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Hamlet of Taloyoak
PO Box 8
Taloyoak, Nunavut
X0B 1B0

Tel: 867-561-6341
Fax: 867-561-5057
Email: hamoftal@qiniq.com

January 30, 2013

Nunavut Water Board
PO Box 119
Gjoa Haven, Nunavut
X0B 1J0

Attention: Phyllis Beaulieu, Manager of Licensing

RE: "Annual Report 2012"- Hamlet of Taloyoak, NU (Licence No.3BM-TAL0813)

Dear Ms. Beaulieu,

The Hamlet of Taloyoak is pleased to submit to Nunavut Water Board the attached file of "Annual Report" of water uses and sewage solid waste disposal as required and directed under the compliance of use in Water Licence No. 3BM-TAL-0813 as stated above. Copies of required tests reports are attached herewith the report as requested for your review and requirements.

With the help of Government of Nunavut through Community and Government Services, we have undertaken a comprehensive waste management monitoring program which has led to improvement of sewage and solid waste site facilities, wetland and effluent discharge. Our annual monitoring program for water, sewage and solid waste has been in effect since summer 2012. Sample test result has shown excellent control on contamination parameters within allowable limits comprising BOD, TSS, E-coli and Toxicity components.

Thanking you for cooperation.

Regards,

Christopher Dickson
Senior Administrative Officer

ANNUAL REPORT

YEAR BEING REPORTED: 2012

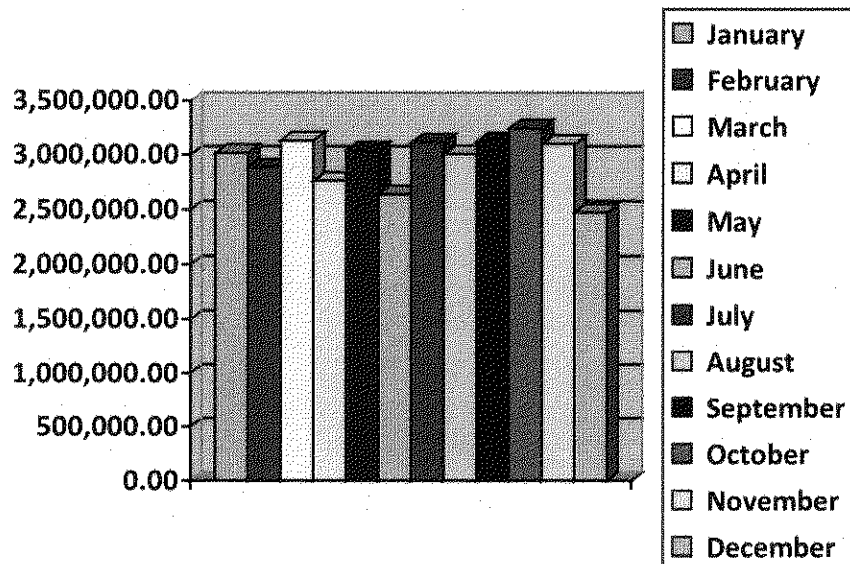
The following information is compiled pursuant to the requirements of Part B, Item 1 of Water Licence 3BM-TAL0813 issued to the Taloyoak.

- i) - iii) tabular summaries of all data generated under the "Monitoring Program"; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	3,016,051.60	Same
February	2,884,452.20	Same
March	3,128,312.60	Same
April	2,761,584.00	Same
May	3,037,917.20	Same
June	2,638,462.90	Same
July	3,109,908.90	Same
August	3,005,179.50	Same
September	3,120,151.50	Same
October	3,241,974.70	Same
November	3,099,989.30	Same
December	2,474,798.20	Same
ANNUAL TOTAL	35,518,782.60	Same

ANNUAL REPORT



iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;

