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

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: Chevron Ellice & Mallik 3D seismic - N2001B0034

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:* 2001/10/20
[(YYYYMMDD]

EA Type:* screening
[Screening, Class Screening or Comprehensive Study]

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 (camp, waste, fuel storage)

Multiple Activities: __Yes _X_ No Indicate One: _____

Project Category Code: Point Linear Areal (Circle one)

Geographic Place Name: Inuvik, (Ellice & Mallik Islands)

EA Determination:* 20-1-a
[Final screening determination from subsection 20(1) -- see #12 of Screening Form and insert number here]

EA Determination Date: 2001/10/29

Estimated Follow-up program termination date: n/a

EA Terminated:* no

2. General File Information

NWT Water Board File Number: N7-1-1772
DIAND Land Use Permit Number: N2001B0034
NEB File Number: 9180-C843-1

Type of Application(s):* New Land Use Permit
[eg new water licence; new Land Use permit, new NEB operations authorization]

Present licence/permit/lease number: Nil

Proposed Date of Activity: Start up Dec. 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: Chevron Canada Resources, Calgary , AB.

Type of proponent: industry

4. Project Location:

Topographic Map Sheet Number: 107 C

Latitude / Longitude: 69 08 00 & 135 37 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: Within the Community Conservation Plans Area, near the Kendall Island Bird Sanctuary

5.a) Project Description

The program proposed by Chevron Canada Resources , on behalf of their joint venture partners: Burlington Resources Canada and BP Canada Energy Co., entails the acquisition of 432 km2 of 3D seismic data in three proposed 3D seismic blocks. An additional 59 km of 2D seismic that was previously approved during the Burlington 2000/2001 application , will

also be conducted as a continuation of last season's program. The proposed seismic blocks are located on Crown land within EL # 393 , # 394 and #404, with some extension onto EL # 384. During the winter 2001/2002 Chevron is proposing to acquire up to 2654 linear kilometres (approximately 1592 ha) of 3D seismic data within the three seismic blocks. The results of the seismic programs will be used to delineate potential exploratory drill site locations on the lands that the Mackenzie Joint Project team currently holds.

Veri-Illuq has been contracted to conduct the seismic operations for Chevron and will provide the geophysical survey crews and equipment. The seismic crew will be housed in two sleigh mounted camps that will be situated at two locations within the proposed 3D blocks, at approximately 69 08 00 & 135 37 00 (Ellice) and 69 22 00 & 134 52 00 (Mallik). 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. Seismic program will mainly use vibroseis as the energy source with dynamite as the secondary source on or beside waterbodies depending on certain conditions.

Camps are to be sent up at locations for 8 to 10 weeks. Incinolet toilets will be used and a grey water steamer will be utilized to steam off any grey water, if capacities are exceeded then grey water will be vac trucked back to town for disposal in the lagoon. Water for camp use will be taken from the Mackenzie River (approx. 15 cubic meters / day) . Bottled water will be provided for human consumption.

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

Describe thoroughly (e.g. duration of project, size of project, related physical activities, machinery used, fuels and chemical use and storage, etc.)

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
__ 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.

Accidents and Malfunctions

- equipment through ice
- equipment operators trained on environmental hazards
- do not attempt to remove the vehicle using inappropriate equipment
- individual responsible for ice management on seismic crews
- dedicated ice-checkers
- advance planning to check ice prior to equipment arrival
- tailgate safety meetings
- ensure that appropriate equipment is available to retrieve the downed vehicle or to clean spill
- 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.

Federal Government		Contact Person	Dates Comments Received
DIAND			
Water Res.	✔	G. Cook, R. Jenkins, B. Reid	
Geology			
Lands			
North Oil & Gas	X		
Ec. Dev.			
Env. & Cons.			
I&I			
D.M.			
DWRO/R.M.O.	x	S. Gallupe, R. Walker	
DFO/CCG	x	Inuvik & YK Offices	P.Cott Sept. 25
DOE	x	EPS, YK Office	M. Dahl Sept 19
Health Canada			
DOT			
NRCan			
NEB	x	Calgary	J. Korec

N.W.T. Government		Contact Person	Dates Comments Received
RWED	x	Inuvik Office , YK Office	
Health	x	D. Fleming	
Transportation	X	Yellowknife office	Sept 10/01
Tourism			
MACA			
EM&PR			
PWNHC	X	E.C.E. Yellowknife	Sept. 13/01
Other			

Aboriginal Groups	Contact Person	Dates Comments Received
EISC	L.Graf	Oct. 9 Approval
ILA (Tuk)	H Arends	

Gwichin Land & Water B		
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.		
Aklavik Hamlet Council		
Inuvik Town Council		

Record of comments attached to screening Form?: No, but are on file -summary follows

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 67 to 72 of the Project Description.

