Nunavut Water Board

Standard Form for Annual Reporting Requirements of NWB2 Exploration Water Licenses

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Under the terms of your water licence issued by the Nunavut Water Board ("NWB") for the use of water and the disposal of waste into water associated with mineral exploration (NWB2 Licenses), Licensees are required to submit to the NWB an Annual Report no later than March 31st of the year following the calendar year being reported.

In order to aid the Licensee with the preparation of the Annual Report and facilitate its review by the NWB, Licensees are **required** to use the following form.

Recommendation and Helpful tips for use:

Metric units shall be used to report any relevant data.

How to Add additional space within Text boxes - Right click mouse on the row number (directly to the left of your screen) which falls within the text box range and click insert. **Do not drag or drop text box to modify size of the text box because formatting will not be maintained and data will be lost.** If you have large amounts of data recommend adding additional worksheets. Go to the help menu for assistance.

Electronic versions should be submitted in Adobe to ensure protection of your information. If you do not have shortcut keys to save as a PDF. Go to print menu . Choose to print "Entire Worksheet" then select printer option Adobe PDF and you will be prompted to save the document as a PDF document. Reminder ensure you have saved your document in Excel so that future changes can be made.

Modify the Header - Select "View" then "Header" from the main menu. Select "Custom Header" and change to reflect the valid Water Licence No.

Textboxes denoted with ***** are optional.

Annual Reports shall be submitted by either fax, mail or email in adobe acrobat or Excel format to:

Nunavut Water Board
c/o Manager of Licensing
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: 867-360-6338
Fax:867-360-6369
Email: licensing@nunavutwaterboard.org

NWB Annual Report **Year being reported:** 2014

License No: IBH-CHE1213 **Issued Date:** July 17, 2012
Expiry Date: November 30, 2013

Project Name: Chesterfield Inlet Fuel Storage Facility Upgrade and Expansion

Licensee: Inukshuk Construction Limited

Mailing Address: P.O. Box 654 Rankin Inlet, Nunavut X0C0G0

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

General Background Information on the Project (*optional):

Licence Requirements: the licensee must provide the following information in accodance with

Part B | Select

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s): Pond located on the North East side of the tank farm, see attached.

Water Quantity: 2000	Quantity Allowable Domestic (cu.m)
2000	Actual Quantity Used Domestic (cu.m)
	Quantity Allowable Drilling (cu.m)
	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☐ Solid Waste Disposal
- ☐ Sewage
- ☐ Drill Waste
- ☐ Greywater
- ☐ Hazardous
- ☑ Other: Water

Additional Details:

The water was run through a solid particle collector as per the water license application and disposed in the field on the east side of the tank farm. Test

application and disposed in the field on the east side of the tank farm. Test samples were taken from the source and from the tank prior to discharge. Test results are shown on the attached.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Revisions to the Spill Contingency Plan

Select

Additional Details:

Revisions to the Abandonment and Restoration Plan

Select

Additional Details:

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

Select

Additional Details: (date of request, analysis of results, data attached, etc)

On August 21, 2014 the filling of the tank with water started. The filling was completed on August 28th. The water was kept in the tank for 24 hours. A water sample was taken from the source prior to pumping and another one from the tank after filling. Attached are the water sample result. On approval of the results, the water from the tank was discharged in the field on the east side of the tank farm. Stantec, the engineering consultant for the GN, approved the results for disposal of the water.

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

Select

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

Select

Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

After the tank was emptied, this completed the requirement of the this water permit, and no more water was required. Therefore, this closing this water permit.

Date Submitted:	February 11, 2014	
Submitted/Prepared by:	Marc Losier	
Contact Information:	**Tel:**	902-429-0272
	Fax:	902-429-7762
	email:	marc@inukshukconstruction.ca

GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	° Deg	' Min	" Sec	° Deg	' Min	" Sec
Pond Northeast side of tank farm	63	20	20.44	90	41	22.97

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	° Deg	' Min	" Sec	° Deg	' Min	" Sec
Field east side of tank farm	63	20	27.05	90	41	23.5

Sample Receipt Confirmation

Report Distribution:

Company Name: Mosher Engineering Ltd.
Contact: MARC LOSIER
Address: 1869 Upper Water Street, Halifax, NS, B3J 1S9
Phone: 902-429-0272
Fax: 902-429-7762
Email: marc@mosher.ca
Report Name: STANDARD
Digital Type: --
Digital Email: --
Distribution: Hard Copy: Y Email: Y Fax: N

Invoice Distribution:

