



**Renewal Application for Water Licence S03L1-001
Proposed Amendments
(Section 3 of 20)**

Submitted to the Sahtu Land and Water Board by Imperial Oil Resources N.W.T. Limited

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3.0 Introduction

Imperial Oil Resources N.W.T. Limited (IOR) is committed to conducting its operations in compliance with the regulatory framework applicable to its Norman Wells Operations (NWO). IOR respectfully requests several areas of the water licence be amended.

The following sections summarize the requested amendments, and present the rationale for the requests. Proposed key word and text changes to the Licence are underlined, deletions are overstruck, and suggested new text is italicized.

3.1 Proposed Amendments: Operation and Maintenance

Proposed Amendment:

Change the wording in Item 6, Licence Part E: Conditions Applying to Operation and Maintenance, as follows:

6. The Licencee may, upon notifying the Inspector, clean the ~~backwash~~ settling pond at the Central Processing Facility as required according to the procedure outlined in the plan (CPF ~~Backwash~~ Settling Pond Cleaning Standard Procedure, approved by the Board ~~June 26, 2002~~ and amended from time to time). All discharges must meet the limits as specified in Part D, Item 5.

Rational

IOR requests to amend this item to reflect the updated procedure and the correct terminology used for the pond. As the procedure is updated on a regular basis, IOR requests that the date or version of the procedure is not specifically included to avoid the administrative burden of frequent amendments to the licence document. IOR has provided a revised copy of the procedure in Appendix 3 of Section 6 for the Board's consideration.

Proposed Amendment:

Add to the wording in Item 1, Part F: Conditions Applying to Modifications, as follows:

1. The Licencee may, without written consent from the Board, carry out the Modification(s) to the water supply ~~and~~, waste disposal facilities, *bunkers, docks, bridges, pipelines, creek banks, and river banks*

provided that the Modification(s) are consistent with the terms of this Licence and the following requirements are met:

- a. The Licencee has provided the details of the proposed Modification(s) to the Board, in writing, at least sixty (60) days prior to the commencement of the Modification(s);
- b. The Modification(s) does not place the Licencee in contravention of either the Licence, the Act or Federal, Territorial or Municipal Legislation:
- c. The board has not, during the sixty (60) days following notification of the proposed Modification(s), informed the Licencee that review of the proposal will require more than sixty (60) days; and
- d. The Board has not rejected the proposed Modification(s).

Rational

IOR requests to amend this item to allow for routine work after giving notice. Inclusion of these activities in the next water licence would allow critical maintenance work (such as excavations to access buried pipelines or to construct new pipelines, protective feature around bunkers and docks, erosion protection and measure near facilities and along banks) to be conducted in a more timely manner than when separate Type B approvals must be obtained. At the same time, regulatory oversight could be maintained by the SLWB with the requirement to give notice of the work before it proceeds, and to include reporting on the work in annual reports and through the submission of as-built drawings as is required in the current licence by Part E, Item 3. It is understood that this requested change would in no way alter the requirements and oversight provided by other regulatory agencies such as the Department of Fisheries and Oceans (DFO). It is hoped that an additional benefit of including this sort of routine work in the next water licence would be a reduction in administrative work for both the SLWB and IOR.

3.2 Proposed Amendments: Aquatic Effects Monitoring Program

Proposed Amendment:

Add the following Item to provide for the development of a new Aquatic Effects Monitoring Program in Part I: Aquatic Effects Monitoring Program:

The licensee shall submit within one year of the licence being awarded an Aquatics Effects Monitoring Program plan for review by the Board.

Retain the following Item in Part I: Aquatic Effects Monitoring Program:

1. The Licensee shall implement the Aquatic Effects Monitoring Program as submitted and approved by the Board and as may be amended from time to time.

Rational

IOR proposes to implement a new AEMP as part of its Renewal Application in accordance with the Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs: Overview (MVLWB June 2009) and Guidelines for Adaptive Management – a Response Framework for Aquatic Effects Monitoring (Wek'èezhii Land & Water Board October 17, 2010). IOR suggests that a phased implementation period, that includes review and consultation with the SLWB, be included in the new water licence to allow for the orderly collection of data and development of appropriate parameter criteria.

3.3 Proposed Amendments: Surveillance Network Program

Proposed Amendment:

Amend the weekly water intake and water outlet monitoring requirements stipulated in the Surveillance Network Program Attachment to the Water Licence as described in Table A.