- Upgrading on Water System completed including intake systems, pump house, electrical and mechanical works for water intake pumps, generator, treatment system and truck fill.
- The new system also included in automatic remote monitoring of temperature in intake lines, pumps selection and chlorine injection.
- Physical indication of water pressure inside the pipe in treatment terrain helping in treatment filter control and alarming indication of such condition for attention.
- The intake system and treatment plant also equipped with use and selection of alternate energy systems from newly built Wind Turbine power generation and solar energy from solar panel grids.
- The whole system is up-to-date with compliance of modern technology and more option in the event of grid line power failure.

v. a list of unauthorized discharges and summary of follow-up action taken;

- Sewage waste collecting through vacuum truck from house hold sewage tanks and discharge at the truck-off point into the primary cell of sewage lagoon. The lagoon system is basically a series of ponds with sub-merged separator in between. Temporary retention

ANNUAL REPORT

of sewage waste in the primary cell during summer time and mostly full retention during winter when sewage remain frozen. Due to long and wide wetland, it holds effluent for sufficient time duration for BOD content and natural treatment before ending onto final discharge to ocean.

- INAC inspection 2012 indicated the sewage facility still remains un-licensed for use since it wasn't included during the last amendment of water Licence in Dec 2008, suggested for amendment application to the Board for Sewage and solid waste facilities due to outstanding items such as compliance plan. Hamlet of Taloyoak will be working closely with EXP consultants scheduled in Feb 2013 for study and improvement of these outstanding and will apply for amendment of these facilities by June 2013.
-

vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

- New intake, pump house and treatment system moved from the existing intake, storage and distribution through truck-fill. The old water system and pumphouse remains unused, however no plan for restoration.
 - Feasibility study for sewage lagoon in the proposal subjected to fund availability which will include significant isolation of primary cell for sufficient retention of sewage and confinement of effluent from sewage and solid waste sites on wetland for natural treatment facility.
-

vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;

- Direction from AANDC Report 2012 for sewage collection, disposal, treatment and discharge information details. Hamlet is operating such facilities with private contracting, however, hamlet is monitoring their operation and service quality.
- Hamlet has started segregation of solid waste and containment in separate cells for metal and hazardous materials but wasn't very intensive due to resources which was identified in AANDC Report. However, we are expecting much more improvement for the next year 2013. EXP consultants will be helping hamlet for such improvement.
- Hamlet also working to dissolve the issue of un-marked and un-known barrels at solid waste site, basically sort of illegal dump as identified in AANDC report. Improvement of such items will be notified the Board.
- Hamlet is aware of missing in submission of As-built drawing of the newly completed water system and treatment plant; however, if not available yet at the FTP site of the Board, hamlet will submit (or re-submit) those missing items as well as O & M manual

ANNUAL REPORT

- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
-

Water Licence remains active until Sep 30, 2013, but not included for sewage and solid waste facilities. Hamlet is preparing for submission of amendment application for these two facilities including the Land farm.

- ix. Updates or revisions to the approved Operation and Maintenance Plans.
-

Plan for upgrading of sewage lagoon and solid waste disposal site in proposals, but maintenance will be continued as required and direction.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

Hamlet realized that current sewage lagoon is not an engineered lagoon, but improvement of berm and some work on wetland will be very useful for the facility. Also, confinement of effluent from solid waste site and segregation of items inside would be useful in maintain these facilities, and hamlet is working on these.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

Hamlet is aware of the report by AANDC and condition of Licence. Our annual monitoring program will be continued with more resources in order to comply with concerns such as signage, sample monitoring, unknown dump clearing, solid waste site securing and operator training.

