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Kathleen Racher  
Manager, Water Resources Division  
P.O. Box 1500  
Yellowknife, NT X1A 2R3

October 15, 2004

Mr. Gordon Wray  
Chairman  
NWT Water Board  
P.O. Box 1326  
Yellowknife, NT X1A 2N9



Your file - Votre référence

N7-1-1803

Our file - Notre référence

Dear Mr. Wray:

**RE: Imperial Oil Resources Ventures Limited  
Proposed 2005 Winter Geotechnical Investigation Program  
Type "B" Water Licence Application - Level 1 Environmental Screening**

The Department of Indian Affairs and Northern Development (DIAND) has screened the above mentioned water licence application for the Proposed 2005 Winter Geotechnical Investigation Program as submitted by Imperial Oil Resources Ventures Limited pursuant to Section 5 of the *Canadian Environmental Assessment Act* (CEAA). The project has also been screened by the Environmental Impact Screening Committee (EISC), pursuant to the 1984 Inuvialuit Final Agreement.

DIAND has determined that this project, as proposed, is not likely to cause significant adverse environmental effects and concurs with the EISC's similar determination as concluded in their screening decision, providing that proposed mitigation measures are carried out and licence conditions met. A joint screening report has been prepared by DIAND and the North Mackenzie District Office. DIAND recommends that the application proceed through the regulatory process. Incorporation of the recommended mitigative measures into the terms and conditions of the licence is required.

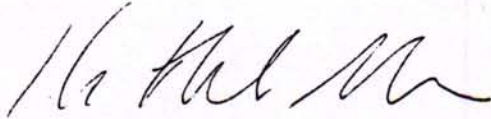
If the Board concurs with our findings, please sign the attached screening forms, advise the applicant of the CEAA recommendations in writing, and return the original forms to Water Resources Division for archiving and closure with CEAA.

.../2

Canada

If you require further information, please contact me at (867) 669-2749.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Racher', written in a cursive style.

Kathleen Racher  
Manager  
Water Resources Division

encl.

cc: D. Livingstone, Director, RR & E  
North Mackenzie/Inuvik District  
Environment and Conservation Division



CEAA SCREENING FORM

Department of Indian Affairs and Northern Development (DIAND)

1. Public Registry Required Information

Applicant: Imperial Oil Resources Limited  
Peter D Grout (403) 237-3984

CEAR Reference Number: 04-01-7073

Subject Descriptors: Land Use

Alias Project Title: Geotechnical Investigation

Lead RA and Screening Division: DIAND, Operations

RA Contact: DIAND North Mackenzie District, Rudy Cockney, Tel: 867-777- 2997

Lead RA Trigger Types: CEAA Law List Regulations

Other Screening Trigger Types: Inuvialuit Final Agreement

EA Start Date: September 27, 2004 (CEAA s.5 notification and scope)

EA Type: Screening

Physical Activity as identified from Inclusion List: Land use

Physical Work Being Assessed: Geotechnical Drilling, Temporary Winter Access

Phase of Project / Primary Undertaking: Geotechnical Investigation

Multiple Activities: ☒ Yes ☐ No Indicate One: Camp

Project Category Code: Point Linear Areal (Underline one)

Geographic Place Name: Parsons Lake Area

EA Determination: 20-1-a

EA Determination Date: October 26, 2004

Estimated monitoring termination date: Summer 2005 - DIAND Land Use Inspector

**EA Terminated:** No

**2. General File Information**

**DIAND Land Use Permit Number:** N2004S0043  
**NWT File Number:** N7-1-1803  
**Type of Applications:** New land use permit, Type "B" Water License  
**Present licence/permit/lease number:** Nil  
**Proposed Date of Activity:** Winter of 2004/2005 (clean-up the following year if required)  
**Other RAs or Screening Divisions:** Provided in Appendix D, "CEAA EA Coordination"  
**Other RA Types of Approval:** Provided in Appendix D, "CEAA EA Coordination"  
**Project File Locations:** DIAND North Mackenzie District (Inuvik)  
**DIAND District:** North Mackenzie, Inuvik

**3. Proponent**

Imperial Oil Resources Limited  
237 Fourth Avenue S.W.  
P.O. Box 2480, Station M  
Calgary, Alberta, Canada  
**Type of Proponent:** Private industry

**4. Project Location**

(Figure 1, APPENDIX F)  
**Topographic Map Sheet Number:** 107B & C  
**Latitude / Longitude:** N68 55 00 W133 48 00  
**Watershed:** Mackenzie River  
**Street Name:** N/A  
**Surrounding Land Status:** Crown lands in the Inuvialuit Settlement Region



**Special Designation:**

Project also occurs on Inuvialuit Private lands

## **5. Project Description**

### **Proposed Project and Schedule:**

The objective of the Program is to obtain information on the soil and ground conditions at potential borrow sites and the proposed location of the Storm Hills piggery facility. The information obtained from the Program will be used in assessing the feasibility of pipelines and facilities in the Inuvialuit Settlement Region and for preparing subsequent regulatory applications. There are a total of six sites that will be assessed, five of which are on crown lands and one site on Inuvialuit private lands (separate application to ILA).

The work will be conducted by subcontractors under the direction of ColtKBR, who will be responsible for directing all operations and liaising with the local community representatives and regulatory authorities.

An Access Crew will mobilize in early January 2005 and commence activities, subject to receipt of all necessary permits and approvals. The primary access for the project is the Inuvik to Tuktoyaktuk winter road between Inuvik and Swimming Point. An access crew will prepare access to the sites using the frozen surfaces of lakes and river channels where possible. Using heavy equipment the access crew will ensure construction of a winter road consistent with NWT Department of Transportation specifications and guidelines. Secondary access to the sites will follow existing cutlines and right of ways where possible. On overland sections where snow cover is not sufficient to meet the 15 cm level water will be hauled and sprayed on the access to build up the thickness of cover. This will require a water license and water withdrawal will be from approved waterbodies. These routes were initially identified using maps and aerial photography and were confirmed or modified based on a 2004 summer reconnaissance program.

Detailed maps are included with the proponents' application.

Access and drilling crews will begin site operations using existing accommodations in Inuvik. The crews will then be moved to the camp at Swimming Point once work starts on the northern locations. All field activities are expected to be completed by mid April 2005.

A topographic survey is planned to take a survey of cross-sections across the borrow sites. The surveys will be carried out to accurately locate access routes and to record locations of boreholes and test pits. A geophysical survey will be used on selected boreholes in order to provide information on subsurface conditions. Survey equipment that may be used include ground penetrating radar, electro-magnetic, and electrical resistivity methods. Equipment will either be carried by hand or towed in a small sled behind a snowmobile.

### **Waste Disposal:**



**Garbage:**

Any garbage generated at the drilling sites will be collected and hauled back to Inuvik or Swimming Point for disposal.

**Sewage (Sanitary & Grey Water):**

Sewage and grey water from sinks, showers and similar sources will go into existing waste handling facilities in Inuvik and Swimming Point.

**Fuel Storage:**

Fuel requirements for the Program are listed below. The number of containers and the exact volumes required are not available at this time. The fuel consumption rates of the contractor's equipment will determine how much fuel will be required and how many containers will be used to meet these fuel demands.

A bulk-fuel dealer in Inuvik will provide fuel for vehicles and equipment. The fuel will be hauled in a tandem-axle fuel truck to the staging sites, via the ice road on the Mackenzie River and associated channels. Upon arrival at the site, the fuel will be pumped from the fuel truck into the fuel sloops at the staging areas. The fuel sloops are either double walled or mounted within a metal berm, which function as secondary containment in the event of spills. As noted in the Environmental Protection Plan (see Appendix A), the fuel truck is equipped with spill-absorbents and clean-up equipment in the event of a spill while transferring the fuel. The method of fuel transfer will be dependant on the type, the location, the source and the quantity. Fuel tanks will be filled by electrical or mechanical pumps.

All contractors will be required to comply with the Environmental Protection Plan and the Spill Contingency Plan provided as Section 3 of the Emergency Response Plan (see Appendix B).

The table that follows identifies the fuels that may be used to conduct the Program. The fuels indicated are subject to change depending on the fuel requirements of the contractors.

Fuel Type	Number of containers (per crew)	Capacity of containers	Location
Diesel	Fuel Truck, Fuel Sloop	Fuel Sloop 5 x 500 Gallons Fuel Truck 1,000 Gallons	On Pick-ups, bulk fuel sloops, on fixed fuel carriers.
Gasoline	Fuel Truck, Fuel Sloop	Fuel Sloop 1 x 500 Gallons	On Pick-ups, bulk fuel sloops, on fixed fuel carriers.

## **Geotech Equipment:**

### **Auger Drill Rigs:**

In locations where the ground is frozen, but does not contain bedrock or boulders, auger drill rigs are ideal for drilling the test holes. Hollow stem augers will be used and samples will be taken at selected intervals from inside the hollow stem augers. In frozen silts and clays, undisturbed samples may be taken with specialty core samplers. This method of drilling does not require drilling fluids. The practical limit of drilling in frozen ground with 250 mm diameter auger drill rigs is to a depth of about 20 metres. An area of 10 metres x 10 metres (0.01 hectares) is required to drill each test hole. Upon completion, test holes will be backfilled to the ground surface with drill cuttings and any excess will be hauled to the contractor's yard for disposal.

### **Air Rotary Drill Rigs:**

In locations where bedrock or boulders are encountered or the ground is frozen, the hole may be drilled with an air rotary drill. Compressed air will be forced down the centre of the drill string and will blow the cuttings to the surface in the space between the walls of the test hole and the outside of the drill string. This method of drilling does not require drilling fluids. The practical limit of drilling in frozen ground with air rotary drills ranges from a depth of 15 to 30 metres depending on the size of the air compressor supplied with the drill. On completion, the test holes will be backfilled to the ground surface with drill cuttings.

### **Backhoes:**

Backhoes will be used to excavate test pits to obtain stratigraphic information and bulk samples of granular materials. If an organic material is present at the pit location, it will be stripped and kept separate from the inorganic materials. A hole of 5 metres x 5 metres, and 5 metres deep is required for each test pit within a maximum disturbed area of 25 metres x 25 metres. Test pits will be backfilled and the ground surfaces will be returned to the original grade and stripped materials will be replaced.

