Hamlet of Whale Cove
ATTN: BROCK JUNKIN
PO Box 120
Whale Cove MB X0C 0J0

Date Received: 28-JUN-12
Report Date: 11-JUL-12 21:33 (MT)
Version: FINAL

Client Phone: 867-896-9961

Certificate of Analysis

Lab Work Order #: L1170026

Project P.O. #: NOT SUBMITTED
Job Reference: WHALE COVER MONITORING PROGRAM
C of C Numbers:
Legal Site Desc:

Gail Hill
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-1 WHA-2							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 09:30							
Matrix: WASTE WATER							
BTEX plus F1-F4							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		06-JUL-12	R2392044
Toluene	<0.0010		0.0010	mg/L		06-JUL-12	R2392044
Ethyl benzene	<0.00050		0.00050	mg/L		06-JUL-12	R2392044
o-Xylene	<0.00050		0.00050	mg/L		06-JUL-12	R2392044
m+p-Xylenes	<0.00050		0.00050	mg/L		06-JUL-12	R2392044
Xylenes	<0.0015		0.0015	mg/L		06-JUL-12	R2392044
F1 (C6-C10)	<0.10		0.10	mg/L		06-JUL-12	R2392044
Surrogate: 4-Bromofluorobenzene (SS)	105.5		70-130	%		06-JUL-12	R2392044
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		09-JUL-12	
F2-Naphth	<0.25		0.25	mg/L		09-JUL-12	
F3-PAH	<0.25		0.25	mg/L		09-JUL-12	
Total Hydrocarbons (C6-C50)	<0.44		0.44	mg/L		09-JUL-12	
F2-F4 PHC method							
F2 (C10-C16)	<0.25		0.25	mg/L	29-JUN-12	30-JUN-12	R2392185
F3 (C16-C34)	<0.25		0.25	mg/L	29-JUN-12	30-JUN-12	R2392185
F4 (C34-C50)	<0.25		0.25	mg/L	29-JUN-12	30-JUN-12	R2392185
Surrogate: 2-Bromobenzotrifluoride	85.6		65-135	%	29-JUN-12	30-JUN-12	R2392185
Miscellaneous Parameters							
Ammonia, Total (as N)	0.201		0.010	mg/L		10-JUL-12	R2396000
Biochemical Oxygen Demand	9.0		6.0	mg/L	29-JUN-12	04-JUL-12	R2392125
BOD Carbonaceous	7.8		6.0	mg/L	29-JUN-12	04-JUL-12	R2392124
Fecal Coliforms	93		3	MPN/100mL		02-JUL-12	R2391621
Oil and Grease, Total	<2.0		2.0	mg/L	03-JUL-12	03-JUL-12	R2391401
Phenols (4AAP)	0.0060		0.0010	mg/L	05-JUL-12	05-JUL-12	R2393500
Phosphorus (P)-Total	0.207		0.010	mg/L		02-JUL-12	R2391239
Total Organic Carbon	24.5		1.0	mg/L	07-JUL-12	07-JUL-12	R2394539
Total Suspended Solids	18.0		5.0	mg/L		09-JUL-12	R2394635
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
2-Methyl Naphthalene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Acenaphthene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Acenaphthylene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Anthracene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Acridine	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Benzo(a)anthracene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Benzo(a)pyrene	<0.0000050		0.0000050	mg/L	29-JUN-12	04-JUL-12	R2393064
Benzo(b&j)fluoranthene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Benzo(g,h,i)perylene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Benzo(k)fluoranthene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Chrysene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Dibenzo(a,h)anthracene	<0.0000050		0.0000050	mg/L	29-JUN-12	04-JUL-12	R2393064
Fluoranthene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Fluorene	<0.000020		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
Indeno(1,2,3-cd)pyrene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Naphthalene	0.000055		0.000050	mg/L	29-JUN-12	04-JUL-12	R2393064
Phenanthrene	<0.000050		0.000050	mg/L	29-JUN-12	04-JUL-12	R2393064
Pyrene	<0.000010		0.000010	mg/L	29-JUN-12	04-JUL-12	R2393064
Quinoline	0.000083		0.000020	mg/L	29-JUN-12	04-JUL-12	R2393064
B(a)P Total Potency Equivalent	<0.000030		0.000030	mg/L	29-JUN-12	04-JUL-12	R2393064