Part H: Monitoring**program.****Wastewater/Sewage parameters**

Sewahe and solid waste effluent samples collected on July 17 and Aug 27, 2012

Parameter	MAC	units	17-Jul-12		27-Aug-12	
	Limits		TAL-1	TAL-2	TAL-1	TAL-2
Alkalinity		mg/L	178		227	239
Conductivity		µS/cm	567	1010	760	1050
p ^H	6-9		10.4	7.59	8.92	7.97
TSS		mg/L	136	16	48	10
Ammonia as N2		mg/L	1.7	<0.01	1.98	0.021
BOD		mg/L	40	<2	24	6
CBOD		mg/L	40	2	15	5
Nitrate as N2		mg/L	0.28	0.02	0.38	0.29
Calcium		mg/L	41.2	82	52.4	78.4
chloride		mg/L	64.4	123	83.8	122
Hardness		mg/L	178	374	227	350
Magnesium		mg/L	18.3	41.2	23.3	37.3
Potassium		mg/L	12.2	3.6	15.1	9.4
Sodium		mg/L	55.6	78.5	69.9	86.8
Sulphate		mg/L	34	54	43	122
Fecal Coliform		CFU/100mL	<10	2	370	9
Oil and Gas	5000	µg/L	Invis.	invis.	none	none
Aluminium		µg/L	84	10	43.4	10.3
Arsenic	100	µg/L	0.9	1.1	0.9	0.9
Cadmium	10	µg/L	<0.1	<0.1	<0.05	<0.05
Chromium	100	µg/L	0.3	0.3	0.2	0.2
Cobalt	50	µg/L	8.2	<0.1	0.2	0.2
Copper	200	µg/L	9	0.7	6.9	1.6
Iron		µg/L	138	466	46	272
Lead	50	µg/L	<0.1	<0.1	<0.1	<0.1
Manganese		µg/L	30.5	95.4	25.6	22.4
Nickel	200	µg/L	1.4	0.9	1.7	1.6
Zinc	500	µg/L	11	<5	6.2	1.4

**Taiga Environmental Laboratory**

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3

Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120530**- FINAL REPORT -****Prepared For:** Hamlet of Taloyoak**Address:** Box 8

Hamlet of Taloyoak, NU

X0E 1B0

Attn: Chester Porter**Facsimile:** (867) 561-5057**Final report has been reviewed and approved by:**

Angelique Hammond

Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
 - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
 - Environment Canada
 - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

Report Date: Tuesday, July 24, 2012**Print Date:** Tuesday, July 24, 2012

Page 1 of 6



Taiga Environmental Laboratory
 4601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2R3
 Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120530

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1

Taiga Sample ID: 001

Client Project: 3BM-TAL0813

Sample Type: Sewage

Received Date: 18-Jul-12

Sampling Date: 17-Jul-12

Sampling Time: 10:00

Location: TAL-1

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	178	0.4	mg/L	18-Jul-12	SM2320:B	
Conductivity, Specific (@ 25°C)	567	0.4	µS/cm	18-Jul-12	SM2510:B	
pH	10.4		pH units	18-Jul-12	SM4500-H:B	
Solids, Total Suspended	136	3	mg/L	19-Jul-12	SM2540:D	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	1.70	0.01	mg/L	20-Jul-12	SM4500-NH3:	
Biochemical Oxygen Demand	40	2	mg/L	18-Jul-12	SM5210:B	
CBOD	40	2	mg/L	18-Jul-12	SM5210:B	
Nitrate+Nitrite as Nitrogen	0.28	0.01	mg/L	19-Jul-12	SM4110:B	
<u>Major Ions</u>						
Calcium	41.2	0.1	mg/L	19-Jul-12	SM4110:B	
Chloride	64.4	0.7	mg/L	19-Jul-12	SM4110:B	
Hardness	178	0.7	mg/L	19-Jul-12	SM2340:B	
Magnesium	18.3	0.1	mg/L	19-Jul-12	SM4110:B	

Report Date: Tuesday, July 24, 2012

Print Date: Tuesday, July 24, 2012



Taiga Environmental Laboratory
 4601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2R3
 Tel: (867) 669-2788 Fax: (867) 669-2718

Taiga Batch No.:
120530

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1

Taiga Sample ID: 001

Potassium	12.2	0.1	mg/L	19-Jul-12	SM4110:B
Sodium	55.6	0.1	mg/L	19-Jul-12	SM4110:B
Sulphate	34	1	mg/L	19-Jul-12	SM4110:B

Microbiology

Coliforms, Fecal	< 10	10	CFU/100mL	18-Jul-12	SM9222:D
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Organics

