

## PRELIMINARY SCREENING REPORT FORM

<p><b>PRELIMINARY SCREENER:</b> Angela Love</p> <p><b>REFERENCE / FILE NUMBER:</b> S13A-002/S13L1-005</p> <p><b>APPLICANT:</b> Husky Oil Operations Limited</p> <p><b>DATE:</b> July 12, 2013</p>	<p><b>EIRB REFERENCE NUMBER:</b></p> <p><b>TITLE:</b> Regulatory Specialist</p> <p><b>ORGANIZATION:</b> Sahtu Land and Water Board</p>
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**Type of Development:** (A) Oil and Gas Drilling; and (L1) Industrial Water Usage

- Type of Development:** (CHECK ALL THAT APPLY)
- New Development
  - Amend, EIRB Ref. #
  - Renew, EIRB Ref. #
  - Requires permit, license or authorization
  - Does not require permit, license or authorization

**Principal Activities (related to scoping)**  
(CHECK ALL THAT APPLY)

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> Construction | <input checked="" type="checkbox"/> Exploration       | <input checked="" type="checkbox"/> Decommissioning |
| <input type="checkbox"/> Installation            | <input checked="" type="checkbox"/> Industrial        | <input type="checkbox"/> Abandonment                |
| <input checked="" type="checkbox"/> Maintenance  | <input type="checkbox"/> Recreation                   | <input type="checkbox"/> Aerial                     |
| <input type="checkbox"/> Expansion               | <input type="checkbox"/> Municipal                    | <input type="checkbox"/> Harvesting                 |
| <input checked="" type="checkbox"/> Operation    | <input type="checkbox"/> Quarry                       | <input checked="" type="checkbox"/> Camp            |
| <input type="checkbox"/> Repair                  | <input checked="" type="checkbox"/> Linear / Corridor | <input type="checkbox"/> Scientific / Research      |
| <input checked="" type="checkbox"/> Water Intake | <input type="checkbox"/> Sewage                       | <input checked="" type="checkbox"/> Solid Waste     |

Other: \_\_\_\_\_  
(DESCRIBE)

**Principal Development Components (related to scoping)**  
(CHECK ALL THAT APPLY)

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Access Road <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> construction</li> <li><input type="checkbox"/> abandonment/removal</li> <li><input type="checkbox"/> modification e.g., widening, straightening</li> </ul> </li> <li><input checked="" type="checkbox"/> Automobile, Aircraft or Vessel Movement</li> <li><input type="checkbox"/> Blasting</li> <li><input type="checkbox"/> Building</li> <li><input checked="" type="checkbox"/> Burning</li> <li><input type="checkbox"/> Burying</li> <li><input type="checkbox"/> Channeling</li> <li><input type="checkbox"/> Cut and Fill</li> <li><input checked="" type="checkbox"/> Cutting of Trees or Removal of Vegetation</li> </ul> | <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Waste Management <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> disposal of hazardous waste</li> <li><input checked="" type="checkbox"/> waste generation</li> </ul> </li> <li><input checked="" type="checkbox"/> Sewage <ul style="list-style-type: none"> <li><input type="checkbox"/> disposal of sewage</li> </ul> </li> <li><input checked="" type="checkbox"/> Geoscientific Sampling <ul style="list-style-type: none"> <li><input type="checkbox"/> trenching</li> <li><input type="checkbox"/> diamond drill</li> <li><input checked="" type="checkbox"/> borehole core sampling</li> </ul> </li> <li><input type="checkbox"/> Bulk soil sampling</li> <li><input type="checkbox"/> Gravel</li> <li><input checked="" type="checkbox"/> Hydrological Testing</li> </ul> |
|---|--|

- Dams and Impoundments
  - construction
  - abandonment/removal
  - modification

- Ditch Construction
- Drainage Alteration
- Drilling other than Geoscientific
- Ecological Surveys
- Excavation
- Explosive Storage
- Fuel Storage
- Topsoil, Overburden or Soil
  - fill
  - disposal
  - removal
  - storage

- Site Restoration
  - fertilization
  - grubbing
  - planting/seeding
  - reforestation
  - scarify
  - spraying
  - recontouring
- Slashing and removal of vegetation
- Soil Testing
- Stream Crossing/Bridging
- Tunneling/Underground
- Water Intake
- Other
  - air emissions (may include emergency flaring)

**NTS Topographic Map Sheet Numbers**  
(LIST ALL THAT APPLY)

**NTS Map Sheet #s:** NTS 96C, 96D and 96E

Latitude/Longitude and UTM System:      Minimum Latitude: N64°40'      Maximum Latitude: N65°20'  
    Minimum Longitude: W125°45'      Maximum Longitude: W126°45'

Little Bear O-41 (65.014770°N    126.389651°W)  
 Little Bear G-70 (64.991234°N    126.453664°W)

Including existing sites as identified below:

N-09 (N64° 58' 55.4"      W126° 31' 26.9")  
 H-64 (N64° 53' 28.7"      W126° 11' 26.9")

**Nearest Community and Water Body:**      The Town of Norman Wells is located approximately 40KM NNW of the exploratory drilling sites. The closest main bodies of water are the Mackenzie and Slater Rivers.