Acct Name: Mosher Engineering Ltd.
Contact: ACCOUNTS PAYABLE
Address: 1869 Upper Water Street, Halifax, NS, B3J 1S9
Phone: 902-429-0272
Fax: 902-429-7762
Invoice Email: marc@mosher.ca
Project #: N/A
Account #: W8516

Client Information:

Job Reference #: CHESTERFIELD INLET TANK FARM
Project PO #:
Legal Site Description: N/A
Quote #: N/A
Date Sampled: 29-AUG-13
Date Received: 29-AUG-13
Sampled By:
Chain Of Custody: --

Workorder Summary:

Lab Work Order #: **L1355407**
Estimated completion date:
2 Samples received at ALS in **WINNIPEG**
Client Job #: CHESTERFIELD INLET TANK FARM
Account Manager: Judy Dalmaijer
Estimated sample disposal date:

Note: *There are* **sample integrity issues** *with your samples submitted. Please see Sample Integrity Observations below for more details.*

Lab Sample ID	Client Sample ID	Date Sampled	Date Received	Sample Due Date	Priority Flag	Sample Type
L1355407-1	221 - TANK	29-AUG-13 00:00	29-AUG-13 12:00			water
L1355407-2	221 - POND	29-AUG-13 00:00	29-AUG-13 12:00			water

Analysis Requested:

Sample Integrity Observations:

Observation	Details
No CofC with Shipment	CLIENT SUPPLIED THE FOLLOWING FOR EACH FRACTION: 1-OGG 1-BOD 3 METALS 1 CYANIDE 3 BTEX/VOC VIALS

ALS Group strives to deliver on-time results to our clients at all times. However, there are times when due to capacity issues or other unforeseen circumstances we are unable to meet our expected turnaround times. The information above is related to a recent workorder you have submitted to our laboratory. In the event that you have an inquiry, please refer to the Lab Work Order # when calling your Account Manager.

Mosher Engineering Ltd.
ATTN: MARC LOSIER
1869 Upper Water Street
Halifax NS B3J 1S9

Date Received: 29-AUG-13
Report Date: 05-SEP-13 10:51 (MT)
Version: FINAL

Client Phone: 902-429-0272

Certificate of Analysis

Lab Work Order #: L1355407

Project P.O. #: NOT SUBMITTED
Job Reference: CHESTERFIELD INLET TANK FARM
C of C Numbers:
Legal Site Desc:

Craig Riddell
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1355407-1 221 - TANK							
Sampled By: CLIENT on 29-AUG-13							
Matrix: water							
BTEX							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
Toluene	<0.0010		0.0010	mg/L		30-AUG-13	R2684394
Ethyl benzene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
o-Xylene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
m+p-Xylenes	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
Xylenes	<0.0015		0.0015	mg/L		30-AUG-13	R2684394
F1 (C6-C10)	<0.10		0.10	mg/L		30-AUG-13	R2684394
Surrogate: 4-Bromofluorobenzene (SS)	104.1		70-130	%		30-AUG-13	R2684394
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		03-SEP-13	
Trivalent Chromium							
Chromium +6							
Chromium, Hexavalent	<0.010		0.010	mg/L		03-SEP-13	R2686099
Total Metals in Water by ICPMS							
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	03-SEP-13	04-SEP-13	R2686445
Total Trivalent Chromium in Water							
Chromium (III)-Total	<0.0010		0.0010	mg/L		05-SEP-13	
Single Metal in Water by ICPMS (Dis)							
Dissolved Metals by ICP-MS							
Lead (Pb)-Dissolved	0.000122		0.000090	mg/L	29-AUG-13	03-SEP-13	R2686112
Two Metals in Water by ICPMS (Total)							
Total Metals by ICP-MS							
Arsenic (As)-Total	0.00040		0.00020	mg/L	03-SEP-13	03-SEP-13	R2686112
Cadmium (Cd)-Total	0.000010		0.000010	mg/L	03-SEP-13	03-SEP-13	R2686112
Miscellaneous Parameters							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	03-SEP-13	03-SEP-13	R2686453
Oil and Grease, Total	<2.0		2.0	mg/L	03-SEP-13	03-SEP-13	R2686926
Total Suspended Solids	<5.0		5.0	mg/L		30-AUG-13	R2685010
pH	7.94		0.10	pH units		31-AUG-13	R2686182
L1355407-2 221 - POND							
Sampled By: CLIENT on 29-AUG-13							
Matrix: water							
BTEX							
BTX plus F1 by GCMS							
Benzene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
Toluene	<0.0010		0.0010	mg/L		30-AUG-13	R2684394
Ethyl benzene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
o-Xylene	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
m+p-Xylenes	<0.00050		0.00050	mg/L		30-AUG-13	R2684394
Xylenes	<0.0015		0.0015	mg/L		30-AUG-13	R2684394
F1 (C6-C10)	<0.10		0.10	mg/L		30-AUG-13	R2684394
Surrogate: 4-Bromofluorobenzene (SS)	106.7		70-130	%		30-AUG-13	R2684394
CCME Total Hydrocarbons							
F1-BTEX	<0.10		0.10	mg/L		03-SEP-13	
Trivalent Chromium							
Chromium +6							
Chromium, Hexavalent	<0.010		0.010	mg/L		03-SEP-13	R2686099
Total Metals in Water by ICPMS							
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	03-SEP-13	05-SEP-13	R2686445
Total Trivalent Chromium in Water							

