0	98	**92 ±5**
H6CDD - Total										
1,2,3,4,7,8	5.7	6.8	84	5.5	5.4	102	6.1	5.4	113	**100 ±15**
1,2,3,6,7,8	6.3	6.3	100	5.4	5.0	108	5.2	5.0	104	**104 ±4**
1,2,3,7,8,9	5.0	4.6	109	5.0	5.2	96	5.9	5.2	113	**106 ±9**
H7CDD - Total										
1,2,3,4,6,7,8	4.3	5.4	80	6.1	5.6	109	4.5	4.4	102	**97 ±15**
O8CDD - Total	6.9	9.2	75	18	17	106	8.1	7.4	109	**97 ±19**
Furans										
T4CDF - Total										
2,3,7,8	4.3	4.7	91	1.7	1.9	89	1.8	1.9	95	**92 ±3**
P5CDF - Total										
1,2,3,7,8	5.2	5.8	90	4.8	4.6	104	5.1	4.6	111	**102 ±11**
2,3,4,7,8	4.7	5.7	82	4.8	4.6	104	4.5	4.6	98	**95 ±11**
H6CDF - Total										
1,2,3,4,7,8	8.1	9.1	89	6.8	7.3	93	6.3	7.3	86	**89 ±3**
1,2,3,6,7,8	8.4	9.5	88	6.8	7.6	89	6.4	7.6	84	**87 ±3**
2,3,4,6,7,8	6.4	5.7	112	5.4	4.6	117	5.7	4.6	124	**118 ±6**
1,2,3,7,8,9	4.5	5.7	79	3.8	4.6	83	4.6	4.6	100	**87 ±11**
H7CDF - Total										
1,2,3,4,6,7,8	7.5	7.5	100	6.6	6.4	103	5.3	6.0	88	**97 ±8**
1,2,3,4,7,8,9	4.4	5.9	75	4.0	4.7	85	3.8	4.7	81	**80 ±5**
O8CDF - Total	7.8	9.4	83	9.1	7.9	115	7.7	7.4	104	**101 16**

Table III-31: Polychlorinated Dibenzo-P-Dioxin / Furan Analytical (Procedural) Blanks

Type	Soil	Soil	Soil	Water	Tissue
Sample	SBLK1140	SBLK1152	SBLK 1202	WBLK 1209	TBLK 1177
Concentration	pg/g	pg/g	pg/g	pg/L	pg/g
Dioxins					
T4CDD - Total	<0.1	<0.1	<0.1	<0.2	<0.1
2,3,7,8	<0.1	<0.1	<0.1	<0.2	<0.1
P5CDD - Total	<0.1	<0.4	<0.1	<0.2	<0.1
1,2,3,7,8	<0.1	<0.4	<0.1	<0.2	<0.1
H6CDD - Total	<0.2	<0.2	<0.2	<0.3	<0.2
1,2,3,4,7,8	<0.2	<0.2	<0.2	<0.3	<0.2
1,2,3,6,7,8	<0.2	<0.2	<0.2	<0.3	<0.2
1,2,3,7,8,9	<0.2	<0.2	<0.2	<0.3	<0.2
H7CDD - Total	<0.3	<0.3	<0.3	<0.4	<0.3
1,2,3,4,6,7,8	<0.3	<0.3	<0.3	<0.4	<0.3
O8CDD - Total	NDR(0.8)	<0.3	<0.5	<0.5	<0.4
Furans					
T4CDF - Total	<0.1	<0.1	<0.1	<0.2	<0.1
2,3,7,8	<0.1	<0.1	<0.1	<0.2	<0.1
P5CDF - Total	<0.2	<0.1	<0.1	<0.2	<0.1
1,2,3,7,8	<0.2	<0.1	<0.1	<0.2	<0.1
2,3,4,7,8	<0.2	<0.1	<0.1	<0.2	<0.1
H6CDF - Total	<0.3	<0.3	<0.2	<0.3	<0.2
1,2,3,4,7,8	<0.3	<0.3	<0.2	<0.3	<0.2
1,2,3,6,7,8	<0.3	<0.3	<0.2	<0.3	<0.2
2,3,4,6,7,8	<0.3	<0.3	<0.2	<0.3	<0.2
1,2,3,7,8,9	<0.3	<0.3	<0.2	<0.3	<0.2
H7CDF - Total	<0.3	<0.2	<0.3	<0.4	<0.2
1,2,3,4,6,7,8	<0.3	<0.2	<0.3	<0.4	<0.2
1,2,3,4,7,8,9	<0.3	<0.2	<0.3	<0.4	<0.2
O8CDF - Total	<0.4	<0.3	<0.4	<0.5	<0.3

