



# Gwich'in Land and Water Board

## Water License Application

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### Schedule III

(Subsection 6 (1) of the Northwest Territories Waters Regulations)

### Application for Water License, Amendment of License Or Renewal of License

**APPLICATION/LICENCE NO:** \_\_\_\_\_  
(Amendment or Renewal only)

#### 1. NAME AND MAILING ADDRESS OF APPLICANT

Imperial Oil Resources Ventures Limited  
237 Fourth Avenue S.W.  
P.O. Box 2480, Station M  
Calgary, Alberta  
Canada T2P 3M9

Peter D. Grout  
Manager, Regulatory Affairs  
Mackenzie Gas Project

Fax (403) 237-2102  
Telephone (403) 237-3984

#### 2. HEAD OFFICE ADDRESS.

Same as above

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

#### 3. LOCATION OF UNDERTAKING

The 2004 Winter Field Geotechnical Investigation Program (the Program) extends from the boundary of the Gwich'in Settlement Area with the Inuvialuit Settlement Region in the north to the boundary with the Sahtu Settlement Area in the south. The Program consists of a total of thirty-one (31) sites of which nineteen (19) were previously approved under Land Use Permit No: G03S003 dated March 28, 2003 and Temporary Right-of-Way Authorization # G02A04 dated March 14, 2003, and Type II Research Authorization # G02R37 dated April 15, 2003. Applications are being concurrently filed with this application for amendments to the above-mentioned Land Use Permit, Temporary Right-of-Way Authorization and the Type II Research Authorization to

cover the twelve (12) new sites.

The proposed program is shown on the attached series of four (4) 1:100,000 scale maps (Drawing Numbers: 107-0000-011-289-001/004 – Rev 0). Additional location information is also provided in Section 4 below.

#### 4. DESCRIPTION OF UNDERTAKING

The 2004 Winter Geotechnical Investigation Program consists of geotechnical investigations of a number of potential borrow sources, overland sites along the proposed pipeline right-of-way, frost heave sites and a river crossing at the Thunder River. The information is required in order to assess the feasibility of the Mackenzie Valley Pipeline and for the preparation of subsequent regulatory applications should the Mackenzie Valley Pipeline proceed.

The primary access route proposed for the movement of equipment, camps, supplies and personnel is the existing C.N.T. trail. Secondary access, using existing cutlines to the maximum extent practical, will be developed from the primary access to each of the sites. Where necessary, new access will be created.

It is proposed to construct temporary snow roads to provide primary and secondary access to the sites. In the event that snow depths are insufficient for road construction, water will be used to construct ice roads capable of supporting the movement of vehicles and equipment. The estimated quantities of water to be used on a contingency basis for ice road construction are based on a volume of 100 m<sup>3</sup>/km and are shown in Table 1.

The project personnel will be accommodated in a 65-person sleigh camp that will be moved along the C.N.T. trail as the work progresses. Eight (8) potential locations have been identified for the sleigh camp at KP 173, KP 199, KP 212, KP 218, KP 238, KP 262, KP 288 and KP 318 of the proposed MGP pipeline right-of-way. The proposed locations for water withdrawal and the proposed access are shown on the attached 1:100,000 topographic maps and are summarized in Table 2.

It is estimated that potable water requirements will be 13.0 m<sup>3</sup> / day for a total of approximately 105 m<sup>3</sup> for each camp location (average stay per location is 8 days).

#### 5. TYPES OF UNDERTAKING

- |                             |  |
|-----------------------------|--|
| 1. Industrial               | _____  |
| 2. Mining and Milling       | _____  |
| 3. Municipal                | _____  |
| 4. Power                    | _____  |
| 5. Agriculture              | _____  |
| 6. Conservation             | _____  |
| 7. Recreation               | _____  |
| 8. Miscellaneous (describe) | Ice road preparation (if necessary) and Sleigh Camp operation in support of 2004 Winter Field Geotechnical Investigation Program |