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

Cumulative 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 Ellice and Mallik seismic program, the study area was based upon the sub-regional footprint of effects of the proposed seismic program of 432 km^2 for the 3D Blocks. This program is scheduled to occur between December 2001 and April 2002. 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.

Environmental or cumulative environmental effect	Description
– Disturbance to terrain features, like pingos, permafrost, vegetation	– Improper use of vehicles, snow cover build up , etc.
– Erosion of banks and slopes, drainage disturbance	– Potential from equipment operation, improper crossing construction etc
– Disturbance to wildlife, fish and habitat	– Equipment and vehicle activity, noise, seismic work, habitat disturbance wastes attract wildlife, detonation of charges
– Water quality impairment	– Potential for spills, erosion of soils into water bodies in spring if terrain improperly protected
– Disturbance to existing cabins, trap lines, snowmobile trails, archaeological sites, etc.	– From operation of equipment, camps, road construction , etc

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 other land uses. The following Table 13 from the proponents project description identifies how potential environmental and socio-economic impacts could arise during the seismic program. They also present recommended mitigative measures to avoid the potential impacts and the significance of the residual impacts.

2. Reviewer's comments

The following Conditions should be considered as mitigation measures to help in preventing or restoring environmental damage.

9.b) Terms & Conditions

RECOMMENDED CONDITIONS ANNEXED TO AND FORMING PART OF LAND USE PERMIT NUMBER N2001B0034

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 material 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. **PROGRESS**

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 15, 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 15 and November 15, unless otherwise authorized by a Land Use Inspector. **SHUT-DOWN PERIOD**

2.9 The Engineer, for the purpose of this operation, designates April 15, 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**

2.15 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 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**

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 erect camps or store material on the surface ice of streams, channels, lakes or any other waterbodies. **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**
6.15	The Permittee shall insulate the ground surface beneath all structures and facilities associated with this land use operation, with a 10 cm ice pad to prevent : (a) Any vegetation present from being removed, and (b) The ground settling and/or eroding.	**INSULATE GROUND SURFACE**
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**
6.19	The permittee shall apply grass seed and fertilizer to areas Designated in writing by a Land Use inspector.	**REPLANT DESIGNATED AREAS**
6.20	The Permittee shall detour around all sand hills, unless otherwise authorized in writing by a Land Use Inspector.	**AVOID SAND HILLS**

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	**WASTE**

	products by incineration or removal.	**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**
7.17	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.	**MUSKRAT LODGES**
8.8	The Permittee shall not detonate explosives within fifteen (15) metres of any body of water which is not completely frozen to the bottom, or as stated in the Department of Fisheries and Oceans 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 Resources, Wildlife and Economic Development at (867) 777-7803 or 1-800-661-0852.	**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 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	**FUEL**

surrounding lands or into water bodies. **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**

11.9 The Permittee shall ensure that the dyke and the area enclosed by the dyke shall be impermeable to petroleum products at all times. **IMPERMEABLE DYKE**

11.10 The Permittee shall: **CHECK FOR LEAKS**

(a) Examine all fuel storage containers for leaks a minimum of twice every day.

(b) Repair all leaks immediately.

11.12 The Permittee shall not use bladders for storing and/or transporting petroleum products. **BLADDERS PROHIBITED**

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**

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: **IDENTIFY AGENT**

(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).

13.9 The Permittee shall, while preparing the access road, make every **TRAPS**

effort to avoid covering or destroying traps or snares that may be found along these routes. **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 pla n, 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.

