Analysis Report

REPORT ON: Analysis of Water Sample

REPORTED TO: DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES, GOVERNMENT OF NUNAVUT
PO BAG #2
RANKIN INLET, NU
X0C 0G0

Att'n: Alex Ishalook

NUMBER OF SAMPLES: 1

REPORT DATE: March 22, 2011

DATE SUBMITTED: March 11, 2011

JOB NUMBER: B119214

SAMPLE TYPE: Water

Max. Acceptable Concentration Summary:
Maximum Acceptable Concentrations (MAC) for both chemical and microbiological parameters are put forth in the "Guidelines for Canadian Drinking Water Quality Summary Table" - May 2008. For the parameters tested, results are generally categorized by health concerns. Some parameters have no limit value denoted because: a) currently available data indicates no health risk, b) the compound is not permitted in Canada, or c) it refers to a family of compounds.

CLIENT SAMPLE ID	HEALTH CHEMISTRY
GOOSE LAKE	Acceptable

TEST METHODS:

Elements by CRC ICPMS (total) - This method describes the multi elemental determination of trace elements by Collision/Reaction Cell (CRC) ICP-MS. The method measures ions produced by a radio frequency inductively coupled plasma. Analyte species originating in a liquid are pneumatically nebulized and the resulting aerosol transported by argon gas into the plasma torch. The ions produced are entrained in the plasma gas and extracted, by means of a differentially pumped vacuum interface, into a mass spectrometer. The ions flow through a Collision/Reaction Cell (CRC) where depending on the mode of analysis either the ions passes through the cell unhindered (no gas - classical ICP-MS mode), or collisions/reactions chemistry takes place between the ions and a neutral gas such as hydrogen or helium. Any polyatomic ions which give interference on the analytes are removed. The ions are then sorted according to their mass to charge ratios by a quadrupole mass spectrometer. The ions transmitted through the quadrupole are quantified by a channel electron multiplier and the ion information processed by a data handling system.

JANELLE KOCHAN, B.Sc

(Continued)

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Fluoride - Fluoride is determined potentiometrically using a specific ion fluoride electrode in conjunction with a silver/silver chloride reference electrode. The electrical potential developed across the two electrodes is measured and calibrated against known standard concentrations of fluoride. This lab uses a combination electrode, containing both the fluoride sensing electrode and the reference electrode together into a single electrode. A total ionic strength adjustment buffer (TISAB) is added to all samples and standards to control matrix interferences.

Hardness (calculated as CaCO3) - Missing Narrative

Hardness Total (calculated as CaCO3) - Missing Narrative

Nitrate + Nitrite (N) - An automated colourimetric procedure, which incorporates a split manifold, is used to determine both nitrite and nitrite plus nitrate simultaneously. In the case of nitrite, the nitrite portion of the sample is determined by diazotizing with sulfanilamide and coupling with N-(1-naphthyl)-ethylenediamine to form an azo dye, which is, measured colourimetrically at 520 nm. In the case of nitrite plus nitrate, the nitrate in a portion of the sample is quantitatively reduced to nitrite in a reductor column containing amalgamated cadmium filings. The nitrite yielded by the reduction plus the nitrite already present in the sample is then determined by diazotizing with sulfanilamide and coupling with N-(1-naphthyl)-ethylenediamine to form an azo dye which is measured colorimetrically at 520 nm.

Nitrite (N) by CFA - Missing Narrative

Nitrogen - Nitrate (as N) - Calculated parameter based on the concentration of Nitrate plus Nitrite(NO2+NO3) minus Nitrite (NO2)

Elements by CRC ICPMS (dissolved) - Missing Narrative

Elements by CRC ICPMS (total) - This method describes the multi elemental determination of trace elements by Collision/Reaction Cell (CRC) ICP-MS. The method measures ions produced by a radio frequency inductively coupled plasma. Analyte species originating in a liquid are pneumatically nebulized and the resulting aerosol transported by argon gas into the plasma torch. The ions produced are entrained in the plasma gas and extracted, by means of a differentially pumped vacuum interface, into a mass spectrometer. The ions flow through a Collision/Reaction Cell (CRC) where depending on the mode of analysis either the ions passes through the cell unhindered (no gas - classical ICP-MS mode), or collisions/reactions chemistry takes place between the ions and a neutral gas such as hydrogen or helium. Any polyatomic ions which give interference on the analytes are removed. The ions are then sorted according to their mass to charge ratios by a quadrupole mass spectrometer. The ions transmitted through the quadrupole are quantified by a channel electron multiplier and the ion information processed by a data handling system.