#### 6. WATER USE

- |   |  |
|---|--|
| To obtain water                             | _____  |
| Flood control                               | _____  |
| To cross a water course                     | _____  |
| To divert water                             | _____  |
| To modify the bed or bank of a water course | _____  |
| To alter the flow of, or store, water       | _____  |
| Other (describe)                            | Ice road preparation (if necessary)<br>Sleigh Camp operation |

**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)

Estimated Ice Road Contingency Requirements – 29,000 m<sup>3</sup>

Estimated Potable Water Requirements – 840 m<sup>3</sup>

The water will be used for ice road construction during the period December 2003 –April 2004 in the event that the snow pack is not sufficient for the preparation of snow roads. No treatment will be required. The water will be released into the natural drainage systems during the course of the Spring 2004 thaw period.

Potable water requirements will be used for Sleigh Camp operations.

**8. WASTE DEPOSITED**

(Quantity, quality, treatment and disposal)

Disposal facilities will be required for a maximum of approximately 105 m<sup>3</sup> of waste water at each of the eight (8) sleigh camp locations. The sewage and grey water will be totally contained in the frozen ground at each site. The sumps will be treated consistent with the General sanitation Regulations pursuant to Section 25(1)(i) of the NT Public Health Act. None of the waste will be discharged to the ground surface or into surface watercourses.

None of the sumps will be located within 100 m of the normal high water mark of any watercourse or lake. The capacity of the sump shall be sufficient to contain 13 m<sup>3</sup> / day of discharge (based on a 65-person camp x 200 l/person/day). In addition, the sump shall be maintained at least 1.2 m below the lowest elevation of the contiguous ground surface at all times. The size and depth of the sump shall be determined on the basis of how long the camp shall be at a particular site and, where possible, the sump shall be constructed deep rather than wide to minimize surface disturbance.

As a contingency, excavation equipment shall be available at each camp location to construct a second sump if the need arises.

All sumps shall be backfilled and restored prior to demobilization from the temporary camp location. All spoil from the initial sump excavation shall be placed over the sump area to ensure that ponding does not occur. An overlap of approximately 2 m beyond the edges of the sump shall be maintained.

**9. Other persons or Properties Affected by this Undertaking**

(Give name, mailing address and location; attach list if necessary)

N/A

**10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION**

The anticipated environmental impacts of water use associated with the 2004 Winter Field Geotechnical Winter Investigation Program will be minor.

The primary reason for this water license application is as a contingency measure to ensure adequate protection of the ground surface along the proposed access routes during the movement of equipment and personnel to the geotechnical sites.

The water will be withdrawn from approved sources and, where necessary, will be used to construct ice roads

along the proposed access to the sites. Ice road construction will only be employed as a contingency where it is determined that snow roads are incapable of supporting the off-road vehicular activity without adversely impacting the ground surface. During the spring thaw in 2004 the water will be released from the access roads to re-enter the natural drainage systems.

The camp waste will be totally contained in the frozen ground and none of the waste will be discharged to the ground surface or surface drainage channels (See Section 8 above)

The primary mitigation measures used for the program to reduce potential adverse environmental impacts will include adherence to the terms and conditions stipulated in the DFO Protocols for Water Withdrawal and Temporary Winter Access Water Crossings for Oil and Gas Activities in the Northwest Territories.

### 11. CONTRACTOR AND SUB-CONTRACTORS

The principal contractor is:

ColtKBR,  
400, 10201 Southport Road S.W.,  
Calgary, Alberta, T2W 4X9  
Contact: Mr. Dale Babala, Construction Manager

Details of sub-contractors have yet to be determined.

### 12. STUDIES UNDERTAKEN TO DATE

Summer 2003 Field Reconnaissance Survey in the Gwich'in Settlement Area. An aerial reconnaissance program used to finalize the proposed access routes to the geotechnical sites.

Water Resources Survey – Gwich'in Settlement Area. Field surveys of bathymetric data for the proposed sources of water for the 2004 Winter Field Geotechnical Investigation Program were conducted in the fall of 2003.