**Land Status (consultation information)**  
(CHECK ALL THAT APPLY)

- Free Hold / Private       Commissioner's Land       Federal Crown Land       Municipal Land

**Transboundary Implications**  
(CHECK ALL THAT APPLY - IF KNOWN & APPLICABLE)

- British Columbia       Alberta       Saskatchewan       Yukon
- Nunavut       Wood Buffalo National Park       Inuvialuit Settlement Region

N/A

**Type of Transboundary Implication:**       Impact / Effect       Development

Public Concern \_\_\_\_\_  
(DESCRIBE)

N/A

## PHYSICAL - CHEMICAL EFFECTS

### IMPACT

### MITIGATION

#### 1. Ground Water

○ water table alteration

✓ water quality changes

1. There will be fuel stored on the wellsite. Re-supply trucks will bring fuel in as required.
2. The fuel storage tank is a double walled containment system.
3. Fuel will not be stored within 100m of the high water mark of any water bodies.
4. Drip pans will be placed under parked equipment, vehicles and/or machinery and will also be used to capture minor spills and drips while fuelling vehicles. The drip trays will be monitored for fluid levels and replaced as necessary.
5. Environment Canada (EC) recommends that a dedicated area should be used for refuelling equipment.
6. Husky has developed Emergency Response and Spill Contingency Plans that will be adhered to throughout the course of the Program.
7. Spill response equipment will be maintained on all fuel transfer vehicles and will be located throughout the program area including dedicated spill kits located near the fuel tanks. Additional spill response materials will be stored at the staging site and the wellsites.
8. Spill response equipment will be made readily available, and will include fuel transfer hoses, absorbent blankets, scoop shovels, and empty 205 L drums.
9. Should a spill occur, the NT-NU 24-hour Spill Report Line will be contacted at (867) 920-8130; or [spills@gov.nt.ca](mailto:spills@gov.nt.ca).
10. As recommended by GNWT - Department of Environment and Natural Resources (ENR), all spills regardless of amount, must be cleaned and reasonable efforts made to notify any affected parties as stated in the *Environmental Protection Act*.
11. All spills, regardless of volume will be documented and reports submitted to the AANDC Land Use Inspector upon request.
12. If a spill does occur, Husky will endeavour to clean-up the spill before infiltration occurs.
13. The operator shall ensure that all chemical substances, including process fluids and diesel fluid, waste material, drilling fluid and drill cuttings generated at an installation are in compliance with Section 23 of the Drilling and Productions Regulations as administered by the NEB.
14. Drilling waste from the mineral oil-based drilling fluid systems will be placed in storage tanks and transported to a Class II Landfill.
15. As recommended by the ENR, Husky shall not deposit or land spread any drill cuttings that have been contaminated with oil based drilling fluid. Any hazardous wastes generated by the proponent must be handled and disposed of in the appropriate manner. The carrier or receiver of said hazardous waste must be registered with ENR and the Environmental Protection Division.
16. All solid and fluid waste from the completions program will be transported to an approved Oilfield Waste Facility.
17. Areas of the wellsite dedicated to waste handling will be protected with a synthetic liner to contain any spills associated with transferring, mixing, and loading. The liner integrity (rips, punctures, and tears) will be protected by rig mats.
18. A groundwater and surface water monitoring plan is in place to establish a baseline groundwater quality in any shallow potable water aquifers prior to drilling in order to monitor the long-term effects of program activities on groundwater sources. The results of which will be submitted to the Sahtu Land and Water Board on an annual basis over the life of the permit. Information on the existence of permafrost has also been collected.

19. Prior to hydraulic fracturing, the steel production casing will be logged to evaluate the quality of the primary cement job over the entire interval to surface.
20. Hydraulic fracture operations will generate a fracture propagation length of approximately 250m and a fracture height of approximately 40m at the H-64 and N-09 wells and a fracture pattern that will extend up to 40m vertically and 80m laterally into the formation around the O-41 and G-70 wells.

infiltration changes

other: \_\_\_\_\_

N/A

**IMPACT**

**MITIGATION**

**2. Surface Water**

✓ flow or level changes

1. Water for drilling purposes of the O-41 and G-70 wells will be obtained from the Mackenzie River in approved quantities. Water for drilling purposes of the H-64 and N-09 wells will be obtained from specified water sources within the program area that are approved for use by DFO.
2. DFO recommends that Husky adhere to the recently finalized Fish Screen Design Criteria for Flood and Water Truck Pumps which is supplemental to the Freshwater Intake End-of-Pipe Fish Screen Guideline.
3. Potable water may be purchased and transported to the project area.

✓ water quality changes

1. There will be fuel stored on the wellsite. Re-supply trucks will bring fuel in as required.
2. The fuel storage tank is a double walled containment system.
3. Fuel will not be stored within 100m of the high water mark of any water bodies.
4. Drip pans will be placed under parked equipment, vehicles and/or machinery and will also be used to capture minor spills and drips while fuelling vehicles. The drip trays will be monitored for fluid levels and replaced as necessary.
5. EC recommends that a dedicated area should be used for refuelling equipment.
6. Husky has developed Emergency Response and Spill Contingency Plans that will be adhered to throughout the course of the Program.
7. Spill response materials will be stationed at the staging site, camp, wellsites, watercourse crossing and water withdrawal sources. Spill response equipment will be maintained on all fuel transfer vehicles.
8. Spill response equipment will be made readily available, and will include fuel transfer hoses, absorbent blankets, scoop shovels, and empty 205L drums.
9. Should a spill occur, the NT-NU 24-hour Spill Report Line will be contacted at (867) 920-8130; or [spills@gov.nt.ca](mailto:spills@gov.nt.ca).
10. As recommended by ENR, all spills regardless of amount must be cleaned and reasonable efforts made to notify any affected parties as stated in the *Environmental Protection Act*.
11. All spills, regardless of volume will be documented and reports submitted to the AANDC Land Use Inspector upon request.
12. If a spill does occur, Husky will endeavour to clean-up the spill before infiltration occurs.
13. The operator shall ensure that all chemical substances, including process fluids and diesel fluid, waste material, drilling fluid and drill cuttings generated at an installation are in compliance with Section 23 of the Drilling and Productions Regulations as administered by the NEB.
14. As recommended by the ENR, Husky shall not deposit or land spread any drill cuttings that have been contaminated with oil based drilling fluid.

