



Your Project #: 110217729 NCIA MONITORING  
 Site: FORT SASKATCHEWAN  
 Your C.O.C. #: 32188

**Attention: DYLAN KING**  
 STANTEC CONSULTING LTD.  
 10160-112 STREET  
 EDMONTON, AB  
 CANADA T5K 2L6

**Report Date: 2008/01/10**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: A763555**  
**Received: 2007/12/18, 17:25**

Sample Matrix: Water  
 # Samples Received: 7

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity - Water	7	2007/12/24	2007/12/24	EENVSOP-00054	SM 2320
BTEX in Water by HS GC/MS	6	2007/12/24	2007/12/24	EENVSOP-00004 EENVSOP-00002	EPA 8260C / CCME
BTEX in Water by HS GC/MS	1	2007/12/28	2007/12/28	EENVSOP-00004 EENVSOP-00002	EPA 8260C / CCME
Chloride (IC)	7	N/A	2007/12/24	EENVSOP-00055	SM 4110B
Carbon (DOC)	7	N/A	2007/12/27	EENVSOP-00060 v2	MMCW 119
Conductance - water	7	N/A	2007/12/24	EENVSOP-00054	SM 2510B
CCME Hydrocarbons in Water (F2; C10-C16)	7	2007/12/27	2007/12/27	EENVSOP-00009 EENVSOP-00008	EPA 8015D/3510C
Fluoride	7	N/A	2008/01/03	EENVSOP-00054	SM 4500 F-C
Hardness	7	N/A	2007/12/27		
Mercury (Dissolved)	7	2007/12/27	2007/12/27	EENVSOP-00031	EPA 245.1
Elements by ICP - Dissolved	7	N/A	2007/12/27	EENVSOP-00034	EPA SW846 6010C
Elements by ICPMS - Dissolved	7	N/A	2007/12/24	EENVSOP-00123	EPA SW-846 6020A
Ion Balance	7	N/A	2007/12/28		
Ammonia-N	7	2007/12/27	2007/12/27	EENVSOP-00058	EPA 350.1
Nitrite (NO2) BY IC-EC	7	N/A	2007/12/24	EENVSOP-00055	SM 4110B
Nitrate + Nitrite-N (calculated)	7	N/A	2007/12/28		
Nitrate (NO3) BY IC-EC	7	N/A	2007/12/24	EENVSOP-00055	SM 4110 B
pH Water	7	N/A	2007/12/24	EENVSOP-00054 EENVSOP-00053	SM 4500H+B
Phenols (4-AAP)	7	N/A	2007/12/24	EENVSOP-00061	TAA 2 MTD 127.71 W/B
Orthophosphate by Konelab	7	N/A	2007/12/24	EENVSOP-00095	EPA 365.1
Sulphate (SO4)	7	N/A	2007/12/24	EENVSOP-00055	SM 4110B
Total Dissolved Solids (Calculated)	7	N/A	2007/12/28	CAL WI-00053	

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



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**Report Date: 2008/01/10**

**CERTIFICATE OF ANALYSIS**

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Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

JEREMY WAKARUK, B.Sc. Biology, Senior Project Manager  
Email: jwakaruk@maxxamanalytics.com  
Phone# (780) 577-7105 Ext:7105

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

**PETROLEUM HYDROCARBONS (CCME) WATER**

Maxxam ID		I44750	I44751	I44752	I44753		
Sampling Date		2007/12/18	2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188	32188		
	<b>Units</b>	<b>MW9</b>	<b>MW11</b>	<b>MW10</b>	<b>MW12</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Hydrocarbons</b>							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	<0.1	0.1	2042094
<b>Volatiles</b>							
Benzene	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2038989
Toluene	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2038989
Ethylbenzene	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2038989
o-Xylene	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2038989
m & p-Xylene	ug/L	<0.8	<0.8	<0.8	<0.8	0.8	2038989
Xylenes (Total)	ug/L	<0.8	<0.8	<0.8	<0.8	0.8	2038989
F1 (C06-C10) - BTEX	ug/L	<100	<100	<100	<100	100	2038989
(C06-C10)	ug/L	<100	<100	<100	<100	100	2038989
<b>Surrogate Recovery (%)</b>							
O-TERPHENYL (sur.)	%	106	105	105	108	N/A	2042094
4-BROMOFLUOROBENZENE (sur.)	%	100	101	102	99	N/A	2038989
D4-1,2-DICHLOROETHANE (sur.)	%	108	102	117	90	N/A	2038989
D8-TOLUENE (sur.)	%	93	95	100	101	N/A	2038989
N/A = Not Applicable RDL = Reportable Detection Limit							

