

NDM, Nov 1/97 : Goose Lake - Env. Baseline Data Compilation Report - Appendix 11

GOOSE LAKE SUMMARY WATER QUALITY

Parameter	Sample Number: Date:	GOOSE W3 97/05/16	GOOSE W3 7/13/97	GOOSE W3 8/11/97	ARITHMET AVERAGE	GOOSE W6 97/05/16	GOOSE W6 7/13/97	GOOSE W6 8/11/97	ARITHMET AVERAGE	GOOSE W7 7/13/97	GOOSE W7 7/13/97	GOOSE W7 7/13/97	ARITHMET AVERAGE
pH		6.4	6.7	6.9	6.7	6.3	6.8	6.9	6.7	6.4	6.7	6.8	6.6
Specific Conductance		26	13	13	17	37	18	15	23	35	14	14	21
Residue Nonfilterable (TSS)		< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	
Residue Filterable 1.0u (TDS)		26	12	< 4	19	22	18	8	16	20	10	16	15
Hardness Total -D		10.2	5.7	6.4	7.4	14.5	7.7	5.3	9.2	13.8	5.8	5.4	8.3
Acidity pH 8.3		1.4	1.6	1.3	1.4	1.7	1.5	1.2	1.5	1.5	1.4	1.2	1.4
Acidity pH 4.5		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	
Alkalinity Phen. 8.3		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	
Alkalinity Total 4.5		6.8	4.6	5	5.5	9.2	5.9	5.3	6.8	8.8	4.8	4.9	6.2
Carbonate		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	
Bicarbonate		8.3	5.6	6.1	6.7	11.2	7.2	6.5	8.3	10.7	5.8	6	7.5
Hydroxide		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5		< 0.5	< 0.5	< 0.5	
Cyanide(SAD) + Thiocyanate		0.001	0.002	0.001	0.001	0.001	0.002	< 0.001	0.002	0.001	0.002	< 0.001	0.002
Chloride Dissolved		0.9	< 1.0	< 1.0		1.4	< 1.0	< 1.0		1.3	< 1.0	< 1.0	
Fluoride Dissolved		< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	
Ion Balance		14	4.6	12.4	10.3	15.8	7	3	8.6	15.4	3.8	7.1	8.8
Organic Carbon - Total		6.5	4.3	3.7	4.8	8.7	2.9	4.3	5.3	8.2	4.8	4.1	5.7
Organic Nitrogen - Total		0.22	0.25	0.18	0.22	0.29	0.13	0.14	0.19	0.36	0.19	0.07	0.21
Total Kjeldahl Nitrogen		0.23	0.25	0.19	0.22	0.3	0.13	0.15	0.19	0.37	0.19	0.11	0.22
Total Nitrogen		0.23	0.25	0.19	0.22	0.3	0.2	0.15	0.22	0.37	0.19	0.14	0.23
Ammonia Nitrogen		0.009	< 0.005	0.012	0.011	0.013	0.005	0.011	0.010	0.013	< 0.005	0.038	0.026
Nitrate+Nitrite (N)		< 0.02	< 0.02	< 0.02		< 0.02	0.07	< 0.02		< 0.02	< 0.02	0.03	
Nitrate Nitrogen Dissolved		< 0.02	< 0.02	< 0.02		< 0.02	0.07	< 0.02		< 0.02	< 0.02	0.03	
Nitrite Nitrogen		< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005		< 0.005	< 0.005	< 0.005	
Ortho-Phosphorus (P)		< 0.003	< 0.003	< 0.003		< 0.003	< 0.003	< 0.003		0.003	< 0.003	< 0.003	
Phosphorus - Total		0.007	0.003	0.005	0.005	0.009	< 0.003	0.006	0.008	0.009	0.003	0.007	0.006
Sulfate		1.5	1	< 1.0	1.3	2.1	1.5	< 1.0	1.8	2	1	< 1.0	1.5

GOOSE LAKE SUMMARY WATER QUALITY

Parameter	Sample Number: Date:	GOOSE W3 97/05/16	GOOSE W3 7/13/97	GOOSE W3 8/11/97	ARITHMET AVERAGE	GOOSE W6 97/05/16	GOOSE W6 7/13/97	GOOSE W6 8/11/97	ARITHMET AVERAGE	GOOSE W7 7/13/97	GOOSE W7 7/13/97	GOOSE W7 7/13/97	ARITHMET AVERAGE
Total Metals													
Silver	mg/L	< 0.00001	< 0.00001	0.00001	0.05	0.00008	0.00002	0.00004	0.00005	< 0.00001	< 0.00001	0.00002	0.00002
Aluminum	mg/L	0.074	0.037	0.024	0.0011	0.08	0.054	0.072	0.07	0.09	0.029	0.022	0.05
Arsenic	mg/L	0.00017	< 0.00005	0.00005	0.00011	0.00011	< 0.00005	0.00029	0.0002	0.00021	< 0.00005	0.00005	0.00013
Boron	mg/L	0.019	0.026	0.02	0.022	0.01	0.058	0.029	0.032	0.21	0.008	0.016	0.078
Barium	mg/L	0.0064	0.0037	0.0028	0.0043	0.0099	0.0043	0.0041	0.0061	0.0087	0.0037	0.0025	0.0050
Beryllium	mg/L	< 0.00001	< 0.00001	0.00001	0.0043	< 0.00001	< 0.00001	0.00002	0.00001	< 0.00001	< 0.00001	0.00001	0.00001
Bismuth	mg/L	< 0.00001	< 0.00001	< 0.00001	1.5	< 0.00001	< 0.00001	< 0.00001	2.0	< 0.00001	< 0.00001	< 0.00001	1.7
Calcium	mg/L	2.2	1.1	1.1	0.00003	0.00005	< 0.00001	1.3	0.000035	0.00002	< 0.00001	0.00002	0.00002
Cadmium	mg/L	< 0.00001	0.00003	0.00003	0.00003	0.00005	< 0.00001	0.00002	0.000035	0.00002	< 0.00001	0.00002	0.00002
Cobalt	mg/L	< 0.00004	< 0.00004	< 0.00004	0.00006	< 0.00004	< 0.00004	0.0006	0.0008	0.001	< 0.00004	< 0.00004	0.0009
Chromium	mg/L	0.0006	0.0008	0.0005	0.0006	0.0008	0.0009	0.0007	0.0008	0.001	0.001	0.0006	0.0009
Copper	mg/L	0.0037	0.0018	0.0018	0.0024	0.0045	0.0029	0.0029	0.0034	0.0044	0.0018	0.0017	0.0026
Iron	mg/L	0.026	0.073	0.043	0.05	0.057	0.017	0.2	0.09	0.073	0.056	0.096	0.08
Mercury	mg/L	< 0.00001	< 0.00001	< 0.00001	0.32	< 0.00001	< 0.00001	0.00029	0.44	< 0.00001	< 0.00001	0.00003	0.40
Potassium	mg/L	0.44	0.24	0.29	0.32	0.63	0.33	0.35	0.44	0.59	0.3	0.31	0.40
Magnesium	mg/L	1.3	0.62	0.63	0.9	1.7	0.93	0.73	1.1	1.6	0.74	0.66	1.0
Manganese	mg/L	0.0044	0.0033	0.0021	0.0033	0.0037	0.0005	0.0065	0.0036	0.011	0.0038	0.0036	0.0061
Molybdenum	mg/L	< 0.00004	< 0.00004	< 0.00004	0.0033	< 0.00004	< 0.00004	< 0.00004	0.0036	< 0.00004	< 0.00004	< 0.00004	0.84
Sodium	mg/L	0.96	0.49	0.49	0.65	1.3	0.65	0.5	0.82	1.4	0.55	0.57	0.84
Nickel	mg/L	0.007	0.004	0.003	0.005	0.009	0.004	0.004	0.006	0.01	0.004	0.002	0.005
Phosphorus	mg/L	0.006	0.007	< 0.0004	0.007	0.009	0.004	0.016	0.010	0.01	0.009	0.008	0.009
Lead	mg/L	< 0.0001	< 0.0003	< 0.0003	0.0002	0.0002	< 0.0003	< 0.0003	1.4	0.0003	< 0.0003	< 0.0003	1.2
Sulphur	mg/L	1.5	0.73	0.77	1.0	2	1.2	0.91	1.4	1.9	0.94	0.82	1.2
Antimony	mg/L	< 0.002	< 0.002	< 0.002	0.00044	< 0.002	< 0.002	< 0.002	0.00029	< 0.002	< 0.002	< 0.002	0.00012
Selenium	mg/L	0.00051	< 0.00005	0.00036	0.00044	< 0.00005	< 0.00005	0.00029	0.00029	< 0.00005	0.00008	0.00016	0.00012
Silicon	mg/L	0.79	0.3	0.22	0.4	1	0.56	0.29	0.6	1	0.28	0.1	0.5
Tin	mg/L	< 0.002	< 0.002	< 0.002	0.0062	< 0.002	< 0.002	< 0.002	0.0081	< 0.002	0.002	< 0.002	0.0072
Strontium	mg/L	0.0096	0.0046	0.0045	0.0062	0.013	0.0062	0.0051	0.0081	0.012	0.0053	0.0044	0.0072
Tellurium	mg/L	< 0.002	< 0.002	< 0.002	0.0062	< 0.002	< 0.002	< 0.002	0.0081	< 0.002	0.0053	0.0044	0.0072
Titanium	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	0.0016	0.0010	0.0003	< 0.0003	< 0.0003	0.0003
Thallium	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	0.0010	< 0.0003	< 0.0003	< 0.0003	0.0003
Vanadium	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0004	< 0.0003	< 0.0003	< 0.0003	0.010	< 0.0003	< 0.0003	< 0.0003	0.009
Zinc	mg/L	0.005	0.003	0.003	0.004	0.02	0.004	0.005	0.010	0.021	0.002	0.003	0.009
Zirconium	mg/L	0.003	0.0027	0.0004	0.002	0.0004	0.0004	0.0004	0.000	< 0.0003	0.0039	0.0017	0.003

GOOSE LAKE SUMMARY WATER QUALITY

Parameter	Sample Number: Date:	GOOSE W3 97/05/16	GOOSE W3 7/13/97	GOOSE W3 8/11/97	ARITHMET AVERAGE	GOOSE W6 97/05/16	GOOSE W6 7/13/97	GOOSE W6 8/11/97	ARITHMET AVERAGE	GOOSE W7 7/13/97	GOOSE W7 7/13/97	GOOSE W7 7/13/97	ARITHMET AVERAGE	GOOSE W7 7/13/97	ARITHMET AVERAGE
Dissolved Metals															
Silver Dissolved	mg/L	< 0.00001	< 0.00001	< 0.00001	0.044	0.00005	< 0.00001	< 0.00001	0.051	< 0.00001	0.00002	< 0.00001	< 0.00001	< 0.00001	0.043
Aluminum Dissolved	mg/L	0.07	0.036	0.027	0.0013	0.073	0.029	< 0.006	0.00013	0.00019	0.034	0.014	0.014	0.014	0.00013
Arsenic Dissolved	mg/L	0.00011	< 0.00005	0.00014	0.00013	0.0001	< 0.00005	0.00016	0.00013	0.00018	< 0.00005	0.00006	0.00006	0.00006	0.00013
Boron Dissolved	mg/L	0.017	0.009	0.046	0.024	0.006	0.009	0.019	0.011	0.018	0.011	0.022	0.022	0.022	0.017
Barium Dissolved	mg/L	0.0061	0.0036	0.0043	0.0047	0.01	0.0042	0.0024	0.0055	0.0084	0.0036	0.0029	0.0029	0.0029	0.0050
Beryllium Dissolved	mg/L	< 0.0001	< 0.0001	< 0.0001	0.0047	< 0.0001	< 0.0001	< 0.0001	0.0055	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0050
Bismuth Dissolved	mg/L	< 0.0002	< 0.0002	< 0.0002	1.5	< 0.0002	0.002	< 0.002	1.9	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	1.7
Calcium Dissolved	mg/L	2.1	1.2	1.3	0.044	3	1.6	1.2	0.044	2.9	1.2	1.1	1.1	1.1	1.7
Cadmium Dissolved	mg/L	< 0.00001	< 0.00001	0.00003	0.0006	0.00005	< 0.00001	< 0.00001	0.00001	0.00002	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00001
Cobalt Dissolved	mg/L	< 0.0004	< 0.0004	< 0.0004	0.0006	< 0.0004	< 0.0004	< 0.0004	0.0006	0.0006	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0006
Chromium Dissolved	mg/L	0.0007	0.0009	0.0003	0.0006	0.0006	0.001	0.0002	0.0006	0.0009	0.0008	0.0016	0.0016	0.0016	0.0011
Chromium Dissolved	mg/L	0.0035	0.0016	0.0019	0.0023	0.0024	0.0022	0.0016	0.0021	0.0045	0.0019	0.0022	0.0022	0.0022	0.0029
Copper Dissolved	mg/L	0.018	0.076	0.008	0.034	0.054	0.015	< 0.005	0.035	0.046	0.057	0.028	0.028	0.028	0.044
Iron Dissolved	mg/L	0.46	0.3	0.3	0.35	0.73	0.32	0.32	0.46	0.63	0.32	0.32	0.32	0.32	0.42
Potassium Dissolved	mg/L	1.2	0.77	0.77	0.91	1.7	0.57	0.57	0.95	1.6	0.65	0.65	0.65	0.65	0.97
Magnesium Dissolved	mg/L	0.0039	0.0004	0.0004	0.0016	0.0033	0.0006	0.0006	0.0015	0.011	0.0027	0.0027	0.0027	0.0027	0.0055
Manganese Dissolved	mg/L	< 0.0004	< 0.0004	< 0.0004	0.0016	< 0.0004	< 0.0004	< 0.0004	0.0015	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0055
Molybdenum Dissolved	mg/L	0.91	0.68	0.68	0.76	1.4	0.54	0.54	0.83	1.2	0.54	0.54	0.54	0.54	0.76
Sodium Dissolved	mg/L	0.007	0.003	0.003	0.004	0.007	0.003	0.003	0.004	0.009	0.002	0.002	0.002	0.002	0.004
Nickel Dissolved	mg/L	< 0.004	< 0.004	< 0.004	0.004	0.008	0.005	0.005	0.006	0.008	< 0.004	< 0.004	< 0.004	< 0.004	0.008
Phosphorus Dissolved	mg/L	< 0.0001	< 0.0001	< 0.0001	1.08	0.0001	< 0.0001	< 0.0001	1.35	0.0006	0.0002	0.0002	0.0002	0.0002	0.0003
Lead Dissolved	mg/L	1.5	0.87	0.87	0.044	2.1	0.97	0.97	1.35	1.9	0.83	0.83	0.83	0.83	1.19
Sulfur Dissolved	mg/L	< 0.002	< 0.002	< 0.002	0.00026	< 0.0002	< 0.002	< 0.002	0.00018	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.00015
Antimony Dissolved	mg/L	0.0005	0.00014	0.00014	0.00026	< 0.00005	0.00018	0.00018	0.00018	0.00006	0.00019	0.00019	0.00019	0.00019	0.00015
Selenium Dissolved	mg/L	0.76	0.42	0.42	0.53	1.2	0.3	0.3	0.60	0.97	0.14	0.14	0.14	0.14	0.42
Silicon Dissolved	mg/L	< 0.002	< 0.002	< 0.002	0.008	< 0.002	< 0.002	< 0.002	0.0075	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0075
Tin Dissolved	mg/L	0.009	0.0077	0.0077	0.008	0.013	0.0048	0.0048	0.0075	0.013	0.0047	0.0047	0.0047	0.0047	0.0075
Strontium Dissolved	mg/L	< 0.002	< 0.002	< 0.002	0.008	< 0.002	< 0.002	< 0.002	0.0075	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.0075
Tellurium Dissolved	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003
Titanium Dissolved	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003
Thallium Dissolved	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003
Vanadium Dissolved	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003
Zinc Dissolved	mg/L	0.006	0.003	0.003	0.004	0.002	< 0.001	< 0.001	0.002	0.023	0.002	0.002	0.002	0.002	0.009
Zirconium Dissolved	mg/L	< 0.0003	0.0005	0.0005	0.0005	0.0004	< 0.0003	< 0.0003	0.0004	< 0.0003	0.0004	0.0004	0.0004	0.0004	0.0004

