

NORTHWEST TERRITORIES WATER BOARD

WATER LICENCE APPLICATION QUESTIONNAIRE

FOR

OIL AND GAS EXPLORATION: SEISMIC

prepared by

Department of Indian Affairs and Northern Development
Water Resources Division
August 2002

INTRODUCTION

The purpose of this questionnaire is to solicit supplemental information from an applicant to support their application for a Water Licence (or renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the Northwest Territories Water Board having to solicit additional information after an application has been submitted. This information will be used during the environmental assessment and screening of your application, which must be undertaken prior to the approval of a Water Licence.

The applicant should complete the questionnaire to the best of their ability, recognizing that some questions may not be relevant to the proposed project. For questions that do not relate to the operation, the applicant is requested to indicate **N/A** (not applicable). For information from other sources, please fully reference the material cited, including the title of the document and the page numbers referred to.

If any questions arise while completing the questionnaire, the applicant may wish to contact the Northwest Territories Water Board at (867) 669-2772. If your question is of a technical nature, please contact the Policy and Assessment Section of the Water Resources Division, Department of Indian Affairs and Northern Development (DIAND) at (867) 669-2658.

Chairman
Northwest Territories Water Board

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SECTION 1: APPLICANT INFORMATION

1.1 Applicant: Shell Canada Limited (Shell)
Address: 400 – 4th Avenue S.W.
P.O. Box 100, Station M
Calgary, Alberta, T2P 2H5

1.2 Project Name: 2006/2007 Winter Field Program
Property Name : Niglintgak Natural Gas Field
Exploration Licence Number: Shell Canada Limited
Significant Discovery Licence (SDL) 19
Closest Community (s): Tuktoyaktuk
Min/Max Latitude of Project Area: Niglintgak SDL: (NAD 83)
North boundary: 7691538.7
South boundary: 7684131.97
Min/Max Longitude of Project Area: Niglintgak SDL:
West boundary: 483218.96
East boundary: 491657.89

1.3 Primary Company Contact: Ben Seligman
Title: Project Integration Coordinator
Contact Number: (403) 691-4396
Alternate Contact Numbers: (403) 828-4396
Fax: (403) 691-4850

1.4 Field Contact: Dave Widdifield
Title: Logistics and Construction Manager
Contact Number: (403) 218-4689
Alternate Contact Numbers: (403) 850-4150

Fax: (403) 266-2976

1.5 List the contractors (ie. Major, sewage, water) that will be involved in the project:

Company Name: Contractors yet to be awarded.

Primary Contact: _____

Title: _____

Contact Number: _____

Alternate Contact Numbers: _____

Fax: _____

Company Name: _____

Primary Contact: _____

Title: _____

Contact Number: _____

Alternate Contact Numbers: _____

Fax: _____

Company Name: _____

1.6 List all other permits or authorizations applied for: _____

Primary Contact: _____

Instrument and Legislation	Agency	Activities and Approval Required
Project Description <i>Inuvialuit Final Agreement</i>	Christine Inglangasuk Environmental Assessment Coordinator Environmental Impact Screening Committee P.O. Box 2120 Inuvik, NT X0E 0T0 Telephone: 867-777-2828 Fax: 867-777-2610	Screening required for activities within the Inuvialuit Settlement Region.