Table A: Proposed Changes to Weekly SNP Sampling

SNP Sample Point	Existing Requirement	Proposed Changes	Field Lab	Guideline Limit
S03L1-01 Water Intake	Phenols	No Change	Lab	N/A
	Oil & Grease	TPH	Lab	N/A
	Total Suspended Solids	Change frequency to 2x per week to meet hold time	Lab	N/A
S03L1-02 Outlet Return Line	Phenols	No Change	Lab	0.14 mg/L
	Oil & Grease	TPH	Lab	10.00 mg/L
	Total Residual Chlorine	Change frequency to Daily Grab to meet hold times	Field	N/A
	Total Suspended Solids	Change to 2x per week frequency to meet hold times	Lab	N/A
	pH	Change to 2x per week frequency to meet hold times	Lab	6.0-9.0
	Specific Conductivity	Change to 2x per week frequency to meet hold times	Lab	N/A
	Temperature	No Change	Field	N/A

Rationale

The frequency changes proposed in Table A are designed to achieve more representative data and to accommodate laboratory hold times. Hold time is the length of time between when a sample is collected and when it is analyzed. For some

parameters, a weekly composite sample will exceed hold times due to the length of time it takes to transport samples to the laboratory.

Oil & grease is measured weekly as part of the Water Licence. However, this parameter does not distinguish between petroleum related oil & grease and the oil & grease associated with animal fats and other non-petroleum products. As such, IOR proposes replacing the oil & grease analysis with Total Petroleum Hydrocarbons (TPH). TPH has a lower detection limit than oil & grease, and will provide data that are more useful for detecting potential impacts.

Proposed Amendment

Amend the semi-annual water intake and water outlet monitoring requirements stipulated in the Surveillance Network Program Attachment to the Water Licence as described in Table B.

Table B: Proposed Changes to Semi-Annual SNP Sampling

SNP Sample Point	Existing Requirement	Proposed Changes
S03L1-01 Water Intake	pH	No Change
	Sodium	No Change
	Potassium	No Change
	Sulphate	No Change
	Chloride	No Change
	Calcium	No Change
	Magnesium	No Change
	Total Alkalinity	No Change
	Specific Conductivity	No Change
	Suspended Solids	No Change
	Total Dissolved Solids	No Change
	Oil & Grease	TPH
	Total Phosphorus	No Change
	Total Hardness	No Change

SNP Sample Point	Existing Requirement	Proposed Changes
S03L1-02 Outlet Return Line	N/A	pH Sodium Potassium Sulphate Chloride Calcium Magnesium Total Alkalinity Specific Conductivity Suspended Solids Total Dissolved Solids TPH Total Phosphorus Total Hardness

Rationale

The proposed changes include updating the analytical suite to ensure there is consistency in the parameters assessed at both the intake and outlet locations.

3.4 Proposed Amendments: Surface Water Management

Proposed Amendment:

Amend the surface water monitoring requirements stipulated in Licence the Surveillance Network Program Attachment to the Water Licence as described in Table C.

Table C: Proposed Changes to the Surface Water Testing Schedule

Sample Type	Existing Requirement	Proposed Changes	Field or Lab	Proposed Guideline Limit
Surface water areas where no impacts are anticipated	Visible sheen	No Change	Field	No Sheen
	Chlorides	No Change	Field	500 mg/L
	pH	No Change	Field	6.0-9.0
Surface water areas where impacts may be anticipated	Phenols	No Change	Lab	0.14 mg/L
	Oil & Grease	TPH	Lab	10.00 mg/L
	Total Suspended Solids	No Change	Lab	N/A
	pH	No Change	Lab	N/A
	Specific Conductivity	No Change	Lab	N/A
	Total Dissolved Solids	No Change	Lab	N/A
	Chloride	No Change	Lab	500 mg/L

Rationale

Oil & grease in surface water is measured prior to discharge as part of the Water Licence. However, this parameter does not distinguish between petroleum related oil & grease and the oil & grease associated with animal fats and other non-petroleum products. As such, IOR proposes replacing the oil & grease analysis with Total Petroleum Hydrocarbons (TPH). TPH has a lower detection limit than oil & grease, and will provide data that are more useful for detecting potential impacts.

Proposed Amendment

Modify wording in Part A: Scope and Definitions as follows:

“Surface Water Run-Off Facilities” means the Refinery Impounding Basin, Battery 3 Impounding Basin, Refinery Water Flood Basin, CPF Impounding Area, Miscellaneous Mainland Impounding Areas, Miscellaneous Bear Island Impounding Areas, Miscellaneous Goose Island Impounding Areas, *excavations, bunkers, bermed areas*, and associated ditches provided for the collection,

storage and discharge of surface run-off waters from the Imperial Oil resources
N.W.T. Limited lease
licence licence

Rationale

The current Water Licence does not explicitly address water releases from excavations, bunkers, and bermed areas (other than impound basins). IOR proposes that releases from excavations, bunkers, and bermed areas be added to the list of SWROF to ensure clarity.