GOOSE LAKE WATER QUALITY QA/QC

Parameter	Sample Number: Date:	Unit	W3A- GOOSE 97/05/16	W3B- GOOSE 97/05/16	% DIFFERENCE	W6A- GOOSE 97/05/16	W6B- GOOSE 97/05/16	% DIFFERENCE	FIELD BLANK 97/05/16	TRIP BLANK 97/05/16	GOOSE W6 7/13/97	GOOSE W6 DUP 7/13/97	% DIFFERENCE	TRIP BLANK 7/13/97	W3 8/11/97	W3 DUP 8/11/97	% DIFFERENCE	W6 8/11/97	W6 DUP 8/11/97	% DIFFERENCE	TRIP BLANK 8/11/97	FIELD BLANK 8/11/97
pH		pH units	6.4	6.4	0%	6.3	6.3	0%	5.4	5.5	6.8	6.8	0%	---	6.9	6.8	1%	6.9	6.9	0%	---	---
Specific Conductance		µS/cm	26	26	0%	37	37	0%	< 4	< 4	18	19	5%	---	13	13	0%	15	15	0%	---	---
Residue Nonfilterable (TSS)		mg/L	< 4	< 4	0%	< 4	< 4	0%	< 4	< 4	< 4	< 4	0%	---	< 4	< 4	0%	< 4	< 4	0%	---	---
Residue Filterable 1.0µ (TDS)		mg/L	26	24	8%	22	30	27%	< 4	< 4	18	12	33%	---	< 4	6	0%	8	8	0%	---	---
Hardness Total -D		mg/L	10.2	11.1	8%	14.5	16.1	10%	< 0.1	< 0.1	7.7	7.7	0%	---	6.4	6.3	2%	5.3	7.5	29%	---	---
Acidity pH 8.3		mg/L	1.4	1.4	0%	1.7	1.7	0%	1.5	1.5	1.5	1.5	0%	---	1.3	1.2	8%	1.2	1.2	0%	---	---
Alkalinity Phen. 8.3		mg/L	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	< 0.5	< 0.5	< 0.5	< 0.5	0%	---	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	---	---
Alkalinity Total 4.5		mg/L	< 0.5	< 0.5	0%	9.2	9.1	1%	< 0.5	< 0.5	< 0.5	< 0.5	0%	---	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	---	---
Carbonate		mg/L	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	< 0.5	< 0.5	< 0.5	< 0.5	0%	---	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	---	---
Bicarbonate		mg/L	8.3	8.3	0%	11.2	11.1	1%	1.9	2	5.9	6	2%	---	5	4.9	2%	5.3	5.3	0%	---	---
Hydroxide		mg/L	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	< 0.5	< 0.5	< 0.5	< 0.5	0%	---	< 0.5	< 0.5	0%	< 0.5	< 0.5	0%	---	---
Cyanide(SAD) + Thiocyanate		mg/L	0.001	0.001	0%	0.001	0.001	0%	< 0.001	< 0.001	0.002	0.002	0%	---	0.001	< 0.001	0%	< 0.001	< 0.001	0%	---	---
Chloride Dissolved		mg/L	< 0.10	< 0.10	10%	1.4	1.4	0%	< 0.5	< 0.5	< 1.0	< 1.0	0%	---	< 1.0	< 1.0	0%	< 1.0	< 1.0	0%	---	---
Ion Balance		%	14	16.8	17%	15.8	20.7	24%	? (2)	? (2)	7	6.7	4%	---	< 0.10	< 0.10	9%	3	15.1	80%	---	---
Organic Carbon - Total		mg/L	6.5	6.2	5%	8.7	8.6	1%	< 1.0	< 1.0	2.9	2.7	7%	---	3.7	3.8	3%	4.3	4.1	5%	---	---
Organic Nitrogen - Total		mg/L	0.22	0.17	23%	0.29	0.41	29%	< 0.04	< 0.04	0.13	0.16	19%	---	0.18	0.22	18%	0.14	0.1	29%	---	---
Total Kjeldahl Nitrogen		mg/L	0.23	0.18	22%	0.3	0.42	29%	< 0.04	< 0.04	0.13	0.18	28%	---	0.19	0.22	14%	0.15	0.11	27%	---	---
Total Nitrogen		mg/L	0.23	0.18	22%	0.3	0.42	29%	< 0.06	< 0.06	0.2	0.26	23%	---	0.19	0.22	14%	0.15	0.11	27%	---	---
Ammonia Nitrogen		mg/L	0.009	0.008	11%	0.013	0.015	13%	< 0.005	< 0.005	0.005	0.021	76%	---	0.012	0.005	58%	0.011	0.01	9%	---	---
Nitrate+Nitrite (N)		mg/L	< 0.02	< 0.02	0%	< 0.02	< 0.02	0%	< 0.02	< 0.02	0.07	0.08	13%	---	< 0.02	< 0.02	0%	< 0.02	< 0.02	0%	---	---
Nitrate Nitrogen Dissolved		mg/L	< 0.02	< 0.02	0%	< 0.02	< 0.02	0%	< 0.02	< 0.02	0.07	0.08	13%	---	< 0.02	< 0.02	0%	< 0.02	< 0.02	0%	---	---
Nitrite Nitrogen		mg/L	< 0.008	< 0.008	0%	< 0.008	< 0.008	0%	< 0.008	< 0.008	< 0.008	< 0.008	0%	---	< 0.008	< 0.008	0%	< 0.008	< 0.008	0%	---	---
Ortho-Phosphorus (P)		mg/L	< 0.003	< 0.003	0%	< 0.003	< 0.003	0%	< 0.003	< 0.003	< 0.003	< 0.003	0%	---	< 0.003	< 0.003	0%	< 0.003	< 0.003	0%	---	---
Phosphorus - Total		mg/L	0.007	0.007	0%	0.009	0.008	0%	< 0.003	< 0.003	< 0.003	< 0.003	0%	---	< 0.003	< 0.003	0%	< 0.003	< 0.003	0%	---	---
Sulfate		mg/L	1.5	1.7	12%	2.1	2.1	0%	< 1.0	< 1.0	1.5	1.5	0%	---	< 1.0	< 1.0	0%	< 1.0	< 1.0	0%	---	---

GOOSE LAKE WATER QUALITY QA/QC

Parameter	Sample Number: Date:	W3A- GOOSE 97/05/16	W3B- GOOSE 97/05/16	% DIFFERENCE	W6A- GOOSE 97/05/16	W6B- GOOSE 97/05/16	% DIFFERENCE	FIELD BLANK 97/05/16	TRIP BLANK 97/05/16	GOOSE W6 7/13/97	GOOSE W6 DUP 7/13/97	% DIFFERENCE	TRIP BLANK 7/13/97	W3 8/11/97	W3 DUP 8/11/97	% DIFFERENCE	W6 8/11/97	W6 DUP 8/11/97	% DIFFERENCE	TRIP BLANK 8/11/97	FIELD BLANK 8/11/97
Total Metals																					
Silver	mg/L	< 0.00001	< 0.00001		0.00008	0.00001		< 0.00001	< 0.00001	0.00002	< 0.00001		0.00001	0.00001	0.00001		0.00004	< 0.00001		< 0.00001	< 0.00001
Aluminum	mg/L	0.074	0.068	8%	0.08	0.085	6%	0.11	0.13	0.054	0.047		0.11	0.024	0.029		0.072	0.037	49%	< 0.00001	< 0.00001
Arsenic	mg/L	0.00017	0.00016	6%	0.00011	0.00017	35%	< 0.00005	< 0.00005	< 0.00005	< 0.00005		< 0.00005	0.00005	0.0001		0.00029	0.00015	48%	< 0.00005	< 0.00005
Boron	mg/L	0.019	0.009	53%	0.01	0.039	74%	0.009	0.009	0.058	0.024		0.024	0.02	0.011		0.029	0.021	45%	0.021	0.013
Barium	mg/L	0.0064	0.0065	2%	0.0099	0.0098	1%	0.0002	0.0004	0.0043	0.0045		0.0003	0.0028	0.003		0.0041	0.0033	20%	0.0001	0.0001
Beryllium	mg/L	< 0.00001	< 0.00001		< 0.00001	< 0.00001		< 0.00001	< 0.00001	< 0.00001	< 0.00001		< 0.00001	0.00001	0.00001		0.00002	0.00001	50%	0.0001	0.00001
Bismuth	mg/L	< 0.0001	< 0.0001		< 0.0002	< 0.0002		< 0.0002	< 0.0002	< 0.0002	< 0.0002		< 0.0002	< 0.0002	< 0.0002		< 0.0002	< 0.0002		< 0.0002	< 0.0002
Calcium	mg/L	2.2	2.3	4%	3	2.8	7%	0.09	0.01	1.7	1.7		0.007	1.1	1.1		1.3	1.2	8%	0.005	0.005
Cadmium	mg/L	< 0.00001	< 0.00001		0.00005	0.00005	0%	< 0.00001	< 0.00001	< 0.00001	0.00002		< 0.00001	0.00003	0.00004		0.00002	0.00001	50%	< 0.00001	< 0.00001
Cobalt	mg/L	< 0.0004	< 0.0004		< 0.0004	< 0.0004		< 0.0004	< 0.0004	< 0.0004	< 0.0004		< 0.0004	< 0.0004	< 0.0004		0.0006	0.0004	33%	< 0.0004	< 0.0004
Chromium	mg/L	0.0006	0.001	40%	0.0008	0.0012	33%	0.0006	0.0006	0.0009	0.0009		0.0008	0.0005	0.0004		0.0007	0.0005	29%	0.0006	0.0005
Copper	mg/L	0.0037	0.0039	5%	0.0045	0.0048	6%	0.0005	0.0006	0.0029	0.0022		< 0.0002	0.0018	0.0018		0.0029	0.0022	24%	0.0005	< 0.0002
Iron	mg/L	0.026	0.029	10%	0.057	0.072	21%	< 0.005	0.009	0.017	0.02		< 0.005	0.043	0.046		0.2	0.066	67%	< 0.005	< 0.005
Mercury	mg/L	< 0.00001	< 0.00001		< 0.00001	< 0.00001		< 0.00001	< 0.00001	< 0.00001	< 0.00001		< 0.00001	< 0.00001	0.00003		0.00029	0.00005	83%	0.00009	0.0001
Potassium	mg/L	0.44	0.46	4%	0.63	0.64	2%	< 0.04	< 0.04	0.33	0.36		< 0.04	0.29	0.31		0.35	0.32	9%	< 0.04	< 0.04
Magnesium	mg/L	1.3	1.3	0%	1.7	1.6	6%	< 0.002	< 0.002	0.93	0.92		0.002	0.63	0.64		0.73	0.72	1%	0.002	< 0.002
Manganese	mg/L	0.0044	0.0053	17%	0.0037	0.0033	11%	< 0.0002	< 0.0002	0.0005	0.0006		< 0.0002	0.0021	0.002		0.0065	0.0024	63%	< 0.0002	< 0.0002
Molybdenum	mg/L	< 0.0004	< 0.0004		< 0.0004	< 0.0004		< 0.0004	< 0.0004	< 0.0004	< 0.0004		< 0.0004	< 0.0004	< 0.0004		< 0.0004	< 0.0004		< 0.0004	< 0.0004
Sodium	mg/L	0.96	0.97	1%	1.3	1.3	0%	< 0.04	< 0.04	0.65	0.64		< 0.04	0.49	0.49		0.5	0.55	9%	< 0.01	< 0.01
Nickel	mg/L	0.007	0.007	0%	0.009	0.01	10%	< 0.001	< 0.001	0.004	0.003		< 0.001	0.003	0.003		0.004	0.003	25%	< 0.001	< 0.001
Phosphorus	mg/L	0.006	0.007	14%	0.009	0.006	33%	< 0.004	< 0.004	0.004	0.005		< 0.004	< 0.004	0.006		0.016	0.012	25%	< 0.004	< 0.004
Lead	mg/L	< 0.0001	< 0.0001		0.0002	0.0002	5%	< 0.01	< 0.01	1.2	1.2		< 0.003	< 0.003	0.005		< 0.003	0.004		< 0.003	0.007
Sulphur	mg/L	1.5	1.6	6%	2	1.9		< 0.001	< 0.001	0.0005	0.0005		< 0.001	0.77	0.79		0.91	0.92	1%	< 0.01	< 0.01
Antimony	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002
Selenium	mg/L	0.00051	< 0.0005		< 0.0005	< 0.0005		< 0.0005	< 0.0005	< 0.0005	0.00011		< 0.0005	0.00036	0.00045		0.00029	0.00042	31%	0.00016	0.00009
Silicon	mg/L	0.79	0.83	5%	1	1	0%	< 0.08	< 0.08	0.56	0.57		< 0.08	0.22	0.21		0.29	0.24	17%	< 0.08	< 0.08
Tin	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002
Strontium	mg/L	0.0096	0.0099	3%	0.013	0.013	0%	< 0.0001	< 0.0001	0.0062	0.006		< 0.0001	0.0045	0.0046		0.0051	0.0051	0%	< 0.0001	< 0.0001
Tellurium	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002		< 0.002	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002
Titanium	mg/L	< 0.0003	< 0.0003		0.0003	0.0003	0%	< 0.0003	< 0.0003	< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003		0.0016	< 0.0003		< 0.0003	< 0.0003
Tungsten	mg/L	< 0.0003	< 0.0003		< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003		< 0.0003	< 0.0003		< 0.0003	< 0.0003
Vanadium	mg/L	< 0.0003	< 0.0003		< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003	< 0.0003		< 0.0003	< 0.0003	< 0.0003		< 0.0003	< 0.0003		< 0.0003	< 0.0003
Zinc	mg/L	0.005	0.005	0%	0.02	0.017	15%	0.002	0.001	0.004	0.002		0.001	0.003	0.003		0.008	0.004	20%	< 0.002	< 0.002
Zirconium	mg/L	0.003	0.003	90%	0.0004	0.0006	33%	< 0.0003	< 0.0003	0.0004	0.0058		0.0014	0.004	0.0026		0.0004	0.0015	73%	0.0006	0.0009