Na, K, Ca, Mg, S by CRC ICPMS (diss.) - Missing Narrative

Na, K, Ca, Mg, S by CRC ICPMS (total) - Missing Narrative

(Continued)

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Alkalinity - Conventional Parameters - Winnipeg Laboratory (Unit D-675 Berry Street, Winnipeg, Manitoba R3H 1A7): Analyses performed at Cantest's Winnipeg facilities follow procedures based on those described in the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater" (21st Edition).

Chloride by Automated Colourimetry - Missing Narrative

Colour (True) - Missing Narrative

Conductivity - Conventional Parameters: Analyses performed follow procedures based on those described in the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater" (21st Edition). Location of Testing: Maxxam Analytics, Unit D, 675 Berry Street, Winnipeg, Manitoba R3H 1A7.

Filter and HNO3 Preserve for Metals - Missing Narrative

pH - Conventional Parameters: Analyses performed follow procedures based on those described in the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater" (21st Edition). Location of Testing: Maxxam Analytics, Unit D, 675 Berry Street, Winnipeg, Manitoba R3H 1A7.

pH Water - Method Brief available upon request.

Sulphate by Automated Colourimetry - Method Brief available upon request.

Total Dissolved Solids (Filt. Residue) - Missing Narrative

Turbidity - Conventional Parameters: Analyses performed follow procedures based on those described in the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials" (2005 Edition) and "Standard Methods for the Examination of Water and Wastewater" (21st Edition). Location of Testing: Maxxam Analytics, Unit D, 675 Berry Street, Winnipeg, Manitoba R3H 1A7.

COMMENTS:

Package 1	4.8°C

Each temperature is the average of up to three cooler temperatures taken at receipt

TEST RESULTS:

(See following pages)

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REPORT DATE: March 22, 2011

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Potability (Health Criteria at Point of Use) in Water

CLIENT SAMPLE IDENTIFICATION:	GOOSE LAKE			
SAMPLE DATE:	Mar 10/11			
LAB ID:	AC8196	HEALTH	REPORTING	UNITS
ANALYSIS DATE:	Mar 16/11	CHEMISTRY	LIMIT	
Elements by Atomic Spectroscopy				
Total Antimony (Sb)	ND	6	0.5	ug/L
Total Arsenic (As)	0.4	10	0.1	ug/L
Total Barium (Ba)	20	1000	1	ug/L
Total Boron (B)	ND	5000	50	ug/L
Total Cadmium (Cd)	0.02	5	0.01	ug/L
Total Chromium (Cr)	ND	50	1	ug/L
Total Lead (Pb)	ND	10	0.2	ug/L
Total Mercury (Hg)	ND	1	0.05	ug/L
Total Selenium (Se)	ND	10	0.1	ug/L
Total Uranium (U)	ND	20	0.1	ug/L
Conventional Parameters				
Fluoride (F)	0.15	1.5	0.01	mg/L
Total Hardness (CaCO3)	71.2 X	20	0.5	mg/L
Dissolved Hardness (CaCO3)	70.4 X	20	0.5	mg/L
Nitrate plus Nitrite (N)	0.30 (1)	10	0.02	mg/L
Nitrite (N)	0.010 (1)	1	0.005	mg/L
Nitrate (N)	0.29	10	0.02	mg/L

mg/L = milligrams per liter
ug/L = micrograms per liter
ND = Non Detected
X = Result is outside the Max. Acceptable Concentration Limits
Fluoride = Detection limits raised due to dilution to bring analyte within the calibrated range.
(1) Sample analysed past recommended hold time