**PETROLEUM HYDROCARBONS (CCME) WATER**

Maxxam ID		I44754		I44756		
Sampling Date		2007/12/18		2007/12/18		
COC Number		32188		32188		
	<b>Units</b>	<b>MW13</b>	<b>QC Batch</b>	<b>99-1</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Hydrocarbons</b>						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.1	2042094	<0.1	0.1	2042094
<b>Volatiles</b>						
Benzene	ug/L	<0.4	2038989	<0.4	0.4	2042068
Toluene	ug/L	<0.4	2038989	<0.4	0.4	2042068
Ethylbenzene	ug/L	<0.4	2038989	<0.4	0.4	2042068
o-Xylene	ug/L	<0.4	2038989	<0.4	0.4	2042068
m & p-Xylene	ug/L	<0.8	2038989	<0.8	0.8	2042068
Xylenes (Total)	ug/L	<0.8	2038989	<0.8	0.8	2042068
F1 (C06-C10) - BTEX	ug/L	<100	2038989	<100	100	2042068
(C06-C10)	ug/L	<100	2038989	<100	100	2042068
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	%	104	2042094	105	N/A	2042094
4-BROMOFLUOROBENZENE (sur.)	%	98	2038989	112	N/A	2042068
D4-1,2-DICHLOROETHANE (sur.)	%	94	2038989	105	N/A	2042068
D8-TOLUENE (sur.)	%	95	2038989	95	N/A	2042068

N/A = Not Applicable  
 RDL = Reportable Detection Limit

**PETROLEUM HYDROCARBONS (CCME) WATER**

Maxxam ID		144757		
Sampling Date		2007/12/18		
COC Number		32188		
	<b>Units</b>	<b>99-2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Hydrocarbons</b>				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.1	0.1	2042094
<b>Volatiles</b>				
Benzene	ug/L	<0.4	0.4	2038989
Toluene	ug/L	<0.4	0.4	2038989
Ethylbenzene	ug/L	<0.4	0.4	2038989
o-Xylene	ug/L	<0.4	0.4	2038989
m & p-Xylene	ug/L	<0.8	0.8	2038989
Xylenes (Total)	ug/L	<0.8	0.8	2038989
F1 (C06-C10) - BTEX	ug/L	<100	100	2038989
(C06-C10)	ug/L	<100	100	2038989
<b>Surrogate Recovery (%)</b>				
O-TERPHENYL (sur.)	%	108	N/A	2042094
4-BROMOFLUOROBENZENE (sur.)	%	92	N/A	2038989
D4-1,2-DICHLOROETHANE (sur.)	%	103	N/A	2038989
D8-TOLUENE (sur.)	%	97	N/A	2038989
N/A = Not Applicable RDL = Reportable Detection Limit				

**RCAP - PARTIAL ROUTINE (WATER)**

Maxxam ID		144750	144751	144752	144753		
Sampling Date		2007/12/18	2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188	32188		
	<b>Units</b>	<b>MW9</b>	<b>MW11</b>	<b>MW10</b>	<b>MW12</b>	<b>RDL</b>	<b>QC Batch</b>

<b>CONVENTIONALS</b>							
Nitrate (N)	mg/L	<0.2	<0.2	<0.2	<0.2	0.2	2041025
Nitrite (N)	mg/L	<0.06	<0.06	<0.06	<0.06	0.06	2041021
<b>Calculated Parameters</b>							
Hardness (CaCO3)	mg/L	300	480	410	300	0.5	2038363
Ion Balance	N/A	0.86	0.87	0.84	0.84	0.01	2038367
Total Dissolved Solids	mg/L	1020	810	822	601	10	2038379
<b>Misc. Inorganics</b>							
Alkalinity (Total as CaCO3)	mg/L	550	560	540	570	1	2039496
Alkalinity (PP as CaCO3)	mg/L	<1	<1	<1	<1	1	2039496
Bicarbonate (HCO3)	mg/L	670	680	660	700	1	2039496
Carbonate (CO3)	mg/L	<1	<1	<1	<1	1	2039496
Hydroxide (OH)	mg/L	<1	<1	<1	<1	1	2039496
<b>Anions</b>							
Dissolved Sulphate (SO4)	mg/L	350	210	230	43	1	2040992
Dissolved Chloride (Cl)	mg/L	4	10	<1	5	1	2040987
<b>Nutrients</b>							
Nitrate plus Nitrite (N)	mg/L	<0.2	<0.2	<0.2	<0.2	0.2	2038373
<b>Physical Properties</b>							
Conductivity	uS/cm	1500	1300	1300	1000	1	2039497
pH	pH Units	8.0	7.7	7.8	7.8	N/A	2039457
<b>Elements</b>							
Dissolved Barium (Ba)	mg/L	0.02	0.03	0.02	0.10	0.01	2041334
Dissolved Boron (B)	mg/L	0.26	0.18	0.16	0.22	0.02	2041334
Dissolved Calcium (Ca)	mg/L	83	130	120	82	0.3	2041334
Dissolved Iron (Fe)	mg/L	<0.06	<0.06	<0.06	<0.06	0.06	2041334
Dissolved Lithium (Li)	mg/L	0.07	0.07	0.09	0.06	0.02	2041334
Dissolved Magnesium (Mg)	mg/L	22	38	29	23	0.2	2041334
Dissolved Manganese (Mn)	mg/L	0.77	0.61	0.64	0.40	0.004	2041334
Dissolved Phosphorus (P)	mg/L	<0.1	0.1	0.2	<0.1	0.1	2041334
Dissolved Potassium (K)	mg/L	3.5	4.3	4.8	4.3	0.3	2041334
Dissolved Silicon (Si)	mg/L	5.4	6.8	5.9	6.1	0.1	2041334
Dissolved Sodium (Na)	mg/L	230	87	110	99	0.5	2041334