### **Accidents and Malfunctions:**

- Ground disturbance from human traffic on sensitive terrains.
- Fuel spills and drill additive spills could result in ground contamination (from mechanical failure or operator error)
- Wildlife encounters, such as an attack on humans (surprise encounter) or personnel shooting and injuring wildlife (responding to perceived threat or actual attack) could occur.
- Wildlife disturbance, such as disturbance of a bear den or caribou / muskox migrating thru the program

### **Information Sources Used:**



☐ Other government data  
☐ Historical maps  
☐ Scientific reports  
☒ Project Description for the EISC

☒ CEAA public registry system information  
☐ Contour maps  
☐ Oil and gas water licence questionnaire  
☒ Other: application & additional company information

## 6.a) Description of Environment

This environmental setting describes generally the biophysical conditions at the drill site locations planned for the Taglu Field Development Winter 2005 Geotechnical Field Program. Climate, physiography and soils, permafrost, vegetation, wildlife, hydrology and fish and fish habitat are addressed.

The site is situated in the Tuktoyaktuk Coastal Plain Ecoregion, of the Southern Arctic Ecozone (Ecological Stratification Working Group 1995). This zone includes the outer Mackenzie Delta and adjacent mainland from the Beaufort Sea south to the Inuvik area.

### **Climate**

The area of the proposed Program is classified as a high subarctic ecoclimate and is marked by very cold winters and cool summers. Mean temperatures range from -27.6°C in January to 14.2°C in July. The mean annual precipitation is 249 mm (Environment Canada 2002). Average daily temperatures during the proposed activity period (January to March) historically range from -31.9°C to -17°C. The mean precipitation for the proposed activity period is 36.4 mm.

### **Soils**

Topography in the Tuktoyaktuk coastal plain ecoregion is generally level, with elevations ranging from sea level in the delta to 150 metres above sea level toward Parsons Lake.

The area south and west of Big Lake is characterized by wetlands, lakes, active alluvial channels and estuarine deposits. Elevations in this area are usually less than 15 metres. Surface sediments are expected to be silty sand and fine to medium-grained sand deposited by the Mackenzie River, with some silt sediments deposited during storm tides near the Beaufort Sea.

West of the East Channel, the topography is rolling and consists of morainal deposits overlying older fluvial and deltaic sandy sediments. East of the East Channel, the topography is hummocky to rolling with elevations up to 150 metres above sea level near the Parsons Lake lease. Surficial sediments consist predominantly of hummocky glacial till. The till is fine grained, poorly drained and ice rich.

### **Permafrost**

Historically, both the outer Mackenzie Delta and mainland portions of the proposed investigation area are within the zone of continuous permafrost (>90% permafrost soils), containing a high ice content in the form of ground ice, ice layers, ice wedges and pingos (Ecological Stratification Working Group 1995). Recent reclassifications (Heginbottom 1998) describe the outer delta area (Niglintgak, Taglu and portions of Richards Island near to the



seacoast) as being discontinuous permafrost (with only 35-65% permafrost beneath land areas). Permafrost thickness of more than 600 m has been documented under Richards Island and of more than 400 m near Inuvik. In the Mackenzie Delta, however, permafrost thickness is significantly less, generally between 74 m and 90 m, where present.

The depth of the active layer generally ranges from 30-100 cm but is largely a function of ground surface insulation and thermal conditions (vegetation cover, level of ground disturbance and winter snow cover). In some cases, deeper unfrozen zones called taliks exist (unfrozen zones adjacent to or beneath water bodies), in the order of tens of metres thick, below or near large lakes and rivers. In the delta area, the presence and extent of the taliks is related primarily to the age, size and depth of the lake or river channel. The presence of the unfrozen zones under lakes and the Mackenzie River arms may affect the potential for frost heave, water table changes and groundwater flow conditions.

Low ice content is expected in well-drained, coarse-grained sediments that are often clast supported, and above the local groundwater table, such as gravel and gravelly sand in glacial deposits such as eskers. Ice-rich permafrost is more commonly associated with sand and gravel below the local water table (alluvial sand and gravel in the delta areas), silt clay and fine sand deposits, such as fine-textured moraine, glaciolacustrine and lacustrine sediments as well as organic soils. The ice content may be very high if the deposits are located in poorly drained areas. Ice veins, lenses and massive ground ice are common.

### Hydrology

The Mackenzie River generally exhibits a spring snowmelt-dominated, mean-monthly flow pattern classified as a subarctic, nival flow regime. The maximum mean monthly discharge occurs in the May to July period, mainly due to snowmelt.

In the open-water season, water in the Mackenzie River takes 15-20 days to flow from the outlet of Great Slave Lake to the Beaufort Sea, at an average flow rate ranging from 3.5 -4.7 km/h.

Freeze-up progresses fairly regularly upstream from the mouth of the Mackenzie River to Great Slave Lake and appears to be more orderly than break-up. The Athabasca, Great Slave and Great Bear lakes have important roles in the hydrologic system of the Mackenzie basin. Lake storage is a main source of streamflow over the winter months and directly contributes to groundwater recharge.

The Middle Channel flows approximately 180-280 km north to large distributary channels around Ellice Island and west of Richards Island, before entering Mackenzie Bay. In addition to the three main channels in the Delta, there are numerous smaller channels. The sizes and shapes of the Delta channels are proportional to the discharge carried. The Middle Channel carries the highest percentage of delta inflow, while the East Channel typically carries between 25-35% of the total. In contrast, the channel that extends northwest from Tununuk Point carries only about 1% of total Delta inflow (HIMS 1999). Channels are fairly symmetrical in straight reaches and asymmetrical in bends.

### Vegetation



This project takes place within the Tundra Ecological Zone, which stretches from the Arctic coastline in the Mackenzie Delta area, south to Inuvik and the boundary between the ISR and the Gwichin Settlement Area. Vegetation grows on a veneer of unfrozen organic or granular substrate overlying the permafrost boundary. In wetter areas, sedges, cotton-grasses and sphagnum moss dominate high centred and low-centred polygons. Drier areas support ericaceous shrubs. Riparian communities include wet sedge communities and taller shrubs. Holmes Creek and Hans Creek support outliers of black spruce. On the flood plain of the Mackenzie River, shrub communities and wet sedge – cotton-grass meadows predominate.

Five rare plant species were observed in the area during plant reconnaissance surveys conducted in the ISR during the summers of 2002, 2003 and 2004. Of these five species the arctic seashore willow is a nationally rare species that is endemic to Canada. The Chamisso's willow is ranked as critically imperilled for the NWT because of its extreme rarity. The other three species, Yukon stitchwort, Alternate-flowered water milfoil and Wedgeleaf willow are reported (SR) in the Northwest Territories.

#### **Wildlife & Fish**

The Mackenzie Delta area provides important habitat for many different species of migratory birds. Numerous waterfowl and waterbirds use the Delta annually for staging, nesting, breeding and moulting. Waterfowl and waterbirds include ducks, swans, geese, loons, cranes, shorebirds, seabirds and gulls. Many of the waterfowl species and some waterbirds are important food sources for local residents. Several species of raptor, passerine and ground-dwelling birds are also present in the area. Of the birds found in the Mackenzie Delta area, Eskimo curlew, short-eared owl, Ross' gull and two subspecies of peregrine falcon are considered to be at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Since the vast majority of birds that are found in and around the Mackenzie Delta are migratory, they are not expected to be present at the time of the Program.

Terrestrial mammals present in the area include a variety of ungulates, bears, and furbearers. These species include caribou, polar bear, barren-ground grizzly bear, black bear, moose, muskrat, beaver, fox (red and Arctic), wolf, marten, lynx, wolverine, snowshoe hare and several species of small rodents. Caribou may be found anywhere in the region, whereas most of the other species can be found in shrub and treed communities along channels in the Mackenzie Delta and the riparian areas across the upland portion of the Inuvialuit Settlement Region. Polar bear are typically restricted to areas with sea ice. However, maternity dens and secondary winter habitat occur along the coastline of the Mackenzie Delta, Richards Island and the Tuktoyaktuk Peninsula. The outer Mackenzie Delta, particularly Richards Island, provides excellent habitat for Arctic fox.

Several of these species are economically important to the surrounding communities. Caribou are an important food source for all of the communities within the area, while smaller mammals such as marten, lynx and muskrat, are trapped for their fur. Grizzly bear and wolverine are currently the only terrestrial mammal species that are considered to be at risk by COSEWIC, however, information on some species, such as the grey wolf and polar bear is insufficient to make an accurate determination.

Granular deposits in the ISR provide important habitat for wildlife throughout the year. The loose strata of gravel and sand provides prime denning sites for various animals. Other important denning habitats are southerly facing embankments above lakes and streams.

During the period of the proposed Program (mid-February to mid-April), wildlife activities will be limited.



Wildlife that may be present at this time include non-migratory birds (such as ptarmigan), over-wintering caribou, arctic fox, some furbearers (such as lynx and wolverine) and denning grizzly or polar bears.

Many fish species utilize the Mackenzie River and its tributaries to fulfill various life-cycle requirements (e.g., for migration, spawning, rearing, etc.). Fish species likely to be present in the Mackenzie Delta (see Table 3) were identified using historical and technical references. Species listed in bold have been identified in the Tuktoyaktuk Community Conservation Plan as species important to local communities for subsistence, spiritual and cultural values (The Community of Tuktoyaktuk et al 2000).