Oil and Grease, Total	Not visible			00-Jul-12	Visual Exam
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Trace Metals, Total

Aluminum	84	5	µg/L	20-Jul-12	EPA200.8
Arsenic	0.9	0.2	µg/L	20-Jul-12	EPA200.8
Cadmium	< 0.1	0.1	µg/L	20-Jul-12	EPA200.8
Chromium	0.3	0.1	µg/L	20-Jul-12	EPA200.8
Cobalt	0.2	0.1	µg/L	20-Jul-12	EPA200.8
Copper	9.0	0.2	µg/L	20-Jul-12	EPA200.8
Iron	138	5	µg/L	20-Jul-12	EPA200.8
Lead	< 0.1	0.1	µg/L	20-Jul-12	EPA200.8
Manganese	30.5	0.1	µg/L	20-Jul-12	EPA200.8
Nickel	1.4	0.1	µg/L	20-Jul-12	EPA200.8
Zinc	11	5	µg/L	20-Jul-12	EPA200.8

Report Date: Tuesday, July 24, 2012

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Print Date: Tuesday, July 24, 2012



Taiga Environmental Laboratory
 4601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2R3
 Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
 120530

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-2

Taiga Sample ID: 002

Client Project: 3BM-TAL0813
 Sample Type: Unknown Water
 Received Date: 18-Jul-12
 Sampling Date: 17-Jul-12
 Sampling Time: 10:00
 Location: TAL-2
 Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	700	0.1	mg/L	18-Jul-12	C100700D	
Conductivity, Specific (@ 25°C)	1010	0.4	µS/cm	18-Jul-12	SM2510:B	
pH	7.59		pH units	18-Jul-12	SM4500-H:B	
Solids, Total Suspended	16	3	mg/L	19-Jul-12	SM2540:D	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	< 0.01	0.01	mg/L	20-Jul-12	SM4500-NH3:	
Biochemical Oxygen Demand	< 2	2	mg/L	18-Jul-12	SM5210:B	
CBOD	2	2	mg/L	18-Jul-12	SM5210:B	
Nitrate+Nitrite as Nitrogen	0.02	0.01	mg/L	18-Jul-12	SM4110:B	
<u>Major Ions</u>						
Calcium	82.0	0.1	mg/L	18-Jul-12	SM4110:B	
Chloride	123	0.7	mg/L	18-Jul-12	SM4110:B	
Hardness	374	0.7	mg/L	18-Jul-12	SM2340:B	
Magnesium	41.2	0.1	mg/L	18-Jul-12	SM4110:B	
Potassium	2.6	0.1	mg/L	18-Jul-12	SM4110:B	

Report Date: Tuesday, July 24, 2012
 Print Date: Tuesday, July 24, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT, X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120530

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-2

Taiga Sample ID: 002

Sodium	78.5	0.1	mg/L	18-Jul-12	SM4110:B
Sulphate	54	1	mg/L	18-Jul-12	SM4110:B

Microbiology

Coliforms, Fecal	2	1	CFU/100mL	18-Jul-12	SM9222:D
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Organics

Oil and Grease, visible	Non-visible	23-Jul-12	Visual Exam
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Trace Metals, Total

Aluminium	10	5	µg/L	20-Jul-12	EPA200.8
Arsenic	1.1	0.2	µg/L	20-Jul-12	EPA200.8
Cadmium	< 0.1	0.1	µg/L	20-Jul-12	EPA200.8
Chromium	0.3	0.1	µg/L	20-Jul-12	EPA200.8
Cobalt	< 0.1	0.1	µg/L	20-Jul-12	EPA200.8
Copper	0.7	0.2	µg/L	20-Jul-12	EPA200.8
Iron	466	5	µg/L	20-Jul-12	EPA200.8
Lead	< 0.1	0.1	µg/L	20-Jul-12	EPA200.8
Manganese	95.4	0.1	µg/L	20-Jul-12	EPA200.8
Nickel	0.9	0.1	µg/L	20-Jul-12	EPA200.8
Zinc	< 5	5	µg/L	20-Jul-12	EPA200.8

