

1770/2001

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

1. Public Registry Required Information

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

Alias Project Title: Shell Canada - West Channel bio-remediation project

Lead RA and Screening Division: NWT Water Board (through Water Resources, DIAND)

Lead RA Contact: Greg Cook (DIAND screener) 867-669-2656

Lead RA Trigger Types: law list

Other RA Trigger Types: Inuvialuit Final Agreement, 1984;

EA Start Date: 2001/07/05

EA Type: screening

Physical Activity as identified from Inclusion List: water use

Physical Work Being Assessed: site remediation

Phase of Project / Primary Undertaking: remediation

Multiple Activities: Yes No Indicate One: Waste disposal

Project Category Code: Point Linear Areal (Circle one)

Geographic Place Name: Aklavik

EA Determination: 20-1-a

EA Determination Date: by EISC: 2001/06/08; 2001/07/23

Estimated Follow-up program termination date: n/a

EA Terminated: no

2. General File Information

File Number: N7L1-1770

Type of Application: water licence application

Present licence/permit/lease number: N7-1-1770

Proposed Date of Activity: 2001/06/01

Other RAs or Screening Divisions: yes ; no
if yes, is there an Integrated Screening underway?

Other RA Types of Approval: yes; ILA Land Use Permit

Project File Location: NWT Water Board; DIAND Water Resources Division; Inuvialuit EISC

District: North Mackenzie /Inuvik

3. Proponent

Shell Canada Ltd.

400 - 4th Avenue , Calgary AB; tel. (403) 691-2521

Type of proponent: industry

4. Project Location

Topographic Map Sheet Number: 107 B

Latitude / Longitude: approx. 68 28' 33" N. - 135 33' 25" W.

Watershed: Mackenzie River (West Channel)

Street Name: n/a

Surrounding Land Status: Inuvialuit 7-1-a lands

Special Designation: no; but the project area does lie within the Tuktoyaktuk, Inuvik, and Aklavik Conservation Planning Areas as defined by their respective Community Conservation Plans .

5. Project Description

-see detailed report on file

This is a cleanup/remediation project at a former staging area on the West Channel of the Mackenzie River, in the Delta area, about 37 km. NW of Aklavik, planned for approx. June 2001 to September 2002. Shell's remediation program here utilizes an in-situ bio-circulation cell. Remedial actions planned include: subsurface installation of injection and extraction wells; excavation of recovery trenches; and surface installation of a portable water treatment facility. Water, nutrients and oxygen will be pumped into the injection wells to aid naturally occurring bacteria on site to break down hydrocarbon contamination within the soil. The injected treatment water will be drawn through the subsurface soil containing hydrocarbons by a differential hydraulic gradient. Groundwater and contamination removed from the extraction wells and recovery trenches will be drawn to the surface and amended through a series of filters, retention tanks, and a bio reactor until clean. A portion of the cleaned water will be stored for future use if required, and the remainder re-injected into the subsurface soil following the addition of nutrients and oxygen. Discharged water will be treated to meet CCME Water Quality Guidelines. Access to the site will be by boat, and staff will be housed in a camp on site. Diesel and gasoline will be stored on site in barrels. Wastes will be disposed of by the following methods: honey buckets for septic sewage, incineration of burnable wastes, off site disposal of non burnable solid wastes, and septic or field discharge of grey water.

What sources of information did you use?

- other government data
- historical maps
- scientific reports
- personal information

- CEEA public registry system (EIS)
- contour maps
- other, specify: application and report

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

Risk of further spills, vehicle accidents, failure of bio remediation treatment facility

6. Description of Environment

Located on a lowland, vegetated peninsula adjacent to the West Channel, Mackenzie River. The delta area has typically subdued features, with low relief, broad lowlands and plateaux cut by major river channels. Vegetation includes stunted spruce, and tamarack, with a ground cover of dwarf birch, willow, shrubs, and cotton grass. Wildlife may include caribou, fox, grizzly, several species of birds etc, and numerous fish species in the rivers and lakes nearby. See file reports for more information.

