



SCHEDULE III
(Subsection 6(1))

APPLICATION FOR LICENCE, AMENDMENT OF LICENCE, OR RENEWAL OF LICENCE

APPLICATION/LICENCE NO: (amendment or renewal only)	
<p>1. NAME AND MAILING ADDRESS OF APPLICANT</p> <p>Imperial Oil Resources (applicant) <i>John Bertrand</i> Room 25061, Fifth Avenue Place 237 Fourth Avenue S.W. P.O Box 2480 Station 'M' Calgary, Alberta T2P 3M9 Office: (403) 237-3429 Cell: (587) 226-4368 Fax: (403) 237-2237 email: john.a.bertrand@esso.ca</p>	<p>2. ADDRESS OF HEAD OFFICE IN CANADA IF INCORPORATED</p> <p>Imperial Oil Limited 237 Fourth Avenue S.W. Calgary, Alberta T2P 3M9 E-mail: contact.imperial@esso.ca</p> <p>Telephone: <u>Same as previous</u></p> <p>Fax: <u>Same as previous</u></p>

3. LOCATION OF UNDERTAKING (describe and attach a map, indicating watercourses and location of any proposed waste deposit)

Latitude: 69.01237 N / 69° 0' 44" N Longitude: -134.68258 W / 134° 40' 57"

A remediation project is proposed at the former BAR-C DEW Line / Imperial Oil exploration base located on Richards Island (Tununuk Point) in the Mackenzie delta. The proposed water withdrawal location is an unnamed surface water lake located on a low plateau near the south tip of Richards Island. Please see attached Figures 1 to 3.

4. DESCRIPTION OF UNDERTAKING (describe and attach plans)

This Type B Water License application is to provide water for a construction camp in support of the Bar C remediation project. In addition, water will be needed for compaction during placement of soils for engineered landfill caps and a minor amount should dust control be needed.

The proposed withdrawal location is from a low lying depression (unnamed lake) with no defined outlet channel. Water will be withdrawn via temporary pump and conveyed via water tank truck to the camp and landfill capping areas.

Grey water and treated sanitary sewage from the camp will be required to be stored, treated and tested prior to any discharge at the site. The Contractor will be required to provide a Wastewater Management Plan to IOL prior to mobilization to the site. The plan will include how they propose to manage these types of wastewater.

5. TYPE OF UNDERTAKING

- | | | | | | |
|-----------------------|---------------|----------------|---------------|-----------------|---------------|
| 1. Industrial | <u> X </u> | 4. Power | <u> </u> | 6. Conservation | <u> </u> |
| 2. Mining and milling | <u> </u> | 5. Agriculture | <u> </u> | 7. Recreation | <u> </u> |
| 3. Municipal | <u> </u> | | | | |

8. Miscellaneous (describe): Water is required for soil compaction, dust control and for camp use in support of the BAR C restoration project.

6. WATER USE

- | | | | |
|--|---------------|---------------------------------------|---------------|
| To obtain water | <u> X </u> | Flood control | <u> </u> |
| To cross a watercourse | <u> </u> | To divert water | <u> </u> |
| To modify the bed or bank of a watercourse | <u> </u> | To alter the flow of, or store, water | <u> </u> |

Other (describe): _____

7. QUANTITY OF WATER INVOLVED (litres per second, litres per day or cubic metres per year, including both quantity to be used and quality to be returned to source)

Camp Operations – 10 m³/day (using a conservative number of 30 people on-site at all times)
Soil Compaction – 1950 m³/year (season) or 16 m³/day (over the 122 day season).
Dust Control - 600 m³/year (season) or 4.9 m³/day (over the 122 day season).

The volume of water requested is a maximum of 3,800 m³/year, or 31 m³/day (over the 122 day season).

No water is to be returned directly to the source lake. Considering the maximum volume of water withdrawal, the reduction of the lake volume for one year will be minimal.

8. WASTE DEPOSITED (quantity, quality, treatment and disposal)

Wastewater will be generated by camp activities at approximately 80-95% of the daily withdrawal of 10 m³/day. No wastewater is generated during soil compaction.
It is expected that the camp will be located on the dock, or as a barge camp adjacent to the dock. Wastewater generated during camp operations will be analyzed for discharge suitability based on NT requirements.
Wastewater deemed suitable for disposal on-Site could be discharged in the Mackenzie River where a dilution ratio of 10,000:1 from June to August and greater than 1000:1 in September, would be expected. Wastewater deemed unsuitable for disposal on-Site will be treated and re-tested; water that remains unsuitable for discharge will be containerized and shipped from Site to a licensed off-site treatment facility.

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing address and location; attach list if necessary)

The Site is located on Inuvialuit 7(1) (A) private land within the Inuvialuit Settlement Region (ISR).

Inuvialuit Land Administration
Bag Service #21
Inuvik, NT, X0E 0T0
Attention: Mike Harlow, Chief Land Administrator

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION

No impacts to surface water quality and minimal impact to reduction of lake volume for one year.