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-1 WHA-2							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 09:30							
Matrix: WASTE WATER							
Polyaromatic Hydrocarbons (PAHs)							
Surrogate: Acenaphthene d10	85.5		50-150	%	29-JUN-12	04-JUL-12	R2393064
Surrogate: Acridine d9	94.4		50-150	%	29-JUN-12	04-JUL-12	R2393064
Surrogate: Chrysene d12	84.9		50-150	%	29-JUN-12	04-JUL-12	R2393064
Surrogate: Naphthalene d8	80.6		50-150	%	29-JUN-12	04-JUL-12	R2393064
Surrogate: Phenanthrene d10	88.8		50-150	%	29-JUN-12	04-JUL-12	R2393064
Routine Soluble + Metal scan							
Alkalinity							
Alkalinity, Total (as CaCO3)	134		20	mg/L		29-JUN-12	R2390568
Bicarbonate (HCO3)	163		24	mg/L		29-JUN-12	R2390568
Carbonate (CO3)	<12		12	mg/L		29-JUN-12	R2390568
Hydroxide (OH)	<6.8		6.8	mg/L		29-JUN-12	R2390568
Chloride by Ion Chromatography							
Chloride	72.9		0.50	mg/L		30-JUN-12	R2392864
Conductivity							
Conductivity	653		20	umhos/cm		29-JUN-12	R2390568
Hardness Calculated							
Hardness (as CaCO3)	217		0.30	mg/L		04-JUL-12	
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		30-JUN-12	R2392864
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		28-JUN-12	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		30-JUN-12	R2392864
Sulfate by Ion Chromatography							
Sulfate	87.0		0.50	mg/L		30-JUN-12	R2392864
TDS calculated							
TDS (Calculated)	379		5.0	mg/L		04-JUL-12	
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.095		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Antimony (Sb)-Total	0.0029		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Arsenic (As)-Total	0.0025		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Barium (Ba)-Total	0.0305		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Beryllium (Be)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Bismuth (Bi)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Boron (B)-Total	0.255		0.030	mg/L	03-JUL-12	03-JUL-12	R2392203
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L	03-JUL-12	03-JUL-12	R2392203
Calcium (Ca)-Total	69.8		0.20	mg/L	03-JUL-12	03-JUL-12	R2392203
Cesium (Cs)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Chromium (Cr)-Total	0.0033		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Cobalt (Co)-Total	0.00094		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Copper (Cu)-Total	0.0119		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Iron (Fe)-Total	1.74		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Lead (Pb)-Total	0.0020		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Lithium (Li)-Total	0.0067		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Magnesium (Mg)-Total	10.4		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203
Manganese (Mn)-Total	0.183		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Molybdenum (Mo)-Total	0.0360		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Nickel (Ni)-Total	0.0069		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Phosphorus (P)-Total	<0.50		0.50	mg/L	03-JUL-12	03-JUL-12	R2392203
Potassium (K)-Total	8.01		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Rubidium (Rb)-Total	0.00693		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Selenium (Se)-Total	0.0051		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-1 WHA-2							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 09:30							
Matrix: WASTE WATER							
Total Metals by ICP-MS							
Silicon (Si)-Total	1.26		0.30	mg/L	03-JUL-12	03-JUL-12	R2392203
Silver (Ag)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Sodium (Na)-Total	50.6		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203
Strontium (Sr)-Total	0.490		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Tellurium (Te)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Thallium (Tl)-Total	<0.0050		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203
Thorium (Th)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tin (Sn)-Total	<0.00060		0.00060	mg/L	03-JUL-12	03-JUL-12	R2392203
Titanium (Ti)-Total	0.0043		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tungsten (W)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Uranium (U)-Total	0.00070		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Vanadium (V)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zinc (Zn)-Total	0.051		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zirconium (Zr)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
pH							
pH	7.94		0.10	pH units		29-JUN-12	R2390568
L1170026-2 WHA-3							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 10:20							
Matrix: WASTE WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	27.2	DLA	1.0	mg/L		11-JUL-12	R2396506
Biochemical Oxygen Demand	21.0		6.0	mg/L	29-JUN-12	04-JUL-12	R2392125
BOD Carbonaceous	19.8		6.0	mg/L	29-JUN-12	04-JUL-12	R2392124
Fecal Coliforms	7500		3	MPN/100mL		02-JUL-12	R2391621
Oil and Grease, Total	<2.0		2.0	mg/L	03-JUL-12	03-JUL-12	R2391401
Phenols (4AAP)	0.0020		0.0010	mg/L	05-JUL-12	05-JUL-12	R2393500
Phosphorus (P)-Total	4.79		0.010	mg/L		02-JUL-12	R2391239
Total Organic Carbon	35.0		1.0	mg/L	07-JUL-12	07-JUL-12	R2394539
Total Suspended Solids	40.0		5.0	mg/L		09-JUL-12	R2394635
Routine Soluble + Metal scan							
Alkalinity							
Alkalinity, Total (as CaCO3)	193		20	mg/L		29-JUN-12	R2390568
Bicarbonate (HCO3)	204		24	mg/L		29-JUN-12	R2390568
Carbonate (CO3)	15		12	mg/L		29-JUN-12	R2390568
Hydroxide (OH)	<6.8		6.8	mg/L		29-JUN-12	R2390568
Chloride by Ion Chromatography							
Chloride	79.8		0.50	mg/L		30-JUN-12	R2392864
Conductivity							
Conductivity	678		20	umhos/cm		29-JUN-12	R2390568
Hardness Calculated							
Hardness (as CaCO3)	82.5		0.30	mg/L		04-JUL-12	
Nitrate as N by Ion Chromatography							
Nitrate-N	0.202		0.050	mg/L		30-JUN-12	R2392864
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.296		0.071	mg/L		28-JUN-12	
Nitrite as N by Ion Chromatography							
Nitrite-N	0.095		0.050	mg/L		30-JUN-12	R2392864
Sulfate by Ion Chromatography							
Sulfate	21.2		0.50	mg/L		30-JUN-12	R2392864
TDS calculated							
TDS (Calculated)	331		5.0	mg/L		04-JUL-12	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-2 WHA-3							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 10:20							
Matrix: WASTE WATER							
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.075		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Antimony (Sb)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Arsenic (As)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Barium (Ba)-Total	0.00186		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Beryllium (Be)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Bismuth (Bi)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Boron (B)-Total	0.127		0.030	mg/L	03-JUL-12	03-JUL-12	R2392203
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L	03-JUL-12	03-JUL-12	R2392203
Calcium (Ca)-Total	23.0		0.20	mg/L	03-JUL-12	03-JUL-12	R2392203
Cesium (Cs)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Chromium (Cr)-Total	0.0021		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Cobalt (Co)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Copper (Cu)-Total	0.0196		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Iron (Fe)-Total	<0.10		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Lead (Pb)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Lithium (Li)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Magnesium (Mg)-Total	6.10		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203
Manganese (Mn)-Total	0.0592		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Molybdenum (Mo)-Total	0.00087		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Nickel (Ni)-Total	0.0021		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Phosphorus (P)-Total	4.92		0.50	mg/L	03-JUL-12	03-JUL-12	R2392203
Potassium (K)-Total	15.7		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Rubidium (Rb)-Total	0.0169		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Selenium (Se)-Total	<0.0050		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203
Silicon (Si)-Total	2.13		0.30	mg/L	03-JUL-12	03-JUL-12	R2392203
Silver (Ag)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Sodium (Na)-Total	70.0		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203
Strontium (Sr)-Total	0.102		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Tellurium (Te)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Thallium (Tl)-Total	<0.0050		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203
Thorium (Th)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tin (Sn)-Total	<0.00060		0.00060	mg/L	03-JUL-12	03-JUL-12	R2392203
Titanium (Ti)-Total	0.0011		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tungsten (W)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Uranium (U)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Vanadium (V)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zinc (Zn)-Total	<0.020		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zirconium (Zr)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
pH							
pH	8.63		0.10	pH units		29-JUN-12	R2390568
L1170026-3 WHA-4							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 10:00							
Matrix: WASTE WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.055		0.010	mg/L		10-JUL-12	R2396000
Biochemical Oxygen Demand	<6.0		6.0	mg/L	29-JUN-12	04-JUL-12	R2392125
BOD Carbonaceous	<6.0		6.0	mg/L	29-JUN-12	04-JUL-12	R2392124
Fecal Coliforms	<3		3	MPN/100mL		02-JUL-12	R2391621
Oil and Grease, Total	<2.0		2.0	mg/L	03-JUL-12	03-JUL-12	R2391401
Phenols (4AAP)	<0.0010		0.0010	mg/L	05-JUL-12	05-JUL-12	R2393500