NDR = Peak detected but did not meet quantification criteria

Table III-32: Polychlorinated Dibenzo-P-Dioxin / Furan Results for Analytical Replicates

Type Sample Concentration in pg/g or ppt	Soil G5983		Relative Std. Dev.	Tissue G5900P		Relative Std. Dev.
Dioxins						
T4CDD - Total	100	99	**0.7**	12	8.3	**25.8**
2,3,7,8	4.0	3.9	**1.8**	0.4	0.3	**20.2**
P5CDD - Total	250	260	**2.8**	46	38	**13.5**
1,2,3,7,8	28	29	**2.5**	NDR(4.8)	NDR(3.7)	-
H6CDD - Total	2100	2000	**3.4**	200	160	**15.7**
1,2,3,4,7,8	92	89	**2.3**	8.1	6.0	**21.1**
1,2,3,6,7,8	190	190	**0.0**	16	13	**14.6**
1,2,3,7,8,9	280	270	**2.6**	15	12	**15.7**
H7CDD - Total	3300	3400	**2.1**	430	330	**18.6**
1,2,3,4,6,7,8	1700	1800	**4.0**	210	160	**19.1**
O8CDD - Total	13000	14000	**5.2**	730	560	**18.6**
Furans						
T4CDF - Total	130	150	**10.1**	150	110	**21.8**
2,3,7,8	8.3	9.8	**11.7**	8.1	6.2	**18.8**
P5CDF - Total	140	170	**13.7**	180	150	**12.9**
1,2,3,7,8	2.3	2.5	**5.9**	1.6	1.2	**20.2**
2,3,4,7,8	3.6	3.9	**5.7**	6.7	5.1	**19.2**
H6CDF - Total	520	590	**8.9**	300	230	**18.7**
1,2,3,4,7,8	14	15	**4.9**	9.1	7.3	**15.5**
1,2,3,6,7,8	18	19	**3.8**	11	8.5	**18.1**
2,3,4,6,7,8	14	16	**9.4**	13	10	**18.4**
1,2,3,7,8,9	<0.2	<0.2	-	<0.2	<0.2	-
H7CDF - Total	950	1000	**3.6**	310	240	**18.0**
1,2,3,4,6,7,8	450	480	**4.6**	190	150	**16.6**
1,2,3,4,7,8,9	8.6	9.7	**8.5**	2.6	2.1	**15.0**
O8CDF - Total	1300	1400	**5.2**	150	110	**21.8**

NDR = Peak detected but did not meet quantification criteria

Table III-33: Surrogate Standard Recovery Values (%) for Polychlorinated Dibenzo-P-Dioxin / Furan Analysis

1. Spiked Reference Materials

Phase	Soil	Soil	Tissue
Sample	SSPM437	SPM 489	TSPB 491
Compound		%	
13C-T4CDF:	70	82	92
13C-T4CDD:	68	71	87
13C-P5CDF:	70	84	91
13C-P5CDD:	83	90	110
13C-H6CDF:	62	79	87
13C-H6CDD:	60	73	75
13C-H7CDF:	66	77	89
13C-H7CDD:	66	71	80
13C-O8CDD:	n/a	63	72

