APPLICATION SUMMARY

Applicant:	Imperial Oil Resources Ventures Limited
Regulatory Agency:	Mackenzie Valley Land and Water Board
Application Type:	Type A Water Licence
Location:	Deh Cho Region

Proposed Undertaking:	**Description**	**Estimated Total Water Requirements**
	• withdraw water from 44 potential water sources	----
	• water use and deposit to:	
	◦ develop and maintain about 252.4 km of temporary winter roads to access camps, borrow sites, water sources, and the pipeline right-of-way during construction of the Mackenzie Gas Project	208,800 m^3
	◦ develop and maintain about 521.9 km of right-of-way travel lane	1,062,000 m^3
	• water use and treated water deposits for:	
	◦ consumption at the Blackwater River facility site	7,100 m^3
	◦ consumption at the Ochre River infrastructure site	55,400 m^3
	◦ consumption at the Camsell Bend infrastructure site	55,400 m^3
	◦ consumption at the Trail River facility site	7,100 m^3
	◦ consumption at the McGill Station infrastructure site	55,400 m^3
	◦ consumption at the Trout River Heater Station	1,800 m^3
	◦ consumption at the Trout Lake infrastructure site	27,000 m^3
	◦ consumption at the Hay River infrastructure site	37,700 m^3
	◦ pressure test one pipeline, totalling about 521.9 km in the DCR	4,500 m^3

Proposed Undertaking:	Description	Estimated Total Water Requirements
	• installation of four HDD watercourse crossings in the DCR	15,700 m^3
	Total Water Use Requirements	1,537,900 m^3
	Total Potential Water Deposits	1,537,900 m^3

Overview Map: Figure 2-1 is an overview map of activities in the DCR

Schedule: Following the receipt of all approvals and a decision to proceed, construction is scheduled to begin in mid-2006 with substantial completion scheduled for year-end 2009.

Other Related Applications: Deh Cho Region – Type B water licence application including watercourse crossings, training, and diversions

Inuvialuit Settlement Region – Type A and B water licences

Gwich'in Settlement Area – Type A and B water licences

Sahtu Settlement Area – Type A and B water licences

Figure 2.1 has been moved to reduce file size. To view it, click on the link to the figure in the web page List of Figures for this document.

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Application for a New Water Licence or Amendment of an Existing Licence

Dehcho Region – Water Use

1. Name and Mailing Address of Applicant

Imperial Oil Resources Ventures Limited
425 First Street S.W.
Calgary, Alberta T2P 3M9

Attn: A.D. (Sandy) Martin
Manager, Regulatory Affairs
Mackenzie Gas Project

Telephone number: (403) 237-2864
Fax number: (403) 237-2102
Email: sandy.d.martin@esso.ca

2. Address of Head Office in Canada if Incorporate

Mackenzie Gas Project
Imperial Oil Resources Ventures Limited
237 Fourth Avenue S.W.
Calgary, Alberta T2P 3M9

3. Location of Undertaking (describe and attach a map, indicating watercourses and location of any proposed waste deposits).

The Mackenzie Gas Project within the Dehcho Region extends from the boundary with the Sahtu Settlement Area in the north to the boundary between Alberta and the Northwest Territories in the south.

The location and other details regarding the proposed winter access roads, pipeline right-of-way travel lane construction (travel lane), pressure testing of the pipelines, and site-specific water use requirements are covered in the site-specific sections in this application. See also Appendix C.

4. Description of Undertaking (describe and attach plans)

This Type A water licence application covers certain types of undertakings related to water use and treated water deposits. The types of proposed undertakings are included in the industrial, municipal, and miscellaneous classifications in Schedule II of the *Northwest Territories Waters Regulations*.

The water use undertakings in this application meet or exceed the Type A licensing criteria in schedules IV, VI, and VII of the NWTR. Wastewater deposit activities, which would ordinarily require a Type B water licence, are also included in this application.

The proposed water use and deposit requirements include:

- constructing and maintaining about 199.4 km of winter access roads from 42 borrow sites to sites such as the Ochre River, Camsell Bend, McGill Station, Trout Lake and Hay River infrastructure sites, the Blackwater River, Trail River and Trout River facility sites, the pipeline right-of-way and other existing transportation corridors (see Section 4)

- constructing and maintaining about 53 km of winter roads, including 42.8 km of access from 44 potential water sources and 10.2 km of direct pipeline construction access (shoofly) to the pipeline right-of-way and other existing transportation corridors (see Section 4)

- constructing and maintaining about 521.9 km of pipeline right-of-way travel lane from the SSA boundary to the Alberta boundary (see Section 5)

Additional water use and treated water deposits include:

- water consumed at the Ochre River, Camsell Bend, McGill Station, Trout Lake and Hay River infrastructure camps and the Blackwater River, Trail River and Trout River facility sites (Section 7)

- deposits of treated water from the camps (Section 7)

- potential deposits of treated pressure test water sourced within the DCR (Section 6)

The locations and detailed descriptions of the proposed undertakings are included in each section.