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-3 WHA-4							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 10:00							
Matrix: WASTE WATER							
Phosphorus (P)-Total	1.31		0.010	mg/L		02-JUL-12	R2391239
Total Organic Carbon	33.5		1.0	mg/L	07-JUL-12	07-JUL-12	R2394539
Total Suspended Solids	47.0		5.0	mg/L		09-JUL-12	R2394635
Routine Soluble + Metal scan							
Alkalinity							
Alkalinity, Total (as CaCO3)	220		20	mg/L		29-JUN-12	R2390568
Bicarbonate (HCO3)	254		24	mg/L		29-JUN-12	R2390568
Carbonate (CO3)	<12		12	mg/L		29-JUN-12	R2390568
Hydroxide (OH)	<6.8		6.8	mg/L		29-JUN-12	R2390568
Chloride by Ion Chromatography							
Chloride	137		0.50	mg/L		30-JUN-12	R2392864
Conductivity							
Conductivity	908		20	umhos/cm		29-JUN-12	R2390568
Hardness Calculated							
Hardness (as CaCO3)	196		0.30	mg/L		04-JUL-12	
Nitrate as N by Ion Chromatography							
Nitrate-N	<0.050		0.050	mg/L		30-JUN-12	R2392864
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.071		0.071	mg/L		28-JUN-12	
Nitrite as N by Ion Chromatography							
Nitrite-N	<0.050		0.050	mg/L		30-JUN-12	R2392864
Sulfate by Ion Chromatography							
Sulfate	41.9		0.50	mg/L		30-JUN-12	R2392864
TDS calculated							
TDS (Calculated)	521		5.0	mg/L		04-JUL-12	
Total Metals by ICP-MS							
Aluminum (Al)-Total	0.233		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Antimony (Sb)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Arsenic (As)-Total	0.0107		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Barium (Ba)-Total	0.0287		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Beryllium (Be)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Bismuth (Bi)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Boron (B)-Total	0.197		0.030	mg/L	03-JUL-12	03-JUL-12	R2392203
Cadmium (Cd)-Total	<0.00020		0.00020	mg/L	03-JUL-12	03-JUL-12	R2392203
Calcium (Ca)-Total	56.7		0.20	mg/L	03-JUL-12	03-JUL-12	R2392203
Cesium (Cs)-Total	<0.00050		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Chromium (Cr)-Total	0.0028		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Cobalt (Co)-Total	0.00122		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Copper (Cu)-Total	0.0029		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Iron (Fe)-Total	0.73		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Lead (Pb)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Lithium (Li)-Total	0.0066		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Magnesium (Mg)-Total	13.2		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203
Manganese (Mn)-Total	0.329		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Molybdenum (Mo)-Total	0.00458		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Nickel (Ni)-Total	0.0060		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Phosphorus (P)-Total	1.22		0.50	mg/L	03-JUL-12	03-JUL-12	R2392203
Potassium (K)-Total	22.4		0.10	mg/L	03-JUL-12	03-JUL-12	R2392203
Rubidium (Rb)-Total	0.00932		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Selenium (Se)-Total	0.0072		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203
Silicon (Si)-Total	2.01		0.30	mg/L	03-JUL-12	03-JUL-12	R2392203
Silver (Ag)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Sodium (Na)-Total	118		0.050	mg/L	03-JUL-12	03-JUL-12	R2392203