The water withdrawal is from an unnamed lake of small size with no outlet. There is no in-stream use or proposed alterations to any watercourse as part of this application. There is no or limited human use of the lake now or predicted future use (ie. potential for intermittent hunting / camping). Predicted and potential environmental impacts will be dealt with in accordance with applicable governing laws, environmental policy, and in accordance with the Inuvialuit Land Administration (ILA) Environmental Monitor. The Environmental Monitor from the (ILA) will be present on Site during remediation activities as appropriate.

11. CONTRACTOR AND SUB-CONTRACTORS (names, addresses and functions)


Imperial Oil will be designated the Owner for this project. The remediation work will be bid in fall 2013, with the contract awarded to a "Prime Contractor" who will be responsible for overall site restoration including camp operations and earthworks. The Prime Contractor will advise the Owner of any subcontractors. Names and contact information of the Prime Contractor and any relevant subcontractors for this application can be supplied to the NWTWB upon contract award.

12. STUDIES UNDERTAKEN TO DATE (attach list if necessary):

- Environmental Sciences Group. (ESG) 1995. Environmental Study of Abandoned DEW Line Sites III. One Auxiliary and Eighth Intermediate Sites in the Canadian Arctic. 2 Volumes.
- Komex International Ltd. (Komex), 2001. 2001 Phase I and II Programs at BAR-C, N.W.T.
- IEG Consultants Ltd. 2009. Phase III Environmental Site Assessment Report at BAR-C/Tununuk Point, NT. (Assessment conducted in 2008).
- Golder Associates (Golder) 2011. BAR-C/ Tununuk Point Supplemental Phase III Environmental Site Assessment (Assessment conducted in 2010).
- C. Arnold Heritage Consulting. 2012. History and Traditional Knowledge of Tununuk Point.
- WorleyParsons, 2013. 2012 Supplemental Phase II Environmental Site Assessment Report at BAR-C/Tununuk Point, NT. Prepared for Imperial Oil. Draft, July 2013.

13. PROPOSED TIME SCHEDULE

Start date: 01-May-2014 Completion date: 1-October-2017

Name: Max Brobna Title: Principal Environmental Engineer
Worley Parsons
Signature:  Date: November 14, 2013

FOR NWTWB OFFICE USE ONLY

APPLICATION FEE	Amount: _____	Receipt #:	
WATER USE FEE	Amount: _____	Receipt #:	



Infrastructure & Environment



**IMPERIAL OIL
REMEDIAL ACTION PLAN
BAR-C TUNUNUK POINT, NT
SITE LOCATION MAP**

SOURCE: MAPART PUBLISHING
YUKON NWT
WHITEHOUSE, YELLOWKNIFE, ALASKA,
ANCHORAGE, FAIRBANKS



17-SEP-13	date	K.M.S.	edited by	OTHERS	drawn by	step by
						MS

PROJECT NUMBER:	307074-00983	FIGURE:	1
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PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.



LEGEND

→ SURFACE DRAINAGE DIRECTION

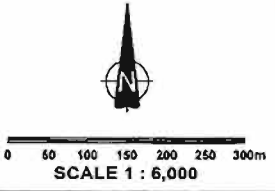
◆ ARCHAEOLOGICAL SITE (50m EXCLUSION ZONE)

APPROXIMATE SITE BOUNDARIES / USE

— DND/DEW LINE (1965-1963)

— IMPERIAL OIL RESOURCES (1972-1984)

— GULF CANADA RESOURCES (1973)



SOURCES:
 1) DEPARTMENT OF THE AIR FORCE, 1987

Infrastructure & Environment

**IMPERIAL OIL
 REMEDIAL ACTION PLAN
 BAR-C TUNUNUK POINT, NT**

HISTORICAL SITE USE



20-SEP-13 dmp K.M.S. edited by OTHERS/M.T. drawn by *MB* app by

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PROJECT NUMBER: 307074-00983

FIGURE: 2

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LEGEND & NOTES :

HORIZONTAL CO-ORDINATES ARE METRES UTM, NAD 83,
 ZONE 18 OR LATITUDE/ LONGITUDE DECIMAL DEGREES
 AND ARE DERIVED FROM KIRKIN PPP CALCULATIONS

CONTOUR 2.5m INDEX

ELEVATIONS ARE ORTHOMETRIC AND ARE CALCULATED WITH HFK2
 ELEVATIONS SHOWN ARE IN METRES AND DECIMALS THEREOF.



SCALE 1 : 10,000

**IMPERIAL OIL
 REMEDIAL ACTION PLAN
 BAR-C TUNUNUK POINT, NT
 SITE LAYOUT**

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WorleyParsons
 resources & energy

- SOURCES:**
1. IEG CONSULTANTS LTD.: CAD FILE A04031A01.FIGURE-1.DWG, DATED MAY 13, 2009
 2. AREAS M, I, AND J FROM GOLDER ASSOCIATES, 2010 ESA REPORT.

12-JUL-13	date	K.M.S.	added by	OTHERS/MLT.	drawn by	MB	app by
<small>PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.</small>							

PROJECT NUMBER:	FIGURE:
307074-00983	3

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