GOOSE LAKE WATER QUALITY QA/QC

Parameter	Sample Number: Date:	W3A- GOOSE 97/05/16	W3B- GOOSE 97/05/16	% DIFFERENCE	W3A- GOOSE 97/05/16	W3B- GOOSE 97/05/16	% DIFFERENCE	FIELD BLANK 97/05/16	TRIP BLANK 97/05/16	GOOSE W6 7/13/97	GOOSE W6 DUP 7/13/97	% DIFFERENCE	TRIP BLANK 7/13/97	W3 8/11/97	W3 DUP 8/11/97	% DIFFERENCE	W6 8/11/97	W6 DUP 8/11/97	% DIFFERENCE	TRIP BLANK 8/11/97	FIELD BLANK 8/11/97
Dissolved Metals																					
Silver Dissolved	mg/L	< 0.00001	< 0.00001		0.00005	< 0.00001		< 0.00001	< 0.00001	0.00004	0.00004			< 0.00001	0.00001		< 0.00001	< 0.00001			
Aluminum Dissolved	mg/L	0.07	0.065	7%	0.073	0.085	14%	0.01	0.007	0.034	0.034			0.027	0.02		< 0.006	0.03			
Arsenic Dissolved	mg/L	0.00011	0.00018	39%	0.0001	0.00023	57%	< 0.00005	< 0.00005	< 0.00005	< 0.00005			0.00014	0.00013		0.00016	0.00019	16%		
Boron Dissolved	mg/L	0.017	0.005	71%	0.006	0.01	40%	< 0.004	0.006	0.009	0.019			0.046	0.014		0.019	0.029	34%		
Barium Dissolved	mg/L	0.0061	0.0062	2%	0.01	0.011	9%	0.0002	0.0002	0.0042	0.0043			0.0043	0.004		0.0024	0.0025	4%		
Bismuth Dissolved	mg/L	< 0.0001	< 0.0001		< 0.0001	< 0.0001		< 0.0001	< 0.0001	< 0.0001	< 0.0001			< 0.0001	< 0.0001		< 0.0001	< 0.0001			
Calcium Dissolved	mg/L	< 0.0002	< 0.0002		< 0.0002	< 0.0002		< 0.0002	< 0.0002	0.002	0.002			< 0.002	< 0.002		< 0.002	< 0.002			
Cadmium Dissolved	mg/L	2.1	2.3	9%	3	3.3	9%	< 0.005	< 0.005	1.6	1.6			1.3	1.3		1.2	1.9	37%		
Cobalt Dissolved	mg/L	< 0.00001	< 0.00001		0.00005	0.00005	0%	< 0.00001	< 0.00001	0.00002	0.00002			0.00003	0.00001		< 0.00001	< 0.00001			
Chromium Dissolved	mg/L	< 0.0004	< 0.0004		< 0.0004	< 0.0004		< 0.0004	< 0.0004	< 0.0004	< 0.0004			< 0.0004	< 0.0004		< 0.0004	< 0.0004			
Copper Dissolved	mg/L	0.0007	0.0007	0%	0.0006	0.0007	14%	0.0006	0.0006	0.001	0.001			0.0003	0.0003		0.0002	0.0002	0%		
Iron Dissolved	mg/L	0.0035	0.0037	5%	0.0024	0.006	60%	0.0004	0.0003	0.0022	0.0022			0.0019	0.0026		0.0016	0.0017	6%		
Potassium Dissolved	mg/L	0.018	0.018	0%	0.054	0.041	24%	< 0.005	0.005	0.015	0.014			0.008	0.012		< 0.005	0.007	33%		
Magnesium Dissolved	mg/L	0.46	0.44	4%	0.73	0.71	3%	< 0.04	< 0.04	0.32	0.31			0.3	0.33		0.32	0.31	3%		
Manganese Dissolved	mg/L	1.2	1.3	8%	1.7	1.9	11%	< 0.002	< 0.002	0.57	0.68			0.77	0.74		0.57	0.68	15%		
Molybdenum Dissolved	mg/L	< 0.0004	< 0.0004		< 0.0004	< 0.0004	13%	< 0.0004	< 0.0004	0.0006	0.0002			0.0004	0.0007		0.0006	0.0002	67%		
Sodium Dissolved	mg/L	0.91	1	9%	1.4	1.5	7%	0.06	0.04	0.54	0.5			< 0.0004	< 0.0004		< 0.0004	< 0.0004			
Nickel Dissolved	mg/L	0.007	0.007	0%	0.007	0.011	36%	< 0.001	< 0.001	0.003	0.002			0.003	0.004		0.003	0.002	7%		
Phosphorus Dissolved	mg/L	< 0.0001	< 0.0001		0.008	0.005	38%	< 0.004	< 0.004	0.005	0.004			< 0.004	< 0.004		0.005	< 0.004	33%		
Lead Dissolved	mg/L	< 0.0001	< 0.0001		0.00011	0.0006	83%	< 0.0001	0.0002	< 0.0001	< 0.0001			< 0.0001	< 0.0001		< 0.0001	< 0.0001			
Sulfur Dissolved	mg/L	1.5	1.6	6%	2.1	2.2	5%	0.01	< 0.01	0.97	0.93			0.87	0.93		0.97	0.93	4%		
Antimony Dissolved	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002			< 0.002	< 0.002		< 0.002	< 0.002			
Selenium Dissolved	mg/L	0.0005	0.00006	88%	< 0.00005	< 0.00005		< 0.00005	< 0.00005	0.00018	0.00025			0.00014	0.00015		0.00018	0.00025	28%		
Silicon Dissolved	mg/L	0.76	0.81	6%	1.2	1.1	8%	< 0.08	< 0.08	0.3	0.58			0.42	0.27		< 0.002	< 0.002	48%		
Tin Dissolved	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002			< 0.002	< 0.002		< 0.002	< 0.002			
Strontium Dissolved	mg/L	0.009	0.0099	9%	0.013	0.014	7%	0.0001	0.0002	0.0048	0.0066			0.0077	0.0053		0.0048	0.0066	27%		
Tellurium Dissolved	mg/L	< 0.002	< 0.002		< 0.002	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002			< 0.002	< 0.002		< 0.002	< 0.002			
Titanium Dissolved	mg/L	< 0.0003	< 0.0003		0.0003	0.0003	0%	< 0.0003	< 0.0003	< 0.0003	< 0.0003			< 0.0003	< 0.0003		< 0.0003	< 0.0003			
Thallium Dissolved	mg/L	< 0.003	< 0.003		< 0.003	< 0.003		< 0.003	< 0.003	< 0.003	< 0.003			< 0.003	< 0.003		< 0.003	< 0.003			
Vanadium Dissolved	mg/L	< 0.0003	< 0.0003		< 0.0003	< 0.0003	90%	< 0.0003	< 0.0003	< 0.0003	< 0.0003			< 0.0003	< 0.0003		< 0.0003	< 0.0003			
Zinc Dissolved	mg/L	0.008	0.005	17%	0.002	0.02		0.001	< 0.001	< 0.001	< 0.001			0.003	0.004		< 0.001	< 0.001	25%		
Zirconium Dissolved	mg/L	< 0.0003	< 0.0003		0.0004	< 0.0003		< 0.0003	< 0.0003	< 0.0003	< 0.001			0.0005	0.0004		< 0.0003	< 0.001	20%		



FILE

36203-01

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Certificate of Analysis

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

Reported To :

NORECOL, DAMES & MOORE INC.

Client Code NR

P.O.BOX 11507, SUITE 1900,
650 WEST GEORGIA STREET,
VANCOUVER, B.C.
V6B 4N7

Attention : BRUCE OTT
Phone : (604) 681-1672
FAX : (604) 687-3446

Project Information :

Project ID : 36203-001 *GOOSE*
Submitted By : DAN GUIGON

Requisition Forms :

Form 61251071 logged on 22-May-97 completed on 12-Jun-97

Remarks :

- ☞ All organic data is blank corrected except for PCDD/F, Hi-res MS and CLP volatile analyses
- ☞ 'MDC' = Minimum Detectable Concentration, '<' = Less than MDC, '---' = Not analyzed
- ☞ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
- ☞ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
- ☞ All Groundwater samples are decanted and/or filtered prior to analysis

Methods used by Philip are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 18th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied.

Your samples will be retained at Philip for a period of 30 days from receipt of data or as per contract.

PHILIP Project Manager: Jack Wilson



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID :	METHOD	97012430	97012430
Client ID :	BLANK	W3A-GOOSE	Duplicate

Sparcode	Parameter	Unit	MDC			
PHYSICAL						
00041220	pH	pH units	0.1	---	6.4	---
00111160	Specific Conductance	uS/cm	1	---	26	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	< 4	26	---
1107CALC	Hardness Total -D	mg/L			10.2	
GENERAL INORGANICS						
01311190	Acidity pH 8.3	mg/L	0.5	< 0.5	1.4	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	---	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	---	6.8	---
CO3-CALC	Carbonate	mg/L			< 0.5	
HCO3CALC	Bicarbonate	mg/L			8.3	
OH--CALC	Hydroxide	mg/L			< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	0.001	0.001	---
ANIONS						
11041330	Chloride Dissolved	mg/L	0.5	< 0.5	0.9	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	< 0.10	---
IonBCALC	Ion Balance	%			14.0	
CARBON						
01030912	Organic Carbon - Total	mg/L	1.0	< 1.0	6.5	---
NITROGEN						
0112CALC	Organic Nitrogen - Total	mg/L			0.22	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	< 0.04	0.23	---
0114CALC	Total Nitrogen	mg/L			0.23	
11081351	Ammonia Nitrogen	mg/L	0.005	< 0.005	0.009	0.011
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	< 0.02	< 0.02
1110CALC	Nitrate Nitrogen Dissolved	mg/L			< 0.02	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	< 0.005	< 0.005
PHOSPHORUS						
11181380	Ortho-Phosphorus (P)	mg/L	0.003	0.003	< 0.003	---
P--T139A	Phosphorus - Total	mg/L	0.003	< 0.003	0.007	---

Matrix :	Water
Sampled on:	97/05/16 12:00

CONTINUED on page 3



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID :	METHOD	97012430	97012430
Client ID :	BLANK	W3A-GOOSE	Duplicate

Sparcode	Parameter	Unit	MDC			
SULFATE						
11211400	Sulfate	mg/L	1.0	< 1.0	1.5	---
METALS TOTAL						
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	< 0.00001	---
Al-TPC10	Aluminum	mg/L	0.006	< 0.006	0.074	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	0.00017	---
B--TPC10	Boron	mg/L	0.004	0.006	0.019	---
Ba-TPC10	Barium	mg/L	0.0001	0.0002	0.0064	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	0.008	2.2	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0002	0.0006 (1)	---
Cu-TPC10	Copper	mg/L	0.0002	< 0.0002	0.0037	---
Fe-TPC10	Iron	mg/L	0.005	< 0.005	0.026	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00001	< 0.00001	---
K_TPC10	Potassium	mg/L	0.04	< 0.04	0.44 (1)	---
Mg-TPC10	Magnesium	mg/L	0.002	0.004	1.3	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	0.0044	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04	0.96	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	0.007	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	0.006	---
Pb-TPCGF	Lead	mg/L	0.0001	< 0.0001	< 0.0001	---
S_TPC10	Sulphur	mg/L	0.01	< 0.01	1.5	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	0.00051	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	0.79	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	< 0.0001	0.0096	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	< 0.001	0.005	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003	0.0030	---

Matrix :	Water
Sampled on:	97/05/16 12:00

CONTINUED on page 4



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ANALYTICAL REPORT
Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

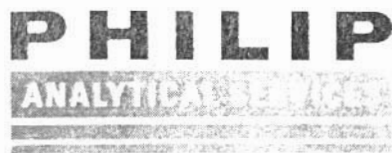
Philip ID : METHOD 97012430
Client ID : BLANK W3A-GOOSE 97012430
Duplicate

Sparcode	Parameter	Unit	MDC			
METALS DISSOLVED						
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	< 0.00001	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	< 0.006	0.070	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	< 0.00005	0.00011	---
B--DPC10	Boron Dissolved	mg/L	0.004	0.007	0.017	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	0.0002	0.0061	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	0.008	2.1	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	< 0.00001	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0003	0.0007	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	< 0.0002	0.0035	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	< 0.005	0.018	---
K_DPC10	Potassium Dissolved	mg/L	0.04	< 0.04	0.46	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	0.006	1.2	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	< 0.0002	0.0039	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	< 0.04	0.91	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	< 0.001	0.007	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	< 0.004	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	< 0.01	1.5	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	< 0.00005	0.00050	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	< 0.08	0.76	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	< 0.0001	0.0090	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	< 0.001	0.006	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---

Matrix : Water
Sampled on: 97/05/16 12:00

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : METHOD 97012431 97012431
Client ID : BLANK W3B-GOOSE Duplicate METHOD BLANK 97012432 97012432
W6A-GOOSE Duplicate

Sparcode	Parameter	Unit	MDC						
PHYSICAL									
00041220	pH	pH units	0.1	n/a	6.4	6.5	=	6.3	---
00111160	Specific Conductance	uS/cm	1	< 1	26	26	=	37	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	=	< 4	---	=	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	=	24	---	=	22	---
1107CALC	Hardness Total -D	mg/L			11.1			14.5	
GENERAL INORGANICS									
01311190	Acidity pH 8.3	mg/L	0.5	=	1.4	---	=	1.7	---
01321180	Acidity pH 4.5	mg/L	0.5	=	< 0.5	---	=	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	n/a	< 0.5	< 0.5	=	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	< 0.5	6.8	7.0	=	9.2	---
CO3-CALC	Carbonate	mg/L			< 0.5			< 0.5	
HCO3CALC	Bicarbonate	mg/L			8.3			11.2	
OH--CALC	Hydroxide	mg/L			< 0.5			< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	=	0.001	---	=	0.001	---
ANIONS									
11041330	Chloride Dissolved	mg/L	0.5	< 0.5	1.0	---	< 0.5	1.4	---
11061341	Fluoride Dissolved	mg/L	0.10	=	< 0.10	---	=	< 0.10	< 0.10
IonBCALC	Ion Balance	%			16.8			15.8	
CARBON									
01030912	Organic Carbon - Total	mg/L	1.0	=	6.2	---	=	8.7	---
NITROGEN									
0112CALC	Organic Nitrogen - Total	mg/L			0.17			0.29	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	=	0.18	---	=	0.30	---
0114CALC	Total Nitrogen	mg/L			0.18			0.30	
11081351	Ammonia Nitrogen	mg/L	0.005	=	0.008	---	=	0.013	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	=	< 0.02	---	=	< 0.02	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L			< 0.02			< 0.02	
11111354	Nitrite Nitrogen	mg/L	0.005	=	< 0.005	---	=	< 0.005	---
PHOSPHORUS									
11181380	Ortho-Phosphorus (P)	mg/L	0.003	=	< 0.003	---	=	< 0.003	< 0.003
P--T139A	Phosphorus - Total	mg/L	0.003	=	0.007	---	=	0.009	---

Matrix : Water
Sampled on: 97/05/16 12:00

Water
97/05/16 12:00

CONTINUED on page 6



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : METHOD 97012431 97012431 METHOD 97012432 97012432
Client ID : BLANK W3B-GOOSE Duplicate BLANK W6A-GOOSE Duplicate