15. As recommended by the ENR, any hazardous wastes generated by the proponent must be handled and disposed of in the appropriate manner. The carrier or receiver of said hazardous waste must be registered with ENR and the Environmental Protection Division.
16. Drilling waste from the mineral oil-based drilling fluid systems will be placed in storage tanks and transported to a Class II Landfill.
17. All solid and fluid waste from the completions program will be transported to an approved Oilfield Waste Facility.
18. Areas of the wellsite dedicated to waste handling will be protected with a synthetic liner to contain any spills associated with transferring, mixing, and loading. The liner integrity (rips, punctures, and tears) will be protected by rig mats.
19. A groundwater and surface water monitoring plan is in place to establish a baseline groundwater quality in any shallow potable water aquifers prior to drilling in order to monitor the long-term effects of program activities on surface water sources. This assessment will also include sediment quality. Information on the existence of permafrost has also been collected. The results of which will be submitted to the Sahtu Land and Water Board on an annual basis over the life of the permit.
20. Where the potential for erosion exists on-site, erosion protection materials will be installed, or soils will be seeded in order to prevent increased sedimentation of water bodies.
21. Where waste is generated near water bodies, waste will be immediately removed, and will be transported to waste storage areas. Wastes will not be stored, even temporarily, within 100m of any water body.

water quantity changes

1. The total anticipated water budget for the O-41 and G-70 project is estimated to be 4,000m<sup>3</sup>. The total water budget for the H-64 and N-09 project is estimated to be 6,500m<sup>3</sup>.
2. Water will be obtained from the Mackenzie River for the O-41 and G-70 wells and Water Sources 2, 6 and 7 (Mackenzie River) for the H-64 and N-09 wells.
3. While Water Source 2 and 7 are exempt from the DFO protocol, Water Source 6 withdrawals should not exceed the 10% limit of 9,820 m<sup>3</sup>. Husky requested withdrawal from Water Source 6 of 2,850m<sup>3</sup>.
4. In 2012, hydrometric stations were installed to monitor water levels and barometric pressures at three major water systems that run through the program area. These stations will be used to collect data that will enable future studies of recharge.

drainage pattern changes

temperature

wetland changes / loss

other: \_\_\_\_\_

N/A

**IMPACT**

**MITIGATION**

**3. Noise**

noise increase

1. Equipment will be properly maintained in order to minimize noise.
2. Noise will be limited to the airstrip, access road, drilling sites, camp and quarries. Noise will be transient (along access), local and temporary (along access, drilling sites, camp, quarries and airstrip).
3. Fixed wing aircraft and helicopter use, when required will be maximized and coordinated with all on-going program activities to prevent excess use and resulting noise.
4. Operations will be limited between the dates of May 1 and June 20 of

each year, wherever possible, to avoid important seasonal activities of resident wildlife and migratory bird species. This period does not occur during the construction, drilling, testing and completions activities. Although it is anticipated that road use will continue after the program.

noise in/near water

1. Noise will be localized and of a temporary nature.
2. Noise in or near water will be limited to the Slater River.

other: \_\_\_\_\_

N/A

**IMPACT**

**4. Land**

geologic structure changes

soil contamination

**MITIGATION**

1. There will be fuel stored on the wellsite. Re-supply trucks will bring fuel in as required.
2. The fuel storage tank is a double walled containment system.
3. Fuel will not be stored within 100m of the high water mark of any water bodies.
4. Drip pans will be placed under parked equipment, vehicles and/or machinery and will also be used to capture minor spills and drips while fuelling vehicles. The drip trays will be monitored for fluid levels and replaced as necessary.
5. EC recommends that a dedicated area should be used for refuelling equipment.
6. Absorbent pads will be used to catch minor drips and leaks and during refuelling.
7. Husky has developed Emergency Response and Spill Contingency Plans that will be adhered to throughout the course of the Program.
8. Spill response materials will be stationed at the staging site, camp, wellsites, watercourse crossing and water withdrawal sources. Spill response equipment will be maintained on all fuel transfer vehicles.
9. Spill response equipment will be made readily available, and will include fuel transfer hoses, absorbent blankets, scoop shovels, and empty 205L drums.
10. Should a spill occur, the NT-NU 24-hour Spill Report Line will be contacted at (867) 920-8130; or [spills@gov.nt.ca](mailto:spills@gov.nt.ca).
11. As recommended by ENR, all spills regardless of amount must be cleaned and reasonable efforts made to notify any affected parties as stated in the *Environmental Protection Act*.
12. All spills, regardless of volume will be documented and reports submitted to the AANDC Land Use Inspector upon request.
13. If a spill does occur, Husky will endeavour to clean-up the spill before infiltration occurs.
14. The operator shall ensure that all chemical substances, including process fluids and diesel fluid, waste material, drilling fluid and drill cuttings generated at an installation are in compliance with Section 23 of the Drilling and Productions Regulations as administered by the NEB.
15. As recommended by the ENR, Husky shall not deposit or land spread any drill cuttings that have been contaminated with oil based drilling fluid.
16. Drilling waste from the mineral oil-based drilling fluid systems will be placed in storage tanks and transported to a Class II Landfill.
17. All solid and fluid waste from the completions program will be transported to an approved Oilfield Waste Facility.
18. Areas of the wellsite dedicated to waste handling will be protected with a synthetic liner to contain any spills associated with transferring, mixing, and loading. The liner integrity (rips, punctures, and tears) will be protected by rig mats.