N/A = Not Applicable  
RDL = Reportable Detection Limit

**RCAP - PARTIAL ROUTINE (WATER)**

Maxxam ID		144750	144751	144752	144753		
Sampling Date		2007/12/18	2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188	32188		
	<b>Units</b>	<b>MW9</b>	<b>MW11</b>	<b>MW10</b>	<b>MW12</b>	<b>RDL</b>	<b>QC Batch</b>

Dissolved Strontium (Sr)	mg/L	0.81	1.1	1.3	0.84	0.02	2041334
Dissolved Sulphur (S)	mg/L	95	58	61	12	0.2	2041334

RDL = Reportable Detection Limit

**RCAP - PARTIAL ROUTINE (WATER)**

Maxxam ID		I44754	I44756	I44757		
Sampling Date		2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188		
	<b>Units</b>	<b>MW13</b>	<b>99-1</b>	<b>99-2</b>	<b>RDL</b>	<b>QC Batch</b>
<b>CONVENTIONALS</b>						
Nitrate (N)	mg/L	<0.2	<0.2	<0.2	0.2	2041025
Nitrite (N)	mg/L	<0.06	<0.06	<0.06	0.06	2041021
<b>Calculated Parameters</b>						
Hardness (CaCO3)	mg/L	170	300	<0.5	0.5	2038363
Ion Balance	N/A	0.87	0.83	NC	0.01	2038367
Total Dissolved Solids	mg/L	457	600	<10	10	2038379
<b>Misc. Inorganics</b>						
Alkalinity (Total as CaCO3)	mg/L	460	570	<1	1	2039496
Alkalinity (PP as CaCO3)	mg/L	<1	<1	<1	1	2039496
Bicarbonate (HCO3)	mg/L	560	700	<1	1	2039496
Carbonate (CO3)	mg/L	<1	<1	<1	1	2039496
Hydroxide (OH)	mg/L	<1	<1	<1	1	2039496
<b>Anions</b>						
Dissolved Sulphate (SO4)	mg/L	9	44	<1	1	2040992
Dissolved Chloride (Cl)	mg/L	2	5	<1	1	2040987
<b>Nutrients</b>						
Nitrate plus Nitrite (N)	mg/L	<0.2	<0.2	<0.2	0.2	2038373
<b>Physical Properties</b>						
Conductivity	uS/cm	790	1000	<1	1	2039497
pH	pH Units	8.0	7.8	5.8	N/A	2039457
<b>Elements</b>						
Dissolved Barium (Ba)	mg/L	0.29	0.10	<0.01	0.01	2041334
Dissolved Boron (B)	mg/L	0.25	0.23	<0.02	0.02	2041334
Dissolved Calcium (Ca)	mg/L	45	82	<0.3	0.3	2041334
Dissolved Iron (Fe)	mg/L	<0.06	<0.06	<0.06	0.06	2041334
Dissolved Lithium (Li)	mg/L	0.05	0.06	<0.02	0.02	2041334
Dissolved Magnesium (Mg)	mg/L	14	23	<0.2	0.2	2041334
Dissolved Manganese (Mn)	mg/L	0.25	0.40	<0.004	0.004	2041334
Dissolved Phosphorus (P)	mg/L	<0.1	<0.1	<0.1	0.1	2041334
Dissolved Potassium (K)	mg/L	3.5	4.2	<0.3	0.3	2041334
Dissolved Silicon (Si)	mg/L	5.4	6.2	<0.1	0.1	2041334
Dissolved Sodium (Na)	mg/L	110	98	<0.5	0.5	2041334
N/A = Not Applicable NC = Non-calculable RDL = Reportable Detection Limit						



**RCAP - PARTIAL ROUTINE (WATER)**

Maxxam ID		I44754	I44756	I44757		
Sampling Date		2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188		
	<b>Units</b>	<b>MW13</b>	<b>99-1</b>	<b>99-2</b>	<b>RDL</b>	<b>QC Batch</b>

Dissolved Strontium (Sr)	mg/L	0.50	0.83	<0.02	0.02	2041334
Dissolved Sulphur (S)	mg/L	2.9	12	<0.2	0.2	2041334

RDL = Reportable Detection Limit

**RESULTS OF CHEMICAL ANALYSES OF WATER**

Maxxam ID		I44750	I44751	I44752	I44753		
Sampling Date		2007/12/18	2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188	32188		
	<b>Units</b>	<b>MW9</b>	<b>MW11</b>	<b>MW10</b>	<b>MW12</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Misc. Inorganics</b>							
Fluoride (F)	mg/L	0.2	0.1	0.2	<0.1	0.1	2047796
<b>Misc. Inorganics</b>							
Dissolved Organic Carbon (C)	mg/L	9	6	5	7	1	2041262
<b>Nutrients</b>							
Ammonia (N)	mg/L	0.23	0.20	1.8	0.29	0.01	2041429
Orthophosphate (P)	mg/L	0.04	0.05	<0.02	<0.02	0.02	2039454
<b>Misc. Organics</b>							
Phenols	mg/L	0.002	0.002	0.002	0.002	0.001	2040103
RDL = Reportable Detection Limit							

