

**SAHTU LAND AND WATER BOARD
Type B Water Licence S13L1-006
Husky Oil Operations Limited
Site Wide Services
Slater River Drilling Program**

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PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This Licence entitles Husky Oil Operations Ltd. to use water, dispose of waste, install watercourse crossings and watercourse training for industrial undertakings, associated uses, and site-wide services in support of Oil and Gas Exploration on the east and west side of the Mackenzie River, approximately 40 km south-southeast of the Town of Norman Wells, NT. at:

Minimum Latitude: N 64°35'

Maximum Latitude: N 65°15'

Minimum Longitude: W 125°40'

Maximum Longitude: W 126°50'

- b) This Licence is issued, subject to the conditions contained herein, with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor-in-Council under the *Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations; and
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial, Tlicho, Deline and Municipal legislation.

2. Definitions

Act - the Mackenzie Valley Resource Management Act and/or Waters Act.

Analyst - an Analyst designated by the Minister under section 65(1) of the *Water Act*.

Artesian Aquifer - a water-bearing rock stratum, which when encountered during drilling operations, produces a pressurized flow of groundwater that reaches an elevation above the water table or above the ground surface.

Board - the Sahtu Land and Water Board established under Section 60(1) of the Mackenzie Valley Resource Management Act.

EC50(15) - in a bioassay test, the effluent is deemed excessively toxic if the light emission of a marine bioluminescent bacterium colony is reduced by more than 50% over 15 minutes when challenged by a sample containing a toxic substance. A test result of greater than or equal to 75 is considered a pass.

Inspector - an Inspector designated by the Minister under Section 84(1) of the *Waters Act*.

Licensee - the holder of this Licence.

LC50(96) - in a bioassay test, that effluent is deemed acutely lethal if the undiluted (100%) effluent kills 50% or more of the fish in the test after 96 hours.

Microtox Test - a bioassay test, that monitors changes in the level of light emission from a marine luminescent bacteria when challenged with a toxic substance or sample containing toxic materials, and is used to provide a more rapid, real-time measurement of acute toxicity. Microtox Test is measured as EC50(15) or IC50(15).

Minister - a duly appointed member of the Executive Council who is responsible for the Act or the department responsible for administering that Act.

Modifications - an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion.

Ordinary High Water Mark - the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes, wetlands, or marine environments, it refers to those parts of the Watercourse bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominantly aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs, this refers to normal high operating levels (full supply level).

Produced Water - any waters produced during gas and oil extraction that cannot normally be disposed of at the surface of the earth because such waters can contain high levels of salts and trace levels of hydrocarbons and other pollutants.

Regulations - Regulations proclaimed pursuant to Section 63 of the Waters Act.

Toxicity Bioassays - tests used to determine if components that might be harmful to vegetation, microorganisms, aquatic species, as well as animals or humans are present, but are not normally detected in routine chemical analysis.

Waste - waste as defined by Section 1 of the Waters Act.

Watercourse - a natural watercourse, body of water or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches, as defined in the Waters Regulations.

Waters - water under the administration and control of the Commissioner, whether in a liquid or frozen state, on or below the surface of the land, as defined in the Waters Act.

PART B:GENERAL CONDITIONS

1. The Water Use Fee shall be paid annually on or before October 24 of each year of this Licence.
2. The Licensee shall provide and maintain with the Minister a security deposit in the amount of \$300,000.00 pursuant to subsection 17 (1) of the *Northwest Territories Waters Act*.
3. The Licensee shall file an Annual Report with the Board not later than September 30th, 2014 and each year thereafter for the life of the Water Licence which shall contain the following information:
 - a) the monthly and annual quantities in cubic metres of fresh Water obtained from all sources;
 - b) the monthly and annual quantities in cubic metres of each and all Waste(s) discharged, including domestic and ash;
 - c) tabular summaries of all data generated under the "Surveillance Network Program";
 - d) a summary of exploration and development activities as they relate to water use and Waste disposal;
 - e) an As-Built map and shapefiles identifying all current sites and infrastructure at the Slater River site with a summary of the operation to date.
 - f) a list of any spills or unauthorized discharges;
 - g) information related to the removal of culverts;
 - h) details of work completed and all closure and reclamation activities;
 - i) The Semiannual Summer Site Inspections Report as laid out in Part E; and
 - j) any other details on water use or Waste disposal requested by the Board by September 30th of the year being reported.
4. The Licensee shall submit all reports in the units of measurement as outlined in Part B: General Conditions.
5. All laboratory test results shall be submitted to the Board and an Inspector, concurrently, within 48 hours of the Licensee receiving such results. The laboratory tests include, but are not limited to: total Waste samples, Microtox Test samples, LC(50)96 samples on test populations, other Toxicity Bioassays, unauthorized Waste samples, baseline soil samples, parent material samples, supernatant fluid samples, Artesian Aquifer water samples, Produced Water samples, dissolved oxygen/temperature profiles and water quality sample results.