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REPORT DATE: March 22, 2011

JOB NUMBER: B119214

Elements by Atomic Spectroscopy in Water

CLIENT SAMPLE IDENTIFICATION:	**GOOSE LAKE**		
SAMPLE DATE:	Mar 10/11		
LAB ID:	AC8196	REPORTING	UNITS
ANALYSIS DATE:	Mar 17/11	LIMIT	
Dissolved Calcium (Ca)	13.1	0.05	mg/L
Dissolved Magnesium (Mg)	9.15	0.05	mg/L
Dissolved Potassium (K)	2.87	0.05	mg/L
Dissolved Sodium (Na)	51.2	0.05	mg/L
Dissolved Iron (Fe)	127	5	ug/L
Dissolved Manganese (Mn)	49	1	ug/L
Dissolved Silicon (Si)	304	100	ug/L
Total Magnesium (Mg)	8.91	0.05	mg/L
Total Sodium (Na)	45.1	0.05	mg/L
Total Aluminum (Al)	5	3	ug/L
Total Copper (Cu)	2.1	0.2	ug/L
Total Iron (Fe)	243	5	ug/L
Total Manganese (Mn)	59	1	ug/L
Total Zinc (Zn)	ND	5	ug/L

mg/L = milligrams per liter
ug/L = micrograms per liter
ND = Non Detected
Elements by CRC ICPMS (dissolved) = RDL raised due to sample matrix interference.

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REPORT DATE: March 22, 2011

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Conventional Parameters in Water

CLIENT SAMPLE IDENTIFICATION:	GOOSE LAKE		
SAMPLE DATE:	Mar 10/11		
LAB ID:	AC8196	REPORTING LIMIT	UNITS
ANALYSIS DATE:	Mar 11/11		
Alkalinity (Total as CaCO3)	21	1	mg/L
Bicarbonate (HCO3)	26	0.5	mg/L
Carbonate (CO3)	ND	0.5	mg/L
Hydroxide (OH)	ND	0.5	mg/L
Dissolved Chloride (Cl)	110	0.5	mg/L
True Colour	15	5	Col. Unit
Conductivity	431	1	uS/cm
Filter and HNO3 Preservation	LAB	0	N/A
pH	6.5	0	pH Units
Dissolved Sulphate (SO4)	16	0.5	mg/L
Total Dissolved Solids	230	10	mg/L
Turbidity	0.6	0.1	NTU

Col. Unit = colour units
mg/L = milligrams per liter
N/A = Not Applicable
NTU = nephelometric turbidity unit
pH Units = pH Units
uS/cm = microSiemens per centimetre
ND = Non Detected
Colour (True) = Sample was analyzed after holding time expired.