Maxxam ID		I44754	I44756	I44757		
Sampling Date		2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188		
	<b>Units</b>	<b>MW13</b>	<b>99-1</b>	<b>99-2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Misc. Inorganics</b>						
Fluoride (F)	mg/L	0.2	<0.1	<0.1	0.1	2047796
<b>Misc. Inorganics</b>						
Dissolved Organic Carbon (C)	mg/L	5	8	<1	1	2041262
<b>Nutrients</b>						
Ammonia (N)	mg/L	0.23	0.26	0.08	0.01	2041429
Orthophosphate (P)	mg/L	<0.02	<0.02	<0.02	0.02	2039454
<b>Misc. Organics</b>						
Phenols	mg/L	<0.001	<0.001	<0.001	0.001	2040103
RDL = Reportable Detection Limit						

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

Maxxam ID		I44750	I44751	I44752		
Sampling Date		2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188		
	<b>Units</b>	<b>MW9</b>	<b>MW11</b>	<b>MW10</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Elements</b>						
Dissolved Aluminum (Al)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Antimony (Sb)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Arsenic (As)	mg/L	0.002	<0.001	0.002	0.001	2038778
Dissolved Beryllium (Be)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Cadmium (Cd)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Chromium (Cr)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Cobalt (Co)	mg/L	0.0009	0.0006	0.0005	0.0003	2038778
Dissolved Copper (Cu)	mg/L	0.0008	0.0008	0.0006	0.0002	2038778
Dissolved Lead (Pb)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Molybdenum (Mo)	mg/L	0.0018	0.0010	0.0011	0.0002	2038778
Dissolved Nickel (Ni)	mg/L	0.0023	0.0027	0.0029	0.0005	2038778
Dissolved Selenium (Se)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Silver (Ag)	mg/L	<0.0001	<0.0001	<0.0001	0.0001	2038778
Dissolved Thallium (Tl)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Tin (Sn)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Titanium (Ti)	mg/L	0.002	0.003	0.002	0.001	2038778
Dissolved Uranium (U)	mg/L	0.0014	0.0013	0.0014	0.0001	2038778
Dissolved Vanadium (V)	mg/L	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Zinc (Zn)	mg/L	0.003	<0.003	<0.003	0.003	2038778
<b>Low Level Elements</b>						
Dissolved Mercury (Hg)	ug/L	<0.05	<0.05	<0.05	0.05	2048239
RDL = Reportable Detection Limit						

**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

Maxxam ID		I44753	I44754	I44756	I44757		
Sampling Date		2007/12/18	2007/12/18	2007/12/18	2007/12/18		
COC Number		32188	32188	32188	32188		
	<b>Units</b>	<b>MW12</b>	<b>MW13</b>	<b>99-1</b>	<b>99-2</b>	<b>RDL</b>	<b>QC Batch</b>

Elements							
Dissolved Aluminum (Al)	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Antimony (Sb)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Arsenic (As)	mg/L	0.002	0.001	0.002	<0.001	0.001	2038778
Dissolved Beryllium (Be)	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Cadmium (Cd)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Chromium (Cr)	mg/L	<0.001	<0.001	0.002	<0.001	0.001	2038778
Dissolved Cobalt (Co)	mg/L	0.0007	0.0009	0.0007	<0.0003	0.0003	2038778
Dissolved Copper (Cu)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	0.0002	2038778
Dissolved Lead (Pb)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Molybdenum (Mo)	mg/L	0.0014	0.0028	0.0015	<0.0002	0.0002	2038778
Dissolved Nickel (Ni)	mg/L	0.0021	0.0016	0.0020	<0.0005	0.0005	2038778
Dissolved Selenium (Se)	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Silver (Ag)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	2038778
Dissolved Thallium (Tl)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	2038778
Dissolved Tin (Sn)	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Titanium (Ti)	mg/L	0.002	0.002	0.003	<0.001	0.001	2038778
Dissolved Uranium (U)	mg/L	0.0011	0.0009	0.0011	<0.0001	0.0001	2038778
Dissolved Vanadium (V)	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	2038778
Dissolved Zinc (Zn)	mg/L	<0.003	<0.003	<0.003	<0.003	0.003	2038778
<b>Low Level Elements</b>							
Dissolved Mercury (Hg)	ug/L	0.07	0.07	0.07	0.06	0.05	2042104
RDL = Reportable Detection Limit							

**General Comments**

Sample I44750-01: Cation anion balance investigated, data quality confirmed  
Sample I44751-01: Cation anion balance investigated, data quality confirmed  
Sample I44752-01: Cation anion balance investigated, data quality confirmed  
Sample I44753-01: Cation anion balance investigated, data quality confirmed  
Sample I44754-01: Cation anion balance investigated, data quality confirmed  
Sample I44756-01: Cation anion balance investigated, data quality confirmed