Sparcode	Parameter	Unit	MDC						
SULFATE									
11211400	Sulfate	mg/L	1.0	< 1.0	1.7	---	< 1.0	2.1	---
METALS TOTAL									
Ag-TPCGF	Silver	mg/L	0.00001	=	< 0.00001	---	=	0.00008	---
Al-TPC10	Aluminum	mg/L	0.006	=	0.068	---	=	0.080	---
As-TPCHY	Arsenic	mg/L	0.00005	=	0.00016	---	=	0.00011	---
B--TPC10	Boron	mg/L	0.004	=	0.009	---	=	0.010	---
Ba-TPC10	Barium	mg/L	0.0001	=	0.0065	---	=	0.0099	---
Be-TPC10	Beryllium	mg/L	0.00001	=	< 0.00001	---	=	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	=	2.3 (1)	---	=	3.0	---
Cd-TPCGF	Cadmium	mg/L	0.00001	=	< 0.00001 (1)	---	=	0.00005	---
Co-TPC10	Cobalt	mg/L	0.0004	=	< 0.0004	---	=	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	=	0.0010	---	=	0.0008	---
Cu-TPC10	Copper	mg/L	0.0002	=	0.0039	---	=	0.0045	---
Fe-TPC10	Iron	mg/L	0.005	=	0.029	---	=	0.057	---
Hg-TLLHG	Mercury	mg/L	0.00001	=	< 0.00001	---	=	< 0.00001	---
K_TPC10	Potassium	mg/L	0.04	=	0.46	---	=	0.63	---
Mg-TPC10	Magnesium	mg/L	0.002	=	1.3	---	=	1.7	---
Mn-TPC10	Manganese	mg/L	0.0002	=	0.0053	---	=	0.0037	---
Mo-TPC10	Molybdenum	mg/L	0.0004	=	< 0.0004	---	=	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	=	0.97 (1)	---	=	1.3	---
Ni-TPC10	Nickel	mg/L	0.001	=	0.007	---	=	0.009	---
P_TPC10	Phosphorus	mg/L	0.004	=	0.007	---	=	0.009	---
Pb-TPCGF	Lead	mg/L	0.0001	=	< 0.0001	---	=	0.0002	---
S_TPC10	Sulphur	mg/L	0.01	=	1.6	---	=	2.0	---
Sb-TPC10	Antimony	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	=	< 0.00005	---	=	< 0.00005	---
Si-TPC10	Silicon	mg/L	0.08	=	0.83	---	=	1.0	---
Sn-TPC10	Tin	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	=	0.0099	---	=	0.013	---
Te-TPC10	Tellurium	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	=	< 0.0003	---	=	0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	=	< 0.003	---	=	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	=	< 0.0003	---	=	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	=	0.005 (1)	---	=	0.020	---
Zr-TPC10	Zirconium	mg/L	0.0003	=	0.0003	---	=	0.0004	---

Matrix :
Sampled on:

Water
97/05/16 12:00

Water
97/05/16 12:00

CONTINUED on page 7



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : METHOD 97012431 97012431 METHOD 97012432 97012432
Client ID : BLANK W3B-GOOSE Duplicate BLANK W6A-GOOSE Duplicate

Sparcode	Parameter	Unit	MDC						
METALS DISSOLVED									
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	=	< 0.00001	---	=	0.00005	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	=	0.065	---	=	0.073	---
As-DPC10	Arsenic Dissolved	mg/L	0.00005	=	0.00018 (1)	---	=	0.00010	---
B--DPC10	Boron Dissolved	mg/L	0.004	=	0.005	---	=	0.006	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	=	0.0062	---	=	0.010 (1)	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	=	< 0.0001	---	=	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	=	2.3	---	=	3.0	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	=	0.00001	---	=	0.00005	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	=	< 0.0004	---	=	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	=	0.0007	---	=	0.0006	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	=	0.0037	---	=	0.0024	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	=	0.018	---	=	0.054	---
K__DPC10	Potassium Dissolved	mg/L	0.04	=	0.44	---	=	0.73	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	=	1.3	---	=	1.7 (1)	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	=	0.0040	---	=	0.0033	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	=	< 0.0004	---	=	< 0.0004	---
Na__DPC10	Sodium Dissolved	mg/L	0.04	=	1.0	---	=	1.4 (1)	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	=	0.007	---	=	0.007	---
P__DPC10	Phosphorus Dissolved	mg/L	0.004	=	0.006	---	=	0.008	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	=	< 0.0001	---	=	0.0001	---
S__DPC10	Sulfur Dissolved	mg/L	0.01	=	1.6	---	=	2.1 (1)	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Se-DPC10	Selenium Dissolved	mg/L	0.00005	=	0.00006 (1)	---	=	< 0.00005	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	=	0.81	---	=	1.2	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	=	0.0099	---	=	0.013	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	=	< 0.002	---	=	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	=	< 0.0003	---	=	0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	=	< 0.003	---	=	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	=	< 0.0003	---	=	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	=	0.005	---	=	0.002	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	=	< 0.0003	---	=	0.0004	---

Matrix :
Sampled on:

Water
97/05/16 12:00

Water
97/05/16 12:00

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.



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ANALYTICAL REPORT Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID :	97012433	97012434	97012434	97012435	97012435
Client ID :	W6B-GOOSE	W7-GOOSE	Duplicate	FIELD BLA NK-GOOSE	Duplicate

Sparcode	Parameter	Unit	MDC					
PHYSICAL								
00041220	pH	pH units	0.1	6.3	6.4	---	5.4	---
00111160	Specific Conductance	uS/cm	1	37	35	---	< 1	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	< 4	---	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	30	20	---	< 4	---
1107CALC	Hardness Total -D	mg/L		16.1	13.8		< 0.1	
GENERAL INORGANICS								
01311190	Acidity pH 8.3	mg/L	0.5	1.7	1.5	---	1.5	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	< 0.5	---	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	< 0.5	---	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	9.1	8.8	---	1.9	---
CO3-CALC	Carbonate	mg/L		< 0.5	< 0.5		< 0.5	
HCO3CALC	Bicarbonate	mg/L		11.1	10.7		2.3	
OH--CALC	Hydroxide	mg/L		< 0.5	< 0.5		< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	0.001	0.001	---	0.001	---
ANIONS								
11041330	Chloride Dissolved	mg/L	0.5	1.4	1.3	---	< 0.5	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	< 0.10	---	< 0.10	---
IonBCALC	Ion Balance	%		20.7	15.4		? (2)	
CARBON								
01030912	Organic Carbon - Total	mg/L	1.0	8.6	8.2	8.2	< 1.0	---
NITROGEN								
0112CALC	Organic Nitrogen - Total	mg/L		0.41	0.36		< 0.04	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	0.42	0.37	---	< 0.04	---
0114CALC	Total Nitrogen	mg/L		0.42	0.37		< 0.06	
11081351	Ammonia Nitrogen	mg/L	0.005	0.015	0.013	---	< 0.005	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	< 0.02	---	< 0.02	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L		< 0.02	< 0.02		< 0.02	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	< 0.005	---	0.005	---
PHOSPHORUS								
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	0.003	---	< 0.003	---
P--T139A	Phosphorus - Total	mg/L	0.003	0.008	0.009	---	0.003	---

Matrix :	Water	Water	Water
Sampled on:	97/05/16 12:00	97/05/16 12:00	97/05/16 12:00

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ANALYTICAL REPORT

Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID :	97012433	97012434	97012434	97012435	97012435
Client ID :	W6B-GOOSE	W7-GOOSE	Duplicate	FIELD BLA NK-GOOSE	Duplicate

Sparcode	Parameter	Unit	MDC					
SULFATE								
11211400	Sulfate	mg/L	1.0	2.1	2.0	---	< 1.0	---
METALS TOTAL								
Ag-TPCGF	Silver	mg/L	0.00001	0.00001	< 0.00001	---	< 0.00001	---
Al-TPC10	Aluminum	mg/L	0.006	0.085	0.090	---	0.011	---
As-TPCHY	Arsenic	mg/L	0.00005	0.00017	0.00021	---	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	0.039	0.21	---	0.009	---
Ba-TPC10	Barium	mg/L	0.0001	0.0098	0.0087	---	0.0002	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	2.8	2.8 (1)	---	0.009	---
Cd-TPCGF	Cadmium	mg/L	0.00001	0.00005 (1)	0.00002 (1)	---	< 0.00001	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	0.0006	---	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0012	0.0010	---	0.0006	---
Cu-TPC10	Copper	mg/L	0.0002	0.0048	0.0044 (1)	---	0.0005	---
Fe-TPC10	Iron	mg/L	0.005	0.072	0.073	---	< 0.005 (1)	---
Hg-TLLHG	Mercury	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	< 0.00001
K_TPC10	Potassium	mg/L	0.04	0.64	0.59	---	< 0.04	---
Mg-TPC10	Magnesium	mg/L	0.002	1.6	1.6 (1)	---	< 0.002	---
Mn-TPC10	Manganese	mg/L	0.0002	0.0033	0.011	---	< 0.0002	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	1.3	1.4	---	< 0.04 (1)	---
Ni-TPC10	Nickel	mg/L	0.001	0.010	0.010	---	< 0.001	---
P_TPC10	Phosphorus	mg/L	0.004	0.006	0.010	---	< 0.004	---
Pb-TPCGF	Lead	mg/L	0.0001	0.0002	0.0003	---	0.0001	---
S_TPC10	Sulphur	mg/L	0.01	1.9	1.9 (1)	---	< 0.01 (1)	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	< 0.00005	---	< 0.00005	---
Si-TPC10	Silicon	mg/L	0.08	1.0	1.0	---	< 0.08	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	0.013	0.012 (1)	---	< 0.0001	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	0.0003	0.0003	---	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	0.017	0.021	---	0.002	---
Zr-TPC10	Zirconium	mg/L	0.0003	0.0006	< 0.0003	---	< 0.0003	---

Matrix :	Water	Water	Water
Sampled on:	97/05/16 12:00	97/05/16 12:00	97/05/16 12:00



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ANALYTICAL REPORT **Form 61251071**

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID :	97012433	97012434	97012434	97012435	97012435
Client ID :	W6B-GOOSE	W7-GOOSE	Duplicate	FIELD BLA NK-GOOSE	Duplicate

Sparcode	Parameter	Unit	MDC					
METALS DISSOLVED								
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	0.085	0.080	---	0.010	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	0.00023	0.00019	---	< 0.00005	---
B--DPC10	Boron Dissolved	mg/L	0.004	0.010	0.018	---	< 0.004	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	0.011	0.0084	---	0.0002	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	3.3	2.9	---	< 0.005	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	0.00005	0.00002	---	< 0.00001	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	0.0006	---	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0007	0.0009	---	0.0006	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	0.0060	0.0045	---	0.0004	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	0.041	0.046	---	< 0.005	---
K_DPC10	Potassium Dissolved	mg/L	0.04	0.71	0.63	---	< 0.04	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	1.9	1.6	---	< 0.002	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	0.0038	0.011	---	0.0002	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	1.5	1.2	---	0.06	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	0.011	0.009	---	< 0.001	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	0.005	0.008	---	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	0.0006	0.0006	---	< 0.0001	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	2.2	1.9	---	0.01	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	< 0.00005	0.00006 (1)	---	< 0.00005	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	1.1	0.97	---	< 0.08	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	0.014	0.013	---	0.0001	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	0.0003	0.0003	---	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	0.020	0.023	---	0.001	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---

Matrix :	Water	Water	Water
Sampled on:	97/05/16 12:00	97/05/16 12:00	97/05/16 12:00

Result comments and/or text results :

- (1) Diss > Total, within precision of analytical method.
- (2) Ph outside of 6.0-9.0 range.



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ANALYTICAL REPORT

Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : 97012436
Client ID : TRIP BLA
NK-GOOSE 97012436
Duplicate

Sparcode	Parameter	Unit	MDC		
PHYSICAL					
00041220	pH	pH units	0.1	5.5	---
00111160	Specific Conductance	uS/cm	1	< 1	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	< 4	< 4
1107CALC	Hardness Total -D	mg/L		< 0.1	
GENERAL INORGANICS					
01311190	Acidity pH 8.3	mg/L	0.5	1.5	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	2.0	---
CO3-CALC	Carbonate	mg/L		< 0.5	
HCO3CALC	Bicarbonate	mg/L		2.4	
OH--CALC	Hydroxide	mg/L		< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	0.001	0.001
ANIONS					
11041330	Chloride Dissolved	mg/L	0.5	< 0.5	< 0.5
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	---
IonBCALC	Ion Balance	%		? (2)	
CARBON					
01030912	Organic Carbon - Total	mg/L	1.0	< 1.0	---
NITROGEN					
0112CALC	Organic Nitrogen - Total	mg/L		< 0.04	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	< 0.04	---
0114CALC	Total Nitrogen	mg/L		< 0.06	
11081351	Ammonia Nitrogen	mg/L	0.005	< 0.005	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L		< 0.02	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	---
PHOSPHORUS					
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	---
P--T139A	Phosphorus - Total	mg/L	0.003	< 0.003	---

Matrix : Water
Sampled on: 97/05/16 12:00

CONTINUED on page 12



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ANALYTICAL REPORT

Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : 97012436
Client ID : TRIP BLA
NK-GOOSE
97012436
Duplicate

Sparcode	Parameter	Unit	MDC		
SULFATE					
11211400	Sulfate	mg/L	1.0	< 1.0	< 1.0
METALS TOTAL					
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	---
Al-TPC10	Aluminum	mg/L	0.006	0.013	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	0.009	---
Ba-TPC10	Barium	mg/L	0.0001	0.0004	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	0.010	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0006	---
Cu-TPC10	Copper	mg/L	0.0002	0.0006	---
Fe-TPC10	Iron	mg/L	0.005	0.009	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00001	---
K_TPC10	Potassium	mg/L	0.04	< 0.04	---
Mg-TPC10	Magnesium	mg/L	0.002	< 0.002	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04 (1)	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	---
Pb-TPCGF	Lead	mg/L	0.0001	< 0.0001 (1)	---
S_TPC10	Sulphur	mg/L	0.01	< 0.01	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	< 0.0001 (1)	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	0.001 (1)	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003 (1)	---

Matrix : Water
Sampled on: 97/05/16 12:00



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ANALYTICAL REPORT
Form 61251071

Client : NORECOL, DAMES & MOORE INC.
Project : 36203-001

Philip ID : 97012436
Client ID : TRIP BLA
NK-GOOSE
97012436
Duplicate

Sparcode	Parameter	Unit	MDC		
METALS DISSOLVED					
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	0.007	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	< 0.00005	---
B--DPC10	Boron Dissolved	mg/L	0.004	0.006	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	0.0002	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	< 0.005	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	< 0.0002	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	0.0003	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	0.005	---
K_DPC10	Potassium Dissolved	mg/L	0.04	< 0.04	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	< 0.002	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	0.0002	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	0.04	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	< 0.001	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	0.0002	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	< 0.01	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	< 0.00005	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	< 0.08	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	0.0002	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	< 0.001	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	---

Matrix : Water
Sampled on: 97/05/16 12:00

Result comments and/or text results :

- (1) Diss > Total, within precision of analytical method.
- (2) Ph outside of 6.0-9.0 range.