2. Analytical Blanks

Phase	Soil	Soil	Soil	Water	Tissue
Sample	SBLK1140	SBLK1152	SBLK 1202	WBLK 1209	TBLK 1177
Compound			%		
13C-T4CDF:	68	83	80	89	62
13C-T4CDD:	75	86	60	82	52
13C-P5CDF:	73	96	82	95	75
13C-P5CDD:	72	100	86	91	80
13C-H6CDF:	77	83	81	110	86
13C-H6CDD:	70	80	68	91	85
13C-H7CDF:	62	68	81	100	82
13C-H7CDD:	52	59	49	85	72
13C-O8CDD:	27	45	33	70	60

3. Sample Analytical Duplicates

Phase	Soil		Tissue	
Sample	G5983	Duplicate	G5900P	Duplicate
Compound		%		
13C-T4CDF:	83	73	49	56
13C-T4CDD:	79	73	56	72
13C-P5CDF:	81	69	62	58
13C-P5CDD:	94	78	92	82
13C-H6CDF:	70	63	56	52
13C-H6CDD:	77	74	81	71
13C-H7CDF:	82	70	56	49
13C-H7CDD:	93	76	72	64
13C-O8CDD:	98	70	52	49

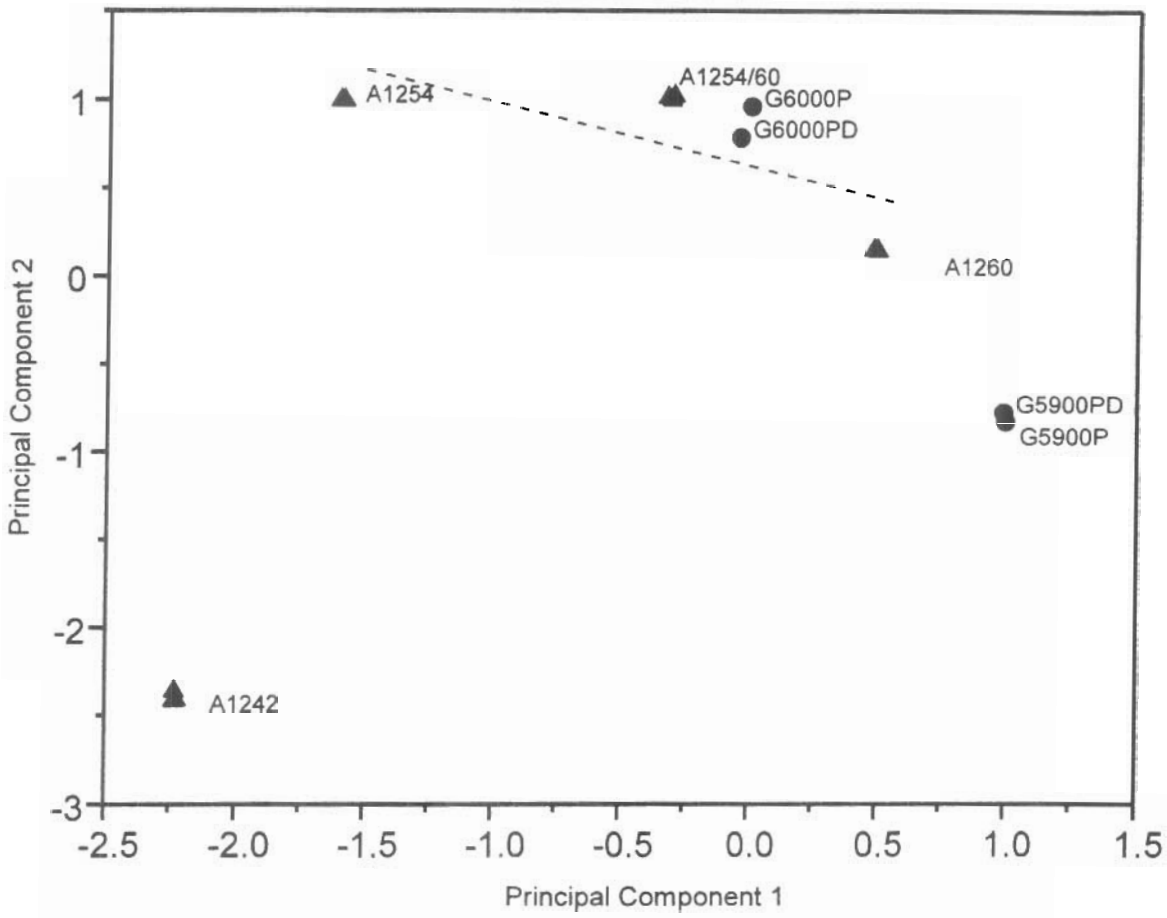

Figure III-1: Principal Component Analysis of Sample Analytical Duplicates

IV. SITE DESCRIPTIONS

A. Backgrounds

A total of eight soil samples, including one field duplicate, were collected from areas in the Iqaluit region believed to be unimpacted by operation of the Upper Base or the town. A total of five plant samples were collected in background sampling locations. One background water sample was collected.

G6005A
- 50 m north of a large remote gravel borrow area, 2.5 km east of the Upper Base, on the east bank of the river valley. No tag was placed.
- Medium to fine-grained, dark brown, rich sand with lots of roots, under a surface cover of moss and lichen (4 cm).
- *Salix arctica* was sampled.
- Other vegetation present: *Pyrola* sp., *Cassiope* sp., *Vaccinium uliginosum*, *Hierchloë* sp., *Salix herbacea*, *Dryas* sp., *Ledum* sp.
- Debris present: none.
- Wildlife evidence present: caribou frass.
- 63° 45.80' N, 68° 28.40' W

G6005B
- Field duplicate of G6005A.

G6006
- On the east bank of the river, 50 m north of the bridge in the road leading to the remote gravel borrow area. No tag was placed
- Very organic sediment taken at the water level. Rust coloured mat with a dark brown component over rocks. An oily sheen was on the water surface.
- *Salix arctica* was sampled.