9.c Reviewers comments , mitigation measures regarding the water licence:

-need for a proper contingency plan prior to licence issuance, equipping of vehicles with spill containment and clean up materials, and use of clean snow etc on stream crossings.
-need for improved cumulative effects assessment generally in the north, and the need for a spill plan. The requirements of the Fisheries Act must be met, and DOE recommends that all fuel storage be equipped with secondary containment, and otherwise proper storage of contaminants; solid wastes should be transported to an approved facility with adequate arrangements in place, all seismic shot holes should be plugged and restored to prevent intermingling of surface and groundwater; and to protect migratory birds, seismic lines should be restricted to a maximum width of 3 to 5 metres.
-DFO listed a number of mitigation measures: prefer they avoid dynamite use, but if do use, adhere to conditions provided by Letter of Advice ; any testing of seismic technology proposed must be authorized by DFO; avoid any interference with traditional harvesting activities; access roads should follow existing routes where possible to minimize vegetation and soil disturbance; avoid mechanized clearing within 100 metres of any water body; use mushroom shoes or boots on bladed vehicles, no cutting of crossing approaches unless authorized, eg use snow ramps; use ice or snow to build temporary crossings, and notch or remove them to ensure spring flow, reclamation work should include bank stabilization and revegetation as required, prior to spring thaw; all waste facilities, drill cuttings etc sumps, should be 100 metres from water bodies, and bermed if possible; use of biodegradable drill additives is encouraged, and cuttings must not enter water; remove any debris from water surfaces before breakup, have a contingency plan, and report all spills
- a map should be provided showing density of operations in the area for review of cumulative impacts; erosion measures should be in place, eg should ground thaw while still working in the area, sludges should only be disposed of to an approved

area, and Inuvik must provide permission to use their facilities, to ensure that they can handle all the additional wastes from such operations; solid wastes should be incinerated in an approved incinerator and elaborate on disposal of excess wastes, [redacted]ls, containers etc. elaborate on when aquatic studies and seismic monitoring will be done; and a spill plan is needed.
-want to see more than one environmental and wildlife monitor on site due to project area size, and any shot holes must be covered over immediately to minimize terrain disturbance.
- concerns with spills/pollution due to numerous vehicles through the ice last year..have proper plans in place; be aware of the private reindeer herd on the island; concern with potential work extension beyond April 15th, due to return of migrating birds; avoid stream blockages at crossings, and ensure that local wildlife monitors are on site .
- welcome new technologies designed to keep explosives in place at desired depths; concern with use of snow for winter roads, numerous drilling programs etc, re drawdown effects on local water bodies; potential for spills, need for good waste management etc; noted subsistence fishery on Husky Lakes, and encroachment of oil and gas activity..need monitoring.

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

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**

Greg Cook
Prepared By (Screener):
G. Cook,

Nov. 19, 2001
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

-1772

Chevron Canada Resources
Winter 2001/2002 Ellice and Mallik Seismic Program

October 29, 2001

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, — Date

Approved By: — Date

17. **National Energy Board**

CEAA Screening Report Reviewed By:
J. Korec, EAO — 21 November 2001 — Date

CEAA Screening Report 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
__ 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 environmental 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_____

_____

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 may 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 operatin 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. Althoug 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.

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 (FA were requested on [date] to review the proposed project and, pursuant to subsection 6(1) of the CEAA Federal Coordination Regulation inform the lead RA by [**date**] 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)			X
Environment Canada (Yellowknife)	X	X	
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)		X	
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

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, an the scope of those factors as follows:

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

2. 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 exploration 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 would 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 activities for the proposed Project. Any additional hydrocarbon exploration activities would be subject to future examination under the *NWT Waters Act*, *Canada Oil and Gas Operations Act* and/or *Territorial Lands 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 CEAA.

C. Scope of the Factors to be Assessed

The following spatial and temporal boundaries, as defined in the Inuvialuit Environmental and Geotechnical Inc. Project Descriptio 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 within 1 to 50 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(1). Each RA for this joint screening made its own independent CEAA determination.