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SPIKE SUMMARY Form 61251071

Parameter	Client ID	Philip ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
Residue Nonfilterable (TSS)	Blank Spike. Batch :	74401520	< 4	202	200	mg/L	101
Residue Filterable 1.0u (TDS)	Blank Spike. Batch :	74401521	< 4	100	100	mg/L	106
Nitrite Nitrogen	W3A-GOOSE	97012430	< 0.005	0.099	.1	mg/L	99
Nitrite Nitrogen	Blank Spike. Batch :	74100484	< 0.005	0.102	.1	mg/L	102
Nitrate+Nitrite (N)	W3A-GOOSE	97012430	< 0.02	0.38	.4	mg/L	95
Nitrate+Nitrite (N)	Blank Spike. Batch :	74100484	< 0.02	0.41	.4	mg/L	104
Ammonia Nitrogen	W3A-GOOSE	97012430	0.009	0.107	.1	mg/L	98
Ammonia Nitrogen	Blank Spike. Batch :	74100484	< 0.005	0.103	.1	mg/L	103
Chloride Dissolved	Blank Spike. Batch :	74100512	< 0.5	63.3	60	mg/L	106
Sulfate Dissolved	Blank Spike. Batch :	74100513	< 1.0	57.4	60	mg/L	95
Cyanide(SAD) + Thiocyanate	Blank Spike. Batch :	74100471	0.001	0.018	.02	mg/L	85
Acidity pH 8.3	Blank Spike. Batch :	74401501	< 0.5	99.7	100	mg/L	100
Arsenic Dissolved	Blank Spike. Batch :	74201036	< 0.00005	0.0023	.002	mg/L	112
Selenium Dissolved	Blank Spike. Batch :	74201036	< 0.00005	0.0021	.002	mg/L	103
Silver	Blank Spike. Batch :	74201024	< 0.00001	0.00051	.0005	mg/L	101
Arsenic	Blank Spike. Batch :	74201036	< 0.00005	0.0023	.002	mg/L	112
Cadmium	Blank Spike. Batch :	74201024	< 0.00001	0.00048	.0005	mg/L	95
Lead	Blank Spike. Batch :	74201024	< 0.0001	0.021	.02	mg/L	106
Selenium	Blank Spike. Batch :	74201036	< 0.00005	0.0021	.002	mg/L	102
Mercury	Blank Spike. Batch :	74200995	0.00002	0.00055	.0005	mg/L	106
pH	Blank Spike. Batch :	74401497	< 0.1	6.1	6	pH units	101
Alkalinity Total 4.5	W3B-GOOSE	97012431	6.8	57.3	50	mg/L	101
Alkalinity Total 4.5	Blank Spike. Batch :	74401498	< 0.5	51.6	50	mg/L	103
Chloride Dissolved	Blank Spike. Batch :	74100519	< 0.5	63.6	60	mg/L	106
Sulfate Dissolved	Blank Spike. Batch :	74100520	< 1.0	64.3	60	mg/L	107
Fluoride Dissolved	W6A-GOOSE	97012432	< 0.10	0.50	.5	mg/L	96
Total Kjeldahl Nitrogen	W6B-GOOSE	97012433	0.42	0.86	.4	mg/L	111
Organic Carbon - Total	W7-GOOSE	97012434	8.2	19.6	10	mg/L	113
Mercury	FIELD BLANK-GOOSE	97012435	< 0.00001	0.00053	.0005	mg/L	106
Sulfate Dissolved	TRIP BLANK-GOOSE	97012436	< 1.0	105	100	mg/L	105
Cyanide(SAD) + Thiocyanate	TRIP BLANK-GOOSE	97012436	0.001	0.021	.02	mg/L	100



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ANALYSIS DATES **Form 61251071**

Philip ID:	97012430	97012431	97012432	97012433
Client ID:	W3A-GOOSE	W3B-GOOSE	W6A-GOOSE	W6B-GOOSE

00041220	pH	23-MAY-1997	26-MAY-1997	26-MAY-1997	26-MAY-1997
00111160	Specific Conductance	23-MAY-1997	26-MAY-1997	26-MAY-1997	26-MAY-1997
00081071	Residue Nonfilterable (TSS)	29-MAY-1997	29-MAY-1997	29-MAY-1997	29-MAY-1997
007H1035	Residue Filterable 1.0u (TDS)	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
01311190	Acidity pH 8.3	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
01321180	Acidity pH 4.5	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
01011211	Alkalinity Phen. 8.3	23-MAY-1997	26-MAY-1997	26-MAY-1997	26-MAY-1997
01021210	Alkalinity Total 4.5	23-MAY-1997	26-MAY-1997	26-MAY-1997	26-MAY-1997
2105AA04	Cyanide(SAD) + Thiocyanate	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
11041330	Chloride Dissolved	03-JUN-1997	03-JUN-1997	03-JUN-1997	03-JUN-1997
11061341	Fluoride Dissolved	22-MAY-1997	22-MAY-1997	22-MAY-1997	22-MAY-1997
TOC-W	15004 Sparg/Ox-Mem Color	26-MAY-1997	26-MAY-1997	26-MAY-1997	26-MAY-1997
0113136A	Total Kjeldahl Nitrogen	29-MAY-1997	29-MAY-1997	29-MAY-1997	29-MAY-1997
11081351	Ammonia Nitrogen	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
11091350	Nitrate+Nitrite (N)	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
11111354	Nitrite Nitrogen	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
11181380	Ortho-Phosphorus (P)	28-MAY-1997	28-MAY-1997	28-MAY-1997	28-MAY-1997
P--T139A	Phosphorus - Total	27-MAY-1997	27-MAY-1997	27-MAY-1997	27-MAY-1997
11211400	Sulfate	03-JUN-1997	03-JUN-1997	03-JUN-1997	03-JUN-1997
WATTPC	METALS PRECONC PACKAGE	02-JUN-1997	02-JUN-1997	02-JUN-1997	02-JUN-1997
WATDPC	METALS PRECONC PACKAGE	02-JUN-1997	02-JUN-1997	02-JUN-1997	02-JUN-1997

Matrix:	Water	Water	Water	Water
Sampled on:	16-MAY-1997	16-MAY-1997	16-MAY-1997	16-MAY-1997



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ANALYSIS DATES
Form 61251071

	Philip ID: Client ID:	97012434 W7-GOOSE	97012435 FIELD BLA NK-GOOSE	97012436 TRIP BLA NK-GOOSE
00041220	pH	26-MAY-1997	26-MAY-1997	26-MAY-1997
00111160	Specific Conductance	26-MAY-1997	26-MAY-1997	26-MAY-1997
00081071	Residue Nonfilterable (TSS)	29-MAY-1997	29-MAY-1997	29-MAY-1997
007H1035	Residue Filterable 1.0u (TDS)	27-MAY-1997	27-MAY-1997	27-MAY-1997
01311190	Acidity pH 8.3	27-MAY-1997	27-MAY-1997	27-MAY-1997
01321180	Acidity pH 4.5	27-MAY-1997	27-MAY-1997	27-MAY-1997
01011211	Alkalinity Phen. 8.3	26-MAY-1997	26-MAY-1997	26-MAY-1997
01021210	Alkalinity Total 4.5	26-MAY-1997	26-MAY-1997	26-MAY-1997
2105AA04	Cyanide(SAD) + Thiocyanate	27-MAY-1997	27-MAY-1997	27-MAY-1997
11041330	Chloride Dissolved	03-JUN-1997	03-JUN-1997	03-JUN-1997
11061341	Fluoride Dissolved	22-MAY-1997	22-MAY-1997	22-MAY-1997
TOC-W	15004 Sparg/Ox-Mem Color	26-MAY-1997	26-MAY-1997	26-MAY-1997
0113136A	Total Kjeldahl Nitrogen	29-MAY-1997	29-MAY-1997	29-MAY-1997
11081351	Ammonia Nitrogen	27-MAY-1997	27-MAY-1997	27-MAY-1997
11091350	Nitrate+Nitrite (N)	27-MAY-1997	27-MAY-1997	27-MAY-1997
11111354	Nitrite Nitrogen	27-MAY-1997	27-MAY-1997	27-MAY-1997
11181380	Ortho-Phosphorus (P)	28-MAY-1997	28-MAY-1997	28-MAY-1997
P--T139A	Phosphorus - Total	27-MAY-1997	27-MAY-1997	27-MAY-1997
11211400	Sulfate	03-JUN-1997	03-JUN-1997	03-JUN-1997
WATTPC	METALS PRECONC PACKAGE	02-JUN-1997	02-JUN-1997	02-JUN-1997
WATDPC	METALS PRECONC PACKAGE	02-JUN-1997	02-JUN-1997	02-JUN-1997
	Matrix:	Water	Water	Water
	Sampled on:	16-MAY-1997	16-MAY-1997	16-MAY-1997

Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

CHAIN JF-CUSTODY RECORD AND ANALYSIS REQUEST

FO

ANALYTICAL SERVICES 8577 Commerce Court Burnaby, B.C. V5A 4N5	COMPANY NAME: Norecol Dames & Moore	PH. #: 1604) 681-1672 FAX #: 1604) 687-3446 Toll Free: 1-800-440-4808	CLIENT PROJECT ID: (#) 36203-001
	COMPANY ADDRESS: 650 West Georgia St. Suite 1900 Vancouver B.C. V6B 4N7		

SAMPLER NAME (PRINT): Dan Guigon	PROJECT MANAGER: Bruce Ott
-------------------------------------	-------------------------------

[illegible]

W3A-Goose	12430	✓	7/19/59	100
W3B-Goose	12431	✓	7 "	"
W6A-Goose	12432	✓	7 "	"
W6B-Goose	12433	✓	7 "	"
W7-Goose	12434	✓	7 "	"
Field Blank-Goose	12435	✓	6 "	"
Trip Blank	12436		.	

[illegible]

TAT Two Week ☒ One Week ☐ 48 Hours ☐ 24 Hours ☒ Other: _____	P.O. NUMBER: <u>per B.O.R.</u>	SPECIAL DETECTION LIMIT
	ACCOUNTING CONTACT:	SPECIAL REPORTING OR

**CUSTODY
RECORD**

RELINQUISHED BY SAMPLER:	<i>Shirley Smith</i>
RELINQUISHED BY:	
RELINQUISHED BY:	

[illegible]

TS/CONTAMINANT TYPE	BILLING INSTRUCTIONS	EDT ☐	LAB USE ONLY		
			LAB INFORMATION		
			CLIENT CODE		June 5/97 10B
			ADDRESS CODE		
			PROJECT MANAGER		

DATE	TIME	RECEIVED BY:
May 20/97		
DATE	TIME	RECEIVED BY:
May 21/97	4:00	
DATE	TIME	RECEIVED BY LABORATORY:
May 21/97	4:00	

TAT

Two Week
One Week
48 Hours
24 Hours
Other: _____

CUSTODY RECORD



P12F
38203-061
6

03-Sep-97
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Certificate of Analysis

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

Reported To :

NORECOL, DAMES & MOORE INC.

Client Code NR

P.O.BOX 11507, SUITE 1900,
650 WEST GEORGIA STREET,
VANCOUVER, B.C.
V6B 4N7

Attention : BRUCE OTT
Phone : (604) 681-1672
FAX : (604) 687-3446

Project Information :

Project ID : GOOSE
Submitted By : GOYER/ATATAHAK

Requisition Forms :

Form 06125324 logged on 18-Jul-97 completed on 3-Sep-97

Remarks :

- ☞ All organic data is blank corrected except for PCDD/F, Hi-res MS and CLP volatile analyses
- ☞ 'MDC' = Minimum Detectable Concentration, '<' = Less than MDC, '---' = Not analyzed
- ☞ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
- ☞ Organic analyses are not corrected for extraction recovery standards except for Isotope
- ☞ Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
- ☞ All Groundwater samples are decanted and/or filtered prior to analysis

Methods used by Philip are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 18th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied.
Your samples will be retained at Philip for a period of 30 days from receipt of data or as per contract.

PHILIP Project Manager: Jack Wilson

PHILIP

ANALYTICAL SERVICES

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ANALYTICAL REPORT Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : METHOD 97023005 97023005 97023006 97023007 97023007
Client ID : BLANK GOOSE W7 Duplicate GOOSE W6 GOOSE W6 Duplicate
DUP

Sparcode	Parameter	Unit	MDC						
PHYSICAL									
00041220	pH	pH units	0.1	n/a	6.7	6.8	6.8	6.8	---
00111160	Specific Conductance	uS/cm	1	< 1	14	14	18	19	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	< 4	---	< 4	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	< 4	10	---	18	12	---
1107CALC	Hardness Total -D	mg/L			5.8		7.7	7.7	
GENERAL INORGANICS									
01311190	Acidity pH 8.3	mg/L	0.5	< 0.5	1.4	---	1.5	1.5	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	< 0.5	---	< 0.5	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	2.2	4.8	5.0	5.9	6.0	---
CO3-CALC	Carbonate	mg/L			< 0.5		< 0.5	< 0.5	
HCO3CALC	Bicarbonate	mg/L			5.8		7.2	7.3	
OH--CALC	Hydroxide	mg/L			< 0.5		< 0.5	< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	0.001	0.002	---	0.002	0.002	---
ANIONS									
11041334	Chloride Dissolved	mg/L	1.0	< 1.0	< 1.0	---	< 1.0	< 1.0	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	< 0.10	---	< 0.10	< 0.10	< 0.10
IonBCALC	Ion Balance	%			3.8		7.0	6.7	
CARBON									
01030912	Organic Carbon - Total	mg/L	1.0	< 1.0	4.8	---	2.9	2.7	---
NITROGEN									
0112CALC	Organic Nitrogen - Total	mg/L			0.19		0.13	0.16	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	< 0.04	0.19	---	0.13	0.18	---
0114CALC	Total Nitrogen	mg/L			0.19		0.20	0.26	
11081351	Ammonia Nitrogen	mg/L	0.005	< 0.005	< 0.005	---	0.005	0.021	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	< 0.02	---	0.07	0.08	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L			< 0.02		0.07	0.08	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	< 0.005	---	< 0.005	< 0.005	---
PHOSPHORUS									
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	< 0.003	---
P--T139A	Phosphorus - Total	mg/L	0.003	< 0.003	0.003	---	< 0.003	< 0.003	---

Matrix : Water Water Water
Sampled on: 97/07/13 97/07/13 97/07/13

CONTINUED on page 3



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ANALYTICAL REPORT Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : METHOD 97023005 97023005 97023006 97023007 97023007
Client ID : BLANK GOOSE W7 Duplicate GOOSE W6 GOOSE W6 Duplicate
DUP