Proposed Amendment

Add wording to Items 3 and 4 (reproduced here only in part due to length) of the Surveillance Network Program Attachment of the Water Licence as follows:

3. . . .Water to be released *or used on roads for dust suppression* from the Surface Water Run-Off Facilities where contaminants are suspected will be analyzed for the following. . .

. . . .Water to be released *or used on roads for dust suppression* from the Surface Water Run-Off Facilities where no contaminants are suspected will be analyzed for the following. . .

4. . . .Water to be released *or used on roads for dust suppression* from areas not associated with the Surface Water Run-Off Facilities, SNP Stations and Sumps, where no contaminants are suspected, will be analyzed for the following. . .

Rationale

The current water licence does not specifically address the use of water for dust suppression. IOR proposes that it be added to ensure clarity.

Proposed Amendment

Add the following monitoring requirements for release of surface water from intact former sumps as described in Table D:

Table D: Proposed Changes to Testing Surface Water on Intact Former Sumps for Discharge

Existing Requirement	Proposed Changes	Field or Laboratory Test	Maximum Concentration of Sample
sulphate	Discontinue	N/A	
conductivity	No Change	Lab	
pH	No Change	Lab	Between 6 – 9
total suspended solids	No Change	Lab	
chloride	No Change	Lab	<500 mg/L
sodium	Discontinue	N/A	
potassium	Discontinue	N/A	
calcium	Discontinue	N/A	
magnesium	Discontinue	N/A	
oil and grease	TPH	Lab	10 mg/L
Microtox	Discontinue	N/A	
copper	Discontinue	N/A	
cadmium	Discontinue	N/A	
iron	Discontinue	N/A	
nickel	Discontinue	N/A	
lead	Discontinue	N/A	
zinc	Discontinue	N/A	
chromium	Discontinue	N/A	
total dissolved solids	Lab	Lab	
phenols	Lab	Lab	0.14 mg/L

Rationale

There is no longer any supernatant fluid being generated on site that would require release to the environment. There are, however, instances where surface water runoff may collect on the surface of closed historical sumps that is not associated with or in contact with the sump contents. This change would eliminate potential ambiguity regarding the appropriate guidelines for the management of this water, and harmonize these guidelines with those for other surface water management.

3.5 Proposed Amendments: Waste Management

Proposed Amendment:

Remove the following Items in Part D: Conditions Applying to Waste Disposal:

- ~~1. All drilling fluids and associated drill Waste generated shall be transported to, and stored in, sumps. All sumps shall totally contain all fluids and provide a minimum, normal operating "freeboard" of (1.2) meters. In no circumstances shall freeboard be less than one (1.0) metre. All plans for the design and location of sumps shall be submitted to the Board for approval.~~

- ~~2. The Licencee may discharge sump Supernatant Fluids to the land surface adjacent to the mainland sumps. The Licencee shall submit to the Board and the Inspector a proposal to Decant sump fluids at least twenty (20) days prior to the planned Decant. The proposal shall contain, but may not be restricted to, the information requirements outlined in the "Sampling and Analytical Requirements For Characterization of Sump Supernatant Fluids" attached to this Licence as Appendix A.~~

- ~~3. The Licencee shall implement the Sump Decant proposal as approved by an Inspector.~~

- ~~10. The Licencee shall Decant a sump only as set out in Part D: Conditions Applying To Waste Disposal. Any other method requires the approval of the Board and an Inspector.~~

Rationale

IOR has no planned drilling activities. Historical sumps have now been closed and are in the process of being reclaimed. If drilling were to occur, IOR would dispose of supernatant fluids at the F-31X Treatment and Injection Facility, and drilling mud solids would be transported off-site to an approved waste management facility. As such, these Items are no longer required.

3.6 Proposed Amendments: Abandonment and Reclamation

Proposed Amendment

Add the following text to Part A: Scope and Definitions:

“Reclamation” *The process of returning a disturbed site to its natural state or one for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.*

Rationale

IOR proposes to amend the term ‘Restoration’ to ‘Reclamation’ wherever used in the licence. The term ‘Restoration’ is not in keeping with terminology that is currently used for this activity. IOR suggests that changing this term to ‘Reclamation’ will avoid potential confusion, and better align with currently accepted terminology.