- Other vegetation present: *Carex bigelowii, Carex membranacea*, *Vaccinium uliginosum*, *Eriophorum angustifolium*, *Eriophorum scheuchzeri*, *Equisetum variegatum*, *Cassiope* sp., *Ledum* sp.
- Debris present: silver coloured plastic coating material.
- No wildlife was in evidence in the sampling area.
- 63° 45.41' N, 68° 27.78' W

G6007
- On the east bank of the river valley 40 m up the bank from G6006 and 100 m north of the road bridge in the road to the remote gravel borrow area. No tag was placed.
- Dry moss cover over a dark brown organic rich soil with stones rocks and a medium to coarse-grained sand base.
- *Salix arctica* was sampled.

- Other vegetation present: *Cassiope* sp., *Carex bigelowii, Pyrola* sp., *Salix herbacea, Polygonum* sp., *Poa arctica, Hierochloë* sp., *Empetrum* sp..
- Debris present: none.
- Wildlife evidence present: caribou frass.
- 63° 45.44 ' N, 68° 27.78 ' W

G6008
- Up Sylvia Grinnell River, 200 m up stream from the rapids and the end of a rocky beach, in a slightly raised spot between two drainage gullys. Vegetation covered 66% of the area. No tag was placed.
- Mixture of medium and fine-grained sand, with a few roots and no stones or pebbles.
- *Salix arctica* was sampled.
- Other vegetation present: *Salix herbacea, Cassiope* sp., *Carex bigelowii, Salix reticulata, Empetrum* sp., *Oxytropis maydelliana, Polygonum* sp., *Hierochloë* sp.
- Debris present: none.
- No wildlife was in evidence in the sampling area.

G6009
- On the slope above a flat grassy plateau on the north bank of the Sylvia Grinnell River, 300 m up stream from a rocky beach area. No tag was placed.
- Very thick moss layer under other vegetation. A brown, very organic rooty material with a fine silt component.
- *Salix arctica* was sampled.
- Other vegetation present: *Ledum* sp., *Cassiope* sp., *Carex bigelowii, Vaccinium uliginosum, Dryas* sp., *Salix reticulata, Hierochloë* sp.
- Debris present: none.
- No wildlife was in evidence in the sampling area.