Sparcode	Parameter	Unit	MDC						
SULFATE									
11211400	Sulfate	mg/L	1.0	< 1.0	1.0	---	1.5	1.5	---
METALS TOTAL									
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	< 0.00001	---	0.00002	< 0.00001	---
Al-TPC10	Aluminum	mg/L	0.006	< 0.006	0.029 (1)	---	0.054	0.047	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	< 0.00005	---	< 0.00005	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	< 0.004	0.008	---	0.058	0.024	---
Ba-TPC10	Barium	mg/L	0.0001	< 0.0001	0.0037	---	0.0043	0.0045	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---	< 0.002 (1)	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	< 0.005	1.2 (1)	---	1.7	1.7	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	0.00002 (1)	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0003	0.0010	---	0.0009 (1)	0.0009 (1)	---
Cu-TPC10	Copper	mg/L	0.0002	< 0.0002	0.0018 (1)	---	0.0029	0.0022	---
Fe-TPC10	Iron	mg/L	0.005	< 0.005	0.056 (1)	---	0.017	0.020	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00002	< 0.00001	---	< 0.00001	< 0.00001	---
K_TPC10	Potassium	mg/L	0.04	< 0.04	0.30	---	0.33 (1)	0.36 (1)	---
Mg-TPC10	Magnesium	mg/L	0.002	< 0.002	0.74	---	0.93	0.92	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	0.0038	---	0.0005	0.0006	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04	0.55	---	0.65	0.64	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	0.004	---	0.004	0.003 (1)	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	0.009 (1)	---	0.004 (1)	0.005	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	< 0.0003	---
S_TPC10	Sulphur	mg/L	0.01	< 0.01	0.94	---	1.2	1.2	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002 (1)	---	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	0.00008	---	< 0.00005	0.00011	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	0.28 (1)	---	0.56	0.57	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	0.002	---	< 0.002 (1)	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	0.0001	0.0053	---	0.0062	0.0060	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	0.0004	< 0.0003	---	< 0.0003	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	< 0.001	0.002 (1)	---	0.004	0.002	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003	0.0039	---	0.0004	0.0058	---

Matrix : Water Water Water
Sampled on: 97/07/13 97/07/13 97/07/13



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ANALYTICAL REPORT Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : METHOD 97023005 97023005 97023006 97023007 97023007
Client ID : BLANK GOOSE W7 Duplicate GOOSE W6 GOOSE W6 Duplicate
DUP

Sparcode	Parameter	Unit	MDC						
METALS DISSOLVED									
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	0.00002	---	< 0.00001	0.00004	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	< 0.006	0.034	---	0.029	0.034	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	< 0.00005	< 0.00005	---	< 0.00005	< 0.00005	---
B--DPC10	Boron Dissolved	mg/L	0.004	< 0.004	0.011	---	0.009	0.019	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	< 0.0001	0.0036	---	0.0042	0.0043	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---	< 0.0001	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	< 0.002	---	0.002	0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	< 0.005	1.2	---	1.6	1.6	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	< 0.00001	---	< 0.00001	0.00002	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0002	0.0008	---	0.0010	0.0010	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	< 0.0002	0.0019	---	0.0022	0.0022	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	< 0.005	0.057	---	0.015	0.014	---
Hg-DLLHG	Mercury Dissolved	mg/L	0.00001	0.00002	< 0.00001	---	< 0.00001	< 0.00001	---
K_DPC10	Potassium Dissolved	mg/L	0.04	< 0.04	0.25	---	0.34	0.37	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	< 0.002	0.69	---	0.90	0.90	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	< 0.0002	0.0033	---	0.0003	0.0004	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	< 0.04	0.51	---	0.59	0.61	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	< 0.001	0.003	---	0.003	0.004	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	< 0.004	0.010	---	0.005	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---	< 0.0001	< 0.0001	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	< 0.01	0.84	---	1.2	1.1	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	0.003	---	0.002	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	< 0.00005	< 0.00005	---	< 0.00005	< 0.00005	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	< 0.08	0.20	---	0.47	0.50	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	< 0.002	---	0.002	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	0.0001	0.0052	---	0.0060	0.0059	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	0.0003	0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	< 0.001	0.002	---	0.002	0.003	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	0.0049	---	< 0.0003	0.0022	---

Matrix : Water Water Water
Sampled on: 97/07/13 97/07/13 97/07/13

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.



03-Sep-97
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ANALYTICAL REPORT Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : 97023008
Client ID : GOOSE W3
97023008 Duplicate
97023009 GOOSE W3
DUP

Sparcode	Parameter	Unit	MDC			
PHYSICAL						
00041220	pH	pH units	0.1	6.7	---	---
00111160	Specific Conductance	uS/cm	1	13	---	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	---	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	12	18	---
1107CALC	Hardness Total -D	mg/L		5.7		---
GENERAL INORGANICS						
01311190	Acidity pH 8.3	mg/L	0.5	1.6	---	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	---	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	---	---
01021210	Alkalinity Total 4.5	mg/L	0.5	4.6	---	---
CO3-CALC	Carbonate	mg/L		< 0.5		---
HCO3CALC	Bicarbonate	mg/L		5.6		---
OH--CALC	Hydroxide	mg/L		< 0.5		---
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	0.002	---	---
ANIONS						
11041334	Chloride Dissolved	mg/L	1.0	< 1.0	---	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	---	---
IonBCALC	Ion Balance	%		4.6		---
CARBON						
01030912	Organic Carbon - Total	mg/L	1.0	4.3	---	---
NITROGEN						
0112CALC	Organic Nitrogen - Total	mg/L		0.25		---
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	0.25	---	---
0114CALC	Total Nitrogen	mg/L		0.25		---
11081351	Ammonia Nitrogen	mg/L	0.005	< 0.005	< 0.005	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	< 0.02	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L		< 0.02		---
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	< 0.005	---
PHOSPHORUS						
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	---	---
P--T139A	Phosphorus - Total	mg/L	0.003	0.003	---	---

Matrix : Water
Sampled on: 97/07/13 12:53

Water
97/07/13 12:53



03-Sep-97
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ANALYTICAL REPORT Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	97023008	97023008	97023009
Client ID :	GOOSE W3	Duplicate	GOOSE W3 DUP

Sparcode	Parameter	Unit	MDC			
SULFATE						
11211400	Sulfate	mg/L	1.0	1.0	---	---
METALS TOTAL						
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	---	---
Al-TPC10	Aluminum	mg/L	0.006	0.037	0.038	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	0.026	0.026	---
Ba-TPC10	Barium	mg/L	0.0001	0.0037	0.0037	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	1.1 (1)	1.1	---
Cd-TPCGF	Cadmium	mg/L	0.00001	0.00003	---	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0008 (1)	0.0011	---
Cu-TPC10	Copper	mg/L	0.0002	0.0018	0.0020	---
Fe-TPC10	Iron	mg/L	0.005	0.073 (1)	0.073	---
Hg-TLLHG	Mercury	mg/L	0.00001	< 0.00001	---	---
K_TPC10	Potassium	mg/L	0.04	0.24	0.29	---
Mg-TPC10	Magnesium	mg/L	0.002	0.62 (1)	0.62	---
Mn-TPC10	Manganese	mg/L	0.0002	0.0033	0.0034	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	0.49 (1)	0.49	---
Ni-TPC10	Nickel	mg/L	0.001	0.004 (1)	0.004	---
P_TPC10	Phosphorus	mg/L	0.004	0.007 (1)	0.006	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	---	---
S_TPC10	Sulphur	mg/L	0.01	0.73	0.74	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	< 0.00005	---
Si-TPC10	Silicon	mg/L	0.08	0.30	0.30	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	0.0046 (1)	0.0046	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	0.0004	---
Zn-TPC10	Zinc	mg/L	0.001	0.003	0.003	---
Zr-TPC10	Zirconium	mg/L	0.0003	0.0027	0.0028	---

Matrix : Water
Sampled on: 97/07/13 12:53

Water
97/07/13 12:53



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ANALYTICAL REPORT

Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	97023008	97023008	97023009
Client ID :	GOOSE W3	Duplicate	GOOSE W3 DUP

Sparcode	Parameter	Unit	MDC			
METALS DISSOLVED						
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	---	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	0.036	---	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	< 0.00005	---	---
B--DPC10	Boron Dissolved	mg/L	0.004	0.009	---	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	0.0036	---	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	---	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	---	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	1.2	---	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	---	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	---	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0009	---	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	0.0016	---	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	0.076	---	---
Hg-DLLHG	Mercury Dissolved	mg/L	0.00001	< 0.00001	---	---
K_DPC10	Potassium Dissolved	mg/L	0.04	0.26	---	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	0.66	---	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	0.0036	---	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	---	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	0.51	---	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	0.004	---	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	0.008	---	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	< 0.0001	---	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	0.79	---	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	---	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	< 0.00005	---	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	0.28	---	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	---	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	0.0049	---	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	---	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	---	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	---	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	---	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	0.002	---	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	0.0017	---	---

Matrix : Water
Sampled on: 97/07/13 12:53

Water
97/07/13 12:53

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.



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ANALYTICAL REPORT

Form 06125324

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : METHOD 97023010 97023010
Client ID : BLANK TRIP BLANK Duplicate

Sparcode	Parameter	Unit	MDC			
METALS TOTAL						
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	0.00001	< 0.00001
Al-TPC10	Aluminum	mg/L	0.006	< 0.006	0.011	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	< 0.004	0.024	---
Ba-TPC10	Barium	mg/L	0.0001	< 0.0001	0.0003	---
Be-TPC10	Beryllium	mg/L	0.00001	< 0.00001	< 0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	< 0.005	0.007	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0003	0.0008	---
Cu-TPC10	Copper	mg/L	0.0002	< 0.0002	< 0.0002	---
Fe-TPC10	Iron	mg/L	0.005	< 0.005	< 0.005	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00002	< 0.00001	---
K_TPC10	Potassium	mg/L	0.04	< 0.04	< 0.04	---
Mg-TPC10	Magnesium	mg/L	0.002	< 0.002	0.002	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	< 0.0002	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04	< 0.04	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	< 0.001	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	< 0.004	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	< 0.0003	< 0.0003
S_TPC10	Sulphur	mg/L	0.01	< 0.01	< 0.01	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	< 0.00005	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	< 0.08	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	0.0001	< 0.0001	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	0.0004	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	< 0.001	0.001	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003	0.0014	---

Matrix : Water
Sampled on: 97/07/13



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SPIKE SUMMARY **Form 06125324**

Parameter	Client ID	Philip ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
pH	Blank Spike. Batch :	74402441	< 0.1	6.1	6	pH units	101
Specific Conductance	Blank Spike. Batch :	74402443	< 1	1020	1015	uS/cm	100
Alkalinity Total 4.5	GOOSE W7	97023005	4.8	55.6	50	mg/L	102
Alkalinity Total 4.5	Blank Spike. Batch :	74402442	2.2	249	250	mg/L	99
Residue Nonfilterable (TSS)	Blank Spike. Batch :	74402499	< 4	201	200	mg/L	100
Residue Filterable 1.0u (TDS)	Blank Spike. Batch :	74402500	< 4	98	100	mg/L	98
Nitrite Nitrogen	Blank Spike. Batch :	74100822	< 0.005	0.104	.1	mg/L	104
Nitrate+Nitrite (N)	Blank Spike. Batch :	74100822	< 0.02	0.39	.4	mg/L	98
Ammonia Nitrogen	Blank Spike. Batch :	74100822	< 0.005	0.098	.1	mg/L	98
Sulfate Dissolved	Blank Spike. Batch :	74100840	< 1.0	55.4	60	mg/L	92
Acidity pH 8.3	Blank Spike. Batch :	74402451	< 0.5	25.6	25	mg/L	102
Silver	Blank Spike. Batch :	74201653	< 0.00001	0.00049	.0005	mg/L	97
Arsenic	Blank Spike. Batch :	74201603	< 0.00005	0.0019	.002	mg/L	95
Cadmium	Blank Spike. Batch :	74201653	< 0.00001	0.0012	.0012	mg/L	101
Lead	Blank Spike. Batch :	74201653	< 0.0003	0.017	.016	mg/L	103
Selenium	Blank Spike. Batch :	74201603	< 0.00005	0.0020	.002	mg/L	99
Mercury	Blank Spike. Batch :	74201516	0.00002	0.00051	.0005	mg/L	97
Silver Dissolved	Blank Spike. Batch :	74201653	< 0.00001	0.00049	.0005	mg/L	97
Arsenic Dissolved	Blank Spike. Batch :	74201603	< 0.00005	0.0019	.002	mg/L	95
Cadmium Dissolved	Blank Spike. Batch :	74201653	< 0.00001	0.0012	.0012	mg/L	101
Lead Dissolved	Blank Spike. Batch :	74201653	< 0.0001	0.017	.016	mg/L	103
Selenium Dissolved	Blank Spike. Batch :	74201603	< 0.00005	0.0020	.002	mg/L	99
Mercury Dissolved	Blank Spike. Batch :	74201516	0.00002	0.00051	.0005	mg/L	97
Cyanide(SAD) + Thiocyanate	Blank Spike. Batch :	74100804	0.001	0.016	.02	mg/L	75
Fluoride Dissolved	GOOSE W6 DUP	97023007	< 0.10	0.43	.5	mg/L	86
Nitrite Nitrogen	GOOSE W3	97023008	< 0.005	0.094	.1	mg/L	95
Nitrate+Nitrite (N)	GOOSE W3	97023008	< 0.02	0.38	.4	mg/L	93
Ammonia Nitrogen	GOOSE W3	97023008	< 0.005	0.096	.1	mg/L	93
Arsenic	GOOSE W3	97023008	< 0.00005	0.0014	.02	mg/L	10
Selenium	GOOSE W3	97023008	< 0.00005	0.0023	.02	mg/L	11
Mercury	Blank Spike. Batch :	74201519	0.00002	0.00051	.0005	mg/L	97



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ANALYSIS DATES Form 06125324

Philip ID: Client ID:		97023005 GOOSE W7	97023006 GOOSE W6	97023007 GOOSE W6 DUP	97023008 GOOSE W3
00041220	pH	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
00111160	Specific Conductance	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
00081071	Residue Nonfilterable (TSS)	30-JUL-1997	30-JUL-1997	30-JUL-1997	30-JUL-1997
007H1035	Residue Filterable 1.0u (TDS)	29-JUL-1997	29-JUL-1997	29-JUL-1997	29-JUL-1997
01311190	Acidity pH 8.3	24-JUL-1997	24-JUL-1997	24-JUL-1997	24-JUL-1997
01321180	Acidity pH 4.5	24-JUL-1997	24-JUL-1997	24-JUL-1997	24-JUL-1997
01011211	Alkalinity Phen. 8.3	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
01021210	Alkalinity Total 4.5	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
2105AA04	Cyanide(SAD) + Thiocyanate	24-JUL-1997	24-JUL-1997	24-JUL-1997	24-JUL-1997
11041334	Chloride Dissolved	28-JUL-1997	28-JUL-1997	28-JUL-1997	28-JUL-1997
11061341	Fluoride Dissolved	25-JUL-1997	25-JUL-1997	25-JUL-1997	25-JUL-1997
TOC-W	15004 Sparg/Ox-Mem Color	30-JUL-1997	30-JUL-1997	30-JUL-1997	30-JUL-1997
0113136A	Total Kjeldahl Nitrogen	24-JUL-1997	24-JUL-1997	24-JUL-1997	24-JUL-1997
11081351	Ammonia Nitrogen	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
11091350	Nitrate+Nitrite (N)	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
11111354	Nitrite Nitrogen	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
11181380	Ortho-Phosphorus (P)	21-JUL-1997	21-JUL-1997	21-JUL-1997	21-JUL-1997
P--T139A	Phosphorus - Total	28-JUL-1997	28-JUL-1997	28-JUL-1997	28-JUL-1997
11211400	Sulfate	28-JUL-1997	28-JUL-1997	28-JUL-1997	28-JUL-1997
WATTPC	METALS PRECONC PACKAGE	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997
WATDPC	METALS PRECONC PACKAGE	23-JUL-1997	23-JUL-1997	23-JUL-1997	23-JUL-1997

Matrix:	Water	Water	Water	Water
Sampled on:	13-JUL-1997	13-JUL-1997	13-JUL-1997	13-JUL-1997



03-Sep-97
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ANALYSIS DATES
Form 06125324

Philip ID:
Client ID:

97023009
GOOSE W3
DUP

97023010
TRIP BLANK

WATTPC

METALS PRECONC PACKAGE

23-JUL-1997

Matrix:
Sampled on:

Water
13-JUL-1997

Water
13-JUL-1997



File
36203-001
6

16-Sep-97
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Certificate of Analysis

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

Reported To :

NORECOL, DAMES & MOORE INC.