Table 2-1 is a summary of the proposed use for each water source on Crown lands within the DCR. These sources are numbered from DCN2 to 173, including the rivers and creeks, and are shown on the site-specific maps in this application.

Table 2-1: DCR Water Source and Use Summary

Water Source No.	Kilometre Post (KP)	Water Source and Use							Total Amount Required (m^3 per year)
		Infrastructure	Testing	ROW	Access Roads				
					Infrastructure	Borrow	Pipeline	Facility	
Mackenzie River	688.8	-	-	Yes		9.037PB, 9.038PB, 9.038PA			13,484
Blackwater River	698.7	-	-	-					0
Mackenzie River	702.1	Blackwater River	-	Yes	Blackwater River	9.091P, 9.044PB, 9.044PA, 10.001P			18,447
Mackenzie River	704.1	-	-	Yes					103
Mackenzie River	709.9	-	-	Yes		10.003P			2,119
Mackenzie River	712.1	-	-	Yes		10.004P			11,568
Mackenzie River	728.0	-	-	Yes		10.007P	Shoofly		16,134
DCN2	750.2	-	-	-		10.014AP, 10.013P			2,812
White Sand Creek	750.9	-	-	-					0
165	754.6	-	-	-					55
Mackenzie River	757.2	Ochre River	-	Yes	Ochre River	10.020P, 10.022P,	Shoofly		39,896
Ochre River	758.8	-	-	-					0
I-12	766.4	-	-	-					359
Hodgson River	777.5	-	-	-					0
166	790.3	-	-	-					788
Mackenzie River	790.4	-	-	Yes		10.037P, 10.120P			22,394
Mackenzie River	798.1	-	-	Yes		10.043P, 10.044BP, 10.055P			13,811
DCN5	798.1	-	-	-					58
Mackenzie River	803.0	-	-	Yes					30
DCN6	804.9	-	-	-					91
River Between Two Mountains	827.4	-	-	-					0

Table 2-1: DCR Water Source and Use Summary (cont'd)

Water Source No.	Kilometre Post (KP)	Water Source and Use							Total Amount Required (m^3 per year)
		Infrastructure	Testing	ROW	Access Roads				
					Infrastructure	Borrow	Pipeline	Facility	
Mackenzie River	830.2	-	-	Yes	River Between Two Mountains	10.071P, 10.072P, 20.015P			33,220
DCN7	839.8	-	-	-					85
Willowlake River	853.9	-	-	-					0
167	885.9	-	-	Yes		11.019P			28,804
Mackenzie River	895.5	-	-	-					0
DCN7A	880.0	-	-	-		11.021P, 11.019P			988
168	901.4	-	-	Yes		11.033P			20,576
Mackenzie River	928.3	Camsell Bend	Spreads A1, A2	-				Trail River	33,998
Trail River	935.0	-	-	-					0
169	943.4	-	-	-					931
170	947.9	-	-	-					338
Mackenzie River	948.0	-	-	Yes		20.018P			23,999
Mackenzie River	954.2	-	-	Yes		11.067P			12,916
Mackenzie River	982.9	-	-	Yes		11.071P			22,892
Mackenzie River	1000.0	-	-	Yes		11.174P			15,029
Liard River	1010.3	-	-	-					0
Manners Creek #1	1018.9	-	-	-					0
171	1039.4	-	-	Yes		11.192P			56,228
Jean Marie Creek #1	1047.6	-	-	-					0
171A	1056.1	-	-	-					1,135
Jean Marie Creek #2	1082.1	-	-	-					0
Trout River	1104.9	-	-	-					0
173	1168.2	Trout River Trout Lake	-	Yes		20.002P, 20.064P, 20.004PC, 20.004PA, 20.006P, 20.008P, 20.068P			103,403

5. Type of Undertaking.

1.	Industrial	**X**	5.	Agriculture	
2.	Mining and Milling		6.	Conservation	
3.	Municipal	**X**	7.	Recreation	
4.	Power		8.	Miscellaneous	**X**

Industrial: Potential deposit of treated water for pressure testing the pipelines in the DCR

Municipal: Water use and treated water deposits related to the Ochre River, Camsell Bend, McGill Station, Trout Lake and Hay River infrastructure camps and the Blackwater River, Trail River and Trout River facility sites

Miscellaneous: Winter access road and travel lane construction

6. Water Use

To obtain water	**X**	Flood control	
To cross a watercourse		To divert water	
To modify the bed or bank of a watercourse		To alter the flow of, or store water	

Other (describe): Potential treated wastewater deposits

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).