Report Date: Tuesday, July 24, 2012
Print Date: Tuesday, July 24, 2012

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Taiga Environmental Laboratory
4601-02nd Ave., Box 1500, Yellowknife, N.W.T. X1A 2K5
Tel: (867)-669-2788 Fax: (867)-669-2718

**Taiga Batch No.:
120530**

- CERTIFICATE OF ANALYSIS -

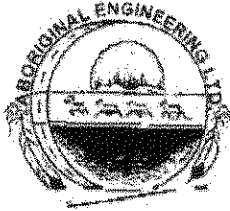
Client Sample ID: TAL-2

Taiga Sample ID: 002

*** Taiga analytical methods are based on the following standard analytical methods**
SM - Standard Methods for the Examination of Water and Wastewater
EPA - United States Environmental Protection Agency

Report Date: Tuesday, July 24, 2012
Print Date: Tuesday, July 24, 2012

Page 6 of 6



Aboriginal Engineering Ltd.
P.O. Box 133, Yellowknife, NT X1A 2N1
Phone: 867-669-9481
Fax: 867-669-9482
GST#: 88819 2259

July 24, 2012

Hamlet of Taloyoak
Box 8
Hamlet of Taloyoak, NU
X0E 1B0

Invoice# 22-2646

PO# _____

LABORATORY SERVICES PERFORMED AT TAIGA LAB

Attention: Chester Porter

Project#: 3BM-TAL0813

Date	TAIGA Sample#	Project/Description	Qty	Cost	Amount
7/17/2012	120530 001	TAL-1	1	\$383.00	\$383.00
7/17/2012	120530-002	TAL-2	1	\$383.00	\$383.00
Sub Total					\$766.00
5% GST					\$38.30
Invoice Total					<u>\$804.30</u>

Remit payment to: Aboriginal Engineering Ltd. Box 133, Yellowknife, NT X1A 2N1

Cost Clarification by Sample Number

Client:	Hamlet of Taloyoak		
Report Sent To:	Chester Porter		
Bill To:	Hamlet of Taloyoak	Bill Contact:	Chester Porter

Taiga Sample ID: 120530-001	Client SampleID: TAL-1	(Sewage)	
Sample Collect Date: 17-Jul-12	Sample Received Date: 18-Jul-12	Client Project#: 3BM-TAL0813	
Report Date: 24-Jul-12	Test Group Name	Test Group Fee	

Inorganics - Physicals

Alkal	Alkalinity	\$15.00
Cond	Conductivity, Specific (@ 25°C)	\$10.00
pH	pH	\$10.00
TSS	Solids, Total Suspended	\$20.00

Inorganics - Nutrients

BOD	Biochemical Oxygen Demand	\$45.00
CBOD	Carbonaceous Biochemical Oxygen Demand	\$45.00
NH3-N	Ammonia as N	\$20.00
NO3+NO2-N	Nitrates+Nitrites as N	\$20.00

Major Ions

IC Anions	IC Anion Suite	\$14.00
IC Anions	IC Anion Suite	\$14.00
IC Cations	IC Cation Suite	\$33.00

Microbiology

FC (Other) - CFU	Fecal Coliform	\$30.00
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Organics

O&G (vis)	Oil & Grease, Visible	\$6.00
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Trace Metals, Total

ICP-MS3	Trace Metals, Total	\$115.00
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Other Fee:	\$0.00
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Sample Preparation Fee:	\$0.00
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Sample Subtotal:	\$383.00
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- Discount (0%):	\$0.00
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+ Rush Surcharge (0%):	\$0.00
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Sample Total:	\$383.00
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Taiga Sample ID: 120530-002	Client SampleID: TAL-2	(Unknown Water)	
Sample Collect Date: 17-Jul-12	Sample Received Date: 18-Jul-12	Client Project#: 3BM-TAL0813	
Report Date: 24-Jul-12	Test Group Name	Test Group Fee	