Client Code NR

P.O.BOX 11507, SUITE 1900,
650 WEST GEORGIA STREET,
VANCOUVER, B.C.
V6B 4N7

Attention : BRUCE OTT
Phone : (604) 681-1672
FAX : (604) 687-3446

Project Information :

Project ID : GOOSE
Submitted By : RITA GOYER

Requisition Forms :

Form 07001501 logged on 14-Aug-97 completed on 11-Sep-97

Remarks :

- ☞ All organic data is blank corrected except for PCDD/F, Hi-res MS and CLP volatile analyses
- ☞ 'MDC' = Minimum Detectable Concentration, '<' = Less than MDC, '---' = Not analyzed
- ☞ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
- ☞ Organic analyses are not corrected for extraction recovery standards except for Isotope
- ☞ Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
- ☞ All Groundwater samples are decanted and/or filtered prior to analysis

Methods used by Philip are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 18th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied.

Your samples will be retained at Philip for a period of 30 days from receipt of data or as per contract.

PHILIP Project Manager: Jack Wilson



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ANALYTICAL REPORT

Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	METHOD	97027708	97027708	97027709	97027709
Client ID :	BLANK	W3	Duplicate	W3-DUPL	Duplicate
				ICATES	

Sparcode	Parameter	Unit	MDC					
PHYSICAL								
00041220	pH	pH units	0.1	n/a	6.9	---	6.8	---
00111160	Specific Conductance	uS/cm	1	< 1	13	---	13	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	< 4	---	< 4	---
007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	< 4	< 4	---	6	---
1107CALC	Hardness Total -D	mg/L			6.4		6.3	
GENERAL INORGANICS								
01311190	Acidity pH 8.3	mg/L	0.5	< 0.5	1.3	1.2	1.2	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	< 0.5	---	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	< 0.5	---	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	2.4	5.0	---	4.9	---
CO3-CALC	Carbonate	mg/L			< 0.5		< 0.5	
HCO3CALC	Bicarbonate	mg/L			6.1		6.0	
OH--CALC	Hydroxide	mg/L			< 0.5		< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	< 0.001	0.001	---	< 0.001	---
ANIONS								
11041334	Chloride Dissolved	mg/L	1.0	< 1.0	< 1.0	---	< 1.0	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	< 0.10	---	< 0.10	---
IonBCALC	Ion Balance	%			12.4		13.7	
CARBON								
01030912	Organic Carbon - Total	mg/L	1.0	< 1.0	3.7	4.2	3.8	---
NITROGEN								
0112CALC	Organic Nitrogen - Total	mg/L			0.18		0.22	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	< 0.04	0.19	---	0.22	0.28
0114CALC	Total Nitrogen	mg/L			0.19		0.22	
11081351	Ammonia Nitrogen	mg/L	0.005	< 0.005	0.012	---	0.005	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L			< 0.02		< 0.02	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	< 0.005	---	< 0.005	---
PHOSPHORUS								
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	---
P--T139A	Phosphorus - Total	mg/L	0.003	< 0.003	0.005	---	0.004	---

Matrix :	Water	Water
Sampled on:	97/08/11 13:30	97/08/11 13:30

CONTINUED on page 3

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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	METHOD	97027708	97027708	97027709	97027709
Client ID :	BLANK	W3	Duplicate	W3-DUPL	Duplicate
				ICATES	

Sparcode	Parameter	Unit	MDC					
SULFATE								
11211400	Sulfate	mg/L	1.0	< 1.0	< 1.0	---	< 1.0	---
METALS TOTAL								
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	0.00001	---	0.00001 (1)	---
Al-TPC10	Aluminum	mg/L	0.006	< 0.006	0.024 (1)	---	0.029	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	0.00005	---	0.00010 (1)	---
B--TPC10	Boron	mg/L	0.004	< 0.004	0.020	---	0.011	---
Ba-TPC10	Barium	mg/L	0.0001	< 0.0001	0.0028	---	0.0030	---
Be-TPC10	Beryllium	mg/L	0.00001	0.00001	0.00001	---	0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	< 0.005	1.1	---	1.1	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	0.00003 (1)	---	0.00004	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0005	0.0005	---	0.0004	---
Cu-TPC10	Copper	mg/L	0.0002	0.0004	0.0018 (1)	---	0.0018	---
Fe-TPC10	Iron	mg/L	0.005	< 0.005	0.043	---	0.046	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00001	< 0.00001	---	0.00003	---
K_TPC10	Potassium	mg/L	0.04	< 0.04	0.29 (1)	---	0.31	---
Mg-TPC10	Magnesium	mg/L	0.002	< 0.002	0.63	---	0.64	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	0.0021	---	0.0020	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04	0.49	---	0.49	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	0.003	---	0.003	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	< 0.004	---	0.006	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	< 0.0003	---	0.0005	---
S_TPC10	Sulphur	mg/L	0.01	< 0.01	0.77	---	0.79	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	0.00036	---	0.00045	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	0.22	---	0.21	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	< 0.0001	0.0045	---	0.0046	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	< 0.001	0.003 (1)	---	0.003	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003	0.0004 (1)	---	0.0026	---

Matrix :
Sampled on:

Water
97/08/11 13:30

Water
97/08/11 13:30



16-Sep-97
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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	METHOD	97027708	97027708	97027709	97027709
Client ID :	BLANK	W3	Duplicate	W3-DUPL	Duplicate
				ICATES	

Sparcode	Parameter	Unit	MDC					
METALS DISSOLVED								
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	< 0.00001	---	0.00001	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	< 0.006	0.027	---	0.020	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	< 0.00005	0.00014	---	0.00013	---
B--DPC10	Boron Dissolved	mg/L	0.004	< 0.004	0.046	---	0.014	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	< 0.0001	0.0043	---	0.0040	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	< 0.005	1.3	---	1.3	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	0.00003	---	0.00001	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0004	0.0003	---	0.0003	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	0.0003	0.0019	---	0.0026	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	< 0.005	0.008	---	0.012	---
Hg-DLLHG	Mercury Dissolved	mg/L	0.00001	0.00001	< 0.00001	---	0.00002	---
K_DPC10	Potassium Dissolved	mg/L	0.04	< 0.04	0.30	---	0.33	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	< 0.002	0.77	---	0.74	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	< 0.0002	0.0004	---	0.0007	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	---	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	< 0.04	0.68	---	0.63	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	< 0.001	0.003	---	0.004	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	< 0.004	< 0.004	---	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	---	< 0.0001	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	< 0.01	0.87	---	0.93	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	0.00005	0.00014	---	0.00015	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	< 0.08	0.42	---	0.27	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	< 0.0001	0.0077	---	0.0053	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	< 0.002	---	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	< 0.003	---	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	---	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	< 0.001	0.003	---	0.004	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	0.0005	---	0.0004	---

Matrix :
Sampled on:

Water
97/08/11 13:30

Water
97/08/11 13:30

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.



16-Sep-97
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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	97027710	97027710	METHOD	97027711	97027712	97027712
Client ID :	W6	Duplicate	BLANK	W6-DUPL	W7	Duplicate
				ICATES		

Sparcode	Parameter	Unit	MDC						
PHYSICAL									
00041220	pH	pH units	0.1	6.9	---	=	6.9	6.8	---
00111160	Specific Conductance	uS/cm	1	15	---	=	15	14	---
00081071	Residue Nonfilterable (TSS)	mg/L	4	< 4	---	=	< 4	< 4	---
0007H1035	Residue Filterable 1.0u (TDS)	mg/L	4	8	---	=	8	16	---
1107CALC	Hardness Total -D	mg/L		5.3			7.5	5.4	
GENERAL INORGANICS									
01311190	Acidity pH 8.3	mg/L	0.5	1.2	---	=	1.2	1.2	---
01321180	Acidity pH 4.5	mg/L	0.5	< 0.5	---	=	< 0.5	< 0.5	---
01011211	Alkalinity Phen. 8.3	mg/L	0.5	< 0.5	---	=	< 0.5	< 0.5	---
01021210	Alkalinity Total 4.5	mg/L	0.5	5.3	---	=	5.3	4.9	---
CO3-CALC	Carbonate	mg/L		< 0.5			< 0.5	< 0.5	
HCO3CALC	Bicarbonate	mg/L		6.5			6.5	6.0	
OH--CALC	Hydroxide	mg/L		< 0.5			< 0.5	< 0.5	
2105AA04	Cyanide(SAD) + Thiocyanate	mg/L	0.001	< 0.001	---	=	< 0.001	< 0.001	---
ANIONS									
11041334	Chloride Dissolved	mg/L	1.0	< 1.0	---	=	< 1.0	< 1.0	---
11061341	Fluoride Dissolved	mg/L	0.10	< 0.10	---	=	< 0.10	< 0.10	< 0.10
IonBCALC	Ion Balance	%		3.0			15.1	7.1	
CARBON									
01030912	Organic Carbon - Total	mg/L	1.0	4.3	---	=	4.1	4.1	---
NITROGEN									
0112CALC	Organic Nitrogen - Total	mg/L		0.14			0.10	0.07	
0113136A	Total Kjeldahl Nitrogen	mg/L	0.04	0.15	---	=	0.11	0.11	---
0114CALC	Total Nitrogen	mg/L		0.15			0.11	0.14	
11081351	Ammonia Nitrogen	mg/L	0.005	0.011	---	=	0.010	0.038	---
11091350	Nitrate+Nitrite (N)	mg/L	0.02	< 0.02	---	=	< 0.02	0.03	---
1110CALC	Nitrate Nitrogen Dissolved	mg/L		< 0.02			< 0.02	0.03	
11111354	Nitrite Nitrogen	mg/L	0.005	< 0.005	---	=	< 0.005	< 0.005	---
PHOSPHORUS									
11181380	Ortho-Phosphorus (P)	mg/L	0.003	< 0.003	---	=	< 0.003	< 0.003	< 0.003
P--T139A	Phosphorus - Total	mg/L	0.003	0.006	---	=	0.006	0.007	---

Matrix : Water
Sampled on: 97/08/11

Water
97/08/11

Water
97/08/11

CONTINUED on page 6



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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	97027710	97027710	METHOD	97027711	97027712	97027712
Client ID :	W6	Duplicate	BLANK	W6-DUPL	W7	Duplicate
				ICATES		

Sparcode	Parameter	Unit	MDC						
SULFATE									
11211400	Sulfate	mg/L	1.0	< 1.0	---	=	< 1.0	< 1.0	---
METALS TOTAL									
Ag-TPCGF	Silver	mg/L	0.00001	0.00004	---	< 0.00001	< 0.00001	0.00002	---
Al-TPC10	Aluminum	mg/L	0.006	0.072	---	=	0.037	0.022	---
As-TPCHY	Arsenic	mg/L	0.00005	0.00029	---	=	0.00015	0.00005 (1)	---
B--TPC10	Boron	mg/L	0.004	0.029	---	=	0.021	0.016	---
Ba-TPC10	Barium	mg/L	0.0001	0.0041	---	=	0.0033	0.0025	---
Be-TPC10	Beryllium	mg/L	0.00001	0.00002	---	=	0.00001	0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	---	=	< 0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	1.3	---	=	1.2	1.1 (1)	---
Cd-TPCGF	Cadmium	mg/L	0.00001	0.00002	---	< 0.00001	0.00001	0.00002	---
Co-TPC10	Cobalt	mg/L	0.0004	0.0006	---	=	0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0007	---	=	0.0005	0.0006	---
Cu-TPC10	Copper	mg/L	0.0002	0.0029	---	=	0.0022	0.0017	---
Fe-TPC10	Iron	mg/L	0.005	0.20	---	=	0.066	0.096	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00029	---	=	0.00005	0.00003	---
K_TPC10	Potassium	mg/L	0.04	0.35	---	=	0.32	0.31 (1)	---
Mg-TPC10	Magnesium	mg/L	0.002	0.73	---	=	0.72	0.66	---
Mn-TPC10	Manganese	mg/L	0.0002	0.0065	---	=	0.0024	0.0036	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	---	=	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	0.50 (1)	---	=	0.55	0.57	---
Ni-TPC10	Nickel	mg/L	0.001	0.004	---	=	0.003	0.002	---
P_TPC10	Phosphorus	mg/L	0.004	0.016	---	=	0.012	0.008	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	---	< 0.0003	0.0004	< 0.0003	---
S_TPC10	Sulphur	mg/L	0.01	0.91 (1)	---	=	0.92 (1)	0.82 (1)	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	---	=	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	0.00029	---	=	0.00042	0.00016 (1)	---
Si-TPC10	Silicon	mg/L	0.08	0.29 (1)	---	=	0.24	0.10 (1)	---
Sn-TPC10	Tin	mg/L	0.002	< 0.002	---	=	< 0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	0.0051	---	=	0.0051	0.0044 (1)	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	---	=	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	0.0016	---	=	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	---	=	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	---	=	< 0.0003	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	0.005	---	=	0.004	0.003	---
Zr-TPC10	Zirconium	mg/L	0.0003	0.0004	---	=	0.0015	0.0017	---

Matrix : Water
Sampled on: 97/08/11

Water
97/08/11
Water
97/08/11



16-Sep-97
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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID :	97027710	97027710	METHOD	97027711	97027712	97027712
Client ID :	W6	Duplicate	BLANK	W6-DUPL	W7	Duplicate
				ICATES		