6. Meters, devices or other such methods for measuring the volumes of water used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
7. The Licensee shall maintain a copy of the Water Licence on-site at all times.
8. The Licensee shall maintain a copy of the Waste Management Plan on-site in a readily available location to the satisfaction of an Inspector.
9. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
10. The "Surveillance Network Program" and compliance dates specified in this Licence may be modified at the discretion of the Board.
11. The Licensee shall within 30 days of the issuance of this Licence, post the necessary signs, where applicable, to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
12. The Licensee shall ensure that all project activities are confined to locations as described in the Water Licence application.
13. All sites affected by project and camp activities shall be stabilized, groomed, reseeded and landscaped as necessary and suitable erosion control measures implemented to minimize sediment deposition into Watercourse(s).
14. The Licensee shall not operate any machinery within 150 metres of any known historical or archaeological site or within 500 metres of any burial grounds.
15. The Licensee shall make every effort to ensure that no historical or archaeological site will be affected by this operation.
16. The Licensee shall make every effort to retain riparian vegetation.
17. The Licensee shall submit for approval to the Board, plans outlining the locations of all culverts prior to their installation.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all water for undertakings in camp use and associated uses for construction and maintenance of roads and ice bridges from water sources as identified in the approved application and listed below:

Name	Location	Maximum Allowable Withdrawal (m ³)
WS-01	65.032524° N 126.378199° W	4,200
WS-02	65.008051° N 126.490602° W	11,200
WS-03	64.965184° N 126.535734° W	1,052
WS-04	64.931725° N 126.467096° W	6,048
WS-05	64.852759° N 126.275778° W	2,821
WS-06	64.874513° N 126.146503° W	4,900
WS-07, Mackenzie River	65.085437° N 126.243890° W	58,085
MW-09A *	64.984687° N 126.517009° W	
Vermillion Creek	65.096499° N 126.131274° W	2,000**
Total		87,485

* Withdrawal from MW-09A may not exceed a rate of 600 m³/day.

** Withdrawal rate from Vermillion Creek may not exceed 10% of the instantaneous flow in the water body at the withdrawal point.

2. Water obtained for undertakings includes water for potable and non-potable camp water, road access construction, site construction and maintenance.
3. Additional bridges recommended and/or approved by the Department of Fisheries and Oceans may be constructed with the approval of the Board. The following bridges exist under this Licence:

Name	Location
Bridge 1 (Bogg Creek)	65.050045° N 126.328477° W
Bridge 2 (KM14)	65.013434° N 126.434790° W
Bridge 3 (KM16)	65.001496° N 126.469252° W

4. The Licensee shall erect and maintain permanent conspicuous signage at all approved water sources. The signage shall be erected at or near the point where land and water interface nearest to the water intake location.
5. Signage erected at all approved water sources shall include the following information: the words "Water Intake Site", the Water Licence file designation "S13L1-006" and the approved nomenclature for the water source as indicated in Part C: Item (1).
6. The Licensee shall maintain water uptake logs for all utilized sources. The water uptake logs shall include the following information: identification of water source, volume of water withdrawn per trip in cubic meters, cumulative uptake per source, time of uptake, date of uptake, and contractor and employee identification.
7. The water intake hose used on the water pumps shall be equipped with a screen of a mesh size of 2.54 mm, sufficient to ensure no entrainment of fish, as per Fisheries and Oceans Canada requirements.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall ensure that any fuels, chemicals, or Waste(s) associated with this undertaking do not enter any Waters.
2. The Licensee shall not dispose of Waste(s) to municipal facilities within the Sahtu Settlement Area.
3. The Licensee shall adhere to the approved Waste Management Plan and shall annually review the plan and make any necessary revisions to reflect changes in operations, technology, chemicals, or fuels, or as directed by the Board. Revisions to the plan shall be submitted to the Board for approval.
4. All analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater" or by such other methods approved by the Analyst.
5. If, during excavation, an Artesian Aquifer is encountered producing water flowing at the surface, the Licensee shall notify the Water Board and an Inspector within 48 hours of the occurrence.
6. If, during excavation, an Artesian Aquifer is encountered producing water flowing at the surface, the Licensee shall employ appropriate technology, as necessary, to prevent artesian aquifer waters from flowing off-lease and to minimize the quantity of such waters that will be stored in the snow bermed area.
7. The Licensee shall notify the Board of the flow rate of the Artesian Aquifer within 48 hours of the occurrence. The flow rate shall be reported in cubic metres per minute.
8. Within 48 hours after the cessation of the flow of Artesian Aquifer waters, the Licensee shall report to the Board the total amount of such waters that has been generated by the Artesian Aquifer and the amount of Artesian Aquifer waters that shall be stored in the snow bermed area or otherwise approved storage area. The amounts reported shall be in cubic metres.
9. If, during excavation an Artesian Aquifer is encountered, a sample of not less than ten litres shall be collected from the flowing source at the point of discharge from the well. Five litres shall be made available to an Inspector for analysis, and the Licensee shall have the remaining five litres analyzed for the following parameters and provided for the approval of an Inspector:

Analyte	Unit of Measurement***
Electrical Conductivity	DS/m at 25° C
pH	Report Result
Total Suspended Solids	mg/L
Total Dissolved Solids	mg/L
Sulphate	mg/L
Chloride	mg/L
Sodium	mg/L

Copper	mg/L
Cadmium	mg/L
Iron	mg/L
Nickel	mg/L
Lead	mg/L
Zinc	mg/L
Chromium	mg/L
Potassium	mg/L
Calcium	mg/L
Magnesium	mg/L
Hydrocarbons	<0.1% on a dry weight basis
Toxicity (Microtox EC50(15))*	Pass=EC50(15)>=75%
LC50(96) Toxicity Testing*	Test sample is of acutely lethal toxicity if test population mortality equals or exceeds 50% of the test population in 96 hour time period
Microtox EC50(15) With Charcoal Filtration**	Pass with Charcoal Filtration=EC50(15)>=75%

*Applicant must complete either a Microtox EC50(15) toxicity test, a LC50(96) toxicity test or both.

** If original microtox tests fail the applicant may perform the microtox test with charcoal filtration.

***All results must be reported in indicated units of measurement.

10. The disposal of fluids generated by an Artesian Aquifer to other than a snow bermed area, or other self-contained area, requires the approval of the Board and an Inspector.
11. Upon the completion of each excavation operation, the Licensee shall, where fluids generated by an Artesian Aquifer are encountered, seal the hole in such a manner as to permanently prevent any further outflow of water.
12. The sealing of an Artesian Aquifer shall be to the satisfaction of an Inspector.
13. The Licensee shall maintain a copy of the Waste Management Plan on-site in a readily available location to the satisfaction of an Inspector.

PART E: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Licensee shall monitor the project area for negative environmental effects relating to the issued Water Licence for a minimum of five years to ensure that mitigation, reseeding, erosion control and restoration efforts have been successful. These efforts shall be performed to the satisfaction of the Board and an Inspector.
2. The Licensee shall inspect the project area for the requirements set out in Part E: Condition (1) of this document once in the spring, after spring melt, and once in the fall, before freeze up to ensure that efforts to fulfill the condition are successful. The inspection results will be submitted as the Semiannual Summer Site Inspections Report.
3. During the five year monitoring period, any failure of the measures as set out in Part E: Conditions (1) and (2) shall be reported to the Board and an Inspector within seven days of the discovery of said failure or failures.
4. All disturbed areas relating to Water Licence activities shall be restored. The site shall be prepared in a manner that fosters natural re-vegetation, or fertilized and reseeded with an approved natural or native seed mixture.