19. Equipment being moved from one area to another will be thoroughly cleaned between projects in order to reduce the risk of cross-contamination between sites.
20. Where sourced soils are required for backfilling operations, care will be taken to ensure that donor soils are free of any soil-borne pathogens (i.e. soil sampling and analysis).

buffer zone loss

soil compaction & settling

1. Clearing of vegetation will be done using low ground pressure mulchers or bulldozers. Hand slashing may also be carried out in areas of soft ground where there is the potential for rutting or damage to the organic layer.
2. Use existing access roads and linear corridors wherever possible.
3. Mulch or slash will be left in place to provide a protective layer for ground cover.
4. Access and wellsites will be padded with locally sourced fill.

destabilization / erosion

1. Where the potential for erosion exists, erosion protection materials (such as coconut matting, silt fencing, and/or rip-rap) will be installed.
2. Topsoil piles and any adjacent bare areas will be seeded in order to prevent erosion.
3. Geotextiles will be used in order to provide strength and stability over soft or weak native soils, to reduce imported fill volume requirements, and to promote natural drainage.

permafrost regime alteration

1. Construction techniques that use cuts or ditches will be avoided where possible.
2. Previously-cleared areas will be used wherever possible in order to avoid the clearing of new areas.
3. In any areas that must be cleared of vegetation, mulched plant material will be left on-site in order to protect the permafrost layer.
4. Surface vegetation and root balls will be left in place where possible.
5. Fill will be placed on top of the undisturbed topsoil/duff layer.
6. Infrastructure will be located in well-drained areas to minimize effects on permafrost.
7. Mulch will be applied to cut slopes to provide an insulating layer to protect permafrost soils.
8. Drainage channels will be constructed to prevent run-off from affecting permafrost.
9. Annual monitoring of installed ground temperature thermistors will be conducted across the program area.

other: \_\_\_\_\_

N/A

**IMPACT**

**MITIGATION**

**5. Non Renewable Natural Resources**

resource depletion

1. Equipment and vehicles using fossil fuels will be used in the most efficient manner possible in order to minimize program fossil fuel requirements.

other: \_\_\_\_\_

N/A

**IMPACT**

**MITIGATION**

**6. Air / Climate / Atmosphere**

- |                            |  |
|----------------------------|--|
| <p>✓ green house gases</p> | <ol style="list-style-type: none"><li>1. Equipment and vehicles using fossil fuels will be used in the most efficient manner possible in order to minimize program fossil fuel emissions.</li><li>2. Fixed wing aircraft and helicopter use will be optimized and coordinated with all on-going program activities to prevent excess use and resulting emissions.</li><li>3. Vegetation that will be removed for the duration of the program will be replaced during program reclamation.</li><li>4. For the exploration program incineration of natural gas and natural gas liquids will be used to minimize emissions.</li><li>5. Flare equipment installations will comply with air quality emission standards.</li><li>6. Section 67 of the Drilling and Production Regulations, as administered by the NEB, states that no operator shall flare or vent gas unless it is otherwise permitted in the approval issued under subsection 52(4) or in the operations authorization.</li><li>7. As recommended by ENR, the installation of an incineration device capable of meeting the emission limits established under the CCME Canada-Wide Standards for Dioxins and Furans and for Mercury Emissions is required.</li></ol> |
|----------------------------|--|

**BIOLOGICAL ENVIRONMENT**

**IMPACT**

**MITIGATION**

**1. Vegetation**

- |                                      |  |
|--------------------------------------|--|
| <p>○ species composition</p>         |  |
| <p>✓ species introduction</p>        | <ol style="list-style-type: none"><li>1. If ground disturbance does occur, it will be reseeded with an approved mix within one full growing season.</li><li>2. Care will be taken to clean all equipment prior to bringing it into the program area to limit the likelihood of the introduction of non-native species.</li></ol>   |
| <p>✓ toxin / heavy accumulation</p>  | <ol style="list-style-type: none"><li>1. Drilling will utilize non-toxic, freshwater based gel-slurry drilling fluids and a low toxicity mineral oil-based drilling fluid.</li><li>2. Drilling waste from the mineral oil-based drilling fluid systems will be placed in storage tanks and transported to a Class II Landfill.</li><li>3. The initial testing of wells generally involves flaring a relatively large quantity of gas over a short period of time. Emissions may affect nearby vegetation predominantly downwind of the flare stack. Due to the relatively short duration of the testing, these impacts are expected to be minimal.</li></ol>   |
| <p>✓ damage to ground vegetation</p> | <ol style="list-style-type: none"><li>1. Previously-cleared areas will be used wherever possible in order to minimize the clearing of new areas.</li><li>2. Clearing of vegetation will be done using low ground pressure mulchers or bulldozers. Hand slashing may also be carried out in areas of soft ground where there is the potential for rutting or damage to the organic layer.</li><li>3. Wellsites will be padded with locally sourced fill. Rig mats will be placed under the drilling rig to provide a level and stable surface to support the rig.</li><li>4. An impermeable liner and rig mats will be placed in the area designated for drilling waste handling.</li><li>5. All fuel storage containers will have secondary containment.</li><li>6. Activity will be restricted to the defined program area, which will limit the area being disturbed.</li><li>7. Drainage channels will be constructed to prevent run-off from affecting</li></ol> |



✓ other: Increased fire hazard potential

- vegetation.
8. Sites will be reclaimed to restore forage values for wildlife valued components as necessary.
  1. Firefighting kits will be available at fuel storage sites.
  2. Fire prevention methods include: designated smoking areas, and fire bans as conditions warrant.
  3. Forest fire management will be planned in reference to the GNWT Guidelines for Forest Fire Prevention and Suppression document.
  4. Husky has developed a Fire Prevention and Suppression Plan in addition to a Project Site Evacuation Plan.
  5. In the event of a forest fire, the GNWT Forest Fire Management Division hotline will be called at 1-877-698-3473.

○ N/A

## **IMPACT**

## **MITIGATION**

### **2. Wildlife & Fish**

✓ effects on rare, threatened or endangered species

1. Species listed as Special Concern or Threatened by SARA in the project area include: Woodland Caribou (Boreal and Northern mountain populations), Peregrine Falcon, Short-eared Owl, Common Nighthawk, Olive-sided Flycatcher and Shortjaw Cisco. The Eskimo Curlew is listed as Endangered.
2. Species listed as Special Concern or Threatened by COSEWIC in the project area include: Woodland Caribou (Boreal and Northern mountain populations), Grizzly bear, Wolverine (western population), Shortjaw Cisco and Dolly Varden.
3. Peregrine Falcons have been observed nesting near the mouth of the Slater River. Only limited use of the all-weather roads will be permitted between the dates of May 1 and June 20 of each year in order to avoid important peregrine falcon seasonal activities. Peregrine falcons, including observed nesting sites, will be avoided by a minimum distance of 1000m horizontally and 760m vertically (AANDC, 2010).
4. Only limited use of the all-weather roads and of the airstrip will be permitted between the dates of May 1 and June 20 of each year in order to avoid important Common Nighthawk, Olive-sided Flycatcher and the Eskimo Curlew seasonal activities.
5. In order to mitigate some of the effects on caribou herds and wolverines, only limited use of the all-weather roads will be permitted between the dates of May 1 and June 20 in order to avoid important seasonal activities, such as calving for caribou and mating for wolverines. Speed limits will be strictly enforced along the road at all times in order to limit vehicle-induced mortality and suspension of operations when specific caribou cohorts (age/sex) are spotted within 500m of any project component. Even with these mitigations, residual effects may result from the habitat alteration, increased predation, road use and increased activity in the area.
6. Program construction and operations will avoid activities within 800m of known carnivore dens between October 15 and May 15.
7. Wildlife monitoring will be conducted by the program's wildlife monitors. The wildlife monitors will observe and record wildlife activity near the program component sites and will report such activity to Husky who will then report to the appropriate regulators and Aboriginal organizations.
8. EC recommends that Husky avoid clearing residual tall trees or snags that may serve as perching or nesting habitat to the extent possible.
9. EC recommends avoid engaging in potentially destructive or disruptive activities in key sensitive periods and locations in order to reduce the risk of affecting birds, their nests or eggs.
10. EC recommends that if Species at Risk are encountered or affected, the primary mitigation measure should be avoidance.
11. EC recommends that the *Migratory Birds Regulations* be adhere to.

12. EC recommends that ground-based activities and low-level aircraft over flights in this area should be avoided during early to mid-May.
13. All employees and contractors will become familiar with the Husky Energy Bear Safety Guidelines (2007) the Wildlife Response Protocol and the ENR Safety in Grizzly and Black Bear Country brochure (GNWT, 2009).
14. Wildlife will not be approached, fed or harassed in any way by program personnel. Chasing, harassing or molesting wildlife is prohibited by the *Wildlife Act*.
15. Program personnel will not be permitted to hunt on the worksite.
16. Program personnel will not be permitted to have dogs or firearms (with the exception of wildlife monitors) in vehicles.
17. Vehicle traffic will be limited to that necessary for program activities.
18. The recreational use of all-terrain vehicles (ATVs) and snowmobiles will be prohibited.
19. Safe driving polices will be implemented and enforced (e.g., no distracted driving, speed limits).
20. Drivers will slow down and not stop when animals are near roads to reduce stress to the animals.
21. Program construction and operations will avoid damaging nests (active or inactive). Destruction, or disruption of eggs and/or nests, including inactive nests, is prohibited by the *Wildlife Act*.
22. The deposition of any substance into waters or areas frequented by migratory birds is prohibited under the *Migratory Birds Convention Act*.
23. Fixed-wing and helicopter flights within the region (except for survey flights requiring specific heights) will adhere to the minimum flight altitude and vertical distances as stated in the publication *Flying Low? Think Again*, (GNWT, 2007), and wildlife setback distances (AANDC, 2010).
24. Implement and observe all other wildlife sensitive periods and recommended minimum setback distances from wildlife habitat and wildlife use areas.
25. Petroleum products such as ethylene glycol are attractive and toxic to wildlife; they will always be stored securely and drip pans will be placed under vehicles and equipment.

✓ fish population changes

1. Where new stream crossings must be developed, they will be constructed in a manner that allows for the free passage of aquatic species beneath structures.
2. Construction works will be greater than 100m from watercourses or water bodies, reducing the possibility of sediment or other material from entering a watercourse or water body.
3. Where stream banks may be disturbed along the existing access road, and the potential for bank erosion exists, erosion protection materials (such as coconut matting, silt fencing, and/or rip-rap) will be installed.
4. Wetland areas will be designated a minimum set-back distance of 100m.
5. Water withdrawal will occur from approved water sources.
6. Water withdrawal will adhere to the Fish Screen Design Criteria for Flood and Water Truck Pumps (DFO, 2011) and the Freshwater Intake End-of-Pipe Fish Screen Guideline (DFO, 1995).
7. Regular inspections of water trucks will be done to ensure they are in good working order with no visible observations of dripping oil and grease.
8. Drip pans will be placed under motorized equipment when not in operation or when unattended. Drip pans and absorbent pads will be used to capture minor spills and drips while fuelling vehicles.
9. Hydrocarbon storage areas will be set-back a minimum of 100m from the high water mark of any water body to prevent contamination of water resources.
10. Where waste is generated near water bodies, waste will be immediately removed, and will be transported to waste storage areas. Wastes will not be stored, even temporarily, within 100m of any water body.
11. Surface working areas will be kept free of sediment or other potential deleterious substances which could enter streams or lakes
12. All fuel storage containers will have secondary containment.

13. Spill response materials will be stationed within 50m of every water body in the areas where operations are occurring.
14. Husky has developed Emergency Response and Spill Contingency Plans that will be adhered to throughout the course of the Program.
15. Spill response equipment will be maintained on all fuel transfer vehicles and will be located throughout the program area including dedicated spill kits located near the fuel tanks. Additional spill response materials will be stored at the staging site and the wellsites.
16. Spill response equipment will be made readily available, and will include fuel transfer hoses, absorbent blankets, scoop shovels, and empty 205 L drums.
17. Should a reportable spill occur, the NT-NU 24-hour Spill Report Line will be contacted at (867) 920-8130; or spills@gov.nt.ca.
18. All spills, regardless of volume will be documented and reports submitted to the AANDC Land Use Inspector upon request.

waterfowl population changes

breeding disturbances

1. Limited use of the all-weather roads will be permitted between the dates of May 1 and June 20 in order to avoid important seasonal activities. Speed limits will be strictly enforced along the road at all times in order to limit vehicle-induced mortality and suspension of operations when specific caribou cohorts (age/sex) are spotted within 500m of any project component.

population reduction

1. The project has a potential to indirectly cause population reduction through increased stress from disturbance, habitat change, increased predation or hunting pressure.
2. Program personnel will not be permitted to hunt on the worksite.
3. Program personnel will not be permitted to have dogs or firearms (with the exception of wildlife monitors) in vehicles.
4. Disturbance will be temporary and limited to the project access road and wellsites.
5. Wildlife will not be approached, fed or harassed in any way by program personnel. Chasing, harassing or molesting wildlife is prohibited by the *Wildlife Act*.

species diversity change

health changes (identify)

behavioural changes (identify)

1. Oil and gas operation may also affect the size of wildlife populations, the location of herds and migratory paths. Wildlife may experience higher levels of stress as a result of being disturbed by oil and gas activities.
2. Wildlife will not be approached, fed or harassed in any way by program personnel. Chasing, harassing or molesting wildlife is prohibited by the *Wildlife Act*.
3. Drivers will slow down and not stop when animals are near roads to reduce stress to the animals.
4. Food and garbage will be stored securely and disposed of frequently.
5. Petroleum products such as ethylene glycol are attractive and toxic to wildlife; they will always be stored securely and drip pans will be placed under vehicles and equipment.
6. Roadside attractants (including garbage and road kill) will be removed immediately.
7. Encounters with problem wildlife and any defense of life and property kills will be reported immediately to ENR.

habitat changes / effects

1. Whenever possible, existing access roads and linear corridors will be used.
2. EC recommends that Husky avoid clearing residual tall trees or snags that

may serve as perching or nesting habitat to the extent possible.

3. Vehicle traffic will be limited to that necessary for Program activities.
4. Program construction and operations will avoid damaging nests (active or inactive).
5. Program construction and operations will avoid activities within 800 m of known carnivore dens between October 15 and May 15.
6. Husky will implement and observe all other wildlife sensitive periods and recommended minimum setback distances from wildlife habitat and wildlife use areas.
7. Fixed-wing and helicopter flights within the region (except for survey flights requiring specific heights) will adhere to the minimum flight altitude and vertical distances as stated in the publication *Flying Low? Think Again*, (GNWT, 2007), and wildlife setback distances (AANDC, 2010).

✓ game species effects

1. Program personnel will not be permitted to hunt on the worksite.
2. Program personnel will not be permitted to have dogs or firearms (with the exception of wildlife monitors) in vehicles.
3. Wildlife will not be approached, fed or harassed in any way by program personnel. Chasing, harassing or molesting wildlife is prohibited by the *Wildlife Act*.
4. Safe driving polices will be implemented and enforced (e.g., no distracted driving, speed limits).
5. Wildlife monitoring will be conducted by the Program's wildlife monitors. The wildlife monitors will observe and record wildlife activity near the Program component sites and will report such activity to Husky who will then report to the appropriate regulators and Aboriginal organizations.

○ toxins / heavy metals

✓ forestry changes

1. Husky will adhere to Forest Fire Prevention and Suppression Guidelines for Industrial Activities (GNWT, 2001).
2. In the event of a forest fire, the GNWT-ENR Forest Fire Management Division hotline will be called.
3. ENR states that the *Forest Management Act* and *Regulations* prohibits anyone from cutting, using or transporting timber or damaging standing timber unless: authorized with a Timber Permit, Authorized by a Licence, or Exempted from holding a permit or licence. Husky should contact the ENR office for more information on obtaining a Forest Management Authorization.
4. ENR recommends that Husky will require a Permit to Burn if any brush or other materials will be burned during the forest fire season (May1-Sept30).
5. ENR recommends if the site brush and tree cover is not merchantable then it should be piled up accordingly so that it can be burned or spread out at a later date. Merchantable wood should be cleanly set to one side of the operation and made available for recovery.

○ agricultural changes

✓ other: Wildlife may be attracted to garbage or harmed by debris from operations

1. Combustible waste will be incinerated on site. Non-combustible waste will be removed from the program area to Norman Wells.
2. All food and waste will be stored in sealed airtight containers to prevent the attraction of wildlife.
3. The well sites and campsites will be kept as clean as possible throughout operations to prevent injury to wildlife.
4. EC recommends that all food, domestic wastes be made inaccessible to wildlife at all times.

○ N/A

## INTERACTING ENVIRONMENT

<i>IMPACT</i>	<i>MITIGATION</i>
<b>1. Habitat and Communities</b>	
✓ predator-prey	1. Hunting pressure and success may increase as a result of increased and more convenient access to the land.
✓ wildlife habitat / ecosystem composition changes	1. Habitat for wildlife will be affected by access and site construction activity. Wildlife will also be affected by the increased stimuli associated with construction, drilling, completions and testing, and the creation of linear corridors.
✓ reduction / removal of keystone or endangered species	1. EC recommends that Husky avoid clearing residual tall trees or snags that may serve as perching or nesting habitat to the extent possible. 2. Operators of vehicles and other equipment will abide by all posted speed limits, will be required to communicate approach and hazards using radios, and will be instructed to slow down when passing wildlife or on-coming traffic. 3. Workers will be made aware of the potential for hunters in the area.
✓ removal of wildlife corridor or buffer zone	1. Whenever possible, existing access roads and linear corridors will be used.
○ other: _____	
○ N/A	

<i>IMPACT</i>	<i>MITIGATION</i>
<b>2. Social and Economic</b>	
✓ planning / zoning changes or conflicts	1. The final Sahtu Land Use Plan was adopted by the Sahtu Land Use Planning Board on April 29, 2013. No approved Land Use Plan exists.
○ rental house	
○ airport operations / capacity changes	
✓ human health hazard	1. Fuel will not be stored within 100m of the high water mark of any water bodies. 2. The fuel storage tank is a double walled containment system. 3. Husky has developed Emergency Response and Spill Contingency Plans that will be adhered to throughout the course of the Program. 4. Spill response materials will be stationed at the staging site, camp, wellsites, watercourse crossing and water withdrawal sources. Spill response equipment will be maintained on all fuel transfer vehicles. 5. Spill response equipment will be made readily available, and will include fuel transfer hoses, absorbent blankets, scoop shovels, and empty 205L drums. 6. Should a spill occur, the NT-NU 24-hour Spill Report Line will be contacted at (867) 920-8130; or <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a> . 7. The operator shall ensure that all chemical substances, including process fluids and diesel fluid, waste material, drilling fluid and drill cuttings generated at an installation are in compliance with Section 23 of the Drilling and Productions Regulations as administered by the NEB. 8. Drilling will utilize non-toxic, freshwater based gel-slurry drilling fluids and a low toxicity mineral oil-based drilling fluid. 9. Drilling waste from the mineral oil-based drilling fluid systems will be

- placed in storage tanks and transported to a Class II Landfill.
10. As recommended by ENR, the installation of an incineration device capable of meeting the emission limits established under the CCME Canada-Wide Standards for Dioxins and Furans and for Mercury Emissions is required.

impair the recreational use of water or aesthetic quality

affect water use for other purposes

affect other land use operations

1. Operators of vehicles and other equipment will abide by all posted speed limits.
2. Public notifications will be posted in Norman Wells and Tulita prior to project operations commencing.

quality of life changes

1. Access into the area will be improved.
2. Local personnel and businesses will be employed wherever possible.
3. Access and Benefits Agreements have been signed which will contribute to the local economy through employment of personnel and businesses.

public concern

1. Reviewer comments expressed concern regarding the proposed timing of this exploration drilling project (August to October).
2. Reviewer comments expressed concern regarding the construction of all-weather access roads and well pads as it will create irreversible changes to the wetlands and hydrology of the area.
3. Reviewer comments expressed concern over inadequate consultation on the proposed project.

other: \_\_\_\_\_

N/A

**IMPACT**

**MITIGATION**

**3. Cultural and Heritage**

affects to historic property

1. A qualified archaeologist conducted a Historical Resource Impact Assessment of the proposed drilling program.
2. If a suspected site is discovered during the conduct of the program, the crew will not disturb the site and will contact the SLWB or AANDC as well as the PWNHC for instructions.
3. Husky is aware of the locations of historic sites and will not conduct their activities within 150m of any recorded site.

increased economic pressure

1. Beneficiary companies will be given preference as per the Benefits Agreement.

changes to or loss of historic resources

change to or loss of archaeological resources

increased pressure on archaeological sites

1. An archaeological survey has been conducted to identify areas that have high to moderate potential for new heritage resources.
2. Husky will not conduct their activities within 150m of any recorded site.
3. If a suspected site is discovered during the conduct of the program, the crew will not disturb the site and will contact the SLWB or AANDC as well as the PWNHC for instructions.

change to or loss of  
aesthetically important site

affects to aboriginal  
lifestyle

1. Wildlife monitoring will be conducted by the Program's wildlife monitors. The wildlife monitors will observe and record wildlife activity near the program component sites and will report such activity to Husky who will then report to the appropriate regulators and Aboriginal organizations.
2. Beneficiary companies will be given preference as per the Benefits Agreement.
3. Public notifications will be posted in Tulita and Norman Wells prior to project operations commencing.

