TERMS OF REFERENCE
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR DEVON NEC CORPORATION'S

JACKFISH 3 IN-SITU PROJECT

Approximately 15 km Southeast from Conklin, Alberta

ISSUED BY: **Alberta Environment**

DATE: **June 14, 2010**

TABLE OF CONTENTS

PURPOSE OF THE TERMS OF REFERENCE

The purpose of this document is to identify for Devon NEC Corporation (Devon), aboriginal communities and appropriate stakeholders the information required by government agencies for an Environmental Impact Assessment (EIA) report prepared under the *Environmental Protection and Enhancement Act* (EPEA) for the Jackfish 3 In-Situ Project (the Project).

Devon holds (100% ownership of 58 sections of mineral surface leases (Jackfish leases)) that are home to both the operating and under-construction Jackfish projects. These lands are approximately 15 km southeast of Conklin, Alberta. For reference, a project location map is attached at the end of this document. The Jackfish and Jackfish 2 projects are approved for a combined production of 70,000 barrels per day (bpd) of bitumen. Through ongoing resource delineation, Devon has identified sufficient oil sands resource to support a third facility capable of producing an additional 35,000 bpd over 20 years. The addition of the Project would increase the total approved production from the Jackfish leases to 105,000 bpd.

The Project will utilize the same well established Steam Assisted Gravity Drainage (SAGD) technologies currently employed at the Jackfish and Jackfish 2 facilities to recover bitumen. The Central Processing Facility (CPF) for the Project is generally located between Jackfish and Jackfish 2 as shown on the project location map. The main infrastructure required for the Project will include a CPF, 19 new well pads and associated shared infrastructure such as pipelines, roads and power lines. Given the location of the new pads and the proposed CPF, Devon plans to redistribute the resource base to provide a balance of resource sent to each of the Jackfish, Jackfish 2 and the future Jackfish 3 plants. The result is each facility will have a "full production" life of between 20 and 25 years, given the current technologies.

The proposed Jackfish 3 development study area is located primarily within the areas previously assessed through the Jackfish and Jackfish 2 project EIAs as shown on the project location map. Through the development of these EIAs, and the monitoring programs in place at Jackfish, significant information is known about the local and regional study areas. Devon will incorporate this accumulated knowledge into the Project EIA. These Terms of Reference recognize the location of the Jackfish 3 project, the existing dataset and operating experience, and therefore have been tailored with the emphasis of the EIA and assessment of cumulative effects on specific areas of potential concern, such as air and water. For areas where there have been learnings from the Jackfish and Jackfish 2 projects, Devon intends on highlighting the adaptive environmental and regulatory management systems currently in place and the results of monitoring programs to improve the assessment of the potential impacts of the Project. The specific content of each environmental assessment area will be as identified in the Terms of Reference.

SCOPE OF THE EIA REPORT

Devon shall prepare and submit an EIA report that examines the environmental and socio-economic impacts of the Project.

The EIA report shall be prepared considering all applicable provincial and federal legislation, codes of practice, guidelines, standards and directives.

The EIA report shall be prepared in accordance with these Terms of Reference and the environmental information requirements prescribed under EPEA and associated regulations, and

the *Canadian Environmental Assessment Act* if applicable. The EIA report will form part of Devon's application to the Energy Resources Conservation Board (ERCB). An EIA report summary will also be included as part of the ERCB Application.

CONTENT OF THE EIA REPORT

1 PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION

[A] Describe the concerns and issues expressed by the public and the actions taken to address those concerns and issues, including how public input was incorporated into the Project development, impact mitigation and monitoring.

[B] Describe the concerns and issues expressed by aboriginal communities and the actions taken to address those concerns and issues, including how aboriginal community input was incorporated into the Project development, impact mitigation and monitoring. Describe consultation undertaken with aboriginal communities and groups with respect to traditional ecological knowledge and traditional use of land.

[C] Describe plans to maintain the public engagement and aboriginal consultation process following completion of the EIA report to ensure that the public and aboriginal peoples will have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project.

2 PROJECT DESCRIPTION

2.1 The Proponent

[A] Provide:

a) a corporate profile; and
b) the name of the legal entity that will develop, manage and operate the Project and hold the operating approvals.

[B] Describe Devon's experience in developing oil sands resources.

[C] Discuss Devon's involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional development.

2.2 The Project

2.2.1 Relationship to Jackfish and Jackfish 2

[A] Describe the history of development of the overall Jackfish project.

[B] Provide maps showing the EIA study areas for Jackfish and Jackfish 2 and the proposed Project Area for Jackfish 3. Discuss the implications of any overlaps in the mapped areas, including the confidence Devon has in the data and assessments from Jackfish and Jackfish 2 as they apply to Jackfish 3 and the need for additional field studies to fill any gaps.