Proposed Amendment

Amend Item 1, Part H: Conditions Applying to Abandonment and Restoration, with the changes, additions and deletions as marked:

Part H: Conditions Applying to Abandonment and Reclamation

1. The Licencee shall address items "a" to "w", as appropriate, when implementing or modifying the Abandonment and Reclamation Program:
 - a) the Water Intake facilities and distribution system *excluding operating facilities*;
 - b) Waste disposal sites and facilities *excluding operating facilities*;
 - c) the petroleum, chemical and hazardous waste storage areas *excluding operating facilities*;
 - d) the restoration of natural drainage and the restoration of stream banks at the operation site(s);
 - e) the extent of soil and groundwater impacts and proposed remediation;
 - f) a phased approach and implementation schedule;
 - g) maps delineating all disturbed areas, borrow material locations and site facilities;
 - ~~h) a proposal identifying measures by which restoration costs will be financed by the Licencee upon abandonment;~~
 - i) the oil collection system, especially above ground or near-surface Flowline(s) *excluding operating facilities*;
 - j) the Waterflood sediment settling lagoons;
 - k) the drilling fluids and camp sewage and domestic garbage disposal areas;
 - l) any site affected by waste spills, especially diked storage areas;

- m) the mainland and underwater Flowline(s);
- n) the Waterflood facilities;
- o) the Central Processing Facility *excluding operating facilities*;
- p) the Artificial Islands and Natural Islands *excluding operating facilities*;
- q) the former refinery area and associated facilities;
- r) any other facility which could potentially have been impacted by operations ~~create a pollution problem~~ *excluding operating facilities*;
- s) cataloguing of all the abandoned well heads and sumps and identifying the status of each, including any planned mitigation;
- t) shall address the future land use of the abandoned facilities and associated remediation standard;
- u) buildings and other infrastructure such as roads *excluding operating facilities*;
- v) proposed revegetation; and
- w) post monitoring program identified for each proposed Abandonment and Reclamation Plan.

Rationale

Item 1(h) refers to an agreement between the Crown and IOR. Items 1(a), (b), (c), (i), (o), (p), (r) and (u) refer to operations facilities under the current Licence. These facilities are addressed elsewhere in the Licence and are not part of the abandonment and reclamation program until they become inactive.

Proposed Amendment

Amend Part H as follows:

- 6. Upon implementation of any Abandonment and Reclamation Plan the Licencee shall provide, ~~using a reporting template to be developed by the Board,~~ an Annual Report of all abandonment and reclamation activities to be submitted by May 31st of each reporting year.

Rationale

Currently in the Water Licence, there are two different dates stipulated regarding submission of reports regarding abandonment and reclamation activities: one requires submission by October 31st (Part H: Item 6) and one on March 31st (Part B: Item 3, (s) and (u)). IOR proposes to align the abandonment and reclamation annual reporting dates such that a single report is due on May 31st to allow for better workload

management. IOR respectfully suggests the Board consider using a single and separate list of the items be included in the abandonment and reclamation report to ensure clarity.

3.7 Proposed Amendments: General Conditions

Proposed Amendment

Remove portions of Item 3, Part B: General Conditions, as follows:

3. The Licencee shall file an Annual Report with the Board not later than March 31st of the year following the calendar year reported which shall contain the following information:

- ~~s) a summary of any Abandonment and Restoration Program work completed during the year and an outline of any work anticipated for the next year;~~
- ~~u) approved revisions to the Abandonment and Restoration Program~~

Rationale

Currently in the Water Licence, there are two different dates stipulated regarding annual reporting for operations: one requiring submission by October 31st (Surveillance Network Program Annex Part E Item 2 regarding island inspections) and one for March 31st (Part B, Items 3 (a) to (r) inclusive, (t), and (v)). No change is requested regarding these operations annual reporting requirements.

As described previously, IOR proposes to align the abandonment and reclamation annual reporting dates to May 31st, and respectfully suggests the Board consider using a single and separate list of the items to be included in that report (including Part B, Items 3(s) and 3(u) suggested for removal above) to ensure clarity.

Proposed Amendment

Remove Item 4, Part E: Conditions Applying to Operation and Maintenance, as follows:

- ~~4. The Licencee shall submit to the Board any NEB approved Modification(s) or changes to the Flowline Integrity Management Plan for information purposes only.~~

Rationale

A detailed description of current Flowline Integrity Management is provided in the Licence Renewal Application. IOR respectfully suggests that any future changes to flowline management be provided in the operations annual report submitted by March 31st each year. The Board may wish to add “modifications and changes to flowline integrity management” to the information required for this annual report that is currently listed in Part B, Item 3.