### 13. PROPOSED TIME SCHEDULE

Start Date: December, 2003

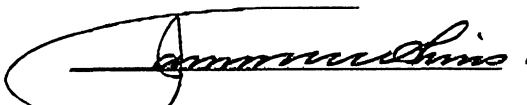
Completion Date April, 2004

FOR / PETER D. GROUT

Manager, Regulatory Affairs  
Imperial Oil Resources Ventures Ltd.

Name (Print)

Title (Print)

  
Signature

October 20, 2003

Date

### FOR OFFICE USE ONLY

Application Fee Amount: \$ \_\_\_\_\_ Receipt No: \_\_\_\_\_

Water Use Deposit Amount: \$ \_\_\_\_\_ Receipt No: \_\_\_\_\_

**TABLE 1  
GWICH'IN SETTLEMENT AREA  
LAND USE SUMMARY**

SITE ID	ACCESS (m)			LAND USE (ha)			WATER USE (m <sup>3</sup> )
	New	Existing	Total	Access	Site	Total	
<b>NEW GEOTECHNICAL SITES</b>							
20.039PB	6500	14000	20500	12.30	0.08	12.38	2050
2.051PA	-	2120	2120	1.27	0.16	1.43	210
2.051PB	1000	-	1000	0.60	0.16	0.76	100
Thunder R.	500	-	500	0.30	0.07	0.37	50
<b>SUBTOTAL</b>	<b>8000</b>	<b>16120</b>	<b>24120</b>	<b>14.47</b>	<b>0.47</b>	<b>14.94</b>	<b>2410</b>
<b>SLEIGH CAMPS</b>							
SC KP173	-	-	-	-	3.00	3.00	105
SC KP199	-	-	-	-	3.00	3.00	105
SC KP212	-	-	-	-	3.00	3.00	105
SC KP218	-	-	-	-	3.00	3.00	105
SC KP238	-	-	-	-	3.00	3.00	105
SC KP262	-	-	-	-	3.00	3.00	105
SC KP288	-	-	-	-	3.00	3.00	105
SC KP318	-	200	200	0.12	3.00	3.12	105
<b>SUBTOTAL</b>	<b>-</b>	<b>200</b>	<b>200</b>	<b>0.12</b>	<b>24.00</b>	<b>24.12</b>	<b>(840)</b>
CNT TRAIL		174500	174500	104.70	-	104.70	17450
<b>SUBTOTAL</b>	<b>-</b>	<b>174500</b>	<b>174500</b>	<b>104.70</b>	<b>-</b>	<b>104.70</b>	<b>17450</b>
<b>PERMITTED SITES (2003)</b>							
2.064PB	500	1250	1750	1.05	0.09	1.14	175
OL 39	-	1630	1630	0.98	0.01	0.99	165
OL 40	2300	-	2300	1.38	0.01	1.39	230
OL 41	-	-	-	-	0.01	0.01	-
OL 42	2000	-	2000	1.20	0.01	1.21	200
4.026	1250	10750	12000	7.20	0.16	7.36	1200
4.024	700	2000	2700	1.62	0.16	1.78	270
4.023	1600	-	1600	0.96	0.15	1.11	160
4.038APB	350	-	350	0.21	0.08	0.29	35
4.038APA	300	-	300	0.18	0.16	0.34	30
4.020P	3000	-	3000	1.80	0.16	1.96	300
4.039	1500	-	1500	0.90	0.16	1.06	150
4.060P	-	-	-	-	0.16	0.16	-
4.059AP	2550	-	2550	1.53	0.30	1.83	255
4.103PA	3450	-	3450	2.07	0.08	2.15	345
4.103PB	1500	-	1500	0.90	0.08	0.98	150
5.014PA	-	5500	5500	3.30	0.08	3.38	550
5.014PB	750	-	750	0.45	0.08	0.53	75
5.020	2050	10700	12750	7.65	0.23	7.88	1275
<b>SUBTOTAL</b>	<b>24,050</b>	<b>31,830</b>	<b>55,880</b>	<b>33.38</b>	<b>2.17</b>	<b>35.55</b>	<b>5,590</b>
<b>TOTAL</b>	<b>32,050</b>	<b>222,650</b>	<b>254,700</b>	<b>152.67</b>	<b>26.64</b>	<b>179.31</b>	<b>25,450</b>
					<b>CAMPS</b>		<b>840</b>
					<b>TOTAL WATER</b>		<b>26,290</b>