**Results relate only to the items tested.**

Quality Assurance Report  
 Maxxam Job Number: EA763555

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2038778	JY2	Calibration Check					
		Dissolved Aluminum (Al)	2007/12/24		106	%	80 - 120
		Dissolved Antimony (Sb)	2007/12/24		107	%	80 - 120
		Dissolved Arsenic (As)	2007/12/24		103	%	80 - 120
		Dissolved Beryllium (Be)	2007/12/24		104	%	80 - 120
		Dissolved Cadmium (Cd)	2007/12/24		105	%	80 - 120
		Dissolved Chromium (Cr)	2007/12/24		107	%	81 - 120
		Dissolved Cobalt (Co)	2007/12/24		105	%	80 - 120
		Dissolved Copper (Cu)	2007/12/24		105	%	81 - 120
		Dissolved Lead (Pb)	2007/12/24		104	%	80 - 120
		Dissolved Molybdenum (Mo)	2007/12/24		105	%	80 - 120
		Dissolved Nickel (Ni)	2007/12/24		104	%	80 - 120
		Dissolved Selenium (Se)	2007/12/24		102	%	80 - 120
		Dissolved Silver (Ag)	2007/12/24		104	%	80 - 120
		Dissolved Thallium (Tl)	2007/12/24		106	%	80 - 120
		Dissolved Tin (Sn)	2007/12/24		108	%	80 - 120
		Dissolved Titanium (Ti)	2007/12/24		106	%	80 - 120
		Dissolved Uranium (U)	2007/12/24		104	%	80 - 120
		Dissolved Vanadium (V)	2007/12/24		107	%	80 - 120
		Dissolved Zinc (Zn)	2007/12/24		105	%	80 - 120
	MATRIX SPIKE	Dissolved Antimony (Sb)	2007/12/24		93	%	80 - 120
		Dissolved Arsenic (As)	2007/12/24		98	%	80 - 120
		Dissolved Cadmium (Cd)	2007/12/24		94	%	80 - 120
		Dissolved Cobalt (Co)	2007/12/24		89	%	80 - 120
		Dissolved Copper (Cu)	2007/12/24		91	%	80 - 120
		Dissolved Lead (Pb)	2007/12/24		93	%	80 - 120
		Dissolved Molybdenum (Mo)	2007/12/24		97	%	80 - 120
		Dissolved Nickel (Ni)	2007/12/24		90	%	80 - 120
		Dissolved Selenium (Se)	2007/12/24		100	%	80 - 120
		Dissolved Thallium (Tl)	2007/12/24		95	%	80 - 120
		Dissolved Titanium (Ti)	2007/12/24		94	%	80 - 120
	BLANK	Dissolved Aluminum (Al)	2007/12/24	0.001, RDL=0.001		mg/L	
		Dissolved Antimony (Sb)	2007/12/24	<0.0002		mg/L	
		Dissolved Arsenic (As)	2007/12/24	<0.001		mg/L	
		Dissolved Beryllium (Be)	2007/12/24	<0.001		mg/L	
		Dissolved Cadmium (Cd)	2007/12/24	<0.0002		mg/L	
		Dissolved Chromium (Cr)	2007/12/24	<0.001		mg/L	
		Dissolved Cobalt (Co)	2007/12/24	<0.0003		mg/L	
		Dissolved Copper (Cu)	2007/12/24	<0.0002		mg/L	
		Dissolved Lead (Pb)	2007/12/24	<0.0002		mg/L	
		Dissolved Molybdenum (Mo)	2007/12/24	<0.0002		mg/L	
		Dissolved Nickel (Ni)	2007/12/24	<0.0005		mg/L	
		Dissolved Selenium (Se)	2007/12/24	<0.001		mg/L	
		Dissolved Silver (Ag)	2007/12/24	<0.0001		mg/L	
		Dissolved Thallium (Tl)	2007/12/24	<0.0002		mg/L	
		Dissolved Tin (Sn)	2007/12/24	<0.001		mg/L	
		Dissolved Titanium (Ti)	2007/12/24	<0.001		mg/L	
		Dissolved Uranium (U)	2007/12/24	<0.0001		mg/L	
		Dissolved Vanadium (V)	2007/12/24	<0.001		mg/L	
		Dissolved Zinc (Zn)	2007/12/24	<0.003		mg/L	
	RPD	Dissolved Aluminum (Al)	2007/12/24	NC		%	20
		Dissolved Antimony (Sb)	2007/12/24	NC		%	20
		Dissolved Arsenic (As)	2007/12/24	NC		%	20
		Dissolved Beryllium (Be)	2007/12/24	NC		%	20
		Dissolved Chromium (Cr)	2007/12/24	NC		%	20
		Dissolved Cobalt (Co)	2007/12/24	NC		%	20

Quality Assurance Report (Continued)