**Table 3 - Fish Species Likely to be Present in the Mackenzie Delta**

Family	Common Name	Scientific Name
Cyprinidae - Carps and Minnows	Flathead chub	<i>Platygobio gracilis</i> (Richardson)
	Lake chub	<i>Couesius plumbeus</i> (Agassiz)
Gadidae - Cods	<b>Burbot or Loche</b>	<b><i>Lota lota</i> (Linnaeus)</b>
	Saffron cod <sup>(a)</sup>	<i>Eleginus gracilis navaga</i> (Tilesius)
	Arctic Cod	<i>Boreogadus saida</i>
	Greenland Cod	<i>Gadus ogac</i>
Clupeidae - Herring	Tom Cod	<i>Microgadus proximus</i> / <i>Ulugaq</i>
	Pacific Herring <sup>(a)</sup>	<i>Clupea harengus</i> (Linnaeus)
	Blue Herring	<i>(Clupea pallasii)</i> / <i>Qualuqaq</i>
Petromyzontidae - Lampreys	Arctic lamprey <sup>(b)</sup>	<i>Lampetra japonica</i> (Martens)
Hiodontidae - Mooneyes	Goldeye	<i>Hiodon alosoides</i> (Rafinesque)
Percidae - Perches	Walleye	<i>Stizostedion vitreum</i> (Mitchill)
Esocidae - Pikes	<b>Northern pike</b>	<b><i>Esox lucius</i> (Linnaeus)</b>
Cottidae - Sculpins	Fourhorn sculpin, Deepwater Sculpin or Devil Fish <sup>(a)</sup>	<i>Myoxocephalus quadricornis</i> (Linnaeus)/ <i>Kanayuq</i>
	Slimy sculpin	<i>Cottus cognatus</i> (Richardson)
	Spoonhead sculpin	<i>Cottus ricei</i> (Nelson)
Osmeridae - Smelts	Pond smelt	<i>Hypomesus olidus</i> (Pallas)
	Rainbow smelt <sup>(b)</sup>	<i>Osmerus mordax</i> (Mitchill)
	Boreal smelt <sup>(a,b)</sup>	<i>Osmerus eperlanus</i> (Linnaeus)
Gasterosteidae - Sticklebacks	Brook stickleback	<i>Culaea inconstans</i> (Kirtland)
	Ninespine stickleback <sup>(b)</sup>	<i>Pungitius pungitius</i> (Linnaeus)
Catostomidae - Suckers	Longnose sucker	<i>Catostomus catostomus</i> (Forster)
	Longnose Dace	<i>Rhinichthys cataractae</i>
	White Sucker	<i>Catostomus commersoni</i>



Salmonidae - Trouts	Arctic cisco <sup>(c)</sup>	<i>Coregonus autumnalis</i> (Pallas)
	<b>Arctic grayling</b>	<b><i>Thymallus arcticus</i> (Pallas)</b>
	<b>Broad whitefish<sup>(b)</sup></b>	<b><i>Coregonus nasus</i> (Pallas)</b>
	Chum salmon <sup>(c)</sup>	<i>Oncorhynchus keta</i> (Walbaum)
	<b>Dolly Varden<sup>(b)</sup></b>	<b><i>Salvelinus malma</i> (Walbaum) / Qalukpuk</b>
	<b>Inconnu or Coney<sup>(c)</sup> or</b>	<b><i>Stenodus leucichthys</i> (Güldenstadt)</b>
	Lake herring/Cisco	<i>Coregonus artedii</i> (Lesueur)
	<b>Lake Trout</b>	<b><i>Salvelinus namaycush</i> (Walbaum)</b>
	<b>Lake Whitefish<sup>(b)</sup></b>	<b><i>Coregonus clupeaformis</i> (Mitchill)</b>
	<b>Least cisco or Big-eyed Herring<sup>(b)</sup></b>	<b><i>Coregonus sardinella</i> (Valenciennes)</b>
	Round whitefish	<i>Prosopium cylindraceum</i> (Pallas)
	Pink Salmon	<i>Onchorhynchus gorbushca<sup>(b)</sup></i>
	Sand Lance	<i>(Amodytes sp.)</i>
	Artic Char	<i>(Salvelinus alpinus) / Qalukpik<sup>(b)</sup></i> land locked
	Arctic Cisco	<i>Coregonus autumnalis</i>
	Round Whitefish	<i>Prosopium cylindraceum</i>
	Starry Flounder	<i>Platichthys stellatus</i>
	Capelin	<i>Mallotus villosus</i>
Finescale Dace	Phoxinus neogaeus	
Percopsidae - Trout-Perches	Trout-perch	<i>Percopsis omiscomaycus</i> (Walbaum)

**Note:** Species listed in bold have been identified in the Tuktoyaktuk Community Conservation Plan as species important to local communities for subsistence, spiritual and cultural values (The Community of Tuktoyaktuk *et al* 2000).

<sup>(a)</sup>Marine/brackish water species

<sup>(b)</sup>Anadromous and freshwater populations

<sup>(c)</sup>Anadromous species

Most fish species select shallow water habitats to spawn in spring or fall when water temperatures are relatively cool (Richardson *et al.* 2001). Therefore the channels of the Mackenzie River are unlikely to provide significant



spawning habitat. However, the Mackenzie River provides important migration routes for many fish species, including seasonal migrations to spawning areas. The shoreline habitat of the Mackenzie River provides juvenile rearing and adult resting habitat, with the presence of slack water areas and cover components (e.g., shoreline vegetation). Due to the flow and depth, the channels of the Mackenzie River have been identified as an important overwintering area for Least Cisco, Broad Whitefish, Burbot and Longnose Sucker.

## **6.b) Description of Socio-economic and Cultural Environment**

The Inuvialuit Settlement Region includes the communities of Tuktoyaktuk, Aklavik, Sachs Harbour, Holman and Paulatuk within its boundaries. The population within the Inuvialuit Settlement Region totals approximately 2,700 people and, with the exception of Aklavik, the population in the communities is almost entirely Inuvialuit. Although Inuvik (population approximately 3400) is not within the boundaries of the Inuvialuit Settlement Region, a number of Inuvialuit businesses and administrative bodies are located there, along with federal and territorial government offices.

The Program will include drilling/test pits at up to 42 locations at the six sites within the ISR. The ISR Winter 2005 Geotechnical Field Program will potentially generate seven separate contracts with a potential estimated total value in excess of \$3 million.

It is anticipated that the Program will require a crew of up to 45 people. The Program crew will include heavy equipment operators involved in access construction, site clearing and pit excavation, land and geophysical surveyors, drilling operators and helpers, environmental and safety inspectors, local wildlife and environmental monitors and the camp and catering staff. In addition, there will be a field office in Inuvik with an estimated staff of three to four people and a single fuel delivery truck and driver. The number of local people to be hired for the Program will depend on the companies or business entities awarded the contract work and the capabilities of their labour force. The contracts have not yet been awarded.

The Program and associated activities is proposed to occur over a 50 to 70 day period from January to mid-April, 2005. The work schedule will be a 12-hour work shifts per day, 7 days a week throughout this period. The final work schedule will be determined following award of contracts.

## **7. Consultation on Project**

Imperial Oil Resources Ltd. consulted or held meetings with several community groups (see list below and in Proponents Project description) of the impending project and noted comments from the meetings. Information obtained from the groups and their members was incorporated into the project description where appropriate.

DIAND also sent out a letter asking for comments to government agencies, local aboriginal and local government groups.

Responses to this request are listed below.

The NWTWB also sent out a letter to the members of their Technical Advisory Committee. Responses to this request are listed below



**Proponent Consultation list:**

Paulatuk Community Meeting - Separate meeting with local HTC, Elders Committee and Community Corp  
 Sachs Harbour Community Meeting - Separate meeting with local HTC, Elders Committee and Community Corp  
 Inuvik Community Meeting - Separate meeting with local HTC, Elders Committee and Community Corp  
 Tuktoyaktuk Community Meeting  
 Aklavik Community Meeting - Separate meeting with local HTC, Elders Committee and Community Corp  
 Aklavik Renewable Resource Council, Gwichin Tribal Council, local Band council

**DIAND Consultation:**

GNWT - Inuvik  
 ILA - Tuktoyaktuk  
 EPS - Yellowknife  
 DFO - Inuvik

Municipal and Community Affairs - Inuvik  
 Education, Culture and Employment - YK  
 Department of Transportation - YK  
 Resources, Wildlife & Economic Development - YK

Inuvik Town Council  
 Inuvik Community Corp  
 Inuvik Native Band  
 Inuvik Metis Local #62  
 Inuvik Hunters and Trappers Comm.

Tuktoyaktuk Hunters and Trappers Comm.  
 Tuktoyaktuk Community Corp  
 Tuktoyaktuk Hamlet Council

Aklavik Community Corporation  
 Aklavik Hunters and Trappers Comm.  
 Aklavik Hamlet Council  
 Aklavik Metis Local #56  
 Aklavik Band Council  
 Aklavik Renewable Resource Committee

Environmental Impact Screening Committee  
 Gwich'in Land and Water Board

**NWTWB Consultation:**

GNWT/RWED  
 ILA  
 DOE-EPS  
 DFO

GNWT/HSS - Inuvik  
 DIAND, Water Resources  
 DIAND, Operations - WRO Inuvik

Federal Government	Contact Person	Dates Comments Received
DIAND		



Imperial Oil Resources Limited      October 2004  
 Screening  
 ISR Geotechnical Investigation N 2004S0043 Program

INAC

Water Res.	<input type="checkbox"/>	Robert Jenkins	October 12, 2004
DWRO/R.M.O.			
DFO/CCG	<input type="checkbox"/>	Briar Young	CEAA response- September 29, 2004 + information request letter September 27, 2004
DOE	<input type="checkbox"/>	Wade Romanko	CEAA response September 27, 2004
NRCan			
Parks Canada			
NEB	<input type="checkbox"/>	Meike Vander Valk	CEAA response – September 27, 2004
NWTWB	<input type="checkbox"/>	Sarah Aho	CEAA response – September 28, 2004

Territorial Government	Dates Comments Received	Federal Government
RWED	Jason McNeill	Letter to EISC- Letter to INAC-
Health		
Transportation	<input type="checkbox"/> Angela Plautz	– Letter of comment , 2004
Tourism		
MACA		
EM&PR		
PWNHC		
Other		

Aboriginal Groups	Contact Person	Dates Comments Received
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EISC	<input type="checkbox"/>	Christine Inglangasuk	Screening decision letter- October 8, 2004
Inuvik Hunters & Trappers Committee			No comment
FJMC	<input type="checkbox"/>	Robert K. Bell	Letter to EISC - October 1, 2004
Inuvialuit Game Council			No comment
Wildlife Management Advisory Council (NWT)			No comment
Tuktoyaktuk HTC	<input type="checkbox"/>	Eleanor Ross-Saunders	Letter to EISC - October 4, 2004
Inuvik HTC	<input type="checkbox"/>	Ronnie Gruben	Letter to EISC - October 1, 2004
ILA	<input type="checkbox"/>	James Thorbourne	Letter to EISC - October 1, 2004

Public/Interested Parties/Other	Contact Person	Dates Comments Received
Inuvik Comm. Corp.	<input type="checkbox"/>	No comment

#### Summary of Aboriginal Group and other Public Concerns

##### EISC:

The EISC decided that the development would have no significant negative impact on the environment or Inuvialuit wildlife harvesting in the Inuvialuit Settlement Region (IFA Section 11(17)(b)). The EISC made the following recommendations in its screening decision letter:

The proponent discuss with the HTCs the road locations, particularly in the Storm Hills area, and rely on already disturbed routes. Blueberry Hill continues to be used for berry harvesting, is known as an area frequented by caribou and there are burial sites in the area as well

That the proponent consult with RWED regarding the necessity of conduction a bear denning survey with particular emphasis on the Ya Ya Lakes area, because of the potential for the proposed activity to disturb denning bears.