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		Calibration Check	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4698796	Alkalinity (Total as CaCO3)	2011/03/11					1, RDL=1	mg/L	11.8(1)	9	96	85 - 115
4698796	Bicarbonate (HCO3)	2011/03/11							11.5	20		
4698796	Carbonate (CO3)	2011/03/11							NC	20		
4698796	Hydroxide (OH)	2011/03/11							NC	20		
4704266	Nitrate plus Nitrite (N)	2011/03/14	105	80 - 120	106	80 - 120	ND, RDL=0.02	mg/L	NC	25		
4704270	Nitrite (N)	2011/03/14	101	80 - 120	101	80 - 120	ND, RDL=0.005	mg/L	NC	20		
4704585	Dissolved Chloride (Cl)	2011/03/14	NC	80 - 120	104	80 - 120	ND, RDL=0.5	mg/L	1.6	20		
4704592	Turbidity	2011/03/11					ND, RDL=0.1	NTU	0	20		
4704594	Conductivity	2011/03/11					ND, RDL=1	uS/cm	0.2	5	99	96 - 104
4704676	Dissolved Sulphate (SO4)	2011/03/14	NC	80 - 120	97	80 - 120	ND, RDL=0.5	mg/L	0.4	20		
4704976	True Colour	2011/03/14					ND, RDL=5	Col. Unit	NC	N/A		
4705822	Total Dissolved Solids	2011/03/15	98	80 - 120	96	80 - 120	ND, RDL=10	mg/L	0.6	20		
4706566	Total Arsenic (As)	2011/03/16	103	80 - 120	96	80 - 120	ND, RDL=0.1	ug/L	NC	20		
4706566	Total Cadmium (Cd)	2011/03/16	102	80 - 120	99	80 - 120	ND, RDL=0.01	ug/L	NC	20		
4706566	Total Chromium (Cr)	2011/03/16	96	80 - 120	96	80 - 120	ND, RDL=1	ug/L	NC	20		
4706566	Total Copper (Cu)	2011/03/16	91	80 - 120	99	80 - 120	ND, RDL=0.2	ug/L	10.5	20		
4706566	Total Lead (Pb)	2011/03/16	96	80 - 120	101	80 - 120	ND, RDL=0.2	ug/L	NC	20		
4706566	Total Selenium (Se)	2011/03/16	109	80 - 120	106	80 - 120	ND, RDL=0.1	ug/L	NC	20		
4706566	Total Uranium (U)	2011/03/16	102	80 - 120	103	80 - 120	ND, RDL=0.1	ug/L	NC	20		
4706566	Total Zinc (Zn)	2011/03/16	102	80 - 120	101	80 - 120	ND, RDL=5	ug/L	NC	20		
4706566	Total Aluminum (Al)	2011/03/16					ND, RDL=3	ug/L	NC	20		
4706566	Total Antimony (Sb)	2011/03/16					ND, RDL=0.5	ug/L	NC	20		
4706566	Total Barium (Ba)	2011/03/16					ND, RDL=1	ug/L	3.1	20		
4706566	Total Boron (B)	2011/03/16					ND, RDL=50	ug/L	NC	20		
4706566	Total Iron (Fe)	2011/03/16					ND, RDL=5	ug/L	1.9	20		
4706566	Total Manganese (Mn)	2011/03/16					ND, RDL=1	ug/L	3.5	20		
4706566	Total Mercury (Hg)	2011/03/16					ND, RDL=0.05	ug/L	NC	20		
4706622	Dissolved Iron (Fe)	2011/03/17					ND, RDL=5	ug/L				
4706622	Dissolved Manganese (Mn)	2011/03/17					ND, RDL=1	ug/L	0.5	20		
4706622	Dissolved Silicon (Si)	2011/03/17					ND, RDL=100	ug/L				
4709818	Fluoride (F)	2011/03/16	102	80 - 120	101	80 - 120	ND, RDL=0.01	mg/L	NC	20		

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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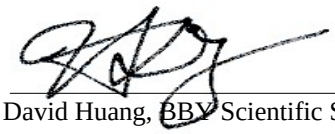
Validation Signature Page

Maxxam Job #: B119214

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



David Huang, BBY Scientific Specialist

JANELLE KOCHAN, B.Sc,

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

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Notification Log

Maxxam Job #: B119214
Report Date: 2011/03/22

DEPARTMENT OF COMMUNITY AND GOVERNMENT SE
PROJECT #:
Site: GOOSE LAKE

No Reportable Regulation Exceedences Noted.

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Sample Integrity Form

Invoice To:
DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES, GOVERNMENT OF NUNAVUT
ATTN: LEXIE MORLING
PO BOX 490
RANKIN INLET, NU
CANADA X0C 0G0
Client Contact:
Alex Ishalook

Report To:
DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES, GOVERNMENT OF NUNAVUT
ATTN: Alex Ishalook
PO BAG #2
RANKIN INLET, NU
CANADA X0C 0G0

Maxxam Job #: B119214
Date Received: 2011/03/11
Maxxam Project Manager: JANELLE KOCHAN

No discrepancies noted.

Report Comments

Received Date: 2011/03/11 **Time:** 10:30 **By:** _____

Inspected Date: _____ **Time:** _____ **By:** _____

SIF Created Date: _____ **Time:** 00:00 **By:** _____

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