other: \_\_\_\_\_

N/A

**PRELIMINARY SCREENER / REFERRING BODY INFORMATION**  
(CHECK ALL THAT APPLY)

	<b>RA or DRA</b>	<b>ADVISE</b>	<b>PERMIT REQUIRED</b>
<b>Federal</b>			
ATOMIC ENERGY CONTROL BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CANADIAN HERITAGE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CANADIAN TRANSPORTATION AGENCY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENVIRONMENT CANADA	<input type="radio"/>	✓	<input type="radio"/>
FISHERIES & OCEANS	<input type="radio"/>	✓	<input type="radio"/>
ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA	<input type="radio"/>	✓	<input type="radio"/>
INDUSTRY CANADA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATIONAL DEFENSE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATIONAL ENERGY BOARD	✓	✓	✓
NATURAL RESOURCES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PUBLIC WORKS & GOVERNMENT SERVICES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TRANSPORT CANADA	<input type="radio"/>	✓	<input type="radio"/>
CANADIAN NUCLEAR SAFETY COMMISSION	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Territorial</b>			
MUNICIPAL & COMMUNITY AFFAIRS	<input type="radio"/>	✓	<input type="radio"/>
PUBLIC WORKS & GOVERNMENT SERVICES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENVIRONMENT & NATURAL RESOURCES	<input type="radio"/>	✓	<input type="radio"/>
TRANSPORTATION	<input type="radio"/>	✓	<input type="radio"/>
DEPARTMENT OF HEALTH AND SOCIAL SERVICES	<input type="radio"/>	✓	<input type="radio"/>
PRINCE OF WALES NORTHERN HERITAGE CENTRE	<input type="radio"/>	✓	<input type="radio"/>
INDUSTRY, TOURISM AND INVESTMENT	<input type="radio"/>	✓	<input type="radio"/>
<b>Boards</b>			
GWICH'IN LAND & WATER BOARD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAHTU LAND & WATER BOARD	✓	<input type="radio"/>	✓
MACKENZIE VALLEY LAND & WATER BOARD	<input type="radio"/>	✓	<input type="radio"/>
MACKENZIE VALLEY ENVIR. IMPACT REVIEW BOARD	<input type="radio"/>	✓	<input type="radio"/>
SAHTU LAND USE PLANNING BOARD	<input type="radio"/>	✓	<input type="radio"/>
SAHTU RENEWABLE RESOURCES BOARD	<input type="radio"/>	✓	<input type="radio"/>
SAHTU HEALTH BOARD	<input type="radio"/>	✓	<input type="radio"/>
<b>Aboriginal / First Nation</b>			
SAHTU SECRETARIAT INCORPORATED	<input type="radio"/>	✓	<input type="radio"/>
NORMAN WELLS LAND CORPORATION	<input type="radio"/>	✓	<input type="radio"/>
FORT NORMAN RENEWABLE RESOURCES COUNCIL	<input type="radio"/>	✓	<input type="radio"/>
TULITA DISTRICT LAND CORPORATION	<input type="radio"/>	✓	<input type="radio"/>
FORT NORMAN METIS LOCAL #60 LAND CORPORATION	<input type="radio"/>	✓	<input type="radio"/>
TULITA LAND CORPORATION	<input type="radio"/>	✓	<input type="radio"/>
NORMAN WELLS RENEWABLE RESOURCES COUNCIL	<input type="radio"/>	✓	<input type="radio"/>
<b>Local Government</b>			
TULITA HAMLET INCORPORATED	<input type="radio"/>	✓	<input type="radio"/>
TOWN OF NORMAN WELLS	<input type="radio"/>	✓	<input type="radio"/>

Communities

\_\_\_\_\_  
(IDENTIFY)

Non-Governmental Organizations (NGO)

\_\_\_\_\_  
(IDENTIFY)



**REASONS FOR DECISION**

(LIST ALL REASONS AND SUPPORTING RATIONALES FOR PRELIMINARY SCREENING DECISION)

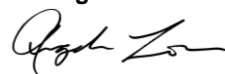
- The program is in an area of pre-existing oil and gas exploration activity.
- Adequate time has been given to Reviewers to provide potential environmental impacts and mitigation measures on information as requested from the Proponent during the initial review period.
- The immediate environmental impacts from this development can be mitigated with known technology or are of temporary nature.
- Public concern around timing of operations, construction of all-weather access roads and well pads and adequacy of consultation has been expressed. Husky is committed to ensuring mitigation measures are in place to address any concerns with regards to wildlife and fish habitat. Husky has also committed to meeting with the communities regarding their upcoming operations to allow for an opportunity for everyone to fully understand the operations Husky is proposing.
- Husky has committed to doing significant environmental baseline studies that will aid in future decisions on programs in the area.

-	<b>PRELIMINARY SCREENING DECISION</b>
✓	<b>Outside Local Government Boundaries</b>
○ ✓	The development proposal might have a significant adverse impact on the environment, <i>refer it to the EIRB.</i> <i>Proceed with regulatory process and/or implementation.</i>
○ ✓	The development proposal might have public concern, <i>refer it to the EIRB.</i> <i>Proceed with regulatory process and/or implementation.</i>
○	<b>Wholly within Local Government Boundaries</b>
○ ○	The development proposal is likely to have a significant adverse impact on air, water or renewable resources, <i>refer it to the EIRB.</i> <i>Proceed with regulatory process and/or implementation.</i>
○ ○	The development proposal might have public concern, <i>refer it to the EIRB.</i> <i>Proceed with regulatory process and/or implementation.</i>

**Preliminary Screening Organization**

**Signatures**

Sahtu Land & Water Board \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_