PART F: CONDITIONS APPLYING TO STREAM CROSSINGS

1. The Licensee shall not use any materials other than clean snow and clean water in the construction of snowfills.
2. Prior to spring break-up or completion of the land-use operation, the Licensee shall clean up and either remove or v-notch all snowfills from stream crossings, unless otherwise authorized in writing by an Inspector.
3. The Licensee shall install and maintain culverts such that scouring does not occur.
4. The Licensee shall not excavate land within 100 metres of the Ordinary High Water Mark of any Watercourse, unless otherwise authorized in writing by an Inspector.
5. Materials used for construction of the bridge abutments, approaches, ramps or bank stabilization, must be obtained from an approved source, and be clean and free of contaminants.
6. The Licensee shall adhere to the approved Erosion Control and Sedimentation Management Plan and shall annually review the plan and make any necessary revisions to reflect changes in operations or technology, or as directed by the Board. Revisions to the plan shall be submitted to the Board for approval.
7. The Licensee shall not ford wet streams.
8. The Licensee shall take all reasonable measures to prevent damage to wildlife and fish Habitat during this land-use operation.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out Modification(s) to the planned undertakings provided that such Modification(s) are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified the Board in writing of such proposed Modification(s) at least five days prior to beginning the Modifications;
 - b) such Modification(s) do not place the Licensee in contravention of either the Licence or the Act;
 - c) the Board has not, during the five days following notification of the proposed Modification(s), informed the Licensee that review of the proposal will require more than five days; and
 - d) the Board has not rejected the proposed Modification(s).
2. Modification(s) for which all of the conditions referred to in Part G, Item (1), have not been met may be carried out only with written approval from the Board.
3. The Licensee shall provide to the Board as-built plans and drawings of the Modification(s) referred to in this Licence within 90 days of completion of the Modification(s).

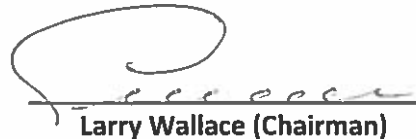
PART H: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall maintain a copy of the Emergency Response Plan/Spill Contingency Plan on-site in a readily available location to the satisfaction of an Inspector.
2. The Licensee shall adhere to the approved Spill Contingency Plan and shall annually review the plan and make any necessary revisions to reflect changes in operations, technology, chemicals, or fuels, or as directed by the Board. Revisions to the plan shall be submitted to the Board for approval.
3. The Licensee shall ensure that petroleum products, hazardous material and other Waste(s) associated with the project do not enter any Waters.
4. The Licensee shall maintain a record of all spills. For all reportable spills, in accordance with the GNWT *Spill Contingency Planning and Reporting Regulations*, the Licensee shall:
 - a) Immediately report each spill to the 24-hour Spill Report Line (867) 920-8130;
 - b) Report each spill to an Inspector within 24 hours; and
 - c) Submit to the Board and an Inspector, a detailed report on each spill within 30 days.
5. The Licensee shall ensure all refueling and storage of fuels, chemicals or deleterious substances, are located a minimum of 100 metres from the Ordinary High Water Mark of any Watercourse.

SAHTU LAND AND WATER BOARD



Witness



Larry Wallace (Chairman)

**Annex A: Surveillance Network Program (SNP)
Annexed to Water Licence S13L1-006
Husky Oil Operations Limited
Site-Wide Services
Slater River Drilling Program**

1. Location of Surveillance Stations

<u>Station Number</u>	<u>Description</u>
S13L1-006(1)	Treated effluent prior to disposal
S13L1-006(2)	Storage Pond at Quarry A
S13L1-006(3)	Storage Pond at Quarry B
S13L1-006(4)	Storage Pond at Quarry C
S13L1-006(5)	Storage Pond at Quarry D
S13L1-006(6)	Storage Pond at Quarry E
S13L1-006(7)	Storage Pond at Quarry G
S13L1-006(8)	Storage Pond at Quarry J
S13L1-006(9)	Storage Pond at Quarry M

2. Sampling and Analysis Requirements

- a) Any effluent discharged at SNP Stations S13L1-006(1) shall be sampled prior to disposal and analyzed for the following parameters and shall not exceed the following criteria:

PARAMETER	MAX. CONCENTRATION
Suspended Solids	100 mg/L
Oil and Grease	5 mg/L
BOD ₅	100 mg/L
Fecal Coliforms	1 x 10 ⁶ CFU/100ML
pH	between 6 and 9

Visual inspection for any oil sheen on the water

- b) If de-watering of the storage ponds located at Station Numbers S13L1-006(2) to S13L1-006(9) is necessary, a Grab Sample shall be collected and inspected for the following:

Visual inspection for any oil sheen on the water
Chlorides (using field test equipment) to be less than 500 mg/l
pH (using field test equipment) to be from 6.0 to 9.0

Sample frequency may be altered at the request/approval of an Inspector.

All analyses shall be performed in a laboratory approved by the Analyst

3. **Reports**

The Licensee shall, within 48 hours following receipt of results, submit to the Board, all data and information required by the "Surveillance Network Program".

The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the "Surveillance Network Program" in the Licensee's Annual Report, which shall be submitted to the Board by September 1st of the year following the calendar year being reported.

SAHTU LAND AND WATER BOARD



Witness



Larry Wallace (Chairman)