G5984
- Adjacent to a small pond which drains into the fresh water lake drainage, 800 m east-northeast of the Upper Base. No tag was placed.
- Very fine sand with a few roots.
- No vegetation was sampled.
- Vegetation present: *Salix reticulata, Luzula* sp., *Carex* sp., *Eriophorum* sp.
- Debris present: none.
- No wildlife was in evidence in the sampling area.
- 63° 47.32' N, 68° 32.90' W

WF6007
- Water sample taken from a pond north of the Upper Base which drains into the Freshwater Supply Lake; collected at the same location as G5984.

G5985
- In a dry area in the watershed draining into Carney Creek which runs through the North 40, 1 km north-northwest of the Upper Base site. No tag was placed.

- Fine to medium-grained sand with rocks and some roots.
- Other vegetation present: *Salix arctica, Vaccinium* sp., *Dryas* sp., *Astragalus alpinus*, *Salix reticulata*, *Dryas* sp., *Polygonum* sp., *Cassiope* sp.
- Debris present: none.
- Wildlife evidence present: caribou frass.
- 63° 47.37 ' N, 68° 33.28 ' W

B. Upper Base

No wildlife was seen at the Upper Base by the sampling team during the 1994 summer sampling program. However, caribou and ravens were abundant at the site in February of 1995.

1. Building PV222

Pole Vault Building 222 (Building PV222) is located southwest of the Upper Base buildings and can be accessed by a road leading from the west side of the Upper Base. Two sampling programs were undertaken in the vicinity of Building PV222: 115 delineation soil samples were collected in the immediate vicinity of the building in order to outline an area of known PCB contamination regulated under the Canadian Environmental Protection Act (>50 ppm); an additional 46 assessment soil samples, including four field duplicates, were collected outside of the delineated areas and were concentrated in drainage paths and stained areas. Delineation soil samples were collected along a grid pattern and were given sample numbers beginning "QB". The results for these and the assessment soil samples are provided in Chapter V of the Appendices. Assessment soil samples were collected in areas of unknown but suspected contamination. The sample numbering scheme for these samples follows the pattern of a letter followed by four numbers. The letter represents the presumed influence acting on the sample (e.g., L for samples located within the influence of a landfill or dump, O for samples collected in the vicinity of an outfall and G for all other general samples). The first two numbers represent the current site under investigation (ie. Iqaluit is represented by the 5900 and 6000 series of samples) while the third and forth numbers are the sequence of samples collected in each category (G, L or O) starting at zero.

To determine whether contaminants were making their way into the food chain vegetation was collected in assessment sample locations where sufficient material was available. A total of 26 plant samples were collected in the vicinity of Building PV222.

G5981
- In the drainage from PV222, 10 m northeast of the building and 4m northeast of QB54. ESG tag # 166.
- A moss and organic root layer (8 cm) over a coarse sand and stone layer.
- *Salix arctica* was sampled.
- Other vegetation present: *Trisetum* sp., *Polygonum* sp., *Poa arctica*, *Cerastium* sp., *Carex* sp.

- Debris present: none.
- No wildlife was in evidence in the sampling area.
- 63° 46.62 ' N, 68° 32.20 ' W

G5982
- On the east side of Building PV222 beside large antenna fragments, 4 m south of G5981, slightly above the drainage from a stain, but in the drainage from the building. ESG tag # 167.
- A moss layer (0.5 cm) overlying a dark brown medium and fine-grained sand with some roots.
- *Salix arctica* was sampled.
- Other vegetation present: *Polygonum* sp., *Salix reticulata*, *Poa arctica*, *Astragalus alpinus*, *Carex* sp.
- Debris present: old antenna poles.
- No wildlife was in evidence in the sampling area.
- 63° 46.62 ' N, 68° 32.20 ' W

G5900
- In a small drainage pathway, 12 m from the northeast corner of Building PV222, beside the road embankment. Sample was taken 6 m down-slope from QB54. ESG tag # 1.
- Coarse and fine sand under a moss layer. Below the surface (1 cm) was a black ash layer (1 cm).
- *Salix arctica* was sampled.
- Other vegetation present: *Carex bigelowii* (necrotic), *Salix herbacea, Astragalus alpinus, Epilobium* sp., *Festuca baffinensis, Polygonum* sp., *Poa arctica.*
- Debris present: beer can, broken glass, light cover, cables from support guy wires , radar support struts and ceramic insulation.
- Wildlife evidence present: lemming frass.