Maxxam Job Number: EA763555

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2038778 JY2	RPD	Dissolved Copper (Cu)	2007/12/24	NC		%	20
		Dissolved Lead (Pb)	2007/12/24	NC		%	20
		Dissolved Molybdenum (Mo)	2007/12/24	NC		%	20
		Dissolved Nickel (Ni)	2007/12/24	NC		%	20
		Dissolved Selenium (Se)	2007/12/24	NC		%	20
		Dissolved Silver (Ag)	2007/12/24	NC		%	20
		Dissolved Thallium (Tl)	2007/12/24	NC		%	20
		Dissolved Tin (Sn)	2007/12/24	NC		%	20
		Dissolved Titanium (Ti)	2007/12/24	NC		%	20
		Dissolved Uranium (U)	2007/12/24	0.05		%	20
		Dissolved Vanadium (V)	2007/12/24	NC		%	20
		Dissolved Zinc (Zn)	2007/12/24	NC		%	20
2038989 CD1	MATRIX SPIKE	4-BROMOFLUOROBENZENE (sur.)	2007/12/24		91	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2007/12/24		107	%	70 - 130
		D8-TOLUENE (sur.)	2007/12/24		96	%	70 - 130
		Benzene	2007/12/24		101	%	70 - 130
		Toluene	2007/12/24		98	%	70 - 130
		Ethylbenzene	2007/12/24		105	%	70 - 130
		o-Xylene	2007/12/24		100	%	70 - 130
		m & p-Xylene	2007/12/24		100	%	70 - 130
		(C06-C10)	2007/12/24		105	%	60 - 140
	SPIKE	4-BROMOFLUOROBENZENE (sur.)	2007/12/24		92	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2007/12/24		109	%	70 - 130
		D8-TOLUENE (sur.)	2007/12/24		93	%	70 - 130
		Benzene	2007/12/24		101	%	70 - 130
		Toluene	2007/12/24		94	%	70 - 130
		Ethylbenzene	2007/12/24		101	%	70 - 130
		o-Xylene	2007/12/24		95	%	70 - 130
		m & p-Xylene	2007/12/24		95	%	70 - 130
		(C06-C10)	2007/12/24		112	%	80 - 120
	BLANK	4-BROMOFLUOROBENZENE (sur.)	2007/12/24		97	%	70 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2007/12/24		113	%	70 - 130
		D8-TOLUENE (sur.)	2007/12/24		92	%	70 - 130
		Benzene	2007/12/24	<0.4		ug/L	
		Toluene	2007/12/24	<0.4		ug/L	
		Ethylbenzene	2007/12/24	<0.4		ug/L	
		o-Xylene	2007/12/24	<0.4		ug/L	
		m & p-Xylene	2007/12/24	<0.8		ug/L	
		Xylenes (Total)	2007/12/24	<0.8		ug/L	
		F1 (C06-C10) - BTEX	2007/12/24	<100		ug/L	
		(C06-C10)	2007/12/24	<100		ug/L	
	RPD	Benzene	2007/12/24	NC		%	40
		Toluene	2007/12/24	NC		%	40
		Ethylbenzene	2007/12/24	NC		%	40
		o-Xylene	2007/12/24	NC		%	40
		m & p-Xylene	2007/12/24	NC		%	40
		Xylenes (Total)	2007/12/24	NC		%	40
		F1 (C06-C10) - BTEX	2007/12/24	NC		%	40
		(C06-C10)	2007/12/24	NC		%	40
2039454 DD1	MATRIX SPIKE	Orthophosphate (P)	2007/12/24		95	%	80 - 120
	SPIKE	Orthophosphate (P)	2007/12/24		107	%	90 - 110
	RPD	Orthophosphate (P)	2007/12/24	NC		%	20
2039496 WZ	Calibration Check	Alkalinity (Total as CaCO3)	2007/12/24		100	%	80 - 120
	BLANK	Alkalinity (Total as CaCO3)	2007/12/24	<1		mg/L	
		Alkalinity (PP as CaCO3)	2007/12/24	<1		mg/L	