Instrument and Legislation	Agency	Activities and Approval Required
Scientific Research Licence <i>NWT Scientists Act</i>	Karen Heikkila, Research and Licensing Manager Manager, Scientific Services Aurora Research Institute Box 1450 Inuvik, NT X0E 0T0 Telephone: 867-777-3298 Fax: 867-777-4264	Licence required to conduct scientific studies in the NWT.
Canadian Wildlife Services Bird Sanctuary Permit <i>Migratory Birds Convention Act</i> <i>Migratory Bird Sanctuary Regulations</i>	Paul Latour, Habitat Biologist, Western Arctic Canadian Wildlife Service 2nd Floor, Diamond Plaza 5204 – 50th Avenue, PO Box 2970 Yellowknife, NT X1A 2R2 Telephone: 867-669-4769 Fax: 867-873-6776	Permit required for project activities in the Kendall Island Bird Sanctuary.
Letter of Advice or Fisheries Authorization <i>Fisheries Act</i>	Briar Young Senior Environmental Assessment Officer Fish Habitat Management Western Arctic Area Central and Arctic Region Fisheries and Oceans Canada 5402-50 th Avenue, Suite 101 Yellowknife, NT, X1A 1E2 Telephone: 867-669-4928 Fax: 867-669-4949	A Fisheries Authorization may be required for the excavation and the disposal of excavated material on the ice in Kumak Channel
Approval for Constructing Works in a Navigable Waterway <i>Navigable Water Protection Act</i>	Allen Cadenhead Navigable Waters Protection Officer Transport Canada 1100 9700 Jasper Avenue Edmonton, AB T5J 4E6 Tel: 519-383-1865 Fax: 519-383-1989	Authorization needed should any part of the development interfere substantially with navigation, e.g., disposing excavated material from test pit on the river ice.
Class A Land Use Permit <i>Territorial Lands Act</i> <i>Territorial Land Use Regulations</i>	Conrad Baetz North Mackenzie District Indian and Northern Affairs Canada P.O. Box 2100 Inuvik, NT X0E 0T0 Tel: 867-777-2997 Fax: 867-777-2090	Permit needed for access to Crown land at the Niglintgak Field Development Area.

SECTION 2: PRE-SITE ASSESSMENT

2.1 Please complete the following chart for those items that currently exist in the project area - a snapshot of the area before your project commences. Attach a map depicting all of the indicated items in the project area, as well as the surface drainage patterns and elevation contours.

		Description														
A. well sites	Yes	latitude:	The Niglintgak field was discovered by Shell in 1973 with the drilling of a single well (H-30). Four additional delineation wells were drilled during 1973-1977 (C-58, M-19, B-19, and E-58). The C-58 well was abandoned immediately after drilling. The remaining wells were tested and suspended until abandonment in 1996. H-30 - 7690357.37 N, 486368.53 E B-19 - 7688174.95 N, 487850.21 E E-58 - 7686879.35 N, 490176.82 E													
	No	longitude:														
B. waste dumps	Yes	latitude:														
	No	longitude:														
C. fuel and chemical storage areas	Yes	latitude:	Fuel storage facilities located at Camp Farewell but not in the Niglintgak area.													
	No	longitude:														
D. sump areas	Yes	latitude:	<table border="1"> <tbody> <tr> <td>Kumak C-58</td> <td>7686163.189</td> <td>490860.176</td> </tr> <tr> <td>Kumak E-58</td> <td>7686502.373</td> <td>489443.274</td> </tr> <tr> <td>Niglintgak B-19</td> <td>7687363.478</td> <td>488184.414</td> </tr> <tr> <td>Niglintgak M-19</td> <td>7689243.493</td> <td>487314.004</td> </tr> </tbody> </table>		Kumak C-58	7686163.189	490860.176	Kumak E-58	7686502.373	489443.274	Niglintgak B-19	7687363.478	488184.414	Niglintgak M-19	7689243.493	487314.004
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Niglintgak B-19	7687363.478	488184.414														
Niglintgak M-19	7689243.493	487314.004														

		Kumak A-29	7687847.976	496405.884
		Kumak J-06	7683352.722	499365.681
		Kumak K-16	7683891.086	497823.642
	No	longitude:		
E.	wastewater discharge locations	Yes	latitude:	Sites not known at this time
		No	longitude:	
F.	camps	Yes	latitude:	Camp Farewell (Latitude 69° 12' 30.0" N, Longitude 135° 06' 04.4" W (UTM 7677645.72 N, 496061.20 E NAD 83)) has been used as a staging site since 1969. Its location is shown on Figure 4-1 of the attached Project Description.
		No	longitude:	
G.	transportation routes	Yes	latitude:	Historical transportation routes in the area involve winter (ice) road travel on the Inuvik – Tuktoyaktuk Public Winter Road and a winter (ice) road between Tununuk Point and Niglintgak, as well as boat and barge traffic.
		No	longitude:	
H.	pingos	Yes	latitude:	Pingos are found in the Mackenzie Delta, however no pingos are in the Niglintgak Development area.
		No	longitude:	
I.	staging areas	Yes	latitude:	Camp Farewell (Latitude 69° 12' 30.0" N, Longitude 135° 06' 04.4" W (UTM 7677645.72 N, 496061.20 E NAD 83)) has been used as a staging site since 1969. Its location is shown on Figure 4-1 of the attached