That the proponent provide the information requested by DFO in its letter regarding water sources and follow DFO's recommendations concerning snow harvesting.

That the proponent not use logs or rig mats on ice bridges (the EISC believes that DIAND Land Use Permit conditions do not permit this), the concern being that material other than clean snow could negatively affect fish when the bridges go out.



**Inuvik HTC:**

Letter to EISC;

Like to see Environmental and Wildlife monitors on these projects.

**Tuktoyaktuk HTC:**

Letter to EISC;

Ensure that a wildlife monitor is on sit until the completion of the project.

**Inuvik Community Corporation ( Duane Smith):** Letter to INAC;

concern over the difference in ILA and INAC snow cover on access requirements.

Question on whether INAC is ensuring that future granular requirements for the local communities is being looked after.

Are sanitary management conditions being applied on private and crown lands similar to those of municipalities.

Level of monitoring during and after the project?

Identification of archaeological and heritage resources as outline in this program have to be done in consultation with the appropriate Community Corporations and the Inuvialuit Cultural Resource Center.

Concern over the comment in the application that "the short duration of the program, it is predicted that any disturbance effects caused to wildlife or traditional users will be short term" is inappropriate.

Establishment of barriers such as winter access roads can have impacts throughout its lifespan, which is more than short term considering the social and cultural connection the Inuvialuit have during this time of year.

These are the types of data gathering that the ESRF should be considering. Utilizing the environmental and wildlife monitors to document animal behaviour (from a distance) when they are approached by the winter vehicles or when they approach an access road.

**8.a) Description of Effects (Tables A, B and C), Mitigation, Residual Effects and Significance.**

**Environmental and Cumulative Environmental Effects**

This section outlines potential environmental impacts that may arise due to the Program, as well as proposed mitigation to prevent or minimize these impacts. Potential impacts and proposed mitigation are provided in the following Table. These mitigation measures are also included in the Environmental Protection Plan that has been written for this Program and is included as Section 2.0 of the Proposed Mitigation and Anticipated Environmental and Socio-Economic Impacts (Table 6).

**Table 6 Potential Environmental Impacts and Proposed Mitigation**

Potential Impact	Proposed Mitigation
Physiography and Soils	



Clearing and use of tracked vehicles: Possible disruption of ground cover vegetation could trigger long-term permafrost degradation, surface subsidence and sediment transfer into streams or ponds	Hand clear minimum amounts of vegetation without disturbing ground cover vegetation to reduce potential permafrost degradation. Activities will be carried out only when the ground is frozen to minimize surface disturbance. A minimum of 15 cm of snow and or ice cover is required to protect the ground surface.
Clearing and other activities on steep slopes: Soil contamination by fluids/fuel/waste Possible disturbance of ice-rich sediments on steep slopes could trigger erosion, unstable slopes and increased sediment load in streams	Safe handling and disposal of waste from drill rigs will be used to avoid soil contamination. An emergency spill containment contingency plan will be in place to respond to any fuel leaks/losses to the surface. Access on steep slopes will be avoided. Sites will be hand cleared if required. The vegetation mat will not be disturbed.
<b>Vegetation</b>	
Loss of rare or uncommon vegetation	Avoid known potential rare plant sites by confirming their location with the botanist prior to conducting work at this site. Minimize clearing of shrubs and ground cover vegetation.
Damage to surface vegetation and exposing of organic soils	Activities will be carried out only when the ground is frozen to help minimize surface disturbance. A minimum of 15 cm of snow and or ice cover is required to protect the ground surface.
<b>Wildlife</b>	
Disruption of active den sites of grizzly bear, fox and wolverine	Potential denning habitat will be identified prior to the initiation of activities at the site. If identified, the denning site will be avoided.
Disturbance of sensitive lichen communities, which are critical winter feeding areas for caribou	Areas showing evidence of frequent caribou activity will be avoided, if possible.
Disturbance of important wildlife habitat during access construction	New clearing will be minimized by using existing cleared areas to the greatest extent possible.
<b>Aquatic Resources</b>	



Increased total suspended sediment concentrations during boring	<p>The use of casing and/or hollow-stem augers will be employed at the in-river drill sites to reduce the potential for sedimentation into the river.</p> <p>No cuttings or debris will be left on the ice.</p>
Disturbance of over wintering fish	<p>Casing and/or hollow stem augers will be used to prevent fluids and cuttings from entering the watercourse.</p>
Introduction of deleterious substances to watercourse	<p>Appropriate measures will be taken during refueling operations, <i>i.e.</i> refueling 100 m back from watercourses, using refueling mats and carrying a spill kit with the fuel truck at all times.</p> <p>A spill contingency plan will be in place for the Program.</p> <p>Ice thickness and strength will be checked at watercourse crossings to ensure it is sufficient to withstand the weight of machinery. If any equipment does fall through the ice, it will be removed as quickly as possible.</p> <p>Only ice and snow will be used to construct ice bridges; the use of debris will not be allowed.</p>
<p>Damage to riparian vegetation, bank stability</p> <p>The potential for silt-laden surface run-off as a result of surficial disturbance.</p>	<p>Existing access will be used wherever possible.</p> <p>Gently sloping banks will be used for access; approaches of snow and ice will be of sufficient thickness to protect riverbanks; and banks will not be cut to improve access.</p> <p>Removal of riparian vegetation will be minimized.</p> <p>Erosion control measures will be implemented where there is a risk of silt entering a waterbody.</p>
<b>Heritage Resources</b>	



Disturbance of heritage resources	Should unexpected heritage resources be encountered during activities, all work in the immediate area will cease until an archaeologist is able to examine the find and develop an appropriate site management plan.
-----------------------------------	--

### Cumulative Effects

Cumulative effects can be described as those changes to the environment that are caused by an action in combination with other past, present and future human actions. The effect of a project on the environment may not be fully reflected by the individual project activities and their interaction with environmental and socio-economic components. In many cases, individual projects and/or project activities produce environmental and socio-economic effects that are not significant. However, when combined with the effects of other project activities or other unrelated projects and activities, these insignificant effects may become important. The basis for considering which cumulative environmental and socio-economic effects that undergo examination are provided in the Responsible Authority's Guide (Canadian Environmental Assessment Agency, 1994). For the 2005 Geotechnical Winter Works Program, the term "cumulative environmental and socio-economic effect" used in this Application is defined as:

*The effect on the environment, which results from the effects of project activities when combined with those of other past, existing, and likely future projects and activities.*

The assessment of cumulative effects is based on previous cumulative effects assessment experience, and knowledge of recent similar projects. The objective of the cumulative effects assessment is to consider the nature of potential cumulative effects resulting from the relationship between project-related effects and those of other activities, including general land uses, and identified past, present, and future projects.

Cumulative Effects Assessment (CEA) methodology can differ for each specific environmental and socio-economic issue. Assessment focuses on the extent to which the footprint of the project will add to past/existing and projected future disturbance in the project area and the acceptability of that level of cumulative effect. The assessment is not extended to the larger regional study area because the incremental disturbance to that area would be proportionately smaller.

Based on recent discussions with the Inuvialuit Environmental Impact Screening Committee (EISC), as of the time of filing there are no industrial activities or development applications approved on the EISC public registry within the eastern Mackenzie Delta. However, there is the potential for additional projects to be filed with the EISC later this year for screening in mid November and December 2004. The primary project-specific effects that could potentially occur as a result of the proposed Program are:

environmental impacts as a result of Program activities;



sensory disturbance from aircraft and human activity on the ground; and

intrusion on important cultural or spiritual sites.

While there is small potential for wildlife mortality resulting from human protection from problem animals, training of all staff and operational procedures will be used to minimize this potential.

Interactions with other projects and activities could result in cumulative effects such as:

increased sensory disturbance of wildlife within the program area due to aircraft overflights and landings, human activities on the ground (e.g., vehicles, camps), seismic and drilling activity and other activities. This could result in energetic stress to wildlife, displacement or, in a worst case, seasonal abandonment of habitat;

interference with traditional activities as a result of aircraft overflights and human activities on the ground; and

intrusion on important cultural or spiritual sites as a result of aircraft overflights and human activities.

To minimize the potential for these cumulative effects to occur, the following measures will be employed:

*Use of Appropriate Mitigation Measures and Procedures:* An Environmental Protection Plan has been developed that provides mitigation measures to minimize and prevent adverse environmental impacts during all stages of the Program. This plan will be applied throughout the Program, and has been included in the mitigation measures section of the Proponents project application.

*Scheduling of Activities:* The schedule for the proposed Program will be designed to minimize impacts to other industrial activities and investigations in the region. There are two programs in the general area of the proposed project, the Encana Umiak drill program occurring approximately 17 miles to the Northeast of the Yaya Lake site and Imperials Taglu geotechnical project occurring approximately 13 miles to the Northwest of the same site. Chevron is also proposing to do a seismic program in the Ya Ya Lake area. No other program for the immediate area have been proposed to date (e.g., applications for research programs or industry projects which have been submitted for the upcoming meeting of the Environmental Impact Screening Committee).

*Avoidance of Traditional Harvesting, Cultural and Spiritual Areas:* Prior to the start of the Program, the Inuvik, Aklavik and Tuktoyaktuk Hunters and Trappers Committees will be contacted to reconfirm whether any harvesting activities are ongoing or will be started within the area during the proposed investigation period. Locations of sensitive cultural and spiritual sites will also be confirmed. Methods to avoid these areas (e.g., avoidance of specific sites or portions of specific sites) will be discussed with the Hunters and Trappers Committees.

With these measures in place, and due to the short duration of the proposed Program, it is predicted that any disturbance effects caused to wildlife or traditional users will be short-term (i.e., hours to several days within any



specific geographic region of the investigation area) and localized to the vicinity of the investigations. Avoidance of important harvesting areas and cultural sites by changes in the Program will minimize effects on traditional activities and cultural sites. As a result, no significant cumulative effects are anticipated.

## **Heritage Resources**

Archaeological assessment of the program involved a number of activities, which are documented in the proponents application in Attachment 3. Each of the sites was investigated on the ground during the summer of 2004 and based on these surveys the archaeological potential of each proposed site has been determined. Potential amongst the sites ranged from limited to moderate to high.

In addition, consistent with the intent of the Northwest Territories Act and the Archaeological Sites Regulations, should unexpected heritage resources be encountered during activities, all work in the immediate area will cease until an archaeologist is able to examine the find and develop an appropriate site management plan. Program personnel will be provided with the contact names and numbers for a Program archaeologist as well as the name and number of the Territorial archaeologist at the PWNHC in Yellowknife.

### **8.b) Effects of the Environment on the Project**

#### **Poor weather i.e.: fog, snow**

Fog and blizzard conditions could prevent travel by air or road to the project location hence impeding progress of the project.

Warm weather and heavier than normal snowfall may slow ice-thickening slowing down the building of ice roads on channels.

#### **Sensitive Terrain**

Areas of environmental sensitivity encountered in the program area, such as archaeological sites, are features of the environment that may be impacted.

### **9.a) Summary of Proponent's Mitigation Measures**

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### **9.b) Reviewers' Comments**

#### **GNWT/RWED:**

Letter to EISC-

Comment

Letter to INAC-



Recommended

**Fisheries and Oceans (DFO):**

Request for a map with bathymetric data of the potential lakes that may be used as water sources  
Concerned over the harvesting of snow from lakes allowing the ice levels on lakes to thicken. Requesting that any snow harvesting be done along the edges of lakes or in areas where lakes are already frozen to bottom.  
Harvesting of snow off rivers should be avoided to prevent ice thickening and freeze down.

**Environment Canada (EC):**

CEAA response;

The proponent must ensure that any fuel or hazardous wastes associated with the proposed project are properly handled, transported, and disposed of.

Any spills of fuel or hazardous materials adjacent to or into a water body, regardless of quantity, shall be reported immediately to the NWT Spill Line.

Although work is being conducted in winter time any activities on frozen water any harmful substances deposited on the water bodies must be mitigated according to the measures proposed by the proponent. These spills must be completely cleaned up following the procedures identified by the proponent and subject to final approval by an Inspector.

All mitigation measures identified by the proponent, and the additional measures suggested herein should be strictly adhered to in conducting project activities. All of the proponents representatives should be aware of these measures while conducting operations in the field.

The proponent must be aware of the Migratory Birds Convention Act and Regulations to ensure that they remain in compliance with the Act and Regulations during all phases and undertakings of the project.

Proponent should be aware that Grizzly Bears (Species of Special Concern, SAR Act) may be encountered during their operation. The proponent should be aware of the bears special status and minimize disturbance to, or contact with, this species.

**Parks Canada (PC):**

No comment

**Northwest Territories Department of Transportation:**

Request that the applicant be required to obtain a temporary or permanent access permit from DOT to access the Inuvik-Tuk Ice Road.

Proponent is to obey the load limits of the Inuvik-Tuk ice road.

**DIAND Water Resources:**

Imperial states that the maximum water use per day during their geotechnical investigation program will



be 300 m<sup>3</sup> per day. Imperial must follow all DFO protocols for water withdrawal.

Imperial states that shallow geophysical surveys will be used at selected boreholes in order to provide information on subsurface conditions at the site. What sort of information will Imperial collect during these geophysical surveys in addition to the information collected during the drilling of boreholes? Or is Imperial simply comparing the results from the geophysical surveys to the info collected from the boreholes?

Safe handling and disposal of waste from drill rigs will be used to avoid soil contamination. How will this waste be disposed of and what waste types are Imperial referencing? In addition, Imperial states that drill cuttings will be backfilled into the test holes and any surplus material will be hauled to the contractors yard for disposal. Where is the contractors yard located and what disposal method will be used?

Imperial states that rig mats or logs may be placed on top of watercourse crossings to reinforce ice bridges. These shall be removed prior to spring thaw. Ice bridges should be constructed of clean ice and snow only and be removed (v-notched) prior to spring thaw. Riparian vegetation should either be hand cut or walked down to minimize disturbance to the riparian zone.

Imperial states that each subcontractor shall ensure that during the course of the program fuel or other hazardous materials are not dumped or discharged on the ground or into or onto any watercourse. As Imperial will be the licence holder for this project, Imperial would be responsible for the cleanup of spills associated with this program, including spills from their contractors.

Imperial states that in the event that a spill exceeds the NWT threshold quantities of 100 litres, ColtKBR shall immediately report to the NWT 24-hour Spill Report Line (867) 920-8130. It should be clear that threshold quantities for immediate reporting vary depending on product spilled. All spills exceeding their respective threshold quantities are to be reported immediately to the NWT 24-hour Spill Line. In addition, all spills near or in a waterbody, regardless of product or amount, are to be reported immediately to the 24-hour Spill Line.

The spill contingency plan states that in the event that a spill exceeds any of the threshold quantities for reporting, the Environmental Inspector shall report the spill to the appropriate regulatory agencies, in addition to reporting the spill to the 24-hour Spill Line. By reporting the spill to the Spill Line, Imperial is reporting the spill to the appropriate regulatory agencies and does not need to contact the regulatory agencies directly. However, Imperial should contact the appropriate regulatory agencies directly should they require assistance in spill cleanups (i.e. discussions on spill containment, emergency response, etc.). Within the spill contingency plan, Imperial should include more specific information on methods for cleanup of spills on snow and/or land, spills on open water, spills on ice and spills under ice. As well, it should be added that all spills near or in/on a waterbody, regardless of product or amount, are to be reported immediately to the NWT 24-hour Spill Line.

In Section 3.6.B of the Spill Contingency Plan, it should be added that all minor spills (spills not required to be immediately reported to the Spill Line) for which DIAND is the lead agency are to be reported monthly to the DIAND District Inspector, or at an interval deemed appropriate to the Inspector.

## 10. Significance

After taking into account the above mitigation measures, are any of the adverse environmental effects significant?



☐ Yes

☒ No  
to #12

if yes, identify which one(s) and proceed to 11; if no, proceed

## 11. Likelihood of Occurrence

Of the identified adverse significant environmental effects in #10 are any likely to occur?

n/a Yes

n/a No

If yes, which one(s)?

## Consultation on Screening Report

Public consultation on screening report deemed necessary?    ☐ Yes    ☒ No

Deadline for comments on screening report

N/A

Public Comments Received on Screening Report?

☐ Yes    ☒ No

## 12. Monitoring Program

Regular land use and operation inspections should suffice to identify any problems needing attention. In addition, the Inuvialuit Land Admin will have both a Wildlife Monitor and an Environmental Monitor on the project to ensure that their concerns are addressed during operations. As well IORL will have their own Environmental Inspector providing environmental briefings, enforcement procedures and compliance with its Environmental Protection Plan.

No follow up program should be required.

**13.a) CEAA Determination and Authorization - DIAND North Mackenzie District**

**Determination:**

- ☐ Section 20 (1)(a) - Project may proceed as it is not likely to cause significant adverse environmental effects.
- \_\_\_ Section 20 (1)(b) - Project may not proceed as it is likely to cause significant adverse environmental effects that cannot be justified.
- \_\_\_ Section 20 (1)(c)(i) - Project must be referred to the Minister of Environment as it is uncertain whether the project is likely to cause significant adverse environmental effects.
- \_\_\_ Section 20 (1)(c)(ii) - Project must be referred to the Minister of Environment as it is likely to cause significant adverse environmental effects.
- \_\_\_ Section 20 (1)(c)(iii) - Project must be referred to the Minister of Environment as public concerns warrant the reference.

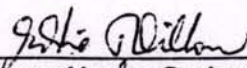
**Authorization:**

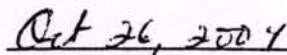
**INAC Authorization (Lead RA):**

Approved by: Rudy Cockney  
District Manager

\_\_\_\_\_  
Date

**NWT Water Board Authorization:**

  
Approved by: Gordon Wray  
Chair, NWT Water Board

  
Date



## **Appendices**

### **APPENDIX A: Subject Descriptors**

Choose from this list and insert as a "Subject Descriptor"

- ☐ Agriculture
- Buildings
- communications
- Defense
- energy
- forestry
- industry
- inland waters
- mining
- oceans
- ☐ oil and gas
- parks
- transportation

**APPENDIX B: Geographic Place Name**  
see project description

**APPENDIX C: Screening Checklist and Cumulative Effects Checklist (Tables A, B and Cumulative Effects)**

**APPENDIX D: CEAA EA Coordination**

**APPENDIX E : DIAND Recommended Land Use Permit Conditions**

**APPENDIX F: Proponents Project Location Map (see project description)**

**APPENDIX G: NWT Water Board Proposed Water License**

**APPENDIX C****Table A. Identification of Project Components and Environmental Effects**

Identify all components of the project under screening and their potential adverse environmental effects

**Project Components**( ☐ check all the items appropriate to this project)☐ access road☐ construction☐ abandonment/removal☐ modification e.g., widening,  
straightening☐ automobile, aircraft or vessel movement☐ blasting (sumps)☐ building☐ burning☐ burying (sumps)☐ channeling☐ cut and fill☐ cutting of trees or removal of vegetation☐ dams and impoundments☐ construction☐ abandonment/removal☐ modification☐ ditch construction☐ drainage alteration☐ drilling other than geoscientific☐ ecological surveys☐ excavation☐ explosive storage☐ fuel storage☐ garbage☐ disposal of hazardous waste☐ disposal of sewage☐ waste generation☐ geoscientific sampling☐ trenching☐ diamond drill☐ borehole core sampling☐ bulk soil sampling☐ gravel☐ hydrological testing☐ site restoration☐ fertilization☐ grubbing☐ planting/seeding☐ reforestation☐ scarify☐ spraying☐ recontouring☐ slash and burn☐ soil testing☐ topsoil, overburden or soil☐ fill☐ disposal☐ removal☐ storage (replacement over sumps)☐ stream crossing/bridging (ice roads)



- ☐ tunneling/underground
- ☐ other, explain

☐ accidents or malfunctions Describe: See section 5 of screening.

☐ effects of environment on project. Describe: See section 8.b) of screening.

#### Project Effects

(☐ check all the items appropriate to this project)

##### Biophysical Environment

1. ☐ deposit into surface water
2. ☐ deposit into ground water
3. ☐ change in surface water flow
4. ☐ change in ground water flow
5. ☐ change in water temperature
6. ☐ change in drainage pattern
7. ☐ change in air quality
8. ☐ change in air flow
9. ☐ micro-climate change
10. ☐ ice fog
11. ☐ change in ambient noise levels
12. ☐ change in slope stability
13. ☐ change in soil structure
14. ☐ alteration of permafrost regime
15. ☐ destabilization/erosion
16. ☐ soil compaction
17. ☐ loss of access to non-renewable resource
18. ☐ depletion of non-renewable resource
19. ☐ removal of rare/endangered plant species
20. ☐ introduction of species
21. ☐ toxin/heavy metal accumulation
22. ☐ removal of rare/endangered wildlife species
23. ☐ change in wildlife health
24. ☐ impact to large mammals
25. ☐ impact to small mammals
26. ☐ impact to fish
27. ☐ impact to birds
28. ☐ impact to other wildlife
29. ☐ impact in a calving, nesting or spawning area
30. ☐ removal of wildlife buffer zone
31. ☐ change in wildlife habitat/ecosystem
32. ☐ other:

**Directly-related Socio-economic and Cultural Environment**

- 33. \_\_\_ impact to trappers
- 34. ☐ impact to hunting
- 35. \_\_\_ impact to outfitters
- 36. \_\_\_ recreational or back country use
- 37. \_\_\_ impact to fishing
- 38. \_\_\_ impact to First Nation traditional use
- 39. ☐ impact to community
- 40. \_\_\_ impact to industry
- 41. \_\_\_ impact to community health
- 42. \_\_\_ change in work force economics

- 43. \_\_\_ change in housing or infrastructure
- 44. \_\_\_ change in regional transportation
- 45. \_\_\_ other, explain \_\_\_\_\_

- 46. ☐ impact to traditional use area
- 47. \_\_\_ impact to historical site or cultural landmark
- 48. \_\_\_ impact to local aesthetics
- 49. ☐ impact to archaeological or historical site
- 50. \_\_\_ other, explain \_\_\_\_\_



**Table B. Identification of Other Resource Uses and Their Environmental Effects**

Identify relevant past, current and future (pending applications) physical works and activities and their potential adverse environmental effects.

**Other Resource Uses**

(☐ check all the items appropriate to this project)

- ☐ agriculture
- ☐ forestry
  - ☐ commercial
  - ☐ domestic
- ☐ fishing
- ☐ hunting/subsistence
- ☐ other:
- ☐ urbanization
  - ☐ commercial / residential (cottages)
  - ☐ built structures
  - ☐ infrastructure
- ☐ mining
  - ☐ exploration
  - ☐ open pits
  - ☐ underground
- ☐ quarries
- ☐ transportation/communications
  - ☐ roads / trails
  - ☐ channels / canal
  - ☐ telephone lines, satellite dishes, cables
  - ☐ beacons
- ☐ solid waste disposal
- ☐ energy project
  - ☐ hydro
  - ☐ pipeline
  - ☐ transmission line
  - ☐ oil and gas exploration

- ☐ other water licenses, permits, leases
- ☐ land claims
  - ☐ selected
  - ☐ withdrawn
  - ☐ special management
  - ☐ heritage sites
- ☐ cultural sites
- ☐ other private lands held under tenure
- ☐ recreational
- ☐ trapping
- ☐ mineral processing
- ☐ airport
- ☐ recreation
- ☐ other:
- ☐ other:

**Effects from other Resource Uses**

(☐ check all the items appropriate to the scope of this project)

**Biophysical Environment**

1. ☐ deposit into surface water
2. ☐ deposit into ground water
3. ☐ change in surface water flow
4. ☐ change in ground water flow
5. ☐ change in water temperature
6. ☐ change in drainage pattern
7. ☐ change in air quality
8. ☐ change in air flow
9. ☐ micro-climate change
10. ☐ ice fog
11. ☐ change in ambient noise levels
12. ☐ change in slope stability
13. ☐ change in soil structure
14. ☐ alteration of permafrost regime
15. ☐ destabilization/erosion
16. ☐ soil compaction
17. ☐ loss of access to non-renewable resource
18. ☐ depletion of non-renewable resource
19. ☐ removal of rare/endangered plant species
20. ☐ introduction of species
21. ☐ toxin/heavy metal accumulation
22. ☐ removal of rare/endangered wildlife species
23. ☐ change in wildlife health
24. ☐ impact to large mammals
25. ☐ impact to small mammals
26. ☐ impact to fish
27. ☐ impact to birds
28. ☐ impact to other wildlife
29. ☐ impact in a calving, nesting or spawning area
30. ☐ removal of wildlife buffer zone
31. ☐ change in wildlife habitat/ecosystem
32. ☐ other, explain \_\_\_\_\_

**Directly-related Socio-economic and Cultural Environment**

33. ☐ impact to trappers
34. ☐ impact to hunting

35. ☐ impact to outfitters
36. ☐ recreational or back country use
37. ☐ impact to fishing
38. ☐ impact to First Nation traditional use
39. ☐ impact to community
40. ☐ impact to industry
41. ☐ impact to community health
42. ☐ change in work force or community economics
43. ☐ change in housing or infrastructure
44. ☐ change in regional transportation
45. ☐ other, explain \_\_\_\_\_
46. ☐ impact to traditional use area
47. ☐ impact to historical site or cultural landmark
48. ☐ impact to local aesthetics
49. ☐ impact to archaeological or historical site
50. ☐ other, explain \_\_\_\_\_



**Table C. Comparison of Effects as Identified in Table A and Table B**

Matching Numbers	Description of cumulative adverse environmental effects
7	Air Quality change caused by running of equipment, drills, generators and other fuel burning machinery during the life of the project will all contribute to emissions to the air environment. These emissions may cause air quality problems in localized areas where the equipment is concentrated. These effects will only be temporary and only in small areas for a limited period of time.
11	Changes in Ambient Noise Levels - this due to the increase in noise levels from heavy equipment and other machinery over the project areas in a wilderness environment. Most wildlife that are present in the winter months will avoid equipment due to the noise levels.
24 & 25	Possible Impacts to bear denning locations, noise or vibration from equipment may disturb the bears in their dens. Caribou may be disturbed by the noise or movement of equipment in the area. Possible impacts to small mammals such as fox due to the possibility of being fed by personnel.
34	Possible impact to hunters as wildlife may avoid those areas where machinery is operating.
39	Possible impact to the local communities with increased demand on services and supplies and also an increase in the local wage economy.

#### **APPENDIX D: CEAA EA Coordination**

##### **CEAA Section 5 Notification**

Pursuant to section 5 of the CEAA Federal Coordination Regulations, potential responsible authorities (RAs) and federal authorities (FAs) were requested on September 26, 2004 to review the proposed project and, pursuant to subsection 6(1) of the CEAA Federal Coordination Regulations, inform the lead RA by October 13, 2004 whether they are a responsible authority or could provide specialist advice.

The responses are provided in the following table:

##### **Role of Federal Departments/Agencies**

<b>Department/Agency (District)</b>	<b>Responsible Authority</b>	<b>Specialist Department</b>	<b>No Involvement</b>
Indian and Northern Affairs (Inuvik)	<b>Lead RA</b>		
Environment Canada (Yellowknife)		X	
Fisheries and Oceans (Inuvik)		X	
Parks Canada		X	
NWT Water Board	X		
Natural Resources Canada (Ottawa)		X	



Imperial Oil Resources Limited	October 2004	INAC
Screening		
ISR Geotechnical Investigation	N 2004S0043 Program	


### **Federal Approvals**

INAC: Territorial Lands Act Land Use Permit  
 NWTWB: Northwest Territories Waters Act Type B Water License

### **Section 8 Requirements of the CEAA Federal Coordination Regulations**

With respect to section 8 of the FCR, the RA prepared a determination of the scope of the project, the factors to be considered, and the scope of those factors as follows:

#### ***Scope of the Project***

#### **1. Undertaking in relation to the physical work or physical activity triggering the CEAA.**

The RA considers the principal project to be the proposed geotechnical investigation work within the Inuvialuit Settlement region.

#### **2. Other associated physical works or physical activities that must be undertaken to carry out the project.**

The RA notes that for the project to proceed to completion, the physical works and activities listed in **Table A** above would need to be undertaken.

#### **3. Other undertakings in relation to the physical works and activities identified in items (1) and (2) above.**

Other than the requirement for a Class B Water License, no other further related activities have been identified in relation to the physical works and activities for this proposed Project. Any additional activities would be subject to future examination under the *Territorial Lands Act*, possibly the *NWT Waters Act*, and *Fisheries Act* and, consequently, under the CEAA.

#### **B. Factors to be Assessed**

The factors considered within the scope of an environmental assessment are those set out in subsection 16(1) of the CEEA.

### ***C. Scope of the Factors to be Assessed***

The following spatial and temporal boundaries are suggested.

#### **Spatial Boundaries**

- Local: Impacts would be limited to the drill/ pit sites and winter access routes;
- Subregional: Impacts might extend beyond the limits of the drill/ pit sites and winter access routes, but would be limited to within 1 to 50 km of the drill/ pit sites and winter access routes; and
- Regional: Impacts might extend beyond 50 km from the drill/ pit sites and winter access routes to the entire region.

#### **2. Temporal Boundaries**

- Immediate: Impact duration would be limited to less than two days;
- Short-term: Impact duration would be longer than two days but less than one year;
- Medium-term: Impact duration would be more than one year but less than ten years; and
- Long-term: Impact duration would extend ten years or longer.



## **Section 9 - Agency Contacts**

Mr. Rudy Cockney  
District Manager  
North Mackenzie District  
Indian and Northern Affairs Canada  
P.O. Box 2100  
Inuvik, Northwest Territories X0E 0T0  
Facsimile (867) 777-2090  
E-mail: [cockneyr@inac.gc.ca](mailto:cockneyr@inac.gc.ca)

Mr. Gordon Wray, Chairman  
Northwest Territories Water Board  
C/O Ms. Sarah Aho, Special Projects Officer  
4914 - 50<sup>th</sup> Street  
P.O. Box 1500  
Yellowknife, Northwest Territories X1A 2R3  
Facsimile (867) 669-2716  
E-mail: [pagottos@inac-ainc.gc.ca](mailto:pagottos@inac-ainc.gc.ca)

**APPENDIX E**

**CONDITIONS ANNEXED TO AND FORMING PART OF  
LAND USE PERMIT NUMBER N2004S0039**

**31 (1) (a) - LOCATION AND AREA**

- |    |  |                                      |
|----|--|--------------------------------------|
| 1. | The Permittee shall not conduct this land use operation on any lands not designated in the accepted application, unless otherwise authorized, in writing, by the Engineer.                               | <b>PLANS</b>                         |
| 2. | The Permittee shall not conduct any part of the land use operation within three hundred (300) metres of any privately owned land or structure, unless otherwise authorized, in writing, by the Engineer. | <b>PRIVATE<br/>PROPERTY</b>          |
| 3. | (a) The Permittee shall offset vehicle travel in areas without a snow covered surface.   | <b>OFFSET<br/>VEHICLE<br/>TRAVEL</b> |
|    | (b) The Permittee shall confine the line to a maximum width of ten (10) metres, unless otherwise authorized, in writing, by a Land Use Inspector.  |                                      |
| 4. | The Permittee shall not construct parallel lines or roads, unless authorized by the Engineer.  | <b>PARALLEL<br/>ROADS</b>            |
| 5. | The Permittee shall remove from Territorial Lands, all scrap metal, discarded machinery and parts, barrels and kegs, buildings and building material.  | <b>REMOVE<br/>WASTE<br/>MATERIAL</b> |
| 6. | The Permittee shall locate all lines, trails and rights-of-way to be constructed parallel to streams a minimum of thirty (30)  | <b>PARALLELLING<br/>STREAMS</b>      |



metres from any stream except at crossings, unless otherwise authorized, in writing, by a Land Use Inspector.

7. The Permittee shall at all times conform to all applicable Federal, Territorial or local regulations, ordinances or bylaws, and land claim agreements.

**CONFORM TO  
APPLICABLE  
LAWS**

**31 (1) (b) - TIME**

8. The Permittee's Field Supervisor shall contact or meet with a Land Use Inspector at the Inuvik office of the Department of Indian Affairs and Northern Development, telephone number (867) 777-3361, at least 48 hours prior to the commencement of this land use operation.

**CONTACT  
INSPECTOR**

9. The Permittee shall advise a Land Use Inspector at least ten (10) days prior to the completion of the land use operation of (a) his plan for removal or storage of equipment and materials, and (b) when final clean-up and restoration of the lands used will be completed.

**REPORTS  
BEFORE  
REMOVAL**

10. The Permittee shall submit a progress report to the Engineer every ten (10) days during this land use operation.

**PROGRESS**

11. The Permittee shall not conduct any overland movement of equipment or vehicles before 0800 hours local time on November 15th unless otherwise authorized, in writing, by a Land Use Inspector.

**START-UP  
DATE**

12. The Permittee shall not conduct any overland movement of equipment and vehicles after 0800 hours local time on April 15<sup>th</sup>, unless otherwise authorized, in writing, by a Land Use Inspector.

**SHUT-DOWN  
DATE**

- |                               |   |   |
|-------------------------------|---|---|
| 13.                           | The Engineer, for the purpose of this operation, designates April 15, as spring break-up.   | <b>SPRING<br/>BREAK-UP</b>                |
| 14.                           | The Permittee shall remove all ice bridges prior to spring break-up or completion of the land use operation, unless otherwise approved, in writing, by a Land Use Inspector.                                  | <b>REMOVE<br/>ICE<br/>BRIDGE</b>          |
| 15.                           | The Permittee shall remove all snow fills from stream crossings prior to spring break-up or completion of the land use operation, unless otherwise approved, in writing, by a Land Use Inspector.             | <b>REMOVE<br/>SNOW FILLS</b>              |
| 16.                           | The Permittee shall commence and foster revegetation on all parts of the land used, as may be directed by a Land Use Inspector, within one (1) year of the completion of the land use operation.              | <b>RE-ESTABLISH<br/>VEGETATION</b>        |
| 17.                           | The Permittee shall complete all clean-up and restoration of the lands used prior to the expiry date of this Permit.  | <b>CLEAN-UP</b>                           |
| 18.                           | The Engineer reserves the right to impose closure of any area to <b>CLOSURE</b> the Permittee in periods when dangers to natural resources are severe.  |   |
| <b>31 (1) (c) - EQUIPMENT</b> |   |   |
| 19.                           | The Permittee shall not use any equipment except of the type, size, and number that is listed in the accepted application, unless otherwise authorized, in writing, by a Land Use Inspector.                  | <b>ONLY<br/>APPROVED<br/>EQUIPMENT</b>    |
| 20.                           | The Permittee shall equip bulldozer blades used in this operation with "mushroom" type shoes or a similar type of device which shall be extended twenty (20) centimetres below the cutting edge of the blade. | <b>BULLDOZER<br/>BLADES<br/>AND SHOES</b> |



21. The Permittee shall keep all garbage and debris in a covered metal container until disposed of. This container shall be marked with the Permittee's name. **GARBAGE CONTAINER**

22. The Permittee shall ensure a garbage container is on site. **GARBAGE CONTAINER**

### 31 (1) (d) - METHODS AND TECHNIQUES

23. The Permittee shall construct and maintain winter roads with a minimum of fifteen(15) centimetres packed clean snow at all times during this land use operation. If this cannot be done, then the Permittee shall construct Ice Roads in a manner approved by a Land Use Inspector. **SNOW ROADS/ ICE ROADS**

24. The Permittee shall plug all bore holes as the land use operation progresses. **PLUG HOLES**

25. The Permittee shall replace all excavated material from the test pits prior to the expiry of this Permit. **TEST PITS**

26. The Permittee shall not erect camps or store material on the surface ice of streams, channels, lakes or any other waterbodies unless authorized in writing by an Inspector. **STORAGE ON ICE**

### 31 (1) (e) - TYPE, LOCATION, CAPACITY AND OPERATION OF FACILITIES

27. The Permittee shall ensure that the land use area is kept clean **CLEAN**

**WORK**

and tidy at all times.

**AREA**

**31 (1) (f) - CONTROL OR PREVENTION OF FLOODING,  
 EROSION AND SUBSIDENCE OF LAND**

- |     |  |  |
|-----|--|--|
| 28. | (a) The Permittee shall, where flowing water from bore holes is encountered, plug the bore hole in such a manner as to permanently prevent any further outflow of water.         | <b>PLUG<br/>ARTESIAN<br/>WELLS</b>         |
|     | (b) The artesian occurrence shall be reported to the Engineer within forty-eight (48) hours.   |  |
| 29. | The Permittee shall remove any obstruction to natural drainage caused by any part of this land use operation.  | <b>NATURAL<br/>DRAINAGE</b>                |
| 30. | The Permittee shall not use any material other than water and / or clean snow in the construction of ice bridges, ramps and snow fills.  | <b>ICE BRIDGE<br/>MATERIAL</b>             |
| 31. | The Permittee shall not allow any ice bridge to hinder the flow of water in any stream.  | <b>ICE BRIDGE</b>                          |
| 32. | The Permittee shall remove or V-notch snow fills in stream crossing as the land use operation progresses, unless otherwise authorized, in writing, by a Land Use Inspector.      | <b>REMOVE<br/>WATER<br/>CROSSINGS</b>      |
| 33. | The Permittee shall prepare the site in such a manner as to prevent rutting of the ground surface.   | <b>PREVENTION<br/>OF RUTTING</b>           |
| 34. | The Permittee shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. | <b>VEHICLES<br/>MOVEMENT<br/>FREEZE-UP</b> |



- |   |  |  |
|---|--|--|
| 35.   | The Permittee shall suspend overland travel of equipment or vehicles if rutting occurs.  | <b>SUSPEND OVER-<br/>LAND TRAVEL</b>             |
| 36.   | The Permittee shall save the organic soil stripped from the excavation area.   | <b>SAVE<br/>ORGANIC SOIL</b>                     |
| 37.   | The Permittee shall place the organic soil over the disturbed area prior to the expiry date of this Permit.  | <b>PLACE<br/>ORGANIC SOIL</b>                    |
| <b>31 (1) (g) - USE, STORAGE, HANDLING AND DISPOSAL<br/>OF CHEMICAL OR TOXIC MATERIAL</b> |  |  |
| 38.   | The Permittee shall not use chemicals in connection with the land use operation without the prior approval of the Engineer.  | <b>APPROVAL<br/>OF CHEMICALS</b>                 |
| 39.   | The Permittee shall remove all garbage and debris from the land use area to a disposal site approved, in writing, by a Land Use Inspector.                                       | <b>REMOVE<br/>GARBAGE</b>                        |
| 40.   | The Permittee shall dispose of all combustible waste petroleum products by removal.  | <b>WASTE<br/><br/>PETROLEUM<br/>DISPOSAL</b>     |
| 41.   | The Permittee shall dispose of all toxic or persistent substances in a manner as approved, in writing, by the Engineer.  | <b>WASTE<br/>CHEMICAL<br/>DISPOSAL</b>           |
| 42.   | The Permittee shall report all spills immediately in accordance with instructions contained in "Spill Report" form N.W.T. 1086(10/79). 24 hour spill report line (867) 920-8130. | <b>REPORT<br/>CHEMICAL<br/>AND<br/>PETROLEUM</b> |

**31 (1) (h) - WILDLIFE AND FISHERIES HABITAT**

- |     |  |  |
|-----|--|--|
| 43. | The Permittee shall not unnecessarily damage wildlife habitat in conducting this land use operation.   | <b>HABITAT<br/>DAMAGE</b>                        |
| 44. | Your operation is in an area where bears may be encountered. Proper food handling and garbage disposal procedures will lessen the likelihood of bears being attracted to your operation. Information about the latest bear detection and deterrent techniques can be obtained from the Department of Resources, Wildlife and Economic Development at (867) 777-7308 or (867) 777-7230. | <b>BEAR/MAN<br/>CONFLICT</b>                     |
| 45. | The Permittee shall not in any circumstances deposit or allow the deposit of any deleterious substances (including but not limited to fuels, lubricants, hydraulics, and coolants) of any type into any waters, or in any place under any conditions where the deleterious substances may enter any waters.  | <b>DEPOSITING<br/>DELETERIOUS<br/>SUBSTANCES</b> |
| 46. | The Permittee shall screen all water intakes from fish bearing waters to exclude fish in accordance with DFO requirements.   |  |

**31 (1) (i) - OBJECTS AND PLACES OF RECREATIONAL,  
SCENIC AND ECOLOGICAL VALUE**

- |     |  |   |
|-----|--|---|
| 47. | The Permittee shall not operate any machinery or equipment within one hundred (100) metres of the base of a pingo.           | <b>PINGOS</b>                           |
| 48. | The Permittee shall not feed wildlife.   | <b>NO FEEDING<br/>WILDLIFE</b>          |
| 49. | The Permittee shall immediately suspend the Land Use operation on the site and notify the Land Use Inspector of the location | <b>ARCHAEOLOGICAL<br/>SITES AND /OR</b> |



of the site and nature of any unearthed materials, structures or artifacts.

**BURIAL GROUND**

### 31 (1) (k) - PETROLEUM FUEL STORAGE

- |     |  |                                     |
|-----|--|-------------------------------------|
| 50. | The Permittee shall report, in writing, to a Land Use Inspector the location and quantity of all petroleum fuel caches within ten (10) days after the establishment.                         | <b>REPORT FUEL LOCATION</b>         |
| 51. | The Permittee shall not place any petroleum fuel storage containers within thirty (30) metres of the normal high water mark of any stream where possible.                                    | <b>FUEL BY STREAM</b>               |
| 52. | The Permittee shall locate mobile fuel facilities on land when stationary for any period of time exceeding twelve (12) hours.  | <b>FUEL ON LAND</b>                 |
| 53. | The Permittee shall not allow petroleum products to spread to surrounding lands or into water bodies.  | <b>FUEL CONTAINMENT</b>             |
| 54. | The Permittee shall: <ul style="list-style-type: none"> <li>(a) Examine all fuel storage containers for leaks a minimum of once a day.</li> <li>(b) Repair all leaks immediately.</li> </ul> | <b>CHECK FOR LEAKS</b>              |
| 55. | The Permittee shall seal all container outlets except the outlet currently in use.   | <b>SEAL OUTLET</b>                  |
| 56. | The Permittee shall mark all fuel containers with the Permittee's name. This includes forty-five (45) gallon drums.  | <b>MARK CONTAINERS</b>              |
| 57. | The Permittee shall at all times have on site sufficient spill clean-up equipment and material in readiness to clean-up all hazardous material which may be spilled.                         | <b>OIL SPILL CLEAN-UP EQUIPMENT</b> |

**31 (1) (l) - DEBRIS AND BRUSH DISPOSAL**

- |     |  |                           |
|-----|--|---------------------------|
| 58. | The Permittee shall spread all cut debris and brush over the areas cleared, prior to completion of the operation or expiry of the Land Use Permit. | <b>SPREAD BRUSH</b>       |
| 59. | The Permittee shall salvage all portions of trees cleared that are larger than thirteen (13) centimetres in diameter.                              | <b>SALVAGE<br/>TIMBER</b> |
| 60. | The Permittee shall neatly pile all salvaged wood at locations specified, in writing, by a Land Use Inspector.                                     | <b>PILE WOOD</b>          |
| 61. | The Permittee shall not leave tree stumps exceeding twenty (20) centimetres above the ground surface.  | <b>TREE STUMPS</b>        |

**31 (1) (m) - MATTERS NOT INCONSISTENT  
WITH THE REGULATIONS**

- |     |  |                           |
|-----|--|---------------------------|
| 62. | The Permittee shall display a copy of this Permit in a conspicuous place in each campsite established to carry out this land use operation.                          | <b>DISPLAY<br/>PERMIT</b> |
| 63. | The Permittee shall keep on hand, at all times during this land use operation, a copy of the Land Use Permit.  | <b>COPY OF<br/>PERMIT</b> |
| 64. | The Permittee shall provide in writing to the Engineer, at least forty-eight (48) hours prior to commencement of this land use operation, the following information: | <b>IDENTIFY<br/>AGENT</b> |
- (a) person, or persons, in charge of the field operation to whom notices, orders, and reports may be served;
- (b) alternates;



- (c) all the indirect methods for contacting the above person(s).
65. The Permittee shall restore any trails used by trappers or hunters by slashing any and all trees that may fall across these paths or trails and by removing any other obstructions, such as snow piles or debris, that may be pushed across the trails. **TRAILS RESTORATION**
66. The Permittee shall ensure that a copy of this Permit, operating conditions and definitions is provided to and understood by all contractors and sub-contractors prior to the start-up of this Land Use Operation. **PERMIT CONTRACTORS & SUB-CONTRACTORS**
67. The Permittee shall submit to the Engineer a contingency plan, for chemical and petroleum spills, for use during the construction and operation of the winter road. **CONTINGENCY PLAN**

**Recommended Mitigation Measures Supplementary to Permit Conditions**

**Fuel Storage**

Fuel sloops located within 30 m of a water body should be parked within an impermeable dyke. This can be constructed snow/ice material and will reduce the likelihood of a spill penetrating the ground and migrating into the water. Should equipment need access inside the dyked area for refueling, the opening should be on the uphill side. Refueling operations occurring outside an area described above should include a haz-mat/ drip tray under the tank receptacle.

**Equipment**

All equipment parked or may be parked for four (4) hours or more, should have a haz-mat/drip tray under it, or be sufficiently diapered (leaky equipment should be repaired immediately).

**Operational**

No burning of plastics  
Waste oil should be recycled if possible

## APPENDIX F

### **PART A: SCOPE AND DEFINITIONS**

#### **1. Scope**

This Licence entitles Imperial Oil Ventures Limited to use Water for industrial undertakings in the Mackenzie Delta for the 2005 Field Geotechnical Investigation Program;

b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations; and

c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

#### **2. Definitions**

In this Licence: **N7L1-1804**

**"Act"** means the *Northwest Territories Waters Act*;

**"Analyst"** means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;



**"Board"** means the Northwest Territories Water Board established under Section 10 of the *Northwest Territories Waters Act*;

**"Inspector"** means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

**"Licensee"** means the holder of this Licence;

**"Minister"** means the Minister of Indian Affairs and Northern Development;

**"Modification"** means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

**"Regulations"** means Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

**"Waste"** means waste as defined by Section 2 of the *Northwest Territories Waters Act*;

**"Waters"** means waters as defined by Section 2 of the *Northwest Territories Waters Act*;

## **PART B: GENERAL CONDITIONS**

1. The Licensee shall file a Final Report with the Board and an Inspector not later than June 1<sup>st</sup>, 2005 which shall contain the following information:

the total quantity in cubic metres of fresh Water obtained from each water source(s);

- b) details of work completed;
- c) a list of spills and unauthorized discharges;
- d) results from all monitoring programs; and

- e) any other details on Water use or Waste disposal requested by the Board within forty-five (45) days before the final report is due.
- 2. Meters, devices or other such methods used for measuring the volumes of Water used shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
- 3. All monitoring data shall be submitted in printed form and electronically in spreadsheet format on a diskette or other electronic forms acceptable to the Board.
- 4. All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.
- 5. Prior to the use of Water for industrial undertakings or the disposal of Waste and pursuant to Section 17(1) of the *Act* and Section 12 of the Regulations, the Licensee shall have posted and shall maintain a security deposit of ~~XXX~~ in a form suitable to the Minister.
- 6. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the *Act*. This clause shall survive the expiry of this Licence or renewals thereof and until full and final restoration has been completed to the satisfaction of the Minister.
- 7. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

#### **PART C: CONDITIONS APPLYING TO WATER USE**

- 1. The Licensee shall obtain Water from Lake ID 25, Lake ID 28 and Lake ID 10BC as described in the response to DFO Information Request #1 (dated October 15,



2004), or as otherwise approved by an Inspector.

2. For lakes used as a water source, a representative dissolved oxygen/temperature profile must be obtained prior to the initial water withdrawal and prior to demobilization of the project for the year.
3. The Licensee is not permitted to remove more than five (5) % of the available under ice water volume per lake as calculated using a maximum expected ice thickness of two (2) meters during a single winter season.
4. The daily quantity of Water used for all purposes shall not exceed 300 cubic metres.
5. The water intake hose used on the water pumps shall be equipped with a screen with a mesh size sufficient to ensure no entrainment of fish (2.54 mm).

#### **PART D: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
  - a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;
  - b) such Modifications do not place the Licensee in contravention of either this Licence or the Act;
  - c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than

five (5) days; and

d) an Inspector has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in Part E, Item 1 have not been met may be carried out only with written approval from an Inspector.

3. The Licensee shall provide to the Board as-built plans and drawings of the modifications referred to in this Licence within ninety (90) days of completion of the modifications.

#### **PART E: CONDITIONS APPLYING TO STREAM AND WATER BODY CROSSINGS**

The Licensee shall ensure that only clean snow and ice is used on all stream or water body crossings, and that no debris is left on the surface of the crossings.

Stream or water body crossings shall be notched or removed before spring break-up to facilitate natural flow.

The removal of naturally occurring material from the bed or banks of any stream or water body below the ordinary high water mark is not permitted.

#### **PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING**

The Licensee will maintain a copy of the approved Emergency Response Plan onsite in a readily available location, to the satisfaction of an Inspector.

The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the project do not enter any Waters.



The Licencee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.

If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:

- a) report the incident immediately via the 24 Hour Spill Reporting Line (867) 920-8130; and
- b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

**PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION**

Upon completion of all activities, the Licensee shall ensure that all equipment and materials are removed from the site. Other final restoration activities as outlined in the Project Description should be implemented to the satisfaction of an Inspector.



The Licencee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.

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Upon completion of all activities, the Licensee shall ensure that all equipment and materials are removed from the site. Other final restoration activities as outlined in the Project Description should be implemented to the satisfaction of an Inspector.