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1170026-3 WHA-4							
Sampled By: BARB ULURKSIT on 27-JUN-12 @ 10:00							
Matrix: WASTE WATER							
Total Metals by ICP-MS							
Strontium (Sr)-Total	0.373		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Tellurium (Te)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Thallium (Tl)-Total	<0.0050		0.0050	mg/L	03-JUL-12	03-JUL-12	R2392203
Thorium (Th)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tin (Sn)-Total	<0.00060		0.00060	mg/L	03-JUL-12	03-JUL-12	R2392203
Titanium (Ti)-Total	0.0102		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
Tungsten (W)-Total	<0.0020		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Uranium (U)-Total	0.00347		0.00050	mg/L	03-JUL-12	03-JUL-12	R2392203
Vanadium (V)-Total	0.0023		0.0020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zinc (Zn)-Total	<0.020		0.020	mg/L	03-JUL-12	03-JUL-12	R2392203
Zirconium (Zr)-Total	<0.0010		0.0010	mg/L	03-JUL-12	03-JUL-12	R2392203
pH							
pH	8.50		0.10	pH units		29-JUN-12	R2390568

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-TOT-WP	Water	Alkalinity	APHA 2320B

Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. It is determined by titration with a standard solution of strong mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BOD-CBOD-WP	Water	Carbonaceous BOD	APHA 5210 B-5 day Incub.-O2 electrode

A sample of water is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at beginning and end of incubation provides a measure of Biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis.