Quality Assurance Report (Continued)  
 Maxxam Job Number: EA763555

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits		
2039496 WZ	BLANK	Bicarbonate (HCO3)	2007/12/24	<1		mg/L			
		Carbonate (CO3)	2007/12/24	<1		mg/L			
		Hydroxide (OH)	2007/12/24	<1		mg/L			
	RPD [I44757-01]	Alkalinity (Total as CaCO3)	2007/12/24	NC		%	25		
		Alkalinity (PP as CaCO3)	2007/12/24	NC		%	25		
		Bicarbonate (HCO3)	2007/12/24	NC		%	25		
		Carbonate (CO3)	2007/12/24	NC		%	25		
2039497 WZ	Calibration Check	Conductivity	2007/12/24		99	%	80 - 120		
	BLANK	Conductivity	2007/12/24	<1		uS/cm			
2040103 YY	RPD [I44757-01]	Conductivity	2007/12/24	NC		%	25		
	MATRIX SPIKE	Phenols	2007/12/24		102	%	80 - 120		
2040987 JQ	SPIKE	Phenols	2007/12/24		99	%	80 - 120		
	BLANK	Phenols	2007/12/24	<0.001		mg/L			
	RPD	Phenols	2007/12/24	NC		%	20		
2040987 JQ	Calibration Check	Dissolved Chloride (Cl)	2007/12/24		101	%	80 - 120		
	MATRIX SPIKE [I44750-01]	Dissolved Chloride (Cl)	2007/12/24		102	%	80 - 120		
	BLANK	Dissolved Chloride (Cl)	2007/12/24	<1		mg/L			
	RPD [I44750-01]	Dissolved Chloride (Cl)	2007/12/24	NC		%	25		
2040992 JQ	Calibration Check	Dissolved Sulphate (SO4)	2007/12/24		99	%	80 - 120		
	MATRIX SPIKE [I44750-01]	Dissolved Sulphate (SO4)	2007/12/24		113	%	80 - 120		
	BLANK	Dissolved Sulphate (SO4)	2007/12/24	<1		mg/L			
	RPD [I44750-01]	Dissolved Sulphate (SO4)	2007/12/24	0.03		%	25		
2041021 JQ	Calibration Check	Nitrite (N)	2007/12/24		97	%	80 - 120		
	MATRIX SPIKE [I44750-01]	Nitrite (N)	2007/12/24		92	%	80 - 120		
	BLANK	Nitrite (N)	2007/12/24	<0.06		mg/L			
	RPD [I44750-01]	Nitrite (N)	2007/12/24	NC		%	25		
2041025 JQ	Calibration Check	Nitrate (N)	2007/12/24		107	%	80 - 120		
	MATRIX SPIKE [I44750-01]	Nitrate (N)	2007/12/24		111	%	80 - 120		
	BLANK	Nitrate (N)	2007/12/24	<0.2		mg/L			
	RPD [I44750-01]	Nitrate (N)	2007/12/24	NC		%	25		
2041262 YY	MATRIX SPIKE	Dissolved Organic Carbon (C)	2007/12/27		104	%	80 - 120		
	SPIKE	Dissolved Organic Carbon (C)	2007/12/27		103	%	80 - 120		
	BLANK	Dissolved Organic Carbon (C)	2007/12/27	<1		mg/L			
	RPD	Dissolved Organic Carbon (C)	2007/12/27	2.9		%	20		
2041334 AS7	Calibration Check	Dissolved Barium (Ba)	2007/12/27		115	%	80 - 120		
		Dissolved Boron (B)	2007/12/27		100	%	80 - 120		
		Dissolved Calcium (Ca)	2007/12/27		102	%	80 - 120		
		Dissolved Iron (Fe)	2007/12/27		90	%	80 - 120		
		Dissolved Lithium (Li)	2007/12/27		96	%	80 - 120		
		Dissolved Magnesium (Mg)	2007/12/27		100	%	80 - 120		
		Dissolved Manganese (Mn)	2007/12/27		98	%	80 - 120		
		Dissolved Phosphorus (P)	2007/12/27		102	%	80 - 120		
		Dissolved Potassium (K)	2007/12/27		99	%	80 - 120		
		Dissolved Silicon (Si)	2007/12/27		102	%	80 - 120		
		Dissolved Sodium (Na)	2007/12/27		100	%	80 - 120		
		Dissolved Strontium (Sr)	2007/12/27		95	%	80 - 120		
		MATRIX SPIKE	Dissolved Boron (B)	2007/12/27		98	%	80 - 120	
			Dissolved Calcium (Ca)	2007/12/27		97	%	80 - 120	
			Dissolved Iron (Fe)	2007/12/27		89	%	80 - 120	
				Dissolved Lithium (Li)	2007/12/27		94	%	80 - 120



Quality Assurance Report (Continued)

Maxxam Job Number: EA763555

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits	
2041334 AS7	MATRIX SPIKE	Dissolved Magnesium (Mg)	2007/12/27		96	%	80 - 120	
		Dissolved Manganese (Mn)	2007/12/27		95	%	80 - 120	
		Dissolved Phosphorus (P)	2007/12/27		104	%	80 - 120	
		Dissolved Potassium (K)	2007/12/27		97	%	80 - 120	
		Dissolved Silicon (Si)	2007/12/27		97	%	80 - 120	
		Dissolved Sodium (Na)	2007/12/27		98	%	80 - 120	
	SPIKE	Dissolved Strontium (Sr)	2007/12/27		90	%	80 - 120	
		Dissolved Sulphur (S)	2007/12/27		99	%	80 - 120	
		BLANK	Dissolved Barium (Ba)	2007/12/27	<0.01		mg/L	
			Dissolved Boron (B)	2007/12/27	<0.02		mg/L	
			Dissolved Calcium (Ca)	2007/12/27	<0.3		mg/L	
			Dissolved Iron (Fe)	2007/12/27	<0.06		mg/L	
	Dissolved Lithium (Li)		2007/12/27	<0.02		mg/L		
	Dissolved Magnesium (Mg)		2007/12/27	<0.2		mg/L		
	RPD	Dissolved Manganese (Mn)	2007/12/27	<0.004		mg/L		
		Dissolved Phosphorus (P)	2007/12/27	<0.1		mg/L		
		Dissolved Potassium (K)	2007/12/27	<0.3		mg/L		
		Dissolved Silicon (Si)	2007/12/27	<0.1		mg/L		
		Dissolved Sodium (Na)	2007/12/27	<0.5		mg/L		
		Dissolved Strontium (Sr)	2007/12/27	<0.02		mg/L		
		Dissolved Sulphur (S)	2007/12/27	<0.2		mg/L		
		Dissolved Calcium (Ca)	2007/12/27	2.2		%	20	
		Dissolved Magnesium (Mg)	2007/12/27	0.2		%	20	
		Dissolved Potassium (K)	2007/12/27	1.9		%	20	
		Dissolved Sodium (Na)	2007/12/27	1.7		%	20	
	2041429 DD1	MATRIX SPIKE	Ammonia (N)	2007/12/27		NC	%	80 - 120
		SPIKE	Ammonia (N)	2007/12/27		102	%	80 - 120
RPD		Ammonia (N)	2007/12/27	NC		%	25	
2042068 HW4	MATRIX SPIKE	4-BROMOFLUOROBENZENE (sur.)	2007/12/28		103	%	70 - 130	
		D4-1,2-DICHLOROETHANE (sur.)	2007/12/28		102	%	70 - 130	
		D8-TOLUENE (sur.)	2007/12/28		95	%	70 - 130	
		Benzene	2007/12/28		103	%	70 - 130	
		Toluene	2007/12/28		102	%	70 - 130	
		Ethylbenzene	2007/12/28		101	%	70 - 130	
		o-Xylene	2007/12/28		102	%	70 - 130	
		m & p-Xylene (C06-C10)	2007/12/28		104	%	70 - 130	
		SPIKE	4-BROMOFLUOROBENZENE (sur.)	2007/12/28		99	%	60 - 140
			4-BROMOFLUOROBENZENE (sur.)	2007/12/28		107	%	70 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2007/12/28		102	%	70 - 130
			D8-TOLUENE (sur.)	2007/12/28		97	%	70 - 130
			Benzene	2007/12/28		104	%	70 - 130
			Toluene	2007/12/28		100	%	70 - 130
	Ethylbenzene		2007/12/28		98	%	70 - 130	
	o-Xylene		2007/12/28		102	%	70 - 130	
	m & p-Xylene (C06-C10)		2007/12/28		101	%	70 - 130	
	BLANK		4-BROMOFLUOROBENZENE (sur.)	2007/12/28		99	%	80 - 120
		4-BROMOFLUOROBENZENE (sur.)	2007/12/28		107	%	70 - 130	
		D4-1,2-DICHLOROETHANE (sur.)	2007/12/28		107	%	70 - 130	
		D8-TOLUENE (sur.)	2007/12/28		99	%	70 - 130	
		Benzene	2007/12/28	<0.4		ug/L		
		Toluene	2007/12/28	<0.4		ug/L		
		Ethylbenzene	2007/12/28	<0.4		ug/L		
		o-Xylene	2007/12/28	<0.4		ug/L		
		m & p-Xylene	2007/12/28	<0.8		ug/L		
		Xylenes (Total)	2007/12/28	<0.8		ug/L		