Part 7 of each section in this application provides an estimate of the quantity of water involved with each undertaking.

8. Waste deposited (quantity, quality, treatment and disposal)

Water deposits for winter access roads and the pipeline travel lane are described in Part 8 of Section 4 and Section 5. An overview of water deposits is provided in Section 3 and Section 11.

9. Other persons or properties affected by this Undertaking (give name, mailing address and location). Attach a list if necessary.

A public involvement program, including aspects of the undertakings in this water licence application, has been conducted with local communities. For a summary of this program, see Section 10.

10. Predicted environmental impacts of Undertaking and proposed mitigation.

Biophysical and human environment setting, potential effects and primary mitigation strategies are discussed on a regional basis in Section 8. An overview of planned environmental protection plans is included in Section 11.

11. Contractors and sub-contractors (names, addresses and functions). Attach a list if necessary.

The number of workers required for development activities at each site will depend upon the type, size and stage of each activity. An estimate of the personnel requirements for each aspect of the development is shown in Part 3 of the application for a land use permit on Crown land in the DCR.

12. Studies undertaken to date. Attach a list if necessary.

Detailed bathymetric surveys were conducted as part of the 2003 and 2004 field programs (Golder, 2004). The surveys were intended to determine mean and maximum depths, and estimate summer and winter under-ice water volumes in potential water sources. This information will be used to determine the suitability of each lake as a potential water source, based on criteria established by Fisheries and Oceans Canada (DFO) in the *Draft DFO Protocol for Winter Water Withdrawal in the Northwest Territories* dated June 2004 (DFO Protocol).

The DFO Protocol is designed to protect fish and fish habitat and is based primarily on the following criteria:

- maximum water depth in the lake
- lake connectivity with other lakes
- maximum withdrawal of up to 5.0% of the under-ice volume

Nine lakes along the proposed pipeline corridor in the DCR were included in the 2003 and 2004 bathymetric surveys (Golder 2004). The lakes were initially identified based on their proximity to the location of planned use, available volumes from the source, source recharge capabilities and other related factors. Of the lakes surveyed, one has been eliminated and an additional six have been added. Information on the potential requirements from each of the remaining water sources, including various creeks and rivers, is provided in Table 2-1.

Water withdrawals from the majority of sources are not expected to exceed the 5.0% total volume criterion established by DFO. For lakes that do not exceed 5.0% criterion, no potential adverse environmental effects are expected.

For water source locations that require the withdrawal of water in excess of the 5.0% criterion, potential environmental effects and mitigation that might occur are shown in Table 2-2.

Table 2-2: Potential Environmental and Mitigation Effects

Potential Effect	Primary Mitigation Strategy
Direct effects on fish habitat	Avoid spawning, rearing or overwintering habitats, unless authorized.
Direct effects on rare aquatic vegetation or riparian areas because of low snow pack	Avoid shoreline areas where these types of plants typically occur.
Loss of vegetation by access road construction	Reclaim sites according to regulations, policies, industry standards and best management practices.
Water withdrawals	Record the volume of the water withdrawal and ensure that volumes do not exceed regulatory limits stated in the water licence.

13. Proposed time schedule

The anticipated duration of the proposed undertakings is included in the Schedule (Part 13) of the summary and site-specific sections in this application.

The term of the requested water licence is five years. This covers a three-year construction period and allows for subsequent demobilization, construction cleanup and reclamation activities.

Applicant

Name (print):

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425 First Street S.W.
Calgary, Alberta T2P 3M9

Attn: A.D. (Sandy) Martin
Manager, Regulatory Affairs
Mackenzie Gas Project

Signature: _____

Date: _____

FOR OFFICE USE ONLY

Please make all cheques payable to "Receiver General of Canada"

Application Fee Amount:	**$30.00**	**Receipt No:** _____
Water Use Deposit Amount:	**$130.86**	**Receipt No:** _____