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

Your file - Votre référence
N7-1-1762
Our file - Notre référence

October 7, 2005

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

Dear Mr. Wray:

RE: Shell Canada Limited
Farewell Camp and Stockpile Site (Camp Farewell)
Type B Water Licence Renewal - Level 1 Environmental Screening

The Department of Indian Affairs and Northern Development (DIAND) has screened the above mentioned water licence renewal application for Camp Farewell submitted by Shell Canada Limited pursuant to Section 5 of the *Canadian Environmental Assessment Act* (CEAA). The project has also been screened by the Environmental Impact Screening Committee (EISC), pursuant to the 1984 Inuvialuit Final Agreement.

DIAND has determined that this project, as proposed, is not likely to cause significant adverse environmental effects concurring with the EISC's similar determination as concluded in their screening decision, providing that proposed mitigation measures are carried out and licence conditions met. A joint screening report was prepared by DIAND (Federal Environmental Assessment Coordinator - FEAC) and included input from Environment Canada. DIAND recommends that the application proceed through the regulatory process. The incorporation of the recommended mitigative measures into the terms and conditions of the licence is required.

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

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

Sincerely,

Dr. Kathleen Racher
Manager
Water Resources Division

encl.

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

ENVIRONMENTAL SCREENING REPORT

SCREENING SUMMARY

Shell Canada Limited (Shell) applied to the Northwest Territories Water Board (NWTWB) pursuant to Section 14(6)(b) of the *Northwest Territories Water Act* (NWTWA) for a licence renewal for the Farewell Camp and Stockpile Site (Camp Farewell). The camp is located within the Inuvialuit Settlement Region (ISR) on the northeast bank of Middle Channel near Harry Channel in the Kendall Island Bird Sanctuary (KIBS), Northwest Territories. Camp farewell has been in existence since 1969 and has been used intermittently since then as a base for approved research, exploration and development activities. The environmental components with the potential to be adversely affected include surface water, soil and permafrost, vegetation, terrestrial fauna and habitat, aquatic fauna and habitat, heritage resources, and traditional use.

The NWTWB and Environment Canada (EC) are Responsible Authorities under the *Canadian Environmental Assessment Act* (CEA Act) and have prepared a joint screening. The NWTWB, as the Lead Responsible Authority, has examined Shell's proposed environmental protection and mitigation measures, as well as, their operation and maintenance plan, and abandonment and restoration plan in relation to the CEA Act and determined the measures to be adequate.

The NWTWB and EC are of the view that, taking into account the implementation of Shell's proposed environmental procedures, mitigative measures, operation and maintenance plan, and abandonment and restoration plan the project is not likely to cause significant adverse environmental effects. This represents a determination pursuant to paragraph 20(1) (a) of the *Canadian Environmental Assessment Act*.

PROJECT IDENTIFICATION

Project Title:	Shell Canada Limited – Type B Water Licence Renewal Application Camp Farewell, Mackenzie Delta, NT. (N7-1-1762)
Physical Work/Activity:	Water Use and Deposit of Waste
Project Location:	N.E. Bank of Middle Channel near Harry Channel, ISR, NT. Approx. 69 12 30.0N 135 06 04.4W
Applicant Name:	Shell Canada Limited (Shell)
Application Date:	07/15/05
NEB File No.:	N/A
NWT Water Board File No.:	N7-1-1762
INAC File No.:	N/A
CEA Act Registration Date:	17/08/05
CEA Registry Reference[1] No.:	05-01-13812
CEA Act Law List Trigger:	Paragraph 14(6)(b) of the *Northwest Territories Waters Act* Paragraph 9(1) of the *Migratory Bird Sanctuary Regulations*
CEA Act Determination Date:	18 October 2005

[1] CEAR (Canadian Environmental Assessment Registry)

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1.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The licence renewal application was submitted to support future research, exploration and development activities. Shell has operated Camp Farewell as a camp and stockpile site over the past 35 years. The site has been used intermittently; however, Shell has continually held leases and permits to operate this site. Because of the nature of its use, project specific schedules are not available at this time. Shell does not intend to change the use of Camp Farewell.

The scope of the project is the withdrawal of water for domestic purposes and the discharge of waste. Unless otherwise identified this Environmental Screening Report (ESR) is based on the information provided in the Shell's Project Description[2] for the Type B Water Licence Renewal Application and associated documents (Appendix A).

Scope of the Project

Physical Work and/or Activity	Description
Operation and Maintenance Phase	
Camp maintenance	▪ Conduct the usual seasonal maintenance on accommodation, kitchen, equipment handling and waste storage areas. ▪ Maintenance to ensure the integrity of the camp pad.
Equipment maintenance	▪ Ensure all water intake and discharge pumps are in good working order. ▪ Maintain the sewage treatment system as required.
Barge landing site and airstrip maintenance	▪ Maintain the barge landing site to minimize and mitigate any erosion. ▪ Ensure the airstrip is graded and maintained as required.
Fuel storage and maintenance	▪ Regular inspection of the tank farm and berm for leaks or weathering. ▪ Storage of only a limited amount of fuel drums (< 20) on land at least 100 m away from any watercourse or waterbody.
Water withdrawal	▪ Water withdrawal for domestic purposes only and will not exceed 150m^3/day. This water will be withdrawn from the Mackenzie River in the winter and the unnamed lake to the north in summer. ▪ Potable water will be hauled in from Inuvik.

[2] Shell Canada Limited: July 2005. *Project Description for the Type B Water Licence Renewal; Farewell Camp and Stockpile Site.*

Physical Work and/or Activity	Description
Waste treatment and disposal	▪ Camp waste, grey water and sewage will be treated and or temporary stored on site until treatment or removal. Wastewater, once licence criteria are met, may be discharge to the land or water and will not exceed 150m^3/day. If not, the wastewater will be hauled along with solid wastes to Inuvik for disposal. ▪ Combustible will be burned onsite in an approved incinerator. ▪ Hazardous waste will be stored at the site and hauled to an approved facility in Inuvik.
Abandonment and Restoration Phase	
Tear down	▪ Removal of the camp buildings. ▪ Removal of tank farm and berm facilities. ▪ Removal of barge landing site and airstrip. ▪ De-mobilization of the camp debris, tanks, materials and equipment.
Clean-up	▪ Disposal of debris, as well as, all remaining contaminated soil (or ice) at an approved disposal site. ▪ Removal of sludge from the sewage lagoon for disposal at an approved facility. ▪ Removal of all hazardous material from site and dispose of at an appropriate hazardous materials storage site.
Reclaim	▪ Recontour the camp pad and airstrip. ▪ Backfill the sewage lagoon and remove berm/levee. ▪ Stabilize the barge landing site. ▪ Reseed the entire area of the camp footprint and promote natural revegetation.

Scope of the Factors that Were Considered

The factors considered within the scope of this ESR, both spatial and temporal, are those set out in subsection 16(1) of the CEA Act and are examined in this report.

The project area is the area in which the project footprint occurs; the access roads and the drilling rig footprints (see area details in scope table above).

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 Physical Environment

Camp Farewell is located within the Tuktoyaktuk Coastal Plain Ecoregion of the Southern Arctic Ecozone. The landscape consists of two main types: broadly rolling uplands generally 30 m above sea level, with elevation reaching 150 metres above sea level toward Parsons Lake, and an active fluvial floodplain next to the Mackenzie River that is generally overlain with surficial sediments of fluvial origin. The active floodplain is subject to annual flooding and continual modification by river currents. Inland from the river glaciofluvial sediments form a stable gently sloping terrace composed of sand and gravel. In areas of permafrost the sediments often contain excess ice in the form of ice veins, lenses, wedges, and

massive ice. Within the permafrost, fluvial sediments are subject to ponding if the surface layer is disturbed.

Sediments in the area are moderately drained and have developed Organic and Turbic Cryosols. These soils contain enough nutrients to promote vegetation. The vegetation provides wildlife habitat and insulative properties that limit the degradation of permafrost. Permafrost, in turn, limits the downward migration of water allowing soils to remain waterlogged even though there is little precipitation.

The climate in the Mackenzie Delta Region is marked by very cold winters and cool summers. In the area of the proposed program it is classified as a high subarctic ecoclimate. Mean temperatures range from –27.6 ^{0}C in January to 14.2 ^{0}C in July. Mean annual precipitation is 249 mm and the mean precipitation expected for the proposed activity period based on historical records is 36.4 mm

2.2 Vegetation

Within the Tuktoyaktuk Coastal Plain Ecoregion vegetation grows on a veneer of unfrozen organic or granular substrate overlying the permafrost boundary. Plant communities found in the vicinity of Camp Farewell are relatively simple and are dominated by a few species that are well adapted to poor soil conditions. The well-drained drier areas support ericaceous shrubs. In wetter areas are covered with water sedges and cotton grasses dominate high-centered and low-centered polygons. Riparian communities are dominated by wet sedges and taller shrubs. Generally, delta shrub communities are located on active river terraces and sedge-cotton-grass communities in wet, less active areas. Most of the area is subjected to seasonal flooding from the Mackenzie River.

2.3 Terrestrial Fauna

Camp Farewell is located within the Kendall Island Bird Sanctuary (KIBS). The 600 km^2 sanctuary provides habitat for over 80 species of migratory birds, including up to 7,500 nesting snow geese. Large numbers of tundra swans, greater white-fronted geese, sandhill cranes, brant, dabbling ducks and shorebirds also nest and moult in the sanctuary. A number of species at risk may occur within the sanctuary include the peregrine falcon (threatened), Ross's Gull (threatened), Whooping Crane (endangered), Eskimo curlew (endangered), Ivory Gull (special concern) and Yellow Rail (special concern) listed under the Species at Risk Act (SARA). Other sensitive species include northern pintail, lesser scaup, longtailed duck, surf scoter, white-winged scoter, golden eagle, American golden plover, black-bellied plover, lesser yellowlegs, whimbrel, sandpiper, long-billed dowitcher, common snipe, red phalarope, bank swallow, American pipit, blackpoll warbler and rusty blackbird. Additional species not listed above but are an NWT species at risk identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) include the Short-Eared Owl and the Peregrine Falcon (tundrius subspecies).

Terrestrial mammals present in the area include barren-ground grizzly bear, arctic and red fox, wolverine, ermine, least weasel, mink, muskrat and several species of ground rodents. Several species are listed as species of concern by COSEWIC which include the grizzly bear, polar bear and wolverine. SARA species include the Wood Bison (threatened), Woodland Caribou – boreal population (threatened) and Woodland Caribou – northern mountain population (special concern).

Grizzly bears exist across coastal areas of the western Arctic in relatively low population densities. They are known to den throughout the Mackenzie Delta particularly on south facing embankments above channels and lakes. Grizzly bears are attracted to the KIBS during the spring waterfowl nesting season to forage on bird eggs. The majority of known grizzly bear dens in the delta occur on Richards Island.

The distribution of polar bears in the Southern Beaufort Sea is regulated by constantly changing sea ice, and by the distribution and abundance of seals. Polar bears demonstrate weak fidelity to activity areas in winter and early spring. Although polar bears frequent near-shore habitat, radio telemetry indicates that

they seldom venture onto land. Polar bears are generally uncommon in the Camp Farewell area. However, bear dens and secondary winter habitat occur along the coastline of the Mackenzie Delta and Richards Island.

2.4 Aquatic Fauna

A large number of fish species occur within the freshwater and marine environments of the delta. Lakes within the Richards Island are typically shallow and small, most of which freeze to the bottom during winter. There are no fish species listed under SARA or COSEWIC that are present in the Mackenzie Delta. Fish species likely present in the freshwater habitat in the Mackenzie Delta include: Burbot, Flathad Chub, Lake Chub, Arctic Cisco, Least Cisco, Finescale Dace, Longnose Dace, Inconnu, Arctic Grayling, Lake Trout, Northern Pike, Deepwater Sculpin, Slimy Sculpin, Spoonhead Sculpin, Pond Smelt, Rainbow Smelt, Ninespine Stickleback, Longnose Sucker, White Sucker, Trout-perch, Walleye, Broad Whitefish, Round Whitefish.

Fish Species likely to be present in saltwater habitat in the Mackenzie Delta include: Capelin, Arctic Char, Arctic Cod, Greenland Cod, Saffron Cod, Tom Cod, Starry Flounder, Blue Herring, Sand Lance, Chum Salmon, Pink Salmon and Fourhorn Sculpin.

2.5 Socio-economic Environment

Year round subsistence harvesting of wildlife, birds and marine have traditionally occurred in the areas surroundign Camp Farewell and will continue into the future. There is also tourism potential (e.g.canoe/kayak, guiding, hunting) in the vicinity of the Project area. As well, the camp provides potential work oppertunities and contract for the local communties and people.

3.0 CONSULTATION

3.1 Consultation carried out by Shell

Shell initiated public consultation with regional organization(s) and government agencies potentially affected by the proposed program in the summer of 2005. The Hunters and Trappers Committees (HTC's) in Inuvik, Tuktoyaktuk and Aklavik were initially informed by telephone of the water licence renewal application. The initial notification was carried out between June 23rd and 29th, 2005. A letter was sent by Shell on June 29, 2005 to these HTC's to describing Camp Farewell's operation and the facilities on site. The letter also provided details of water requirement, renewal application and consultation information. Discussions with regulators and management bodies have been ongoing. A summary of consultation and communication is provided in Project Description submitted by Shell in July 2005.

3.2 Consultation with other Federal Authorities pursuant to the CEA Act

Based on the type and location of the project, and the nature of the environment that could be affected by the project, the NWTWB contacted Environment Canada (EC), Fisheries and Oceans Canada (DFO), NEB, INAC, Natural Resources Canada (NRCan), Health Canada (HC), and Parks Canada (PC). Summaries of the comments are provided in Appendix D.

3.3 Consultation carried out by the Inuvialuit Environmental Impact Screening Committee

The Environmental Impact Screening Committee (EISC) reviewed the Application and decided on September 14, 2005 that the development, if authorized subject to environmental terms and conditions recommended by the screening committee, will have no significant negative impact on the environment or Inuvialuit wildlife harvesting in the Inuvialuit Settlement Region [IFA Section 11(17)(b)].

The EISC received correspondence from the Inuvik Hunters and Trappers Committee, Tuktoyaktuk Hunters and Trappers Committee, EC and GNWT-ENR.

The details of the response to the consultation carried out by the Inuvialuit Impact Screening Committee and the information considered in this ESR is provided in Appendix E.

3.4 Consultation carried out by the NWT Water Board

The NWT Water Board requested comment on the application from the NWT Water Board Technical Advisory Committee to be considered in their Type B water licence application review. The details of the response to the consultation carried out by the NWT Water Board and the information considered in this ESR is provided in Appendix F.

3.5 Consultation carried out by EC

EC reviewers included staff from the Emergencies, Assessment and Monitoring sections of the Environmental Protection Branch and biologists from the Canadian Wildlife Service.

The details of the response to the consultation carried out by EC and the information considered in this ESR is provided in Appendix G.

4.0 ENVIRONMENTAL EFFECTS ANALYSIS

4.1 Baseline Information and Sources

The NWTWB's analysis of environmental effects is based on the information in the Application and the documents referenced in Appendices A, B and C.

4.2 Methodology of the Board's Environmental Assessment

In assessing the environmental effects of the project the NWTWB used an issue-based approach. In its analysis the NWTWB identified interactions expected to occur between the camp and the surrounding environmental components. If there were no expected project interactions with an environmental component then no further examination was deemed necessary (Table 4.3.1).

Further analysis was conducted for project-environment interactions that could result in negative effects or where the interactions or effects were uncertain (Table 4.4.1). As well, environmental effects of accidents or malfunctions that may occur in connection to the project were considered. The Applicant's proposed mitigative measures and environmental-protection procedures were examined to assess the potential for any residual adverse environmental effects.

Each predicted residual adverse environmental effect was evaluated and an overall cumulative effects assessment was completed taking into consideration any additional mitigation, monitoring or regulatory

requirements. Frequency, duration, geographic extent, reversibility and magnitude of the predicted effects were evaluated in determining significance and likelihood. The results of the environmental-effects analysis are summarized in the NWTWB's and EC's (Sections 5.0- 7.0) conclusions.

4.3 Project – Environment Interactions

Table 4.3.1 Interaction Matrix

Environmental Component		Project Interaction (Y/N/U)	Probable Effect (Pos/Neg/0/U)	Description of Interaction (How, When, Where Likely to Occur)
Physical	Groundwater	Y	Neg	• Potential interaction during camp operation and activities (spills or malfunctions).
	Surface Water	Y	Neg	• Introduction of sediments and/or pollutants during camp operation and activities (spills or malfunctions). • Alteration of surface flow patterns (camp pad and barge landing site).
	Air Quality	Y	Neg	• Emissions from the equipment onsite, incineration of camp waste.
	Soils-Permafrost	Y	Neg	• Surface disturbance (camp pad and airstrip) could result in thawing of the permafrost (residual).
	Terrain	Y	Neg	• Creation of the camp gravel pad and airstrip (residual).
	Effects of Environ. on Project	Y	Neg	• Extreme winter conditions could cause work delays.
Biological	Vegetation	Y	Neg	• The removal of vegetation during camp construction (residual).
	Terrestrial Fauna	Y	Neg	• Direct human-wildlife interaction during vehicle travel to and from the camp area, sensory disturbances from operation noise and area avoidance as a result of human activity in the area. • Added potential for bear mortality from den disturbances and/or vehicle collisions and easier access for hunters to harvest wildlife.
	Terrestrial Habitat	Y	Neg	• Habitat removal and/or alteration during camp pad and airstrip construction (residual).
	Wetlands	Y	Neg	• Some minor damage to aquatic and vegetation communities.
	Aquatic Fauna	Y	Neg	• Potential impingement or entrainment in water intake hoses.
	Aquatic Habitat	Y	Neg	• Alteration of aquatic habitat due to barge landing site and potential bank erosion. • The withdrawal of water for industrial and domestic use.
	Species at Risk	Y	Neg	• Possible interaction with COSEWIC and SARA species which include: grizzly bears, polar bears, wolverines, caribou, wood bison, eskimo curlew, whooping crane, ross's gull, peregrine falcon, ivory gull and yellow rail.
Social	Land Use	N	0	• See Traditional Use
	Heritage Resources	N	0	• No known heritage sites at the camp location.
	Traditional Use	Y	Neg	• Potential disturbance of traditional harvesting activities resulting due to changes in wildlife use of the area.
	Socio-economic	Y	Pos	• Short-term and seasonal employment opportunities and use of local suppliers.
	Human Health	N	0	• No interaction
	Noise/Aesthetics	Y	Neg	• Limited noise and aesthetic disruption in the area.

Legend: Y (yes); N (no); U (uncertain); Pos (positive); Neg (negative); 0 (neutral)

4.4 Project Interactions that May Result in Residual Adverse Environmental Effects

Table 4.4.1: Environmental-Effects Matrix

Environmental Component	Predicted Negative or Uncertain Effects	Applicant Mitigation (Y/N)	Residual Adverse Effect (Y/N/U)	Explanatory Notes
Ground Water	Potential interaction during camp operations	Y	N	Fuel will be stored in double walled tanks, bermed to contained 110% of the volume and will not be stored within 100 m of a waterbody. All refueling will occur 100 m away from water bodies and drip pans used. The barge landing site will be maintained to avoid erosion. All activities to occur during frozen winter conditions. An approved spill response and contingency plan will be utilized in the event of an accident, malfunction or spill.
Surface Water	Introduction of sediments and/or pollutants	Y	N	Fuel will be stored in double walled tanks, bermed to contained 110% of the volume and will not be stored within 100 m of a waterbody. All refueling will occur 100 m away from water bodies and drip pans used. The barge landing site will be maintained to avoid erosion. All activities to occur during frozen winter conditions. An approved spill response and contingency plan will be utilized in the event of an accident, malfunction or spill.
Air Quality	Decreased air quality	N	N	Air pollution from equipment will be minimal to the extent that it will be immeasurable.
Soils-Permafrost	Surface and permafrost regime disturbance	Y	N	Any over land access will have a minimum of 15 cm of snow/ice. All operational activities will occur on frozen surface only. No further vegetation will be cleared should be required for camp activities. Mitigation is in placer to reduce permafrost degradation.
Effects of Environ. on Project		N	N	The camp facilities and its operation allow for early project startup dates and can reduce the impact of weather on the program.
Vegetation	Damage and/or removal of vegetation	Y	Y	See Table 4.5.1
Terrestrial Fauna	Sensory disturbances and mortality due to vehicle collision.	Y	N	There will be no feeding or harassing of wildlife. Environmental and wildlife monitors will be present during operations to assess impacts and monitor wildlife. Potential denning habitat will be identified prior to project startup with a 300 m pullback from grizzly and polar bear den site. Management of chemicals, fuels and other harmful materials appropriately and with spill contingencies. Daily incineration and proper storage of camp wastes.
Terrestrial Habitat	Habitat removal or alteration	Y	Y	See Table 4.5.2
Wetlands	Minor damage to aquatic and vegetation communities	Y	N	Minimize the clearing of vegetation especially in riparian areas, conduct activities on frozen ground with a minimum of 15 cm of snow/ice and proper reclamation during camp closure.
Aquatic Fauna	Impingement or entrainment in water intake during withdrawal.	Y	N	Screen all water intake hoses as per DFO guidance and withdrawals to occur only from the Mackenzie River (winter) and unnamed lake north (summer).
Aquatic Habitat	Habitat removal or alteration	Y	Y	See Table 4.5.3
Species at Risk	Disturbance of any species listed under COSEWIC and SARA	Y	N	Polar and grizzly bears are rarely observed in the camp area during the winter season. Project mitigations will limit the effects on migratory birds. A wildlife monitor will be utilized and if wildlife is seen the area will be avoided.

Traditional Use	Disturbance of traditional harvesting activities	Y	N	Local trappers and hunters associations were contacted and will be consulted through camp operations. Project mitigation will minimize the effect on wildlife.
Noise/Aesthetics	Camp and equipment operation	Y	N	The camp equipment and operation activities will affect the local aesthetics and noise levels but the effects will be minimal.
Accidents and Malfunctions	Spills, malfunctions and leaks	Y	N	Regular maintenance checks of equipment and trucks. Proper handling procedures and a spill contingency plan for oils and chemicals. Proper storage of materials, fuel and waste.

Legend: Y (yes); N (no); U (uncertain)

4.5 Predicted Residual Adverse Environmental Effects

Table 4.5: Criteria for Evaluation of Significance of Adverse Environmental Effects

Criteria	Definitions

Criteria	Definitions
ALL CRITERIA	
Uncertain	When no other criteria descriptor is applicable due to either lack of information or inability to predict.
FREQUENCY	
Single	A one-time event over assessment period (i.e., life of the project)
Multiple	Occurs intermittently but repeatedly over assessment period
Continuous	Occurs continually over assessment period
DURATION	
Short-term	Effect duration is limited to less than two days
Medium-term	Effect duration is longer than two days but less than one year
Long-term	Effect duration extends one year or longer
GEOGRAPHIC EXTENT	
Local	Project footprint, or the immediate area of the project operations that is estimated to affect less than 1 % of the regional area
Sub-regional	Extending beyond the limits of the project operations, but limited to an area of no more than 5 % of the regional area
Regional	Effect reaches beyond the 5 % of the regional area (Mackenzie Delta within the Inuvialuit Settlement Region)
REVERSIBILITY	
Reversible	Effect would return to baseline conditions within the life of the project
Irreversible	Effect would be permanent, or only reversible beyond the life of the project
MAGNITUDE	
Low	• Effects anticipated to be restricted to a few individuals, but would not affect the resource or parties involved • Factors that influence species at the population level would not be affected and in no way endangers their long-term survival • The component is not rare, nor unique
Medium	• Effects would affect many individuals or could noticeably affect the resource or parties involved • Factors that influence species at the population level would be affected to a degree that a change within natural limits of variability will occur without endangering their long-term survival • The component is not rare, nor unique
High	• Effects would affect numerous individuals or affect the resources or parties involved in a substantial manner • Factors that influence species at the population level would be altered to such a degree that a change beyond natural limits of variability will occur and endangers the long-term survival of a population or species • The component is unique; requires a particular protection status
EVALUATION OF SIGNIFICANCE	
Significant	Any adverse effect that would be of high frequency, long-term duration, regional extent, irreversible, and of high magnitude
Not significant	Any adverse effect that does not meet the above “significant” definition, in particular any adverse effect that would be of low to medium frequency, short to medium term duration, immediate to local extent, reversible, and of low to medium magnitude

Table 4.5.1: Summary of Analysis

Residual Effect: Damage and/or removal of vegetation					
Physical Work/Activity:	▪ Construction of the camp area and facilities (residual).				
Mitigation:	▪ The footprint of the camp defined and does not require any addition vegetation removal; vegetation was only removed when the camp was initially built. ▪ Most activities will occur in winter during frozen conditions with a minimum of 15 cm of snow/ice cover to protect surrounding vegetation. ▪ During future projects existing access will be used were possible, removal of vegetation will be minimal and removal of riparian vegetation will be avoided were possible. ▪ The camp site will be reclaimed and revegetated once the camp is decommissioned and closed.				
Monitoring/Follow-up:	▪ The camp area is assessed following the completion of all on site activities and reclaimed where necessary. During final reclaim of the site the area will be return to its original state.				
Frequency	**Duration**	**Geographic Extent**	**Reversibility**	**Magnitude**	**Significance**
Single	Long-term	Local	Reversible	Low	Not significant

Table 4.5.2: Summary of Analysis

Residual Effect: Terrestrial habitat removal or alteration					
Physical Work/Activity:	▪ Construction of camp gravel pad and airstrip (residual).				
Mitigation:	▪ The footprint of the camp defined and does not require any addition vegetation removal; vegetation was only removed when the camp was initially built. ▪ Most activities will occur in winter during frozen conditions with a minimum of 15 cm of snow/ice cover to protect surrounding habitat features. ▪ During future projects existing access will be used were possible and the removal of vegetation will be kept to a minimum. ▪ The site will utilize an approved emergency and spill response plans. ▪ The camp site will be reclaimed and revegetated once the camp is decommissioned and closed.				
Monitoring/Follow-up:	▪ The camp area is assessed following the completion of all on site activities and reclaimed where necessary. During final reclaim of the site the area will be return to its original state.				
Frequency	**Duration**	**Geographic Extent**	**Reversibility**	**Magnitude**	**Significance**
Single	Long-term	Local	Reversible	Low	Not significant

Table 4.5.3: Summary of Analysis

Residual Effect: Aquatic habitat removal or alteration					
Physical Work/Activity:	▪ Construction of the barge landing site and its potential erosion (residual). ▪ Water withdrawals for industrial and domestic use.				
Mitigation:	▪ Stream banks and the barge landing site is to be protected by using snow and ice fills and properly maintained to limit and prevent erosion. ▪ During future projects existing access will be used were possible and the removal of riparian vegetation will be kept to a minimum and any alteration to channel banks or the barge landing site will be minimal. ▪ All water withdrawal will utilize the DFO withdrawal protocols and be limited to the Mackenzie River (winter) and the unnamed lake to the north of the camp (summer).				
Monitoring/Follow-up:	▪ The camp area is assessed following the completion of all on site activities and reclaimed where necessary. During final reclaim of the site the area will be return to its original state.				
Frequency	**Duration**	**Geographic Extent**	**Reversibility**	**Magnitude**	**Significance**
Single	Long-term	Local	Reversible	Low	Not significant

4.6 Cumulative Effects Assessment

Table 4.6.1: Summary of Analysis

Potential Cumulative Effect (CE):	• **Damage and/or removal of vegetation** • **Terrestrial habitat removal or alteration** • **Aquatic habitat removal or alteration**
Project Residual Effect:	▪ Minor damage or alteration to the local vegetation. ▪ Minor damage or alteration to the terrestrial habitat at the camp site and airstrip. ▪ Minor damage or alteration to the aquatic habitat at the barge landing site and water withdrawal sites.
Effects of Other Projects or Activities that Act in Combination with the Project Residual Effect:	*The camp facilities are utilized by other projects filed with the EISC in the ISR, which may result in:* ▪ Increased sensory disturbances of wildlife within the program area due human activities on the ground, aircraft overflights and landings, seismic, geotechnical and drilling activities, etc. ▪ Interference with traditional hunting and potential heritage activities in the local area. ▪ Potential increase in development in the area (pipeline, offshore exploration, etc.)
CE Mitigation:	▪ Each separate program related to exploration and development in the region will be screened and will be bound by the licences and permits required for the associated activity. ▪ These programs will utilize an Environmental Protection Plan that incorporates all mitigation measures provided by the proponents including those that pertain to the licences and permits that are required (i.e. altitude restriction for aircraft, snow/ice fills for activities, reclamation and revegetation activities, spills and emergency response plans, etc.) ▪ Prior to project startup, the local groups and agencies will be contacted to reconfirm whether harvesting activities are ongoing or will be started in that area during the proposed period of the project. ▪ Wildlife and environmental monitors will be utilized to identify the locations of sensitive cultural and spiritual sites and the areas will be avoided.
CE Monitor/Follow-up:	▪ None

Frequency	Duration	Geographic Extent	Reversibility	Magnitude	Significance
Multiple	Long-term	Sub-regional	Reversible	Low	Not significant

5.0 NWTWB CONCLUSION

The NWTWB examined all of the environmental information as described or referenced in this ESR in making its conclusion. The NWTWB is of the view that Shell should implement all of the policies, practices, mitigative measures, recommendations, and procedures for the protection of the environment referred to in its application and that a condition is required to that effect.

The NWTWB is of the view that if Shell's environmental protection procedures and mitigative measures are implemented, as well as any conditions imposed by the NWTWB Type B water licence that may be granted, the proposed Project is not likely to cause significant adverse environmental effects.

5.1 Proposed NWTWB Conditions

Proposed conditions are provided in Appendix H.

6.0 EC CONCLUSION

EC examined all of the environmental information as described or referenced in this ESR in making its conclusion. EC is of the view that if Shell's environmental protection procedures and mitigative measures are implemented, as well as any conditions imposed by the EC/CWS permit conditions, the proposed Project is not likely to cause significant adverse environmental effects.

6.1 Proposed EC Conditions

Specific permit conditions relevant to the Kendall Island Migratory Bird Sanctuary are not available at this time. EC (CWS) is currently reviewing its permit conditions for migratory bird sanctuaries in the north and anticipates that the conditions required to mitigate impacts of this project will be available in the near future.

1762

7.0 CEA ACT Determination

This ESR and the CEA Act determination were approved by the NWTWB on the date specified on page one of this report. This ESR and the CEA Act determination were approved by EC on the date specified by the signatures below.

Table 7.0 CEA Act Determination

Responsible Authority Decision indicated by an "X"		CEA Act Decision on the Shell Canada Limited Type B Water Licence Renewal Farewell Camp and Stockpile Site, Mackenzie Delta, NT.
NWT Water Board	EC	
X	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.

NWT Water Board Authorization (Lead RA):

Approved by: Gordon Wray
Chair, NWT Water Board

Nov 8/05
Date

EC Authorization:

Approved by: Chuck Brumwell
Manager, Northern Division

Nov 8/05
Date

8.0 AGENCY CONTACTS

Mr. Mike Fournier
Northern Environmental Assessment Coordinator
Environmental Protection Branch
Prairie and Northern Region
Suite 301, 5204-50th Ave.
Yellowknife, NT
X1E 1E2
Facsimile (867) 669-4743

Mr. Gordon Wray, Chair
Northwest Territories Water Board
C/O Ms. Shannon Pagotto, Head Water Policy and Assessment
4914 - 50th Street
P.O. Box 1500
Yellowknife, Northwest Territories X1A 2R3
Facsimile (867) 669-2716

APPENDIX A: INFORMATION SOURCES

Reference No.	Title/Type of Document/Date
1	Shell Canada Ltd. Water Licence Application, 15 July 2005
2	Shell Canada Ltd. Type B Water Licence Renewal Application N7-1-1762, Camp Farewell, July 2005
3	Letter of Comment from Environment Canada (26 August 2005)
4	Shell's Response to NWTWB Information Request #1 (16 September 2005)
5	Inuvialuit Environmental Impact Screening Committee decision letter (16 September 2005)
6	Shell's Response to NWTWB Information Request #2 (4 October 2005)

APPENDIX B: APPLICANT'S REGULATORY COMMITMENTS

Reference No.	Legislation/Permits
1	NWT Water Board Type B Water Licence
2	EC Access Permit - Kendal Island Bird Sanctuary

APPENDIX C: PROJECT-SPECIFIC MONITORING AND FOLLOW-UP

Environmental Component	Mitigation, Monitoring and/or Follow-up
Soils, Vegetation & Terrain	The camp area is assessed following the completion of all on site activities and reclaimed where necessary. During final reclaim of the site the area will be return to its original state.

APPENDIX D: CONSULTATION WITH OTHER FEDERAL AUTHORITIES

Department / Agency	Involvement			Summary of Comments
	RA[3]	FA[4] Specialist	None	
Department of Fisheries and Oceans			X	- No response to our request.
Environment Canada / Canadian Wildlife Service (Letter dated: Aug. 26, 2005)	X			-Project specific mitigation identified for the project. -Provided comments on the joint screening which were incorporated in the screening.
NEB (Section 5 response dated: Sept. 21, 2005)		X		- Determined that they are an FA with specialist advice available upon request.
Indian and Northern Affairs Canada (Letter dated: Sept. 20, 2005)		X		- Determined that they are an FA with specialist advice available upon request.
Parks Canada (Section 5 response dated: August 18, 2005)		X		- Determined that they are an FA with specialist advice available upon request.
Natural Resources Canada (Section 5 response dated: September 8, 2005)		X		-Determined that they are an FA with specialist advice available upon request.
Health Canada			X	-No response to our request.

APPENDIX E: CONSULTATION CARRIED OUT BY EISC

[3] RA refers to a Responsible Authority as defined by the CEA Act
[4] FA refers to a Federal Authority as defined by the CEA Act

Department / Agency	Summary of Comments
Inuvialuit Environmental Impact Screening Committee (Letter dated: Sept. 16, 2005)	- The EISC determined the project, if authorized subject to environmental terms and conditions recommended by the screening committee, would have no significant negative impact on the environment. - The issuance of appropriate permits and approvals may proceed, incorporating the environmental terms and conditions recommended by the EISC; such as, the proponent ensure their fuel berms are capable of containing 110 % of any fuel stored in tanks within the berm to avoid any spilling over and contaminating the area; the proponent haul grey water to the Inuvik sewage treatment plant for disposal if requirements are not met. This would prevent any contamination of the environment and wildlife; the proponent observe the recommendations in the Environmental Protection Branch - Environment and Natural Resources and Indian and Northern Affairs (Water Resources) letters, the remediation and reclamation plan should be updated; the proponent have an adequate Emergency Response Plan, with personnel who are well trained and practiced in case of emergency. The proponent should also have in place and be prepared to deploy in a timely fashion the necessary emergency equipment. -The EISC would appreciate receiving any follow-up reports that may be produced as a result of this development.
Environment Canada (Letter dated: Aug. 26, 2005)	- Environmental Protection Branch's comments and recommendations include: proper handling, transport and disposal of wastes, update the number for Environment Canada in the Emergency Contact list, have the proper equipment and trained personnel on site to deal with emergencies and adhere to any permits and authorizations including compliance with 36(3) of the *Fisheries Act.* - Canadian Wildlife Services comments and recommendations include: no person shall disturb or destroy nests or eggs, no person shall deposit or permit the deposit of oil, oil wastes or other harmful substances to migratory birds in any water or any area frequented by migratory birds and have contaminated snow be dealt with in an appropriate manner, aircraft maintain an altitude of 610 m (point-to-point), Aircraft used for project activities maintain a vertical distance of 1000m and minimum horizontal distance of 1500 m for observed concentrations of birds, all mitigation measures identified by the proponent should be adhered to including contractors including new field crews, the proponent must remain in compliance with the Migratory Birds Convention Act and Migratory Birds Regulations and adhere the Species at Risk Act which came into full effect 1 June 2004.
GNWT-ENR (Letter dated: Aug. 24, 2005	-ENR noted that the magnitude of operations at Camp farewell are likely to considerably increase, wastes be handled in a timely manner and stored and managed appropriately, have proper waste management strategy, burn only food wastes, paper , cardboard and clean untreated wood, ash be disposed of at an approved disposal site, conduct a Phase 3 ESA and develop a remediation action plan, the proponent attain all appropriate authorizations to dispose of wastes in community facilities, have a updated hazardous materials management plan and emergency response plan.
Tuktoyaktuk Hunters and Trappers Committee (Letter dated: Sept. 14, 2005)	-Tuktoyaktuk's HTC tabled Shell's application and supported the renewal of the water licence.
Inuvik Hunters and Trappers Committee (Letter dated: Sept. 14, 2005)	-Inuvik's HTC support the renewal of the water licence but requested that all grey water must be hauled back to Inuvik.

APPENDIX F: CONSULTATION CARRIED OUT BY NWTWB

Individual / Agency	Summary of Comments
INAC Water Resources (Letter dated: Aug. 19, 2005)	- It is our understanding that Shell Canada is not requesting to change the use of Camp Farewell in any manner. The existing footprint will not be increased and there are no upgrades to existing facilities proposed. -Shell Canada is applying for the use of 150 cubic metres of water per day, the same amount currently approved for use under Water Licence number N7L1-1762. Freshwater sources include the Mackenzie River during the winter and an unnamed lake to the north for summer camp operation. Shell Canada must follow all DFO Protocols for water withdrawal in the Northwest Territories. -Shell Canada has upgraded their wastewater treatment system to an extended aeration system. The sewage lagoon onsite is used as a contingency during start-up (2-4 weeks), system upset, and shutdown. The sewage lagoon is used as storage during this period. Does the wastewater stored in the contingency sewage lagoon get treated once the treatment system is operational? This may only be possible during summer operations. -Shell Canada states that the sewage lagoon when in use is monitored on a regular basis to ensure dyke integrity. Repair requirements, if encountered, are included in the site maintenance schedule. Has Shell ever performed any repairs to their sewage lagoon? If so, what were these repairs, why were they required, and when we they performed? -Shell Canada has had a Phase II site assessment performed at the Camp Farewell lease area. It has been discovered that large amounts of contaminated sediments and soils exist at the site. Specifically: i) 5,500 m3 of soils contaminated by only hydrocarbons; ii) 5,500 m3 of soils contaminated by barium, above residential/parkland criteria but below industrial criteria; and iii) 5,300 m3 of soils contaminated by both organic and/or inorganic parameters above industrial criteria. iv) 1,300 m3 of sediments potentially contaminated by hydrocarbons. -Within the abandonment and restoration plan supplied by Shell Canada, various treatment options for the remediation of contaminated sediments and soils are proposed. However, when will Shell Canada be initiating the reclamation of the site? Will Shell Canada be performing any progressive reclamation of the site to deal with the areas of impacted sediments and soils? -Shell outlines in Section 6.3.1 of their Abandonment and Restoration Plan that insitu biological treatment is proposed for contaminated native soils located outside the base pad area. However, the specific treatment method and volume of contaminated soil is yet to be determined. This determination will be made following an additional environmental assessment of off-base pad areas. When is Shell Canada proposing to do this assessment of the off-base pad area? -Shell's reclamation plan involves leaving the current urethane and gravel layers of the base pad in place. However, in earlier sections of their Abandonment and Restoration Plan, Shell states that the gravel layer is contaminated with barium as these soils were originally mixed with drilling mud products to establish good gravel adhesion and compaction. In addition, it was seen that at Stockpile #2, when a free portion of the insulation was squeezed, it produced an apparent mixture of water and hydrocarbon. Shell further states that leaving the urethane layer in place will provide an effective impermeable liner to prevent contamination of underlying soils and groundwater. Does Shell anticipate any lateral movement of contaminants? If these soils and urethane layer are left insitu and treated as such, the site must be monitored to ensure that the movement of contaminants is not occurring at the site. -Soil monitoring as proposed in Section 7.1 of the A&R plan should include analysis for sodium and potassium. -The Camp Farewell Emergency Response Plan should include specific details with respect to procedures for spill response for spills on and under ice. As well, the location of spill response equipment onsite should be identified, in addition to the equipment list.

	-Shell Canada is aware of the INAC Spill Reporting Protocol for upstream oil and gas operations, as contained in their Emergency Response Plan (ERP). Under this Protocol, spill reporting thresholds are outlined for various products for INAC lead spills. The NEB also has a Spill Reporting Protocol containing the same reporting thresholds for NEB lead spills. In the Camp Farewell ERP, Shell states that the NEB is to be notified if a spill exceeds 200 litres. This is incorrect. As mentioned, the NEB and INAC have spill reporting protocols outlining their spill reporting requirements. Shell should refer to the NEB protocol and update their ERP. It is also important to note that different agencies other than INAC and the NEB may have different spill reporting amounts. Shell Canada must ensure that they are reporting their spills in accordance with the requirements of the responsible agency.
Inuvik Regional Health and Social Services (Email dated: Aug. 25, 2005)	-Indicated that they have no concerns regarding the project however they identified the lists of regulations that are applicable to the camp. -All camp services must be designed and operated in compliance with the Northwest Territories Public Health Act - specifically: -R.R.N.W.T. 1990, c.P-12 Consolidation of Camp Sanitation Regulations -R.R.N.W.T. 1990, c.P-14 Consolidation of Eating and Drinking Places Regulations -R.R.N.W.T. 1990, c.P-16 Consolidation of General Sanitation Regulations -R.R.N.W.T. 1990, c.P-22 Consolidation of Public Sewerage Systems Regulations -R.R.N.W.T. 1990, c.P-23 Consolidation of Public Water Supply Regulations
Environment Canada (Letter dated: Aug. 26, 2005)	-Same letter provided to the EISC.
GNWT-ENR (Letter dated: Aug. 24, 2005)	-Same letter provided to the EISC.

APPENDIX G: CONSULTATION CARRIED OUT BY EC

Individual / Agency	Summary of Comments
Wade Romanko	Commented on areas within the EPB mandate.
Vanessa Charlwood	Commented on areas within the CWS mandate.

APPENDIX H: NWTWB PROPOSED WATER LICENCE

PART A: SCOPE AND DEFINITIONS

1. Scope

a) This Licence entitles Shell Canada Limited to use Water and dispose of Waste for municipal undertakings associated with oil and gas exploration and development in the Mackenzie Delta at Farewell Camp and Stockpile Site (Camp Farewell) located at Latitude 69°12'30" N, and Longitude 135°06'04" W, Northwest Territories.

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

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

2. Definitions

In this Licence: **N7L1-1762**

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

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

"Average Concentration For Faecal Coliform" means the geometric mean of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

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

"Freeboard" means the vertical distance between water line and crest on a dam or dyke's upstream slope;

"Geotechnical Engineer" means a professional engineer registered with the Association of Professional Engineers, Geologists, and Geophysicists of the Northwest Territories and whose experience is the design and construction of earthworks in a permafrost environment;

"Greywater" means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

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

"Licensee" means the holder of this Licence;

"Maximum Average Concentration" means the running average of any four (4) consecutive analytical results, or if less than four analytical results collected, and submitted to the Inspector in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

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

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

"Permeability" means the capacity to transmit water through a medium;

"Sewage" means all toilet waste and greywater;

"Toilet Wastes" means all human excreta and associated products, but does not include greywater;

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

"Sewage Treatment Facilities" comprises the area and engineered structures designed to contain sewage as identified in Appendix D of the Project Description, titled "Wastewater Treatment Packaged Plant", and also includes a Sump constructed of impervious material and or with an impervious liner;

"Sump" means an excavation for the purpose of catching or storing water and/or waste;

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

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

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report with the Board not later than March 31st of the year following the calendar year reported which shall contain the following information:

   a) the total quantity in cubic metres of fresh Water obtained from all sources;

   b) the total quantities in cubic metres of each and all Waste discharged;

   c) the location and direction of flow of all Waste discharged to the land or Water;

   d) the results of sampling carried out under the Surveillance Network Program;

   e) a summary of any modifications carried out on the Water supply and Sewage Treatment Facilities, including all associated structures;

   f) a list of spills and unauthorized discharges;

   g) details on the restoration of any sumps;

   h) any revisions to the approved Contingency Plan; and,

   i) any other details on water use or Waste disposal requested by the Board within forty-five (45) days before the annual report is due.

2. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.

3. The “Surveillance Network Program” and compliance dates specified in the Licence

may be modified at the discretion of the Board.

4. The Licensee shall, within thirty (30) days of the issuance of the Licence, post the necessary signs to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.

5. Meters, devices or other such methods used for measuring the volumes of water used and Waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

6. All monitoring data shall be submitted in printed form and electronically in spreadsheet format on a diskette or other electronic forms acceptable to the Board.

7. All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.

8. Within thirty (30) days of issuance of this Licence, pursuant to Section 17(1) of the *Act* and Section 12 of the Regulations, the Licensee shall have posted and shall maintain a security deposit of **XXX** in a form suitable to the Minister.

9. The Licencee shall ensure a copy of this Licence is maintained at the site of operation at all times.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain Water from the Middle Channel of the Mackenzie River or the unnamed lake north of the camp as described in the project description, or as otherwise approved by an Inspector.

2. The daily quantity of Water used for all purposes shall not exceed 150 cubic metres.

3. The water intake hose used on the water pumps shall be equipped with a screen with a mesh size sufficient to ensure no entrainment of fish (2.54 mm).

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall within thirty (30) days of the issuance of this Licence, submit to the Board for approval an updated Operation and Maintenance Plan for the Sewage and Solid Waste Treatment Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludge.

2. All Sewage shall be directed to the onsite Sewage Treatment Facilities as approved by an Inspector.

3. The Sewage Treatment Facilities shall be maintained and operated in such a manner as to prevent structural failure to the satisfaction of the Inspector.

4. All Waste discharged from the onsite Sewage Treatment Facilities shall be directed to the land surface or to a channel of the Mackenzie River at a location approved by an Inspector.

5. There shall be no discharge of floating solids, garbage, grease, free oil or foam.

6. All Sewage effluent discharged by the Licencee from the Sewage Treatment Facilities at “Surveillance Network Program” Station Number 1762-1 shall meet the following effluent quality requirements:

Sample Parameter	Maximum Average Concentration	
Biological Oxygen Demand (BOD_5)	70.0	mg/L
Total Suspended Solids (TSS)	70.0	mg/L
Faecal Coliforms	10E4	CFU/dL
Oil and Grease	5.0	mg/L
Total Residual Chlorine (TRC)	0.1	mg/L

The Waste discharged shall have a pH between 6 and 9.

7. Introduction of Water to Waste for the purpose of achieving effluent quality requirements in Part D, Item 5 is prohibited.

8. The Licensee shall dispose of all solid Wastes in a manner acceptable to the Inspector.

9. A freeboard limit of 1.0 metre in the Sewage Treatment Facilities shall be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board.

10. The Licensee may commence decanting upon receipt of an Inspector's approval.

11. All analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater" or by such other methods as may be approved by an Analyst.

PART E: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

   a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;

   b) such Modifications do not place the Licensee in contravention of either this Licence or the *Act;*

   c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than five (5) days; and

   d) an Inspector has not rejected the proposed Modifications.

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

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

PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licencee shall submit to the Board for approval within thirty (30) days of the issuance of this Licence an updated Emergency Response & Spill Contingency Plan.

2. The Licencee will maintain a copy of the approved Emergency Response & Spill Contingency Plan onsite in a readily available location, to the satisfaction of an Inspector.

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

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

5. The Licencee shall ensure that fuel stored in each tank within the tank farm be no greater than 85% of the tank's capacity to allow for expansion and avoid overflows.

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

    a) report the incident immediately via the 24 Hour Spill Reporting Line (867) 920-8130; and

    b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval within one (1) year of issuance of this Licence, an updated Interim Abandonment and Restoration Plan which includes the delineation of contaminated soil located off the gravel base pad (off lease) and implement the Plan as and when approved by the Board.

2. The Licensee shall review the Interim Abandonment and Restoration Plan every two (2) years and shall modify the Plan as necessary to reflect changes in operations and technology. All proposed modifications to the Plan shall be submitted to the Board for approval.

NORTHWEST TERRITORIES WATER BOARD

Witness **Chairman**

NORTHWEST TERRITORIES WATER BOARD

LICENSEE: Shell Canada Limited

LICENCE NUMBER: N7L1-1762

EFFECTIVE DATE OF LICENCE:

EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM:

SURVEILLANCE NETWORK PROGRAM

A. Location of Sampling Stations

Station Number	Description
1762-1	Treated Sewage at the Point of Discharge

B. Sampling and Analysis Requirements

1. Water at Station Number 1762-1, shall be sampled every two weeks, and analyzed for the following parameters:

BOD_5	Total Suspended Solids
Oil and Grease	Faecal Coliforms
Ammonia	pH
Phosphorous	Total Residual Chlorine
TPH	

2. More frequent sample collection maybe required at the request of an Inspector.

3. All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.

4. All analyses shall be performed in a laboratory approved by an Analyst.

5. The Licensee shall, by December 31st, 2005, submit to an Analyst for approval a Quality Assurance/Quality Control Plan.

6. The plan referred to in Part B, Item 5 shall be implemented as approved by an Analyst.

C. Reports

1. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board all data and information required by the "Surveillance Network Program" including the results of the approved Quality Assurance Plan.

NORTHWEST TERRITORIES WATER BOARD

_____ _____

Witness **Chairman**