BOD-WP	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B

The sample is incubated for 5 days at 20 degrees Celcius. Comparison of dissolved oxygen content at the beginning and end of incubation provides a measure of biochemical oxygen demand. If carbonaceous BOD is requested, TCMP is added to the sample to chemically inhibit nitrogenous oxygen demand. If soluble BOD is requested, the sample is filtered prior to analysis. Surface waters have a DL of 1 mg/L. Effluents are diluted according to their history and will have a sample DL of 6 mg/L or greater, depending on the dilutions used.

BTEXS+F1-HSMS-WP	Water	BTX plus F1 by GCMS	EPA SW846 8260B REV 2 SEPT 1994

The water sample, with added reagents, is heated in a sealed vial to equilibrium. The headspace from the vial is transfered into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

CL-IC-WP	Water	Chloride by Ion Chromatography	EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-HARDNESS-TOT-WP	Water	Hardness Calculated	HARDNESS CALCULATED
ETL-SOLIDS-CALC-WP	Water	TDS calculated	CALCULATION
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC DEC-2000 - PUB# 1310-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-WS-WP	Water	F2-F4 PHC method	EPA 3510/8000

This is the determination of the Petroleum Hydrocarbon fractions in water (F2, F3 and F4). A water sample volume of 200 mL in a 250 mL glass amber bottle is shaken with 10 mL hexane for two hours on a wrist action shaker, and then sonicated for 5 minutes. After extraction, the solvent layer is drawn off and analyzed against C10, C16 and C34 standards on a gas chromatograph equipped with a flame ionization detector.

FC-MPN-WP	Water	Fecal Coliform	APHA 9221A-C

The Most Probable Number (MPN) method is based on the Multiple Tube Fermentation technique. The results of examination of replicate tubes and dilutions of a sample are reported after confirmations specific to total coliform, fecal coliform and E. coli are performed. Results are reported in MPN/100 mL for water and MPN/gram for food and solid samples.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
IONBALANCE-OP05-WP	Water	Ion Balance Calculation No Reporting	APHA 1030E
MET-T-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-T

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analyis of metals by inductively coupled-mass spectrometery.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-WP	Water	Nitrite as N by Ion Chromatography	EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

NO3-IC-WP	Water	Nitrate as N by Ion Chromatography	EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

OGG-TOT-WT	Water	Oil and Grease, Total	APHA 5520 B

Sample is extracted with hexane, extract is then evaporated and the residue is weighed to determine total oil and grease.

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA SW 846/8270-GC/MS

Water is spiked with a surrogate spike mix and extracted using solvent extraction techniques. Analysis is performed by GC/MS in the selected ion monitoring (SIM) mode.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-WP	Water	Sulfate by Ion Chromatography	EPA 300.1 (modified)

Anions in aqueous matrices are analyzed using ion chromatography with conductivity and/or UV absorbance detectors.

SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TOC-WT	Water	Total Organic Carbon	APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic cabon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