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1355407-2 221 - POND							
Sampled By: CLIENT on 29-AUG-13							
Matrix: water							
Total Trivalent Chromium in Water							
Chromium (III)-Total	<0.0010		0.0010	mg/L		05-SEP-13	
Single Metal in Water by ICPMS (Dis)							
Dissolved Metals by ICP-MS							
Lead (Pb)-Dissolved	<0.000090		0.000090	mg/L	29-AUG-13	03-SEP-13	R2686112
Two Metals in Water by ICPMS (Total)							
Total Metals by ICP-MS							
Arsenic (As)-Total	0.00039		0.00020	mg/L	03-SEP-13	03-SEP-13	R2686112
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	03-SEP-13	03-SEP-13	R2686112
Miscellaneous Parameters							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L	03-SEP-13	03-SEP-13	R2686453
Oil and Grease, Total	<2.0		2.0	mg/L	03-SEP-13	03-SEP-13	R2686926
Total Suspended Solids	<5.0		5.0	mg/L		30-AUG-13	R2685010
pH	7.94		0.10	pH units		31-AUG-13	R2686182

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTEXS+F1-HSMS-WP	Water	BTX plus F1 by GCMS	EPA SW846 8260B REV 2 SEPT 1994

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

CR-CR3-TOT-WT	Water	Total Trivalent Chromium in Water	EPA SW-846 7196A

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7196A, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by colourimetry using diphenylcarbazide in a sulphuric acid solution. Total Chromium (III) is determined by subtraction of chromium (VI) from total chromium.

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC DEC-2000 - PUB# 1310-L

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

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

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

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

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

HG-T-CVAF-WP	Water	Mercury Total	EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

MET-D-L-MS-WP	Water	Dissolved Metals by ICP-MS	U.S. EPA 200.8-DL

Dissolved Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the Examination of Water and Wastewater method 3030B for filtration through a 0.45 um filter and analytical procedures adapted from U.S EPA Method 200.8 for analyis of metals by inductively coupled-mass spectrometery.

MET-T-L-MS-WP	Water	Total Metals by ICP-MS	U.S. EPA 200.8-TL

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

MET-T-MS-WT	Water	Total Metals in Water by ICPMS	EPA 200.8

The concentration of metals is determined on an unfiltered aqueous sample. The sample is digested with nitric acid and then analyzed directly by ICP-MS.

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

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

PH-WP	Water	pH	APHA 4500H

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
reference electrode.			
SOLIDS-TOTSUS-WP	Water	Total Suspended Solids	APHA 2540 D (modified)
Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.			

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

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

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

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

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

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

ALS ANALYTICAL

L1355407-COFC

Environmental Division

10°C
11
29/08/2013
12:00PM

Sample Integrity Form

Date: 29/08/2013

Client:: Mosher Engineering

ALS Contact:

COC #: Chesterfield Inlet Tank Farm

Phone #:

Work Order #:

Please note the following observations that prevent your samples from being processed.
ALS is attempting to contact you for further instructions.
If our attempts fail, please contact us as soon as possible to ensure your analytical needs are met.

	Observation	Details	
	Temperature < freezing point	actual temp. (breakdown by cooler):	
	Temperature ≥ 10 Celsius	actual temp. (breakdown by cooler):	
	Containers broken in transit	details:	
	Sample integrity compromised	details:	
	Regulatory non-compliance	details:	
X	No COC with shipment	details: 221 TANK	221 POND
	Discrepancy between COC and label	details: 1 Oil & Grease	1 Oil & Grease
	COC incomplete or unclear	details: 1500ml	1500ml
	Container incompatible with test	details: 3 metals 1 cyanide	3 metals 1 cyanide
	Volume is insufficient for test	details: 3 BTEX/VOC	3 BTEX/VOC
	Preservation incompatible with test	details:	
	No preservation	details:	
	Other observation	details:	

Additional Information (list all affected sample portions):

Judy is looking into getting CofC.

GH

Q41346