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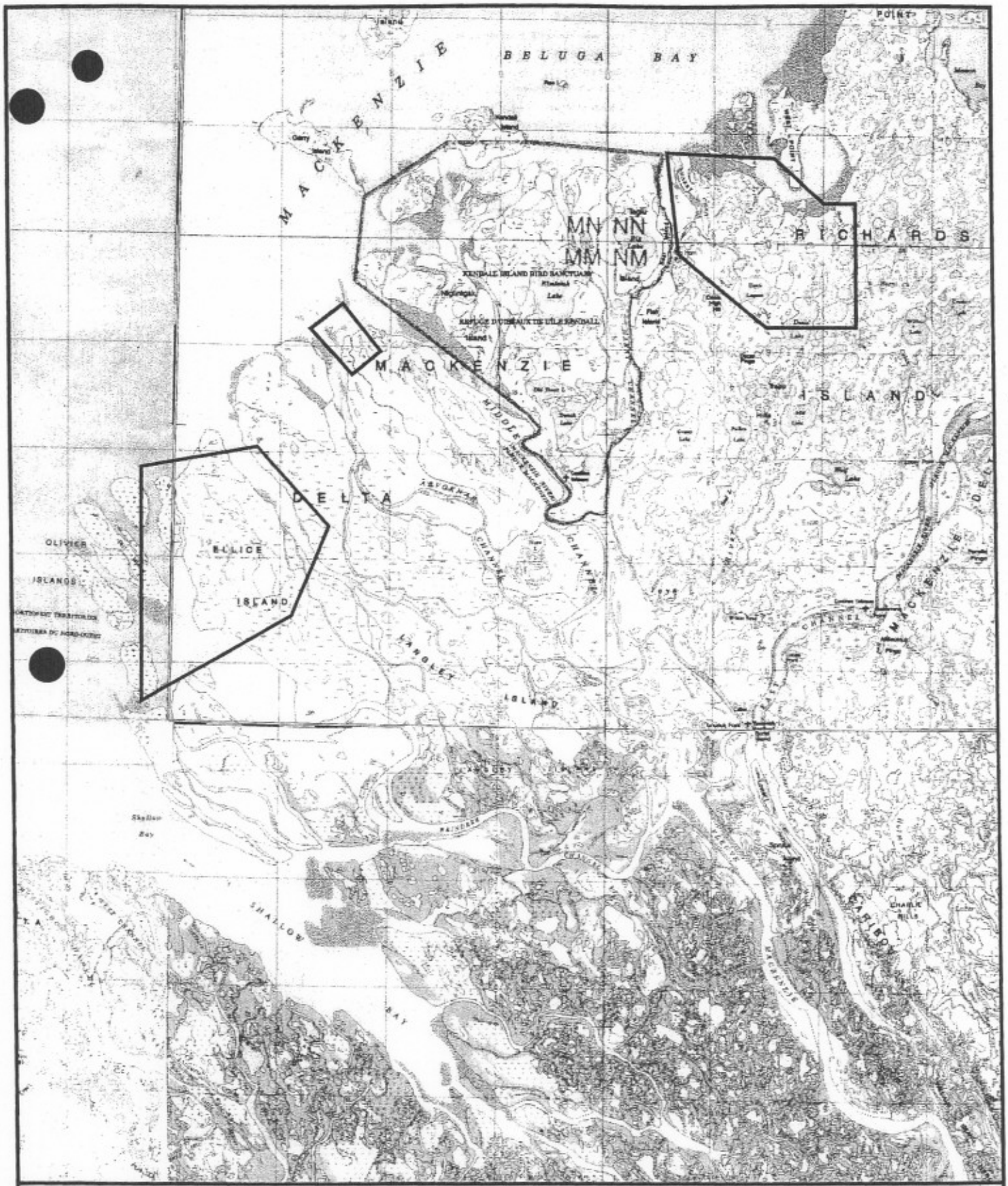

Inuvialuit Environmental & Geotechnical Inc

Regional Location of Chevron Canada Resources Ltd. Winter 2001/2002 Ellice and Mallik Seismic Programs

Scale 0 5 10 15 Kilometres

Sources: Topographic Map of Mackenzie Delta 107C and Herschel Island 117C

LEGEND

- General Location of Mallik Seismic Program
- General Location of N. Langley Seismic Program
- General Location of Ellice Seismic Program

N W E S

5063-01

August 2001

Figure 1