Inorganics - Physicals

Alkal	Alkalinity	\$15.00
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Cond	Conductivity, Specific (@ 25°C)	\$10.00
pH	pH	\$10.00
TSS	Solids, Total Suspended	\$20.00
Inorganics - Nutrients		
BOD	Biochemical Oxygen Demand	\$45.00
CBOD	Carbonaceous Biochemical Oxygen Demand	\$45.00
NH3-N	Ammonia as N	\$20.00
NO3+NO2-N	Nitrates+Nitrites as N	\$20.00
Major Ions		
Hard	Hardness	\$0.00
IC Anions	IC Anion Suite	\$14.00
IC Cations	IC Cation Suite	\$32.00
Microbiology		
FC (Other) - CFU	Fecal Coliform	\$30.00
Organics		
O&G (Vis)	Oil & Grease, Visible	\$6.00
Trace Metals, Total		
ICP-MS3	Trace Metals, Total	\$115.00

Other Fee:	\$0.00
Sample Preparation Fee:	\$0.00
Sample Subtotal:	\$383.00
- Discount (0%):	\$0.00
+ Rush Surcharge (0%):	\$0.00
Sample Total:	\$383.00



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120737

- FINAL REPORT -

Prepared For: Hamlet of Taloyoak

Address: Box 8
Hamlet of Taloyoak, NU
X0E 1B0

Attn: Chester Porter

Facsimile: (867) 561-5057

Final report has been reviewed and approved by:

Helene Harper
Manager

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
 - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
 - Environment Canada
 - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, September 10, 2012
Print Date: Monday, September 10, 2012



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120737

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1

Taiga Sample ID: 001

Client Project:

Sample Type: Unknown Water

Received Date: 28-Aug-12

Sampling Date: 27-Aug-12

Sampling Time: 14:00

Location:

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	227	0.4	mg/L	28-Aug-12	SM2320:B	
Conductivity, Specific (@ 25°C)	760	0.4	µS/cm	28-Aug-12	SM2510:B	
pH	8.92		pH units	28-Aug-12	SM4500-H:B	
Solids, Total Suspended	48	3	mg/L	05-Sep-12	SM2540:D	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	1.98	0.005	mg/L	05-Sep-12	SM4500-NH3:	
Biochemical Oxygen Demand	24	2	mg/L	28-Aug-12	SM5210:B	
CBOD	15	2	mg/L	28-Aug-12	SM5210:B	
<u>Major Ions</u>						
Calcium	52.4	0.1	mg/L	28-Aug-12	SM4110:B	
Chloride	83.8	0.7	mg/L	28-Aug-12	SM4110:B	
Hardness	227	0.7	mg/L	28-Aug-12	SM2340:B	
Magnesium	23.3	0.1	mg/L	28-Aug-12	SM4110:B	
Nitrate as Nitrogen	0.38	0.01	mg/L	28-Aug-12	SM4110:B	

ReportDate: Monday, September 10, 2012

Print Date: Monday, September 10, 2012



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Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120737

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-1

Taiga Sample ID: 001

Nitrite as Nitrogen	0.19	0.01	mg/L	28-Aug-12	SM4110:B
Potassium	15.1	0.1	mg/L	28-Aug-12	SM4110:B
Sodium	69.9	0.1	mg/L	28-Aug-12	SM4110:B
Sulphate	43	1	mg/L	28-Aug-12	SM4110:B

Microbiology

Coliforms, Fecal	370	10	CFU/100mL	28-Aug-12	SM9222:D
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Organics

Oil and Grease, visible	Non-visible			31-Aug-12	Visual Exam
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Trace Metals, Total