**TABLE 2**  
**WATER LICENCE – GWICH'IN SETTLEMENT AREA**  
**ESTIMATED ACCESS REQUIREMENTS**

POTENTIAL WATER SOURCE ID	LATITUDE	LONGITUDE	LAND OWNER	ACCESS (m)	LAND USE (ha)
GSA-1	133.2818	68.2956	Private	150	0.09
GSA-2	133.0883	68.2443	Crown	2,350	1.41
GSA-3	132.8938	68.1393	Crown	250	0.15
GSA-4(a)	132.7189	68.0982	Crown	900 (E)	0.54
GSA-5(b)	132.5525	67.9781	Private	1,500 (E)	0.90
GSA-6	132.4438	67.9969	Private	1,000 (E)	0.60
GSA-7(c)	132.1646	67.8771	Private	350	0.21
GSA-8	132.0551	67.8575	Private	650	0.39
GSA-9	131.9010	67.7925	Private	50	0.03
GSA-10 (d)	131.7911	67.6904	Private	1600 [1400 (E)]	0.96 (0.84)
GSA-11	131.5172	67.5172	Private	650	0.39
GSA-12	131.3919	67.5556	Private	200	0.12
GSA-13	131.2239	67.5273	Private	100	0.06
GSA-14	131.0416	67.5240	Private	200	0.12
GSA-15	130.9036	67.5200	Private	300	0.18
GSA-16	130.7940	67.4741	Crown	200	0.12
GSA-17	130.5769	67.4048	Crown	150	0.09
GSA-18	130.4142	67.3222	Crown	500 <sup>1</sup>	0.30
<b>TOTALS</b>			<b>Crown</b>	<b>3,850</b>	<b>2.31</b>
			<b>Private</b>	<b>6,750</b>	<b>4.05</b>
			<b>Total</b>	<b>10,600</b>	<b>6.36</b>

**LEGEND:**

- (a) North Caribou Lake
- (b) Hill Lake
- (c) Wood Bridge Lake
- (d) Travaillant Lake

**E Existing Access**
















**1. Access not included in total as route shown is located in Sahtu Settlement Area**





**SUMMARY:**

Access to all eighteen (18) water sources would require approximately 10,600 m in the GSA and an additional 500 m in the SSA. Total access in the GSA includes about 4,800 m of existing access and 5,800 m of new access.




# Permit Map Series Legend

## Point Layers






-  Activity Location
-  CHIN Heritage and Archeological Sites
-  DFO Fisheries Studies
-  DIAND Boreholes Exploration
-  DIAND Licenses
-  DOT Granular Resources Inventory
-  Env Canada Stream Gauging Stations
-  GSC Mineral Showings
-  GSC Wells
-  Gwich'in Cabins
-  NTDB Contour Lines
-  NWT Mineral Showings
-  NWT Wells
-  NWT/Yukon Placename
-  Public Registry









-  Rwed Cabins
-  RWED Land Permits
-  Surface disposition
-  Yukon Mineral Showings

## Line Layers

-  Dempster Highway
-  Dene Traditional Trails
-  NTDB Cutlines

## Region Layers

-  GLUPB Proposed Protected Areas
-  GLUPB Special Management Areas
-  Grand River Resource Blocks
-  Gwich'in Harvest Boundaries
-  Gwich'in Parcels

-  Gwich'in Territorial Park
-  Mineral lease
-  NTDB Sand/Gravel
-  NTDB Water Bodies
-  NTDB Wetlands
-  Prospect Lease 98
-  RWED Forest Inventory
-  Town Boundaries