Sparcode	Parameter	Unit	MDC						
METALS DISSOLVED									
Ag-DPCGF	Silver Dissolved	mg/L	0.00001	< 0.00001	---	< 0.00001	< 0.00001	< 0.00001	---
Al-DPC10	Aluminum Dissolved	mg/L	0.006	< 0.006	< 0.006	=	0.030	0.014	---
As-DPCHY	Arsenic Dissolved	mg/L	0.00005	0.00016	---	=	0.00019	0.00006	---
B--DPC10	Boron Dissolved	mg/L	0.004	0.019	0.019	=	0.029	0.022	---
Ba-DPC10	Barium Dissolved	mg/L	0.0001	0.0024	0.0023	=	0.0025	0.0029	---
Be-DPC10	Beryllium Dissolved	mg/L	0.0001	< 0.0001	< 0.0001	=	< 0.0001	< 0.0001	---
Bi-DPC10	Bismuth Dissolved	mg/L	0.002	< 0.002	< 0.002	=	< 0.002	< 0.002	---
Ca-DPC10	Calcium Dissolved	mg/L	0.005	1.2	1.2	=	1.9	1.1	---
Cd-DPCGF	Cadmium Dissolved	mg/L	0.00001	< 0.00001	---	< 0.00001	< 0.00001	< 0.00001	---
Co-DPC10	Cobalt Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	=	< 0.0004	< 0.0004	---
Cr-DPC10	Chromium Dissolved	mg/L	0.0002	0.0002	< 0.0002	=	0.0002	0.0016	---
Cu-DPC10	Copper Dissolved	mg/L	0.0002	0.0016	0.0015	=	0.0017	0.0022	---
Fe-DPC10	Iron Dissolved	mg/L	0.005	< 0.005	< 0.005	=	0.007	0.028	---
Hg-DLLHG	Mercury Dissolved	mg/L	0.00001	0.00020	---	=	< 0.00001	0.00010	---
K_DPC10	Potassium Dissolved	mg/L	0.04	0.32	0.29	=	0.31	0.32	---
Mg-DPC10	Magnesium Dissolved	mg/L	0.002	0.57	0.56	=	0.68	0.65	---
Mn-DPC10	Manganese Dissolved	mg/L	0.0002	0.0006	0.0006	=	0.0002	0.0027	---
Mo-DPC10	Molybdenum Dissolved	mg/L	0.0004	< 0.0004	< 0.0004	=	< 0.0004	< 0.0004	---
Na_DPC10	Sodium Dissolved	mg/L	0.04	0.54	0.53	=	0.50	0.54	---
Ni-DPC10	Nickel Dissolved	mg/L	0.001	0.003	0.003	=	0.002	0.002	---
P_DPC10	Phosphorus Dissolved	mg/L	0.004	0.005	0.005	=	< 0.004	< 0.004	---
Pb-DPCGF	Lead Dissolved	mg/L	0.0001	< 0.0001	---	< 0.0001	< 0.0001	0.0002	---
S_DPC10	Sulfur Dissolved	mg/L	0.01	0.97	0.96	=	0.93	0.83	---
Sb-DPC10	Antimony Dissolved	mg/L	0.002	< 0.002	< 0.002	=	< 0.002	< 0.002	---
Se-DPCHY	Selenium Dissolved	mg/L	0.00005	0.00018	---	=	0.00025	0.00019	---
Si-DPC10	Silicon Dissolved	mg/L	0.08	0.30	0.30	=	0.58	0.14	---
Sn-DPC10	Tin Dissolved	mg/L	0.002	< 0.002	< 0.002	=	< 0.002	< 0.002	---
Sr-DPC10	Strontium Dissolved	mg/L	0.0001	0.0048	0.0047	=	0.0066	0.0047	---
Te-DPC10	Tellurium Dissolved	mg/L	0.002	< 0.002	< 0.002	=	< 0.002	< 0.002	---
Ti-DPC10	Titanium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	=	< 0.0003	< 0.0003	---
Tl-DPC10	Thallium Dissolved	mg/L	0.003	< 0.003	< 0.003	=	< 0.003	< 0.003	---
V--DPC10	Vanadium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	=	< 0.0003	< 0.0003	---
Zn-DPC10	Zinc Dissolved	mg/L	0.001	< 0.001	< 0.001	=	< 0.001	0.002	---
Zr-DPC10	Zirconium Dissolved	mg/L	0.0003	< 0.0003	< 0.0003	=	0.0010	0.0004	---

Matrix : Water
Sampled on: 97/08/11

Water
97/08/11 Water
97/08/11

Result comments and/or text results :

(1) Diss > Total, within precision of analytical method.

16-Sep-97
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ANALYTICAL REPORT Form 07001501

Client : NORECOL, DAMES & MOORE INC.
Project : GOOSE

Philip ID : METHOD 97027713 97027714 97027714
Client ID : BLANK TRIP BLANK FIELD BLANK Duplicate

Sparcode	Parameter	Unit	MDC				
METALS TOTAL							
Ag-TPCGF	Silver	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001	---
Al-TPC10	Aluminum	mg/L	0.006	< 0.006	0.006	0.007	---
As-TPCHY	Arsenic	mg/L	0.00005	< 0.00005	< 0.00005	< 0.00005	---
B--TPC10	Boron	mg/L	0.004	< 0.004	0.021	0.013	---
Ba-TPC10	Barium	mg/L	0.0001	< 0.0001	0.0001	0.0001	---
Be-TPC10	Beryllium	mg/L	0.00001	0.00001	0.00001	0.00001	---
Bi-TPC10	Bismuth	mg/L	0.002	< 0.002	< 0.002	< 0.002	---
Ca-TPC10	Calcium	mg/L	0.005	< 0.005	0.005	0.005	---
Cd-TPCGF	Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001	---
Co-TPC10	Cobalt	mg/L	0.0004	< 0.0004	< 0.0004	< 0.0004	---
Cr-TPC10	Chromium	mg/L	0.0002	0.0005	0.0006	0.0005	---
Cu-TPC10	Copper	mg/L	0.0002	0.0004	0.0005	< 0.0002	---
Fe-TPC10	Iron	mg/L	0.005	< 0.005	< 0.005	< 0.005	---
Hg-TLLHG	Mercury	mg/L	0.00001	0.00001	0.00009	0.00010	0.00010
K_TPC10	Potassium	mg/L	0.04	< 0.04	< 0.04	< 0.04	---
Mg-TPC10	Magnesium	mg/L	0.002	< 0.002	0.002	< 0.002	---
Mn-TPC10	Manganese	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	---
Mo-TPC10	Molybdenum	mg/L	0.0004	< 0.0004	< 0.0004	< 0.0004	---
Na_TPC10	Sodium	mg/L	0.04	< 0.04	0.07	0.06	---
Ni-TPC10	Nickel	mg/L	0.001	< 0.001	< 0.001	< 0.001	---
P_TPC10	Phosphorus	mg/L	0.004	< 0.004	< 0.004	< 0.004	---
Pb-TPCGF	Lead	mg/L	0.0003	< 0.0003	< 0.0003	0.0007	---
S_TPC10	Sulphur	mg/L	0.01	< 0.01	< 0.01	< 0.01	---
Sb-TPC10	Antimony	mg/L	0.002	< 0.002	< 0.002	< 0.002	---
Se-TPCHY	Selenium	mg/L	0.00005	< 0.00005	0.00016	0.00009	---
Si-TPC10	Silicon	mg/L	0.08	< 0.08	< 0.08	< 0.08	---
Sn-TPC10	Tin	mg/L	0.002	=	< 0.002	< 0.002	---
Sr-TPC10	Strontium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	---
Te-TPC10	Tellurium	mg/L	0.002	< 0.002	< 0.002	< 0.002	---
Ti-TPC10	Titanium	mg/L	0.0003	< 0.0003	< 0.0003	< 0.0003	---
Tl-TPC10	Thallium	mg/L	0.003	< 0.003	< 0.003	< 0.003	---
V--TPC10	Vanadium	mg/L	0.0003	< 0.0003	< 0.0003	< 0.0003	---
Zn-TPC10	Zinc	mg/L	0.001	< 0.001	0.002	0.002	---
Zr-TPC10	Zirconium	mg/L	0.0003	< 0.0003	0.0006	0.0009	---

Matrix :
Sampled on:

Water
97/08/01

Water
97/08/11 13:55

16-Sep-97
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SPIKE SUMMARY Form 07001501

Parameter	Client ID	Philip ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
pH	Blank Spike. Batch :	74402748	< 0.1	6.1	6	pH units	101
Specific Conductance	Blank Spike. Batch :	74402750	< 1	985	1015	uS/cm	97
Alkalinity Total 4.5	Blank Spike. Batch :	74402749	2.4	51.4	50	mg/L	98
Residue Nonfilterable (TSS)	Blank Spike. Batch :	74402783	< 4	201	200	mg/L	101
Residue Filterable 1.0u (TDS)	Blank Spike. Batch :	74402756	< 4	116	100	mg/L	116
Nitrate+Nitrite (N)	W3	97027708	< 0.02	0.34	.4	mg/L	85
Sulfate Dissolved	Blank Spike. Batch :	74100992	< 1.0	51.2	60	mg/L	85
Cyanide(SAD) + Thiocyanate	Blank Spike. Batch :	74100946	< 0.001	0.018	.02	mg/L	90
Organic Carbon - Total	W3	97027708	3.7	14.7	10	mg/L	109
Acidity pH 8.3	W3	97027708	1.3	52.9	50	mg/L	103
Acidity pH 8.3	Blank Spike. Batch :	74402770	< 0.5	102	100	mg/L	102
Arsenic	Blank Spike. Batch :	74201815	< 0.00005	0.0019	.002	mg/L	94
Mercury	Blank Spike. Batch :	74201767	< 0.00001	0.00045	.0005	mg/L	89
Selenium Dissolved	Blank Spike. Batch :	74201815	0.00005	0.0025	.0025	mg/L	98
Mercury Dissolved	Blank Spike. Batch :	74201767	< 0.00001	0.00045	.0005	mg/L	89
Total Kjeldahl Nitrogen	W3-DUPPLICATES	97027709	0.22	0.56	.4	mg/L	85
Fluoride Dissolved	W7	97027712	< 0.10	0.64	.5	mg/L	124
Mercury	FIELD BLANK	97027714	0.00010	0.0013	.001	mg/L	119



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ANALYSIS DATES **Form 07001501**

Philip ID: Client ID:		97027708 W3	97027709 W3-DUPL ICATES	97027710 W6	97027711 W6-DUPL ICATES
00041220	pH	15-AUG-1997	15-AUG-1997	15-AUG-1997	15-AUG-1997
00111160	Specific Conductance	15-AUG-1997	15-AUG-1997	15-AUG-1997	15-AUG-1997
00081071	Residue Nonfilterable (TSS)	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
007H1035	Residue Filterable 1.0u (TDS)	19-AUG-1997	19-AUG-1997	19-AUG-1997	19-AUG-1997
01311190	Acidity pH 8.3	18-AUG-1997	18-AUG-1997	18-AUG-1997	18-AUG-1997
01321180	Acidity pH 4.5	18-AUG-1997	18-AUG-1997	18-AUG-1997	18-AUG-1997
01011211	Alkalinity Phen. 8.3	15-AUG-1997	15-AUG-1997	15-AUG-1997	15-AUG-1997
01021210	Alkalinity Total 4.5	15-AUG-1997	15-AUG-1997	15-AUG-1997	15-AUG-1997
2105AA04	Cyanide(SAD) + Thiocyanate	19-AUG-1997	19-AUG-1997	19-AUG-1997	19-AUG-1997
11041334	Chloride Dissolved	26-AUG-1997	26-AUG-1997	26-AUG-1997	26-AUG-1997
11061341	Fluoride Dissolved	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
TOC-W	15004 Sparg/Ox-Mem Color	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
0113136A	Total Kjeldahl Nitrogen	22-AUG-1997	22-AUG-1997	22-AUG-1997	22-AUG-1997
11081351	Ammonia Nitrogen	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
11091350	Nitrate+Nitrite (N)	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
11111354	Nitrite Nitrogen	20-AUG-1997	20-AUG-1997	20-AUG-1997	20-AUG-1997
11181380	Ortho-Phosphorus (P)	22-AUG-1997	22-AUG-1997	22-AUG-1997	22-AUG-1997
P--T139A	Phosphorus - Total	19-AUG-1997	19-AUG-1997	19-AUG-1997	19-AUG-1997
11211400	Sulfate	26-AUG-1997	26-AUG-1997	26-AUG-1997	26-AUG-1997
WATTPC	METALS PRECONC PACKAGE	02-SEP-1997	02-SEP-1997	02-SEP-1997	02-SEP-1997
WATDPC	METALS PRECONC PACKAGE	02-SEP-1997	02-SEP-1997	02-SEP-1997	02-SEP-1997
Matrix:		Water	Water	Water	Water
Sampled on:		11-AUG-1997	11-AUG-1997	11-AUG-1997	11-AUG-1997



16-Sep-97
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ANALYSIS DATES
Form 07001501

Philip ID:	97027712	97027713	97027714
Client ID:	W7	TRIP BLANK	FIELD BLANK

00041220	pH	15-AUG-1997	---	---
00111160	Specific Conductance	15-AUG-1997	---	---
00081071	Residue Nonfilterable (TSS)	20-AUG-1997	---	---
007H1035	Residue Filterable 1.0u (TDS)	19-AUG-1997	---	---
01311190	Acidity pH 8.3	18-AUG-1997	---	---
01321180	Acidity pH 4.5	18-AUG-1997	---	---
01011211	Alkalinity Phen. 8.3	15-AUG-1997	---	---
01021210	Alkalinity Total 4.5	15-AUG-1997	---	---
2105AA04	Cyanide(SAD) + Thiocyanate	19-AUG-1997	---	---
11041334	Chloride Dissolved	26-AUG-1997	---	---
11061341	Fluoride Dissolved	20-AUG-1997	---	---
TOC-W	15004 Sparg/Ox-Mem Color	20-AUG-1997	---	---
0113136A	Total Kjeldahl Nitrogen	22-AUG-1997	---	---
11081351	Ammonia Nitrogen	20-AUG-1997	---	---
11091350	Nitrate+Nitrite (N)	20-AUG-1997	---	---
11111354	Nitrite Nitrogen	20-AUG-1997	---	---
11181380	Ortho-Phosphorus (P)	22-AUG-1997	---	---
P--T139A	Phosphorus - Total	19-AUG-1997	---	---
11211400	Sulfate	26-AUG-1997	---	---
WATTPC	METALS PRECONC PACKAGE	02-SEP-1997	02-SEP-1997	02-SEP-1997
WATDPC	METALS PRECONC PACKAGE	02-SEP-1997	---	---

Matrix:	Water	Water	Water
Sampled on:	11-AUG-1997	1-AUG-1997	11-AUG-1997

COMPANY NAME: N.D.M.		PH. #: 604-681-1672		FAX #: 604-687-3446		CLIENT PROJECT ID: (#)		ANALYSIS REQUEST	
COMPANY ADDRESS: Box 11507 1900-650 West Georgia St. Vancouver, B.C. V6B 4N7		PROJECT MANAGER: Bruce Ott		PROJECT MANAGER (PRINT): Rita Goyer		PROJECT ID: (#)			
FIELD SAMPLE ID	ZENON LAB # (Lab Use Only)	MATRIX	CONTAINERS	DATE	TIME	HEADSPACE VAPOUR			
W3	27708	✓	8	9/18/11	13:30				
W3-Duplicates	27709	✓	8	9/18/11	13:30				
W6	27710	✓	8	9/18/11	13:42				
W6-Duplicates	27711	✓	8	9/18/11	13:42				
W7	27712	✓	8	9/18/11	13:52				
Trip Blank	27713		1	9/18/11					
Field Blank	27714	DI	1	9/18/11	13:55				
DI Water			1	9/18/11					

P.O. NUMBER:		SPECIAL DETECTION LIMITS / CONTAMINANT TYPE		LAB USE ONLY	
ACCOUNTING CONTACT:		SPECIAL REPORTING OR BILLING INSTRUCTIONS		CLIENT CODE ADDRESS CODE PROJECT MANAGER	
RELINQUISHED BY SAMPLER: Rita Goyer		DATE: Aug. 11/97		RECEIVED BY:	
RELINQUISHED BY:		DATE: Aug. 13/97		RECEIVED BY:	
RELINQUISHED BY:		DATE: 3:35		RECEIVED BY LABORATORY: A. Keller	

TAT
☐ Two Week
☐ One Week
☐ 48 Hours
☐ Other
* Denotes surcharge may apply

**CUSTODY
RECORD**

Aug 28/97 100