		Project Description.
	No	longitude:
J. seismic lines	Yes	latitude: Historically, seismic investigations have been conducted over the area but no cut or clearing was required.
	No	longitude:
K. parks and/or protected areas	Yes	latitude: The Niglintgak Development area overlaps with the Kendall Island Bird Sanctuary (KIBS).
	No	longitude:
L. wildlife management areas	Yes	latitude: See Section 11 – Environmental Overview in the attached Project Description
	No	longitude:
M. bird sanctuaries	Yes	latitude: The proposed development is located within Kendall Island Bird Sanctuary (KIBS). Figure 4-1 in the attached Project Description identifies the location of KIBS in relation to the Niglintgak.
	No	longitude:
N. trap lines	Yes	latitude:
	No	longitude:
O. other	Yes :	latitude: See Section 11.0 – Environmental Overview, in the attached Project Description.
	No	longitude:

SECTION 3: WATER USE AND WASTE DISPOSAL

3.1 Water Use

Maximum quantity per day (m ³):	300
Total quantity for project (m ³):	600
Planned uses of water:	Over-land Winter Road Construction at Niglintgak Geotechnical Drilling Rig
Operating capacity of the pump:	0.68 m ³ /minute
Size of intake screen:	Water withdrawn from the Mackenzie River will be screened with 2.54 mm fine mesh to prevent entrainment of fish, in accordance with the Department of Fisheries and Oceans Freshwater Intake End-of-Pipe Fish Screen Guideline (1995).
Source of potable water:	Water for over-land winter road construction and the geotechnical drilling rig will be withdrawn from the Kumak Channel of the Mackenzie River. Water for domestic use at Camp Farewell will be shipped in from Inuvik.

3.1.2 Please provide information for each water source as required by the Department of Fisheries and Oceans:

3.1.3 A Protocol for Water Withdrawal for Oil & Gas Activities in the Northwest Territories@.

Please see Section 11.3 of the attached document *Project Description for the proposed Niglintgak Natural Gas Field Development 2006/2007 Winter Field Program* (Project Description).

3.2 Waste Disposal

3.2.1 Will a camp(s) be provided? **Yes** **No**

Permanent Camp - Camp Farewell

If yes, indicate the maximum number of people that will be accommodated

Capacity:	35
Maximum Accommodated:	35

3.2.2 Will the camp remain in one place for the duration of the project, or move around?

3.2.3 Please describe the camp type (e.g. sleigh camp) and attach diagrams of the proposed layout.

Camp Farewell is a permanent facility.

3.2.3 What is the proposed method of sewage and greywater treatment/disposal?

All sewage and greywater will be collected and transported from Camp Farewell to Inuvik for treatment at the town sewage treatment lagoon

Please describe the treatment process.

N/A

What is the maximum capacity per day (in m³ and people) of the treatment system?

N/A

Please attach a diagram(s) of the treatment system labeling all of the major components.

N/A

3.2.4 Describe the manner in which the treated effluent will be disposed/discharged to the environment:

N/A

3.2.5 What other back-up methods are available for sewage and greywater treatment/disposal (i.e. contingency)?

Camp Farewell has a sewage lagoon on site that can be used for temporary storage of sewage and greywater.

3.2.6 What is the proposed method of solid waste disposal?

Please see Section 5.8 - Waste Management and Wastewater Disposal in the attached Project Description.

3.2.7 List all hazardous materials that will be used during the project as defined under the *Transportation of Dangerous Goods Regulations*.

Diesel
Gasoline
Aviation Fuel

3.2.8 Fuel storage

Please see Section 5.9– Fuel in the attached Project Description.

3.2.9 What is the proposed method of hazardous waste disposal?

All hazardous wastes will be collected and transported to Inuvik for disposal at an approved site.

SECTION 4: SEISMIC PROGRAM INFORMATION

Not Applicable. This water licence application is only for withdrawal of water for overland winter road construction and for use in a geotechnical drilling rig. The Department of Indian and Northern Affairs requested that a Water Licence Questionnaire for Seismic Activity be submitted with the Schedule III Water Licence Application. For a full description of the work to be conducted by Shell, please refer to Section 5.0 - Development Summary of the attached Project Description..