Quality Assurance Report (Continued)  
 Maxxam Job Number: EA763555

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2042068 HW4	BLANK	F1 (C06-C10) - BTEX (C06-C10)	2007/12/28	<100		ug/L	
	RPD	Benzene	2007/12/28	NC		%	40
		Toluene	2007/12/28	NC		%	40
		Ethylbenzene	2007/12/28	NC		%	40
		o-Xylene	2007/12/28	NC		%	40
		m & p-Xylene	2007/12/28	NC		%	40
		Xylenes (Total)	2007/12/28	NC		%	40
		F1 (C06-C10) - BTEX (C06-C10)	2007/12/28	NC		%	40
			2007/12/28	NC		%	40
2042094 LC8	MATRIX SPIKE	O-TERPHENYL (sur.)	2007/12/27		107	%	70 - 130
		F2 (C10-C16 Hydrocarbons)	2007/12/27		149 (1)	%	70 - 130
	SPIKE	O-TERPHENYL (sur.)	2007/12/27		105	%	70 - 130
		F2 (C10-C16 Hydrocarbons)	2007/12/27		107	%	80 - 120
	BLANK	O-TERPHENYL (sur.)	2007/12/27		105	%	70 - 130
		F2 (C10-C16 Hydrocarbons)	2007/12/27	<0.1		mg/L	
	RPD	F2 (C10-C16 Hydrocarbons)	2007/12/27	NC		%	40
2042104 RB3	Calibration Check	Dissolved Mercury (Hg)	2007/12/27		95	%	85 - 115
	MATRIX SPIKE [I44750-01]	Dissolved Mercury (Hg)	2007/12/27		95	%	85 - 115
	SPIKE	Dissolved Mercury (Hg)	2007/12/27		99	%	85 - 115
	BLANK	Dissolved Mercury (Hg)	2007/12/27	<0.05		ug/L	
2047796 RV	Calibration Check	Fluoride (F)	2008/01/03		104	%	80 - 120
	MATRIX SPIKE	Fluoride (F)	2008/01/03		96	%	80 - 120
	BLANK	Fluoride (F)	2008/01/03	<0.1		mg/L	
	RPD	Fluoride (F)	2008/01/03	NC		%	25
2048239 RB3	Calibration Check	Dissolved Mercury (Hg)	2008/01/03		106	%	85 - 115
	MATRIX SPIKE [I44750-01]	Dissolved Mercury (Hg)	2008/01/03		97	%	85 - 115
	BLANK	Dissolved Mercury (Hg)	2008/01/03	<0.05		ug/L	
	RPD [I44750-01]	Dissolved Mercury (Hg)	2008/01/03	NC		%	25

NC = Non-calculable  
 RPD = Relative Percent Difference  
 ( 1 ) Please note that the recovery of some compounds are outside control limits however the overall quality control for this analysis meets our acceptability criteria.

**Validation Signature Page**

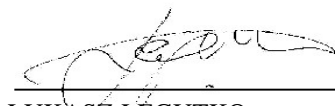
**Maxxam Job #: A763555**

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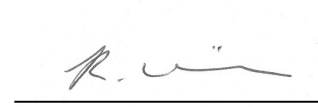
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



LENE NIELSEN,



LUKASZ LEGUTKO,



ROBERT VIVIAN,

=====  
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