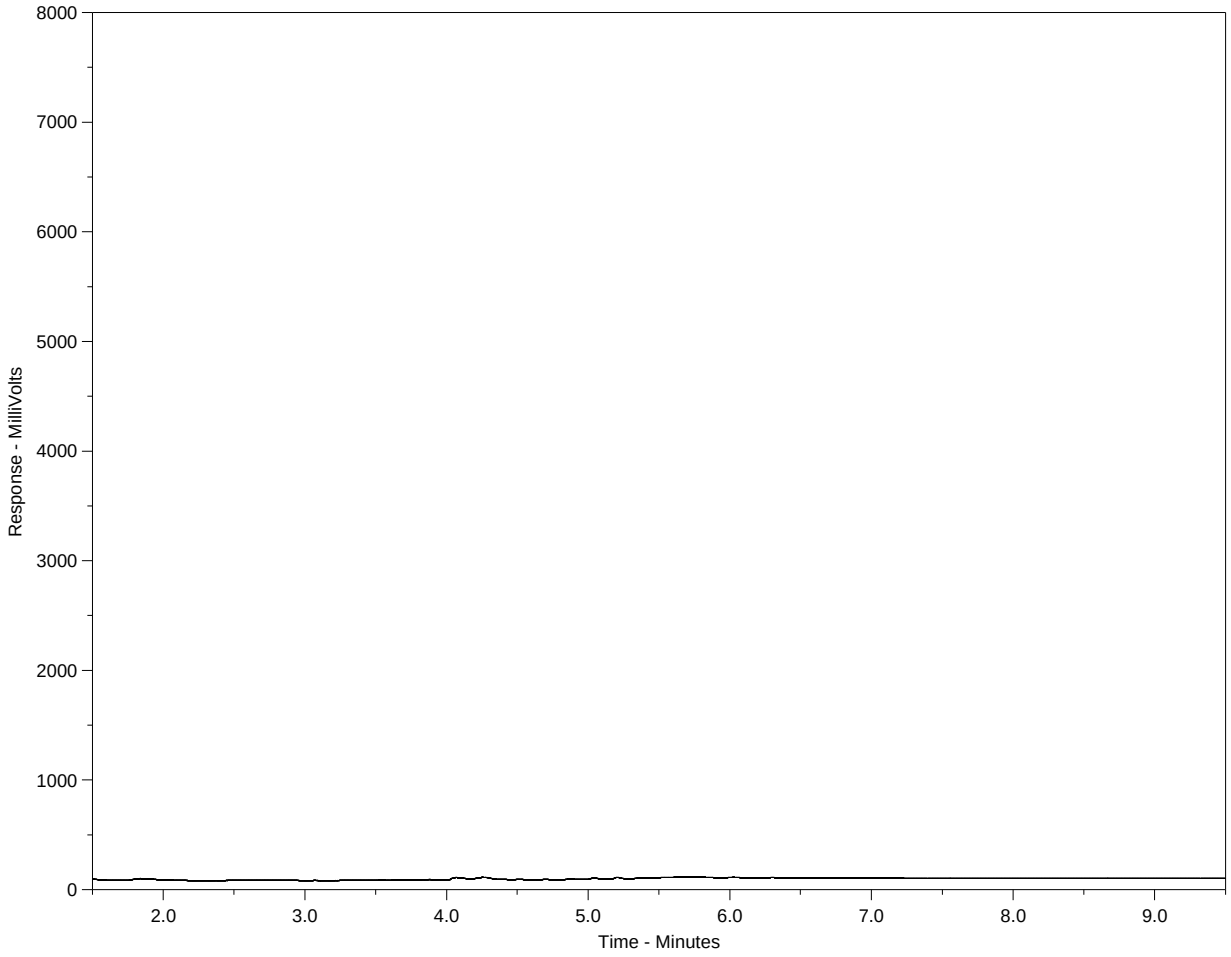
GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Hydrocarbon Distribution Report

ALS Sample ID: **L1170026-1**
Client ID: **WHA-2**



<-nC10---------nC16------------------------nC34-----------------nC50------------------------------>
<-------nC11---------------------nC30-->
<----Gasoline--------------> <------------------Heavy Oils-->
|--------------Diesel----------------|

The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method (December 2007 version). Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Chain of Custody Form
1878

L1170026-COFC

COC # L1170026

Page 1 of 1

Report To					
Company:	Hamlet of Whale Cove	☑ PDF	☐ Excel	☐ Digital	☑ Fax
Contact:	Brock Junkin	Email 1:	sao@whalecove.ca		
Address:	P.O. Box 120, Whale Cove, NU X0C 0J0	Email 2:	mlusty@gov.nu.ca		
Phone:	(867) 896-9961 Fax: (867) 896-9109	Email 3:			
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information			
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Whale Cove Monitoring Program		
Company:		PO / AFE:			
Contact:		LSD:			
Address:					
Phone:	Fax:	Quote #:			
Lab Work Order # (lab use only)		ALS Contact:	Craig Riddell	Sampler:	Barb Ulurksit

Service Requested (Rush for routine analysis subject to availability)

- ◉ Regular (Standard Turnaround Times - Business Days)
- ○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
- ○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
- ○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Carbonaceous BOD	Biochemical Oxygen Demand	Total Organic Carbon	Ammonia by colour	Oil and Grease, Total	Phosphorus, Total	Phenol [4AAP]	Routine Soluble + Metal Scan	Total Suispended Solids	Fecal Coliforms	BTEX plus F1-F4	Polyaromatic Hydrocarbons	Number of Containers
	~~WHA-2~~	27/06/12	9:30	wastewater	P	X	P	P	P	P	P	P	P	P	P	P	14
	~~WHA-3~~	27/06/12	10:20	wastewater	P	X	P	P	P	P	P	P	P	P			8
	~~WHA-4~~	27/06/12	10:00	wastewater	P	X	P	P	P	P	P	P	P	P			8
	[redacted]																
	[redacted]																

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Barb Ulurksit	June 27 2012	11:00	[illegible]	28-Jun-12	14:52	°C				

GENF 20.00 Front