Aluminum	43.4	0.6	µg/L	31-Aug-12	EPA200.8
Arsenic	0.9	0.2	µg/L	31-Aug-12	EPA200.8
Cadmium	< 0.05	0.05	µg/L	31-Aug-12	EPA200.8
Chromium	0.2	0.1	µg/L	31-Aug-12	EPA200.8
Cobalt	0.2	0.1	µg/L	31-Aug-12	EPA200.8
Copper	6.9	0.2	µg/L	31-Aug-12	EPA200.8
Iron	46	5	µg/L	31-Aug-12	EPA200.8
Lead	< 0.1	0.1	µg/L	31-Aug-12	EPA200.8
Manganese	25.6	0.1	µg/L	31-Aug-12	EPA200.8
Nickel	1.7	0.1	µg/L	31-Aug-12	EPA200.8
Zinc	6.2	0.4	µg/L	31-Aug-12	EPA200.8

ReportDate: Monday, September 10, 2012
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Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
120737

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-2

Taiga Sample ID: 002

Client Project:

Sample Type: Unknown Water

Received Date: 28-Aug-12

Sampling Date: 27-Aug-12

Sampling Time: 14:30

Location:

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifier
<u>Inorganics - Physicals</u>						
Alkalinity, Total (as CaCO ₃)	239	0.4	mg/L	28-Aug-12	SM2320:B	
Conductivity, Specific (@ 25°C)	1050	0.4	µS/cm	28-Aug-12	SM2510:B	
pH	7.97		pH units	28-Aug-12	SM4500-H:B	
Solids, Total Suspended	10	3	mg/L	05-Sep-12	SM2540:D	
<u>Inorganics - Nutrients</u>						
Ammonia as Nitrogen	0.021	0.005	mg/L	05-Sep-12	SM4500-NH3:	
Biochemical Oxygen Demand	6	2	mg/L	28-Aug-12	SM5210:B	
CBOD	5	2	mg/L	28-Aug-12	SM5210:B	
<u>Major Ions</u>						
Calcium	78.4	0.1	mg/L	28-Aug-12	SM4110:B	
Chloride	122	0.7	mg/L	28-Aug-12	SM4110:B	
Hardness	350	0.7	mg/L	28-Aug-12	SM2340:B	
Magnesium	37.3	0.1	mg/L	28-Aug-12	SM4110:B	
Nitrate as Nitrogen	0.29	0.01	mg/L	28-Aug-12	SM4110:B	
Nitrite as Nitrogen	< 0.01	0.01	mg/L	28-Aug-12	SM4110:B	

ReportDate: Monday, September 10, 2012

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Taiga Batch No.:
120737

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-2

Taiga Sample ID: 002

Potassium	9.4	0.1	mg/L	28-Aug-12	SM4110:B
Sodium	86.8	0.1	mg/L	28-Aug-12	SM4110:B
Sulphate	122	1	mg/L	28-Aug-12	SM4110:B

Microbiology

Coliforms, Fecal	9	1	CFU/100mL	28-Aug-12	SM9222:D	20
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Organics

Oil and Grease, visible	Non-visible	31-Aug-12	Visual Exam
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Trace Metals, Total

Aluminum	10.3	0.6	µg/L	31-Aug-12	EPA200.8
Arsenic	0.9	0.2	µg/L	31-Aug-12	EPA200.8
Cadmium	< 0.05	0.05	µg/L	31-Aug-12	EPA200.8
Chromium	0.2	0.1	µg/L	31-Aug-12	EPA200.8
Cobalt	0.2	0.1	µg/L	31-Aug-12	EPA200.8
Copper	1.6	0.2	µg/L	31-Aug-12	EPA200.8
Iron	272	5	µg/L	31-Aug-12	EPA200.8
Lead	< 0.1	0.1	µg/L	31-Aug-12	EPA200.8
Manganese	22.4	0.1	µg/L	31-Aug-12	EPA200.8
Nickel	1.6	0.1	µg/L	31-Aug-12	EPA200.8
Zinc	1.4	0.4	µg/L	31-Aug-12	EPA200.8

ReportDate: Monday, September 10, 2012

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Taiga Batch No.:
120737

- CERTIFICATE OF ANALYSIS -

Client Sample ID: TAL-2

Taiga Sample ID: 002

- DATA QUALIFIERS -

Data Qualifier Descriptions:

20 *Possible matrix interference, reported result uncertain.*

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency