Indian and Northern Affairs Canada
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P.O. Box 1500
Yellowknife, NT X1A 2R3

Your file - Votre référence

Our file - Notre référence

N7L1-1765

November 23, 2001

Mr. Gordon Wray
Chairman
NWT Water Board
P.O. Box 1500
YELLOWKNIFE, NT X1A 2R3

Dear Mr. Wray:

RE: CHEVRON CANADA RESOURCES LTD. - PROPOSED OGRUKNANG AND TUMMA SEISMIC PROGRAM, WINTER 2001-2002
WATER LICENCE AMENDMENT (TYPE "B" LICENCE)
LEVEL 1 ENVIRONMENTAL SCREENING

The Department of Indian Affairs and Northern Development (DIAND) has screened the above water licence amendment application for water use and waste disposal as submitted by Inuvialuit Environmental & Geotechnical Inc. for Chevron Canada Resources Ltd., pursuant to Section 5 of the Canadian Environmental Assessment Act (CEAA). The Project Description has been screened by the Inuvialuit Environmental Impact Screening Committee (EISC), pursuant to the 1984 Inuvialuit Final Agreement. This is a change to the project licensed in January 2001, which was identified only as the "Inuvik Block 1&2 Winter Seismic Program". The main project was screened last year, by the EISC and this year's review focusses on the changes proposed. A joint screening has however, has been conducted with the National Energy Board (NEB), and DIAND's North Mackenzie District Office.

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 rendered on September 27 2001,providing that proposed mitigation measures are carried out and licence conditions are met. 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 registration with CEAA.

.../2

Canada

If you require further information, contact me at (867) 669-2650.

Sincerely,

David Milburn
Manager
Water Resources Division

encl.

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

CEAA SCREENING FORM - LEVEL I
Department of Indian Affairs and Northern Development/NEB

1. Public Registry Required Information

Applicant: Chevron Canada Resources

FEAI I.D. Reference Number: *
[A number assigned by the Agency; to be inserted here upon receipt of number from Agency]

Subject Descriptors: inland waters, oil and gas, land use

Alias Project Title:
[DIAND project name] Chevron Ogruknang & Tumma 3D & 2D seismic - N2001B0035

DIAND Lead RA and Screening Division: Lands Administration, North Mackenzie District Office

Lead RA Contact: Rudy Cockney, North Mackenzie District, 867-777-3361

Lead RA Trigger Types: CEAA Law List Regulations; Inclusion List Regulations; Inuvialuit Final Agreement

Other Screening Trigger Types: IFA; NEB geophysical approvals, Water Licence

EA Start Date: 2001/09/13

EA Type: screening

Physical Activity as identified from Inclusion List: Use of Crown Lands in the Territories Use of Water, Oil & Gas Operations

Physical Work and /or Activity Being Assessed: seismic operations, sleigh camp operation fuel storage, water use, waste disposal

Phase of Project / Primary Undertaking: 3D seismic program, access construction (camp operations, water use, waste disposal, fuel storage)

Multiple Activities: __Yes _X_ No Indicate One: _____

Project Category Code: Point Linear Areal (Circle one)

Geographic Place Name: Inuvik, (Caribou Hills - Luker Channel)

EA Determination: 20-1-a

EA Determination Date: 2001/10/30

Estimated Follow-up program termination date: n/a

EA Terminated: no

2. General File Information

NWT Water Board File Number: N7L1-1765
DIAND Land Use Permit Number: N2001B0035
NEB File Number: 9180-C843-2

Type of Application(s): New Land Use Permit, Water Licence Amendment, Geophysical Operations Authorization

Present licence/permit/lease number: Nil

Proposed Date of Activity: Start up December 2001 to Aug. 2002 final cleanup

Other RAs or Screening Divisions: NEB, DIAND Water Resources for NWT Water Board
[Provided in Appendix D, CEAA EA Coordination]

If yes, is there an Integrated Screening underway?: YES

Other RA Types of Approval: Geophysical Operations Authorization, NWT Water Licence
[Provided in Appendix D, CEAA EA Coordination]

Project File Location: North Mackenzie Office, Inuvik,NT , NEB Office, Calgary, AB , NWT Water Board, YK

DIAND District: North Mackenzie, Inuvik

3. Proponent:

Proponent: Chevron Canada Resources, Calgary , AB.

Type of proponent: industry

4. Project Location:

Topographic Map Sheet Number: 107 B

Latitude / Longitude: 68 50 00 /134 25 00 (project covers a large area)

Watershed: Mackenzie delta **Drainage region:** Lower Mackenzie

Street Name: n/a

Surrounding Land Status: Crown Lands in the ISR

Special Designation: Nil (With in the Community Conservation Plans Area)

5.a) Project Description

This program proposed by Chevron Canada Resources and their partner and BP Canada Energy Co., entails the acquisition of 678.7 km2 of seismic data the majority being in two proposed 3D seismic blocks. An additional 29 km of 2D seismic will also be done in conjunction with the 3D seismic work in the Inuvik 1 and 2 Blocks. The total area on crown lands affected is

26.1 ha.

Western Geco has been contracted to conduct the seismic operations for Chevron. Western Geco will provide the geophysical survey crews and equipment required. The seismic crew will be housed in a sleigh mounted camp that will be situated in a location between the two 3D blocks on one of the channels approximately 68 40 30 & 134 13 20. The program is scheduled to commence in December 2001, beginning with surveying and access route construction, and is anticipated to be complete by the end of April 2002. Lines will be cut and cleared of trees and brush using a hydro-axe on a cat. This seismic program will use dynamite as the energy source using Nodwells to drill the shot holes.

Camp will accommodate up to 140 persons and be set up for the duration of the project or until the camp has to be pulled out due to ice conditions. Grey water will be treated to within Municipal guidelines and then discharged in to the river for disposal. Blackwater is to be stored and then vac trucked to the town of Inuvik for disposal in the sewage lagoon. Water for camp use will be taken from the Mackenzie River (approx. 15 cubic meters /day). Bottled water will be provided for drinking water.

Fuel sloops will be used for fuel storage with a total of approximately 28,000 liters being stored on site.

Some winter access roads will be built on river channels and overland access will require snow compaction and watering.

For more detailed information refer to the Proponent's Project Description.

What sources of information did you use? [Information must be on the public record]

__ other government data
__ historical maps
__ scientific reports
_X_ Project Description for the EISC
_x_ CEAA public registry system
__ contour maps
_X_ Oil and gas water licence questionnaire
_x_other, specify: licence application

5.b) Describe any accidents or malfunctions that may occur in connection with the project.

Equipment through ice may result in a fuel spill (mechanical failure, operator error, thin ice), or ground disturbance on the banks of a water body (equipment tracks spinning on banks resulting in vegetation grubbing. Other fuel spills could result in ground contamination (from mechanical failure or operator error) or ground disturbance during clean-up (multiple equipment passes in one location). Sewage spills could contaminate land or water (sewage treatment plant mechanical failure or operator error) or disturbance during clean-up (multiple equipment passes in one location). Wildlife encounters, such as an attack on humans (surprise encounter) or personnel shooting or injuring wildlife (responding to perceived threat or actual attack) could occur. Leaning trees may fall over on men or equipment.

Accidents and Malfunctions

Possible accidents and malfunctions which could impact the environment include:

- equipment through ice
- fuel spill on land
- sewage spill
- wildlife encounter
- leaners (tree) falling on men or equipment

Effects of Environment on the Project

Program is designed to have flexibility in timing to allow for weather-related delays. If delays are extensive, the program would be reduced. Thin ice may be detoured around or snow cleared to enhance freezing. Seismic lines could be set back 30 m from water bodies. Contingency plans and emergency shelters in place to address sudden winter storms.

6.a) Description of the Environment

Ecozone: Southern Arctic

Description of Biophysical Environment:
The proposed areas situated along the Caribou Hills and extending into the eastern part of the Mackenzie delta In the delta permafrost is found in isolated pockets. Although once on the top of the Caribou Hills permafrost is a major feature with polygon terrain, bulging hummocks, ice wedges being evident. Delta drainage is very poor on the land due to its lack of height as its made up of alluvial deposits and sandbars. However the Caribou Hills are made up of sand and along the top it is made up of tundra type vegetation. Areas are covered with grasses and sedges intermingled with tundra type vegetation on them, low lying shrubs, willows with some lichens. Along the edge of the Caribou Hills and on the Delta islands there are stands of spruce trees.

Wildlife in the area include grizzly bear occasionally black bear, moose, caribou, white fox, wolves, wolverines, rabbits, lemmings, ptarmigan, and owls to name a few. In the summer, migratory birds are found throughout this area as its part of the delta. These include numerous migratory waterfowl (ducks , geese etc.), gyrfalcons eagles and hawks.
As the area is rich in fish species, moose and caribou (winter) it is used by various local peoples of the region for fishing, hunting and gathering (berry picking). There are also several cabins scattered throughout the area that are used year round.

The area has seen a lot of oil and gas activity in the recent past (25 years) and is presently experiencing another boom in oil and gas exploration work. Most recently the development of a couple of gas wells and the building of a gas pipeline from Ikhil to Inuvik.

6.b Description of the Socio-economic and Cultural Environment

This area is part of the river travel corridor from Inuvik to Tuktoyaktuk, used both in the summer and winter. There are some archaeological sites found near east branch, this includes the Reindeer Station site which may become a historic park. There are quite a few cabins in the area along the channels used year round by local people. The area is used by local people for fishing both winter and summer and fall moose and winter caribou hunting. There is not much trapping in the area as there are lots of employment opportunities with the oil and gas sector. This is better salary wise as its steady income and of higher pay than trapping. Tourism in the area is mostly done in the summer with tourists flying over the area stopping in Tuk, Herschel Island and Aklavik. There are some boating tours done through this area as well.

What sources of information did you use? [Information must be on the public record]

_X_ Historical Maps (expired permits and licences)
_X_ Running Maps (current permits and licences)
__ Interference Maps (other land dispositions)
__ Public Registry System
_X_ Project Description for the EISC
__ GIS
__ Indian Land Registry
__ Land Transition Management Style
__ Other, eg NWT Data Book, A & R Plan
__ Oil & Gas Water Licence Questionnaire

7.a) Consultation on Project

Federal Government	Contact Person	Dates Comments Received
DIAND		
Water Res.	✔ G. Cook, R. Jenkins, B. Reid	Oct. 17, 22/01

Federal Government		Contact Person	Dates Comments Received
Geology			
Lands		D. Elliott	Sept.20/01
North Oil & Gas	X		
Ec. Dev.			
Env. & Cons.			
I&I			
D.M.			
DWRO/R.M.O.	x	S. Gallupe, R. Walker	Oct. 22/01
DFO/CCG	x	Inuvik & YK Offices	P.Cott Sept. 25/01
DOE	x	EPS, YK Office	M. Dahl Sept 20/01
Health Canada			
DOT			
NRCan			
NEB	x	Calgary	J. Korec Sept.24/01

N.W.T. Government		Contact Person	Dates Comments Received
RWED	x	Inuvik Office , Yellowknife	
Health	x	D. Fleming,YK	
Transportation	X	Yellowknife office	Sept 13/01
Tourism			
MACA	X	Inuvik Office	
EM&PR			
PWNHC	X	E.C.E. Yellowknife	Sept. 13/01
Other			

Aboriginal Groups		Contact Person	Dates Comments Received
EISC	X	L.Graf	Oct. 9 Approval

Aboriginal Groups	Contact Person	Dates Comments Received
ILA (Tuk)	H Arends	
Gwichin Land & Water Board		
Ren. Res Comm.	Aklavik	
Metis Local #56	Aklavik	
Hunters & Trappers comm.	Aklavik	
Band Council	Aklavik	
Community Corp.	Aklavik	
Community Corp.	Tuk	
Hunters & Trappers C.	Tuk	Aug. 29/01
Native Band	Inuvik	
Hunters & Trappers Comm	Inuvik	Sept. 25/01
Metis Local #62	Inuvik	
Community Corp.	Inuvik	

Public/Interested Parties/Other	Contact Person	Dates Comments Received
Tuktoyaktuk Hamlet Coun.		Nil
Aklavik Hamlet Council		Nil
Inuvik Town Council		Nil

Record of comments attached to screening Form: No, but are on file

7.b) Summary of Public Concerns

Public consultation was conducted by the proponent, and a record of these meetings etc can be found on pages 69 to 73 of the Project Description.

8.a) Detailed description of environmental and cumulative effects identified in Tables A and B.

Cumulative Environmental Effects (Taken From Project description)
Cumulative effects refers to impacts that result from past, existing and imminent projects and activities. This broad interpretation of cumulative effects under the *Canadian Environmental Assessment Act* includes both environmental and socio-economic considerations. The socio-economic interactions are more fully discussed in section 8.0 traditional and other

uses. The causal agents of cumulative effects may include several causes, multiple effects, effects of activities in more than one locale and recurring events. The bounding for the cumulative effects assessment has been adapted to address spatial and temporal overlap of the impacts of previous, current and future activities within, and in the vicinity of, the proposed program area.

As an initial assessment of the cumulative effects associated with the chevron Ogruknang and Tumma seismic program, the study area was based upon the sub-regional footprint of effects of the proposed seismic program of the combined lineal extent of 29 km for the 2d lines and the aerial extent of 189 sq. km. For both 3D blocks. This program is scheduled to occur in the December 2001 - April 2002 time period. The significance, extent, duration, magnitude, and residual effects criteria used in this section are defined in the proponents project description Section 12.0, proposed mitigation and anticipated environmental impacts. (see attached table).

Cumulative Environmental Effects
Based on a comparison of effects identified in Box A and Box B

Matching Number(s)	Description of cumulative environmental effects
3 & 6	Change in surface water flow - caused by the buildup of ice and overland access routes may cause surface Water flow to change course. This will be temporary as it will only affect the area for this upcoming spring 2002.
7	Change in air quality caused by the running of deisel and gas engines for the duration of the projects. Emissions from generators, trucks, Nodwells and other heavy equipment will Cause air quality problems in the region.
10 & 11	Ice Fog and Change in ambient noise levels - During cold weather engine emissions will hang in the air and cause ice fog, multiply This by several similar projects and the problem becomes worse. Noise levels will increase due to the number of vehicles and equipment being used in the wilderness area.
14 & 15	Alteration of permafrost Regime and destabilization / erosion could occur if permit conditions and proposed operating procedures were not followed again this would be multiplied by the numerous programs.
24 & 25 & 26 & 27	Impact to large and small mammals, impact to fish and birds - this is certain to occur with development in a wilderness area. This effect will probably displace mammals, fish and birds for a temporary period of time. Although once the wildlife becomes familiar with the presence of people they will start returning to the area
31	Change in wildlife habitat / ecosystem this will occur on each program area due to the minimal disturbance Of the vegetation. This will cause new and perhaps different vegetation growth in the future thus changing the habitat.

8.b) Effects of the Environment on the Project (or in table)

Largely related to weather changes or weather phenomena that could temporarily shut-down operations (too warm, too cold, thin ice, storms or blizzards).

9.a) Summary of Mitigation Measures

1). Proponent's Proposed Mitigation and Anticipated Environmental Impacts

Chevron's proposed seismic program has been designed to acquire geophysical data, while mitigating impacts to the environment and land users. Without adequate mitigation, potential environmental impacts resulting from the winter seismic program may include temporary disturbance to terrain, soils, permafrost, vegetation, terrestrial wildlife, aquatic resources and

environmental impacts and reduce the recovery period of disturbed areas.

-Any steep slopes in particular for the Ogruknang 3D program (Caribou hills) should be avoided.

- Valued ecosystem components (VECs) did not include fish. There will likely be work that has the potential to impact fish in particular for the Mackenzie delta. EC recommends that Fish be considered as a VEC.

Cumulative Effects :DOE encourages all proponents to participate in completing the development of the Cumulative Effects Assessment and Management Framework (CEAMF), so that all of those involved will have greater certainty and clarity in conducting good environmental assessments.

–Spill Contingency Plan and A&R for the Camp site was not really addressed. As this site is on ice, particular attention must be paid to ensuring that this site is cleaned fully before access to the site is lost. Any chronic spills of hydrocarbons on the ice or in the snow must be scraped up and disposed of in an approved manner.

-Post monitoring Plans

The project description -Sec 14.0 identifies that program inspections will be conducted during the summer (July or August) where remaining material will be picked up from the lines and inspections will be noted where additional reclamation or restoration is needed There should be more depth to this plan such as documenting recovery rates of the vegetation over time, and a reporting requirement.

DFO : -screen all water intakes; notch or remove winter crossings prior to spring break up to prevent impeding water flow; the use of explosives as an energy source should be avoided especially within water bodies not having land fast ice, however, if used, DFO conditions laid out in a June 2001 letter must be met; any new technology tests proposed will require a fisheries authorization; proposed seismic programs should avoid traditional fish or seal harvesting areas; access routes should follow existing trails routes etc where possible to minimize vegetation clearing and disturbance, soil compaction etc as vegetation is critical to protect riparian fish habitat; avoid mechanized clearing within 100 metres of any stream or lake to protect bank stability, protect vegetation and soil cover; mushroom shoes or boots on bladed vehicles is recommended as protection to minimize ground disturbance and erosion due to snow plowing and grading activity; no cutting of crossing approaches unless approved- snow ramps are recommended to avoid bank cutting; winter crossings should be V notched or otherwise removed before spring breakup to ensure water flow; reclamation should include bank stabilization and revegetation, and be completed prior to spring thaw when runoff is greatest;

–in order to prevent the deposition of deleterious substances into fish bearing waters, and possible habitat disturbance, all maintenance and refuelling activities should be controlled to prevent any spills , leaks etc; all wastes, fuel storage, sumps etc should be located at least 100 metres from water bodies, and be adequately bermed or otherwise contained (eg double walled tanks) to ensure that these substances to do enter water; drill cuttings should be disposed of such that they do not enter water bodies, eg use of impermeable liners; biodegradable drill additives are recommended over non biodegradable ones; do not

leave material on the ice where there is the potential to enter water; ensure that a spill contingency plan is available to all on site; report all spills; and advise DFO of any major project changes.

GNWT PWNHC:
–the proponent : should remain at least 30 metres from the boundaries of all known archeological sites; proceed with caution in all operations as the area here exhibits a high potential for locating new archeological resources; should conduct a follow-up study next summer to assess the potential impacts to heritage resources as a result of the winter's activities.

Inuvik Hunters and Trappers: be mindful of actual and potential historical sites in the area; no not deposit cleared brush on known travel routes; vehicles should proceed with caution over ice, due to past incidents of vehicles through the ice.. a pollution concern; any extended work season may impact on returning migratory birds; and avoid blocking streams when constructing access roads over them.
Fisheries Joint Management Committee: -recommend the use of local environmental monitors, plus the establishment of a central data base on fish and water body incident reports from environmental monitors; recommend heightened inspections during initial deployment of new explosive use technologies , concern with drawdown of area water bodies, especially small ones, from road, camp construction etc, so recommend that actual drawdowns be monitored by DFO. With all the activities going on , they want assurances that all work complies with various government regulations and guidelines.
DIAND (district):
- should have an approved ERP including current contacts and a list of available spill response equipment.
–some concern with their backup proposal to use a greywater steamer; it may be preferable to dispose of all sewage at a treatment facility, given that te camp is large, and on the ice.
-creek, channel and river crossings must have approaches made of clean ice/ snow.
-all vehicles must be equipped with absorbent materials, drip trays, shovels and disposal bags. In addition, secondary containment must be provided for all hydrocarbon materials.

9. (b) Land Use Permit Terms & Conditions

RECOMMENDED **CONDITIONS ANNEXED TO AND FORMING PART OF LAND USE PERMIT NUMBER N2001B0035**

31 (1) (a) - LOCATION AND AREA

1.1		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.	**PLANS**
1.2		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.	**PRIVATE PROPERTY**
1.3	(a)	The Permittee shall offset vehicle travel in areas without a snow covered surface.	**OFFSET VEHICLE TRAVEL**
	(b)	The Permittee shall confine the line to a maximum width of	

Eight (8) metres, unless otherwise authorized in writing by a Land Use Inspector.

1.4	The Permittee shall not construct parallel lines or roads unless authorized by the Engineer.	**PARALLEL ROADS**
1.7	The Permittee shall remove from Territorial Lands, all scrap metal, discarded machinery and parts, barrels and kegs, buildings and building material.	**REMOVE WASTE MATERIAL**
1.11	The Permittee shall locate all lines, trails and rights-of-way to be constructed parallel to streams a minimum of thirty (30) metres from any stream except at crossings, unless otherwise authorized in writing by a Land Use Inspector.	**PARALLELING STREAMS**

31 (1) (b) - TIME

2.1	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 forty-eight (48) hours prior to the commencement of this land use operation.	**CONTACT INSPECTOR**
2.2	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 and restoration of the land used will be completed.	**REPORTS BEFORE REMOVAL**
2.3	The Permittee shall submit an approved progress report to the Engineer every seven(7) days during this land use operation. (See attached)	**PROGRESS**
2.4	The Permittee shall notify a Land Use Inspector at least ten (10) days prior to backfilling any sump.	**BACKFILLING NOTIFICATION**
2.5	The Permittee shall not conduct any overland movement of equipment or vehicles before 0800 hours local time on November 15 , unless otherwise authorized in writing by a Land Use Inspector.	**START-UP DATE**
2.6	The Permittee shall not conduct any overland movement of equipment and vehicles after 0800 hours local time on April 15th , unless otherwise authorized in writing by a Land Use Inspector.	**SHUT-DOWN DATE**
2.7	The Permittee shall not conduct any overland movement of equipment and vehicles between April 15th and November 15th, unless otherwise authorized by a Land Use Inspector.	**SHUT-DOWN PERIOD**
2.9	The Engineer, for the purpose of this operation, designates April 15th , as spring break-up.	**SPRING BREAK-UP**

2.10	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.	**REMOVE ICE BRIDGE**
2.11	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.	**REMOVE SNOW FILLS**
2.14	The Permittee shall dispose of all brush and timber prior to removal of men or equipment from the land use area.	**BRUSH DISPOSAL**
2.15	The Permittee shall commence and foster revegetation on the land used, as directed by a Land Use Inspector, within one (1) year of the completion of the land use operation.	**RE-ESTABLISH VEGETATION**
2.16	The Permittee shall complete all clean-up and restoration of the lands used prior to the expiry date of this Permit.	**CLEAN-UP**
2.17	The Engineer reserves the right to impose closure of any area to the Permittee in periods when dangers to natural resources are severe.	**CLOSURE**

31 (1) (c) - EQUIPMENT

3.1	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.	**ONLY APPROVED EQUIPMENT**
3.2	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.	**BULLDOZER BLADES AND SHOES**
3.3	The Permittee shall use a forced-air fuel-fired incinerator to incinerate all combustible garbage and debris.	**INCINERATORS**

31 (1) (d) - METHODS AND TECHNIQUES

4.1	The Permittee shall scout proposed lines and routes to select the best location for crossing streams and avoiding terrain obstacles prior to the movement of any vehicle that exerts pressure on the ground in excess of 35 kPa.	**DETOURS AND CROSSINGS**
4.2	The Permittee shall construct and maintain winter roads with a minimum of fifteen (15) centimetres packed 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**
4.3	The Permittee shall dogleg lines, trails and rights-of-way that approach lakes, streams or public roads, as specified in writing by a Land Use Inspector.	**DOGLEG APPROACHES**

4.4	The Permittee shall plug all bore holes as the land use operation progresses.	PLUG HOLES
4.5	The Permittee shall refill and restore bore hole craters as the land use operation progresses.	REFILL CRATERS
4.6	The Permittee shall remove all wire from the land as the land use operation progresses.	REMOVE WIRE
4.13	The Permittee shall not store material on the surface ice of streams	STORAGE ON ICE

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

5.6	The Permittee shall mark all seismic lines at least once every one and a half (1.5) kilometres with a permanent marker indicating the Land Use Permit number or in a manner approved by a Land Use Inspector.	MARKERS/ SEISMIC LINES
5.7	The Permittee shall ensure that the land use area is kept clean and tidy at all times.	CLEAN WORK AREA

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

6.1	(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) The artesian occurrence shall be reported to the Engineer within forty-eight (48) hours.	PLUG ARTESIAN WELLS
6.2	The Permittee shall remove any obstruction to natural drainage caused by any part of this land use operation.	NATURAL DRAINAGE
6.4	The Permittee shall not use any material other than water in the construction of ice bridges.	ICE BRIDGE MATERIAL
6.5	The Permittee shall not allow any ice bridge to hinder the flow of water in any stream.	ICE BRIDGE
6.10	The Permittee shall remove snow fills in stream crossings as the land use operation progresses, unless otherwise authorized in writing by a Land Use Inspector.	REMOVE WATER CROSSINGS
6.17	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.	VEHICLE MOVEMENT FREEZE-UP
6.18	The Permittee shall suspend overland travel of equipment or vehicles if rutting occurs.	SUSPEND OVER-LAND TRAVEL
6.20	The Permittee shall detour around all sand hills, unless otherwise authorized in writing by a Land Use Inspector.	AVOID SAND HILLS
6.22	The Permittee shall apply grass seed and fertilizer to areas	REPLANT

	designated in writing by a Land Use Inspector.	**DESIGNATED AREAS**

31 (1) (g) - USE, STORAGE, HANDLING AND DISPOSAL OF CHEMICAL OR TOXIC MATERIAL

7.8	The Permittee shall burn all garbage and debris at least daily.	**GARBAGE DISPOSAL**
7.10	The Permittee shall remove all noncombustible garbage and debris from the land use area to a disposal site approved in writing by a Land Use Inspector.	**REMOVE GARBAGE**
7.12	The Permittee shall dispose of all combustible waste petroleum products by incineration or removal.	**WASTE PETROLEUM DISPOSAL**
7.15	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.	**REPORT CHEMICAL AND PETROLEUM SPILLS**
7.16	The Permittee shall dispose of all sewage and grey water in a manner approved by a Land Use Inspector.	**SEWAGE DISPOSAL**

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

8.1	The Permittee shall not unnecessarily damage wildlife habitat in conducting this land use operation.	**HABITAT DAMAGE**
8.3	The Permittee shall not obstruct the movement of fish while conducting this land use operation.	**FREE FISH MOVEMENT**
8.6	The Permittee shall not destroy or damage beaver dams.	**BEAVER DAMS**
8.7	The Permittee shall not destroy or damage muskrat lodges.	**M U S K R A T LODGES**
8.8	The Permittee shall not detonate explosives within Thirty (30) metres of any body of water which is not completely frozen to the bottom or as stated in DFO Setback guidelines	**EXPLOSIVES WATER**
8.11	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 Renewable Resources at (867) 920-8066.	**BEAR/MAN CONFLICT**

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

9.3	The Permittee shall not operate any machinery or equipment within one hundred and fifty (150) metres of the base of a pingo.	**PINGOS**
9.4	The Permittee shall not feed wildlife.	**NO FEEDING**

WILDLIFE

31 (1) (k) - PETROLEUM FUEL STORAGE

11.2	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.	**FUEL BY STREAM**
11.3	The Permittee shall locate mobile fuel facilities on land when stationary for any period of time exceeding twelve (12) hours.	**FUEL ON LAND**
11.4	The Permittee shall not allow petroleum products to spread to surrounding lands or into water bodies.	**FUEL CONTAINMENT**
11.6	The Permittee shall construct a dyke around each stationary fuel container or group of stationary fuel containers where any one container has a capacity exceeding 4 000 litres.	**DYKE FUEL CONTAINERS**
11.8	The volume of the dyked area shall be ten per cent (10%) greater than the capacity of the largest fuel container placed therein.	**CAPACITY**
11.10	The Permittee shall: (a) Examine all fuel storage containers for leaks a minimum of twice every day. (b) Repair all leaks immediately.	**CHECK FOR LEAKS**
11.12	The Permittee shall not use bladders for storing and or transporting petroleum products	**BLADDERS PROHIBITED**
11.14	The Permittee shall mark all stationary petroleum products storage facilities with flags, posts or similar devices so that they are at all times plainly visible to local vehicle travel.	**MARK FUEL LOCATION**
11.15	The Permittee shall seal all container outlets except the outlet currently in use.	**SEAL OUTLET**
11.16	The Permittee shall mark all fuel containers with the Permittee's name. This includes 45 gallon drums.	**MARK CONTAINERS**

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

12.9	The Permittee shall complete total disposal of all debris and brush cleared prior to the expiry date of the Permit.	**BRUSH DISPOSAL/ TIMING**
12.11	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.	**SPREAD BRUSH**
12.12	The Permittee shall salvage all portions of trees cleared that are larger than thirteen (13) centimetres in diameter.	**SALVAGE TIMBER**

12.13	The Permittee shall neatly pile all salvaged wood at locations specified in writing by a Land Use Inspector.	**PILE WOOD**
12.15	The Permittee shall not leave tree stumps exceeding twenty (20) centimetres above the ground surface.	**TREE STUMPS**

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

13.5	The Permittee shall display a copy of this Permit in a conspicuous place in each campsite established to carry out this land use operation.	**DISPLAY PERMIT**
13.6	The Permittee shall keep on hand, at all times during this land use operation, a copy of the Land Use Permit.	**COPY OF PERMIT**
13.7	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: (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).	**IDENTIFY AGENT**
13.9	The Permittee shall, while preparing the access road, make every effort to avoid covering or destroying traps or snares that may be found along these routes.	**TRAPS PROTECTION**
13.10	The Permittee shall restore any trails used by trappers or hunters along access routes 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**
13.12	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 MITIGATIONS 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 of 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).
- Low impact wheeled vehicles should be limited to properly constructed snow/ice roads. There should be no use of these vehicles on seismic lines.

Operational

- No burning of plastics
- Waste oil should be recycled
- Seismic lines crossing river channels thirty (30) meters or greater in width should be stopped short of the channel leaving a buffer (where possible) between the end of the line and the channels. Equipment crossing channels should be at designated intervals of one (1) km or more and their approaches should be doglegged.
- Sleigh camps discharging gray water to the ground should do so into a snow/ice berm which can be broken up and spread on land when the camp moves next.
- On those upland areas, ie. Parsons Lake, Storm Hills, Caribou Hills, where dynamite is used as the seismic source, charges should be 15 kg or less at 18 meters depth to prevent excessive cratering. Other configurations of hole depth/ charge size may be acceptable as well.

10. Significance

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

__Yes
_X_No If yes, identify which one(s) and proceed to 11; if no, proceed to #12

11. Likelihood of Occurrence

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

___Yes_X_No (If yes, which one(s)?)

12. CEAA Determination /Recommendation

_X__ 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.

13. Consultation on Screening Report

Public consultation on screening report deemed necessary? ___ Yes __x_ No
Deadline for comments on screening report _____n/a_____
Public Comments Received on Screening Report? ___ Yes __x_ No
[Attach Comments to screening file.]

14. Follow-up Program

None required under CEAA;
Chevron would monitor the effects of dynamite detonations below water bodies, impacts to vegetation from equipment travel and impacts to wildlife. Where effects are noted, Chevron would alter program parameters such as charge burial or size and addition of oxygen to such affected water bodies. RWED would identify known impacts to wildlife. Soil and vegetation impacts would

be remediated. Various government agencies would be provided with monitoring results. No follow-up program is required by DIAND or NWT Water Board ;regular licence and land use inspections should suffice to identify any problems needing attention...or as otherwise determined eg wildlife monitors .

15. INAC Land Administration Authorization

Prepared By: (screener)
R Walker, RMO

Oct 30, 2001
Date

Approved By:
R. Cockney, District Manager

Oct 30, 2001
Date

16. Water Board Authorization

Prepared By (Screener):
G. Cook,

Nov. 2...
Date

Approved By:

Dec 13/01
Date

17. National Energy Board

Prepared By (Screener):
J. Korec, EAO

Date

Approved By:
T. M. Baker, Chief Conservation Officer

Date

"accepted" by NEB

1765

15. INAC Land Administration Authorization

Prepared By: (screener)
R Walker, RMO

Oct 30, 2001
Date

Approved By:
R. Cockney, District Manager

Oct 30, 2001
Date

16. Water Board Authorization

Reviewed By:
G. Cook,

Date

Approved By:

Date

17. National Energy Board

Reviewed By:
J. Korec, EAO

21 November 2001
Date

Approved By:
T. M. Baker, Chief Conservation Officer

21 November 2001
Date

Appendices

Appendix A: Subject Descriptors

Choose (one or more) from this list and insert as a "Subject Descriptor"

agriculture
buildings
communications
defence
energy
forestry
industry
inland waters
mining
oceans
oil and gas
parks
transportation

Appendix B: Geographic Place Name

see list provided in Guide

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

APPENDIX D : CEAA EA Coordination

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)

_X_ access road
- _X_ construction (winter ice roads)
- _X_ abandonment/removal
- __ modification e.g., widening, straightening

_X_ automobile, aircraft or vessel movement
_X_ blasting
__ building
__ burning
__ burying
__ channelling
__ cut and fill
_X cutting of trees or removal of vegetation
__ dams and impoundments
- __ construction
- __ abandonment/removal
- __ modification

__ ditch construction
__ drainage alteration
_X_ drilling other than geoscientific
__ ecological surveys
__ excavation;
_X_ explosive storage
_X_ fuel storage
_X_ garbage
- __ disposal of hazardous waste
- _X_ disposal of sewage
- _X_ waste generation

__ geoscientific sampling
- __ trenching
- __ diamond drill
- __ borehole core sampling
- __ bulk soil sampling

__ gravel
__ hydrological testing
_X_ site restoration
- __ fertilization
- __ grubbing
- _X_ planting/seeding
- __ reforestation
- __ scarify
- __ spraying
- __ recontouring

__ slash and burn
__ soil testing
__ topsoil, overburden or soil
- __ fill
- __ disposal
- __ removal
- __ storage

_X_ stream crossing/bridging (Temp. Winter)
__ tunnelling/underground
__ other, explain_____

_x_ accidents or malfunctions (Check if there is a possibility for malfunctions and accidents with this project). Describe. _risk of spills,_Accidental explosion , vehicles thru ice, cratering using explosives,

_X_ effects of environment on project (e.g., beaver dams). Describe. Cold weather or lack of snow slows down progress on project and promotes equipment failure. Ie. Hoses snap in cold or puncture by willows. More access building using water due to lack of snow.

Project Effects
(✓ check all the items appropriate to this project)

Biophysical Environment

1.__ deposit into surface water
2.__ deposit into ground water
3._X_change in surface water flow
4.__ change in ground water flow
5.__ change in water temperature
6._X_change in drainage pattern (temporary)

7._X_ change in air quality
8.__ change in air flow
9.__ micro-climate change
10._X_ ice fog

11._X_change in ambient noise levels
12.__ change in slope stability
13.__ change in soil structure
14._X__alteration of permafrost regime
15._X_ 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._X impact to large mammals
25._X_ impact to small mammals
26._X_ impact to fish
27._X_ impact to birds
28.__ impact to other wildlife
29.__ impact in a calving, nesting or spawning area
30.__ removal of wildlife buffer zone
31._X_ change in wildlife habitat/ecosystem
32._other, explain_____

Directly-related Socio-economic and Cultural Environment

33._X_ impact to trappers (minimal)
34.__ impact to hunting
35.__ impact to outfitters
36.__ recreational or back country use
37._X_ impact to fishing (minimal)
38.__ impact to First Nation traditional use
39._X_ impact to community
40.__impact to industry
41.__impact to community health
42._X_ change in work force economics
43._X_change in housing or infrastructure
44._X_change in regional transportation
45X__.other, explain Reindeer herding in area_____

46._X_impact to traditional use area
47.__ impact to historical site or cultural landmark
48._X_ impact to local aesthetics
49._X_impact to archaeological or historical site
50.X__ other, explain__Permafrost research sites_____

_____

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 environmen effects.

Other Resource Uses
(✓ check all the items appropriate to this project)

__ agriculture

__forestry
- __ commercial
- __ domestic

_X_ fishing

_X_ hunting/subsistence

__ urbanization
- __ commercial / residential (cottages)
- __ built structures
- __ infrastructure

__ mining
- __ exploration
- __ open pits
- __ underground

__quarries

__transportation/communications
- __ roads / trails
- _X_ channels / canal
- __ telephone lines, satellite dishes, cables
- __ beacons

__ solid waste disposal

__ energy project
- __ hydro
- __ pipeline
- __ transmission line

_X__other water licenses, permits, leases

_X__land claims
- __ selected
- __ withdrawn
- __ special management
  - __heritage sites
  - __ cultural sites

__other private lands held under tenure
__ recreational
__ trapping
__ mineral processing
__ airport
__recreation
__ other heritage sites

_X__other, explain:__reindeer herding____

Effects from other Resource Uses
(✓ check all the items appropriate to the scope of this project)

Biophysical Environment
1._X_deposit into surface water
2.__ deposit into ground water
3._X_ change in surface water flow
4.__ change in ground water flow
5.__ change in water temperature
6._X change in drainage pattern
7._X change in air quality
8.__ change in air flow
9.__micro-climate change
10._X_ ice fog
11._X_ 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._X_ impact to large mammals
25._X_impact to small mammals
26._X_impact to fish
27._X_ impact to birds
28.__ impact to other wildlife
29.__ impact in a calving, nesting or spawning area
30.__ removal of wildlife buffer zone
31._X_ 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._X_ impact to fishing
38.__impact to First Nation traditional use
39._X_ impact to community
40.__ impact to industry
41._X_ impact to community health
42._X_ change in work force or community economics
43._X_change in housing or infrastructure
44._X_ change in regional transportation
45.__ other, explain_____
46.__impact to traditional use area
47.__ impact to historical site or cultural landmark
48._X_ impact to local aesthetics
49.__ impact to archaeological or historical site

50.__ other, explain_____

_____

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 (F were requested on Sept. 13, 2001 to review the proposed project and, pursuant to subsection 6(1) of the CEAA Federal Coordina Regulations, inform the lead RA by Sept. 18, 2001 whether they are a responsible authority or could provide specialist advice.

The responses are provided in the following table:

Role of Federal Departments/Agencies

Department/Agency (District)	Responsible Authority	Specialist Department	No Involvemen
Canadian Coast Guard (Sarnia)			
Environment Canada (Yellowknife)			
Fisheries and Oceans (Yellowknife)		X	
Health Canada (Edmonton)		X	
Indian and Northern Affairs (Inuvik)	Lead R A		
National Energy Board (Calgary)	X		
Natural Resources Canada (Ottawa)			
NWT Water Board (Yellowknife)	X		

Federal Approvals [delete/add any that do not/do apply]

Environment Canada: *Migratory Birds Convention Act* Migratory Bird Sanctuary Permit
INAC: *Territorials Lands Act* Land Use Permit
National Energy Board: *Canada Oil and Gas Operations Act* 5(1)(b) Authorization
NWT Water Board: *NWT Waters Act* Class B Water Licence
DFO /Coast Guard: *Fisheries authorization; Navigable waters permit*

Section 8 Requirements of the CEAA Federal Coordination Regulations

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

A. Scope of the Project (change description as applicable)

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

   The RAs consider the principal project to be the proposed geophysical operations related to hydrocarbon explorat in the Mackenzie Delta area, Northwest Territories. To support this activity, camps are required.

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

The RAs note that for the project to proceed to completion, the physical works and activities listed in **Table A** above w need to be undertaken.

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

No further hydrocarbon exploration-related activities have been identified in relation to the physical works and activi for the proposed Project. Any additional hydrocarbon exploration activities would be subject to future examination un the *NWT Waters Act*, *Canada Oil and Gas Operations Act* and/or *Territorial Lands Act* and, consequently, under the CEA

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 CEA

C. Scope of the Factors to be Assessed

The following spatial and temporal boundaries, as defined in the Inuvialuit Environmental and Geotechnical Inc. Proj Description[1] for the Project, are suggested.

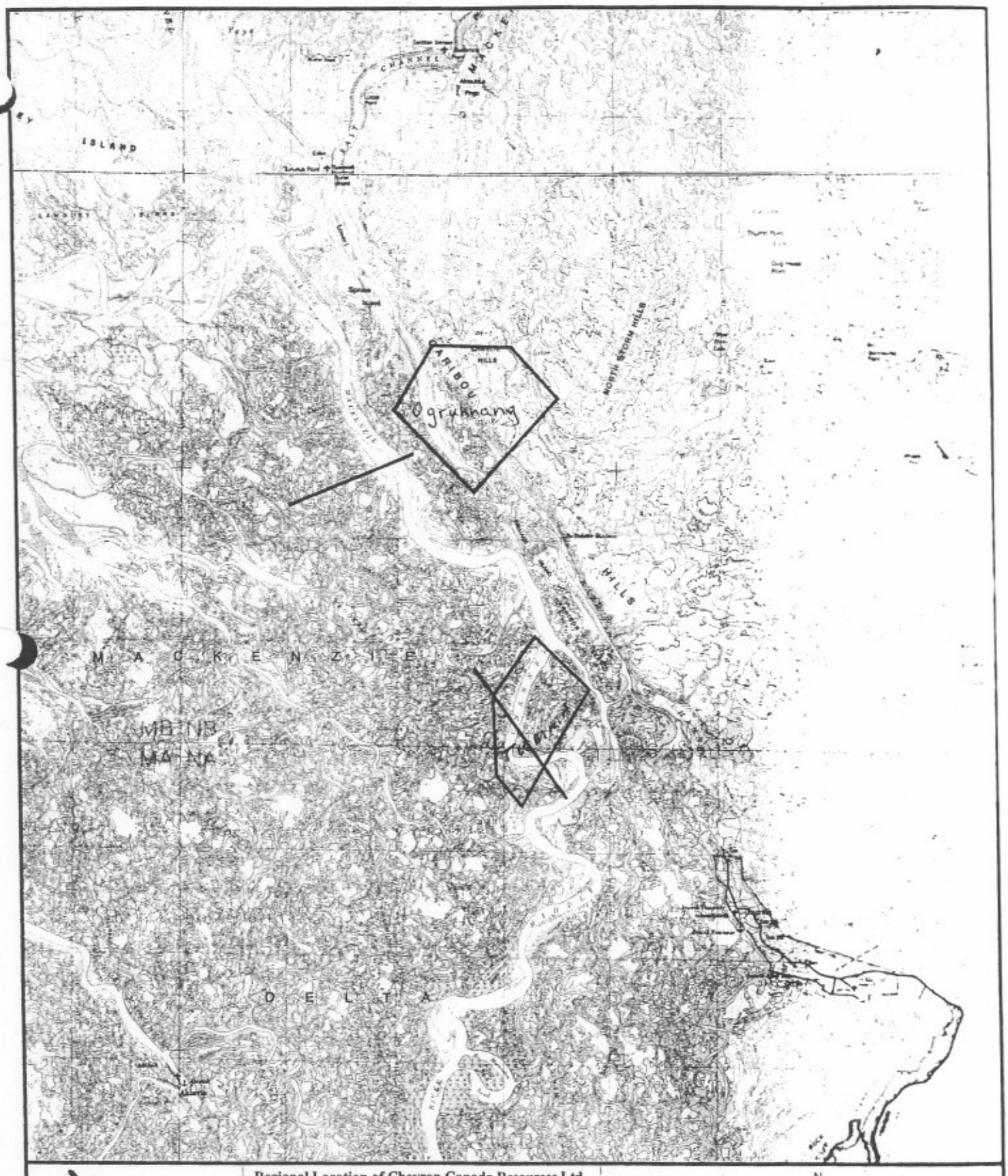
1. Spatial Boundaries
   - Local: Impacts would be limited to the seismic rights-of-way and camps;
   - Subregional: Impacts might extend beyond the limits of the rights-of-way and camps, but would be limited to wit 1 to 50 km of the rights-of-way and camps; and
   - Regional: Impacts might extend beyond 50 km from the rights-of-way and camps 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 Requirements of the CEAA Coordination Regulations

The RAs agreed to a CEAA determination date of October 30, 2001 for taking a course of action under subsection 20 Each RA for this joint screening made its own independent CEAA determination.

Site Map



Inuvialuit Environmental & Geotechnical Inc.

Regional Location of Chevron Canada Resources Ltd.
Winter 2001/2002 Ogruknang and Tumma
Seismic Programs

Scale 0 1 2 3 4 5 10
Kilometres

Sources: Aklavik 107B

LEGEND

- Location of Ogruknang 3D Program
- Location of Tumma 3D Program
- Location of Inuvik 2D Program

N W E S

5063-01

August 2001

Figure 1