Description of socio-economic and cultural environment

The project is on Inuit owned lands (7-1-a). Land use includes subsistence trapping, hunting and fishing, as well as oil and gas exploration and development activity, past and present. Tourism and recreational activities also occur locally. Aklavik is the closest community.

There is a small fishing camp on the point here, as well as an abandoned one on shore just to the SE on the river. The project is within/near two areas defined as Special Management Areas by the Inuvialuit: Inner Mackenzie delta, and North slope, East of Babbage River. The first site is used for hunting, fishing and trapping, as well as containing several historical, cultural, and archeological sites. The second area is an important wildlife area, and home all round to the Porcupine Caribou Herd, harvested all year.

What sources of information did you use?

- Historical Maps (expired permits and licences)
- Running Maps (current permits and licences)
- Interference Maps (other land dispositions)
- Public Registry System

- GIS
- Indian Land Registry
- Land Transition Management Style
- Other, application and report

7. Consultation on Project (government agencies were also consulted by the proponent)

Federal Government	Contact Person:	Date Comments received:
DIAND	<input type="radio"/> _____	<input type="radio"/> _____
Water	<input checked="" type="checkbox"/> <u>Bob Reid</u>	<input checked="" type="checkbox"/> <u>July 09 and 25, 2001</u>
Geology	<input type="radio"/> _____	<input type="radio"/> _____
Lands	<input checked="" type="checkbox"/> <u>B. Becker</u>	<input checked="" type="checkbox"/> <u>June 06, 2001</u>
Minerals	<input type="radio"/> _____	<input type="radio"/> _____
Ec. Dev.	<input type="radio"/> _____	<input type="radio"/> _____
Env'nt	<input type="radio"/> _____	<input type="radio"/> _____
I&I	<input type="radio"/> _____	<input type="radio"/> _____
D.M.	<input checked="" type="checkbox"/> <u>R. Cockney</u>	<input checked="" type="checkbox"/> <u>June 22, 2001</u>
R.M.O.	<input type="radio"/> _____	<input type="radio"/> _____
DFO	<input checked="" type="checkbox"/> <u>J. Dahl</u>	<input checked="" type="checkbox"/> <u>June 27, 2001</u>
DOE	<input checked="" type="checkbox"/> <u>S. Harbict</u>	<input checked="" type="checkbox"/> <u>June 27, 2001</u>
Health Canada	<input type="radio"/> _____	<input type="radio"/> _____
DOT	<input type="radio"/> _____	<input type="radio"/> _____
Coast Guard	<input type="radio"/> _____	<input type="radio"/> _____

N.W.T. Government

Ren. Res.	<input checked="" type="checkbox"/> <u>K. Hall</u>	<input checked="" type="checkbox"/> <u>July 03, 2001</u>
Health.	<input checked="" type="checkbox"/> <u>D. Fleming</u>	<input checked="" type="checkbox"/> _____
Transport.	<input type="radio"/> _____	<input type="radio"/> _____
Tourism	<input type="radio"/> _____	<input type="radio"/> _____
MACA	<input type="radio"/> _____	<input type="radio"/> _____
EM&PR	<input type="radio"/> _____	<input type="radio"/> _____
PWNHC	<input type="radio"/> _____	<input type="radio"/> _____
Other	<input type="radio"/> _____	<input type="radio"/> _____

Aboriginal Groups (local consultation was done through EISC and proponent)

<input checked="" type="checkbox"/> Inuvialuit EISC	<input checked="" type="checkbox"/> <u>June 08 2001</u>
<input checked="" type="checkbox"/> Aklavik HTC	<input type="radio"/> _____
<input checked="" type="checkbox"/> Inuvik HTC	<input type="radio"/> _____
<input checked="" type="checkbox"/> Inuvialuit Land Admin.	<input type="radio"/> _____

Public/Interested Parties/Other (by EISC, and/or proponent)

<input checked="" type="checkbox"/> <u>Tuk Community Corp</u>	<input type="radio"/> _____
<input type="radio"/> _____	<input type="radio"/> _____
<input type="radio"/> _____	<input type="radio"/> _____
<input type="radio"/> _____	<input type="radio"/> _____
<input type="radio"/> _____	<input type="radio"/> _____
<input type="radio"/> _____	<input type="radio"/> _____

Record of comments attached to screening Form: ?

No ...see file ...EISC determination attached, with some responses, and community consultation by proponent was conducted in April 2001, with a summary of visits and issues recorded in the application report (pp. 51-53)

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

Environmental or cumulative environmental effect	Description
**see TABLES FROM COMPANY ATTACHED-table 7	several pages
-temporary disturbance, soil compaction, destruction of vegetation in the immediate project area.	-proposed activities, such as camp construction, cutting of drainage channels etc will result in localized losses to vegetation. This should revegetate and recover naturally over time.
-some potential impact to larger mammals such as caribou and grizzly	-due to noise , garbage, and presence of workers and equipment (eg caribou, grizzly)
-disturbance to permafrost-	-on land movement may affect permafrost in soils below
disturbance to banks and slopes.	-areas could become erosion prone, increase siltation, loss of vegetation and soil; injecting water into the soil may melt permafrost and ice lenses if present, in localized areas
-risk of spills in sensitive terrain and into water, or introduction of pollutants during remediation work	-due to leaks, refueling accidents with equipment and all terrain vehicles, or discharge of contaminated water back into the river, including sewage. Disturbing old land based contaminants here will make them more mobile, and allow them to enter a sensitive watery environment.
-disturbance to fish habitat, fish entrainment, harvesting	-intakes could suck in fish; excavations etc could scare off fish , increase in sediments can impact on fish habitat
	- some concern expressed regarding the effectiveness of the multi phase extraction system to remove vapours or to contain them
-potential air quality impacts	

9. Summary of mitigation measures

See also: attached excerpts from the Project Description regarding potential impacts and mitigation, and licence conditions.

The cleanup of contaminated soils here should result in fewer impacts to the region providing that activities have been completed as planned, and the results monitored.

- Groundwater and soil quality should improve through treatment....a summary of potential impacts and planned mitigation measures prepared by the applicant is attached, but some water related measures include:
 - travel by boat or by foot, ATV on land, soil and organic material replacement to minimize permafrost degradation; wastes will be regularly picked up and incinerated or disposed of at approved facilities; all refueling will be done at least 30 metres from water; a spill plan has been developed and spills immediately reported; and a closed loop system will be used during in-situ remediation to limit both removal from and discharge back(of pollutants to water bodies);to minimize effects on ice rich permafrost soils; erosion measures will be implemented should banks and slopes exhibit any potential for erosion, such as use slash as rollback material; clearings created will be recontoured to restore natural cross drainages; all debris will be removed from any affected water bodies; no equipment will be used instream, nor will any crossing structures be erected over water courses; water intakes will be screened and withdrawal rates for water will not exceed 10 % of that water body's flow rate or volume; non combustibles will be removed for disposal to Inuvik; while garbage will be incinerated; and upon project completion, all affected areas will be cleaned up, materials removed, (but below grade trenches, pipe etc will be left in place to avoid additional disturbance), and equipment and personnel removed. An Inuvialuit monitor will be site to make whatever observations and inspections felt necessary . The company also noted later that the in situ biotreatment cell will not remove any contamination present in the frozen permafrost, ie that no increased impacts to the existing active layer are expected.
 - DFO addressed its mitigation requirements for protection of fish resources and fish habitat through issuance of a "Letter of Advice " to the proponent., which includes in summary: use of existing water crossings if possible, all wastes, fuels etc must be at least 30 metres back from any water body, minimize removal of riparian vegetation, restoration must include bank stabilization and revegetation as required, avoid use of small lakes and streams as a water source, , screen water intakes, report all spills and require a contingency plan, and ensure proper refueling procedures are implemented.
 - all water quality limits and guidelines will be met, and samples collected and analysed to ensure that this is being met. A similar multi phase extraction system was used in the Komakuk Beach remediation project, and this was successful in decreasing contaminant concentrations in the sub soil. The water retention time in the sedimentation tank should be ample to allow sediments to settle out.
 - development of an Environmental Response Plan or Contingency Plan is recommended
 - toxicity tests are recommended, as are setting of maximum effluent limits for certain parameters of concern, such as BTEX and TPH, as well as followup monitoring to ensure effectiveness of remedial activities.
 - secondary containment is recommended when storing fuel barrels, rather than relying on natural depressions.
 - all sumps ,spill basins, fuel caches , chemicals or wastes etc must be located at a sufficient distance, and in such a location that contents do not enter a water body (licence conditions)
 - spill kits should be on site, hazardous wastes should be removed off site for appropriate disposal, and an approved incinerator should be used for burning solid wastes.
 - the staging area should be remediated to CCME and GNWT Guideline levels, as well as the discharge water.-Below grade piping should be removed.

10. Significance

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

Yes 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 No If yes, which one(s)?

12. CEAA Determination /Recommendation

- 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 No

Deadline for comments on screening report n/a _____

Public Comments Received on Screening Report? Yes No (on file)

14. Follow-up Program

None required under CEAA; regular licence and land use inspections should suffice to identify any problems needing attention. The overall project is intended to improve environmental conditions (soils, water quality etc) through remediation of contaminated materials on site .

15. Authorization

Greg Cook
Prepared By (screener):

July 27, 2001
Date

Approved By:
Decision Maker (e.g., Regional Manager, engineer, etc.)

Date

16. Water Board Authorization

Prepared By (screener):

Date

John [Signature]
Approved By:

Nov. 27, 2001
Date

Appendix A: Subject Descriptors

Choose 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

APPENDIX C: Screening Checklist and Cumulative Effects Checklist

Table A. Identification of Project Components and Environmental Effects

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

Project Components

(✓ check all the items appropriate to this project)

- access road
- construction
- abandonment/removal
- modification e.g., widening, straightening
- automobile, aircraft or vessel movement
- blasting
- building
- burning (incineration)
- burying
- channelling
- cut and fill
- cutting of trees or removal of vegetation
- dams and impoundments
 - construction
 - abandonment/removal
 - modification
- ditch construction
- drainage alteration
- drilling other than geoscientific
- ecological surveys
- excavation;
- explosive storage
- fuel storage
- garbage
 - disposal of hazardous waste
 - disposal of sewage
 - waste generation
- geoscientific sampling
 - trenching
 - diamond drill
 - borehole core sampling
 - bulk soil sampling
- gravel
- hydrological testing
- site restoration
 - fertilization
 - grubbing
 - planting/seeding
 - reforestation
 - scarify
 - spraying
 - recontouring
- slash and burn
- soil testing
- topsoil, overburden or soil
 - fill
 - disposal
 - removal
 - storage
- stream crossing/bridging
- tunnelling/underground

other, explain treatment of contaminated water and release _____

accidents or malfunctions (Check if there is a possibility for malfunctions and accidents with this project). Describe. risk of spills, _____

effects of environment on project (e.g., beaver dams). Describe. _____

Project Effects

(✓ check all the items appropriate to this project)

Biophysical Environment

1. deposit into surface water
2. deposit into ground water
3. change in surface water flow
4. change in ground water flow
5. change in water temperature
6. change in drainage pattern

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

11. change in ambient noise levels
12. change in slope stability
13. change in soil structure
14. alteration of permafrost regime
15. destabilization/erosion
16. soil compaction

17. loss of access to non-renewable resource
18. depletion of non-renewable resource

19. removal of rare/endangered plant species
20. introduction of species
21. toxin/heavy metal accumulation (remove)

22. removal of rare/endangered wildlife species
23. change in wildlife health
24. impact to large mammals
25. impact to small mammals
26. impact to fish
27. impact to birds
28. impact to other wildlife
29. impact in a calving, nesting or spawning area
30. removal of wildlife buffer zone
31. change in wildlife habitat/ecosystem
32. other, explain _____

Directly-related Socio-economic and Cultural Environment

33. impact to trappers
34. impact to hunting
35. impact to outfitters
36. recreational or back country use
37. impact to fishing
38. impact to First Nation traditional use
39. impact to community
40. impact to industry
41. impact to community health
42. change in work force economics
43. change in housing or infrastructure
44. change in regional transportation
45. other, explain _____

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

Table B. Identification of Other Resource Uses And Their Environmental Effects

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

Other Resource Uses

(/ check all the items appropriate to this project)

- agriculture
- forestry
 - commercial
 - domestic
- fishing
- hunting/subsistence
- urbanization
 - commercial / residential (cottages)
 - built structures
 - infrastructure
- mining
 - exploration
 - open pits
 - underground
- quarries
- transportation/communications
 - roads / trails
 - channels / canal
 - telephone lines, satellite dishes, cables
 - beacons
- solid waste disposal
- energy project
 - hydro
 - pipeline
 - transmission line
- other water licenses, permits, leases
- land claims
 - selected
 - withdrawn
 - special management
 - heritage sites
 - cultural sites
- other private lands held under tenure
- recreational
- trapping
- mineral processing
- airport
- recreation
- other heritage sites
- other, explain oil/gas exploration eg winter seismic camps

Effects from other Resource Uses

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

Biophysical Environment

1. deposit into surface water
 2. deposit into ground water
 3. change in surface water flow
 4. change in ground water flow
 5. change in water temperature
 6. change in drainage pattern
 7. change in air quality
 8. change in air flow
 9. micro-climate change
 10. ice fog
 11. change in ambient noise levels
 12. change in slope stability
 13. change in soil structure
 14. alteration of permafrost regime
 15. destabilization/erosion
 16. soil compaction
 17. loss of access to non-renewable resource
 18. depletion of non-renewable resource
 19. removal of rare/endangered plant species
 20. introduction of species
 21. toxin/heavy metal accumulation
 22. removal of rare/endangered wildlife species
 23. change in wildlife health
 24. impact to large mammals
 25. impact to small mammals
 26. impact to fish
 27. impact to birds
 28. impact to other wildlife
 29. impact in a calving, nesting or spawning area
 30. removal of wildlife buffer zone
 31. change in wildlife habitat/ecosystem
 32. other, explain _____
- Directly-related Socio-economic and Cultural Environment**
33. impact to trappers
 34. impact to hunting
 35. impact to outfitters
 36. recreational or back country use
 37. impact to fishing
 38. impact to First Nation traditional use
 39. impact to community
 40. impact to industry
 41. impact to community health
 42. change in work force or community economics
 43. change in housing or infrastructure
 44. change in regional transportation
 45. other, explain _____
 46. impact to traditional use area
 47. impact to historical site or cultural landmark
 48. impact to local aesthetics
 49. impact to archaeological or historical site
 50. other, explain _____

Cumulative Environmental Effects

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

Matching
Number(s)

Description of cumulative environmental effects

None were identified by reviewers or the EISC. The company did an assessment, and this was included in the Project description which formed the basis for the review. This is a remedial project, intended to substantially improve the local conditions, and there does not appear to be anything planned by the company in carrying out its activities that would further contribute to cumulative effects. The only other activities of note in the area are small seismic operations. As noted by the company, there may be short term cumulative effects if all operations are ongoing, resulting in some disturbance to vegetation cover and to larger mammals like caribou and grizzly, but these are expected to be minimal and short term.