Two drainage samples from a stain were collected on the east side of the road leading to Building PV222 in the drainage ditch beside the road. Four additional drainage samples were collected from areas east of the road, down-slope to a level pooling area. Another drainage sample was taken further down the drainage ditch on the east side of the road beyond a small side road leading east. A final sample was taken from the west side of the road which would probably not collect drainage from the building.

G5983
- In the drainage from Building PV222, 18 m northeast of G5900. ESG tag # 168.
- A moss layer (0.5 cm) over fine sand with stones. The water level is 2 cm below the ground surface level.
- *Salix arctica* was sampled.

- Other vegetation present: *Carex* sp., *Polygonum* sp., *Pedicularis* sp., *Luzula* sp., *Cerastium* sp..
- Debris present: red stained rocks and aluminum sheeting.
- No wildlife was in evidence in the sampling area.
- 63° 46.63 ' N, 68° 32.21 ' W

G5901
- In a drainage pathway, 22 m northeast of the north corner of Building PV222, on the east side of a little drainage pool and 3 m from the road embankment. ESG tag # 2.
- Coarse sand with rocks and lots of roots. Some gravel under a vegetation layer.
- *Salix arctica* was sampled.
- Other vegetation present: *Carex membranacea*, *Pedicularis lapponica*, *Carex bigelowii*, *Polygonum* sp., *Salix reticulata*, *Saxifraga oppositifolia*, *Carex capillaris*.
- Debris present: none.
- No wildlife was in evidence in the sampling area.

G5902
- In a drainage area, 18 m east of G5900 below a 3 m rock-face, at the edge of a drainage pool. Also 25 m from the suspended counter weight foundations. ESG tag # 3.
- A thick moss layer (5 cm) over an organic rooty layer containing lumps of tar. 10 cm lower was a fine-grained sand.
- *Salix arctica* was sampled.
- Other vegetation present: *Salix reticulata*, *Cassiope* sp., *Polygonum* sp., *Poa arctica*, *Luzula* sp., *Vaccinium uliginosum*, *Astragalus alpinus*, *Oxytropis* sp. sp., *Pyrola* sp.
- Debris present: rusted drum with tar fragments, wood, aluminum foil, pop cans, fencing wire, large aluminum foil sheet and glass fragments.
- No wildlife was in evidence in the sampling area.

G5903
- In the drainage 38 m northeast from Building PV222, 15 m down-slope (north) from G5902 below a small side road and 28 m south of the remains of the communication dish hut. ESG tag # 5.
- A moss and vegetation layer covered a dark brown organic material mixed with fine sand and rocks. Some root material was present.
- *Salix arctica* was sampled.
- Other vegetation present: *Carex membranacea*, *Polygonum* sp., *Salix reticulata*, *Poa arctica*, species of marine algae.
- Debris present: light globe aluminum base, insulated electrical cables and wood fragments.
- Wildlife evidence present: caribou frass.
- 63° 46.64 ' N, 68° 32.20 ' W

G5904A
- 18 m south of the communication dish hut, 7 m southeast of one guy cable concrete foundation block and 10 m southwest of another. ESG tag # 6.

- Coarse and fine-grained brown sand mixed with pebbles and roots under a thin vegetation layer.
- *Salix arctica* was sampled.
- Other vegetation present: *Carex* sp., *Epilobium* sp., *Armeria* sp., *Saxifraga oppositifolia, Saxifraga aizoides, Saxifraga caespitosa, Polygonum* sp., *Pedicularis* sp., *Dryas* sp., *Oxyria* sp., species of mushroom.
- Debris present: rusty can, light bulb fitting, wood fragments and large communication cable.
- No wildlife was in evidence in the sampling area.
- 63° 46.65' N, 68° 32.18' W

G5904B - Field duplicate of G5904A.