4.1 Program Type: N/A

2D
3D

Methods Employed: N/A

Tracked equipment
Wheeled equipment
Narrow width
Hand-cut
Enviro drills
Heliportable
Heli-assist
Other _____

4.2 What type of energy source will be utilized in this program?

N/A

Will explosives be used as an energy source on or near waterbodies? If so, please provide the depth and charge size.

N/A

4.3 Will the project use existing seismic lines or create new ones? Please provide a rationale for the creation of new lines in areas where lines previous exist.

N/A

Please attach a map indicating the proposed seismic lines, as well as any pre-existing lines.

N/A

- 4.4 If existing lines are to be used please provide the distance (km) that will be utilized. How many kilometres of new seismic lines will be created?

N/A

- 4.5 Will the clearing of vegetation/trees be required? If so, describe the method and the amount of clearing required.

N/A

- 4.4 What will be the width of the lines used in this project?

N/A

- 4.5 What is the time frame of this project? Will this project be carried out and completed during frozen ground conditions?

Please refer to Section 6.0 –Development Time Table of the attached Project Description. The Project will be completed during frozen ground conditions.

- 4.6 Please describe the methods in which equipment will be brought to the project area and provide a list of heavy equipment that will be transported to the site.

Please refer to Section 5.3 – Equipment, of the attached Project Description.

- 4.7 Describe any access routes and their method of construction. How many streams will be crossed? Will any stream crossings greater than 5m be required?

Please refer to Section 5.6 – Access, of the attached Project Description.

SECTION 5: CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING

- 5.1 Attach the proposed or existing contingency plan which describes course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials (in compliance with NWT Water Board Guidelines for Contingency Planning, 1987).

Please refer to Section 12 – Potential Environmental Effects, Mitigation and Residual Effects, Section 15 – Clean up, Reclamation, Disposal or Decommissioning Plan in the attached Project Description and the Shell Emergency Response Plan attached to this water licence questionnaire.

- 5.2 Outline the planned abandonment and restoration procedures.
-

Please refer to Section 15 – Clean up, Reclamation, Disposal or Decommissioning Plan of the attached Project Description.

SECTION 7: ENVIRONMENTAL ASSESSMENT AND SCREENING

- 6.1 Has this project ever undergone an initial environmental assessment, including previous owners? If yes, by whom/when:

The Environmental Impact Screening Committee (EISC) has approved similar field work conducted in previous years at the Niglintgak Field Development area. The current project has been submitted to the EISC for screening in October 2006.

- 6.2 What baseline data been collected for the water bodies you intend to cross, do seismic in, or draw water from in the area? Please attach data.

Please refer to Section 11.3 of the attached Project Description.

- 6.3 What baseline data has been collected and evaluated with respect to the biophysical components of the environment potentially affected by the project (wildlife, soils, air quality, etc.)? Please attach data.

Please refer to Section 11 – Environmental Overview of the attached Project Description.

- 6.4 What community consultation has been done in regards to this project? Provide details of the program.

Please refer to Section 10.0 – Community Consultation of the attached Project Description.

- 6.5 Please provide the following information:

1. description of the environment (including known historic sites, results of any archeological assessments, location of survey monuments, wildlife, waterbodies, etc.)

Please refer to Section 11 – Environmental Overview of the attached Project Description.

2. potential environmental impacts (including cumulative and socio-economic effects)

Please refer to Section 12 – Proposed Mitigation and Anticipated Environmental Impacts, of the attached Project Description.

3. proposed mitigation to potential environmental impacts.

Please refer to Section 12 – Proposed Mitigation and Anticipated Environmental Impacts, of the attached Project Description.

- any follow-up or monitoring programs to be implemented to verify effectiveness of mitigation measures.

Please refer to Section 12 – Proposed Mitigation and Anticipated Environmental Impacts, of the attached Project Description.

SECTION 7: LIST OF ATTACHMENTS

Reference to Question #	Title	Page / Section Number
Multiple Questions	Project Description for the Proposed Niglintgak Natural Gas Field Development 2006/2007 Winter Field Program	Sections: 5, 6, 10, 11, 12, 15 and Appendix C