G5905
- In the east drainage from Building PV222, 7 m down-slope from G5702 in the same drainage, in a pooling area below the roadside slope. ESG tag # 4.
- 5 cm moss layer covering decaying organic matter with a coarse-grained sand taken from below water level. A faint anoxic odour was detected.
- Vegetation present: *Carex* sp., *Saxafraga cernua, Salix reticulata, Arctagrostis* sp., *Cassiope* sp., *Pyrola* sp., *Salix arctica, Polygonum* sp., *Salix herbacea.*
- Debris present: rifle cartridge box.
- No wildlife was in evidence in the sampling area.

G5936
- On the west side of the road leading to Building PV222, 30 m from the north corner of the building. The sample was taken on the opposite side of the road to sample G5901. ESG tag # 38.
- Thick moss layer (3 cm) overlying coarse and medium-grained sand mixed with stones and rocks above a peaty layer. The sample was taken at the water level beside a pool.
- Vegetation present: *Cassiope* sp., *Oxyria* sp., *Salix reticulata*, *Carex membranacea*, *Luzula* sp., *Oxytropis* sp. sp., *Vaccinium uliginosum*, *Epilobium* sp., *Armeria* sp., *Pyrola* sp.
- Debris present: cardboard, paper, tin can and metal pipe.
- No wildlife was in evidence in the sampling area.
- 63° 46.69' N, 68° 32.19' W

G5937A
- In a drainage channel 4 m from the east side of the road leading to Building PV222, 90 m from the north corner of Building PV222. Vegetation covered 40% of the area. ESG tag # 39.
- Coarse sand and extensive root material.
- *Carex membranacea* was sampled.

- Other vegetation present: *Epilobium* sp., *Carex capillaris*, *Salix arctica*, *Polygonum* sp., *Saxifraga oppositifolia*, *Luzula* sp., *Salix reticulata*, *Cassiope* sp.
- Debris present: pop can.
- Wildlife evidence present: caribou frass.
- 63° 46.69' N, 68° 32.34' W

G5937B - Field duplicate of G5937A.

The east drainage course was followed from the east side of the building towards a series of three lakes located at the bottom of the eastern slope. Two samples were collected from behind the east communication dish on the gravel pad beside two concrete support blocks. Four samples were collected along the lower eastern edge of the gravel pad and five drainage samples were collected at various intervals, following the drainage course down the slope towards the lakes. One sample was collected at the bottom of a level plateau area below a small steep drop which was located approximately 120 m from the building. The three small lakes are located at the bottom of a gentle slope from the plateau.

G5906 - Down-slope and 10 m east of the centre concrete foundation block supporting the existing east communication dish, in a stain (3.5 m × 1 m). Vegetation covered 30% of the area. ESG tag # 7.
- Coarse and fine-grained brown sand with pebbles and rocks. A strong hydrocarbon odour was detected near the surface but was considerably weaker at a depth of 10 cm.
- Vegetation present: *Vaccinium uliginosum*, *Salix arctica*, *Poa arctica*, *Carex bigelowii*, *Cassiope* sp., *Silene* sp., *Salix herbacea*, *Astragalus alpinus*, *Dryas* sp., *Polygonum* sp., *Oxytropis* sp. sp.
- Debris present: pop cans and wire.
- No wildlife was in evidence in the sampling area.
- 63° 46.62' N, 68° 32.20' W

G5907 - On the east side of Building PV222 between the first and second struts of the equipment loading ramp frame. ESG tag # 8.
- Coarse and fine brown sand with some pebbles and rocks under a thin moss layer. A few roots were included in the sample.
- Vegetation present: *Arctagrostis* sp., *Saxifraga cernua*, *Papaver* sp., *Epilobium* sp., *Luzula* sp., *Poa arctica*, *Cerastium* sp..