[C] Describe, for each EIA discipline, the lessons learned from the planning, design, construction, operation, mitigation and monitoring of Jackfish and Jackfish 2.

[D] Describe, for each EIA discipline, the lessons learned from the public engagement and aboriginal consultation process and the approvals process for Jackfish and Jackfish 2.

[E] Describe how the lessons learned have been incorporated into the design of Jackfish 3.

2.2.2 Project Description

[A] Provide maps and/or drawings of the Project components and activities including:
- a) existing infrastructure, leases and clearings, including exploration clearings;
- b) proposed central processing/treatment and field facilities;
- c) other buildings and infrastructure (pipelines and utilities);
- d) temporary structures;
- e) transportation and access routes;
- f) on-site hydrocarbon storage;
- g) containment structures such as retention ponds and storage ponds (e.g., lime sludge, stormwater runoff, boiler blow-down);
- h) water wells/intakes, pipelines, and storage structures;
- i) sources of aggregate resources, borrow material and other construction material and locations of any stockpiles that will be developed; and
- j) waste storage area, transfer, treatment and disposal sites.

[B] Describe the primary resource recovery process, any proposed follow-up recovery process and other related processes and process facilities of the Project.

[C] Discuss the amount and source of energy required for the Project.

[D] Describe the proposed method to transport product to markets.

[E] Describe, in general terms, how chemical products and hydrocarbons to be manufactured, processed or otherwise used for the Project will be stored and managed.

2.2.3 Project Schedule

[A] Provide a development plan that includes:
- a) the phases of development;
- b) bitumen/heavy oil recovery facilities;
- c) processing facilities;
- d) steam and/or power generation facilities;
- e) infrastructure (pipelines, access roads and power lines);
- f) other buildings and structures;
- g) field maintenance operations; and
- h) activities associated with each stage of the Project.

[B] Provide a schedule outlining the proposed phases of development and the sequence and duration of key project components, including the timing of key steps in the construction, operation, decommissioning, and reclamation stages of each phase.

[C] Discuss the key factors controlling the schedule and restrictions for conducting certain development activities.

[D] Discuss the implications of a delay in proceeding with the Project, or any phase of the Project, or not going ahead with the Project.

2.2.4 Project Benefits

[A] Describe the benefits of the project, including jobs created, local training, employment and business opportunities, and royalties and taxes generated that accrue to:
a) Devon;
b) local and regional communities, including Aboriginal communities;
c) the local authority;
d) Alberta; and
e) Canada.

2.3 Constraints and Alternatives

[A] Discuss the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints. Include the following:
a) any applicable ALSA Regional Plan;
b) land use policies and resource management initiatives that pertain to the Project;
c) the environmental setting;
d) cumulative environmental impacts in the region;
e) cumulative social impacts in the region;
f) results of Project-specific or regional monitoring;
g) potential for new or additional technology to increase resource recovery at later times; and
h) potential for changes in the regulatory regime.

[B] Discuss the reasons for proceeding with the Project:
a) at this time;
b) at this location;
c) according to the proposed schedule;
d) with the proposed technology; and
e) in the proposed configuration.

[C] Discuss any alternatives considered for each of the factors in [B] and the reasons for not selecting any identified alternatives.

[D] Discuss the selection criteria used, options considered, and rationale for selecting:
a) location and route for linear infrastructure;
b) thermal energy and electric power required for the Project;
c) water supply sources;
d) wastewater treatment, wastewater management and wastewater disposal;
e) air emission and air quality management; and
f) waste management (including reduction, treatment and disposal).

[E] Describe opportunities for sharing infrastructure (e.g., access roads, utility corridors, water infrastructure) with other resource development stakeholders, and the rationale for not implementing any of these opportunities.

2.4 Transportation Infrastructure

[A] Provide a summary of any Traffic Impact Assessment study carried out for the Project, or where no Traffic Impact Assessment study has been prepared, describe the anticipated changes to traffic (e.g., type, volume) on highways, including an assessment of impacts

for all stages of the Project. Consider other existing and planned uses of the same highway.

[B] Describe and map the locations of any new road or intersection construction, or any improvements to existing roads or intersections, related to the development of the Project, from the boundary of the Project Area up to and including the highway access point, and

a) discuss the alternatives and the rationale for selection of the preferred alternative;
b) describe the impacts to local communities of the changes in transportation infrastructure;
c) provide a proposed schedule for the work;
d) provide the estimated cost of the work; and
e) provide a summary of consultation with Alberta Transportation and the local authority, including their views on the compatibility of the proposed work with their own local or regional infrastructure development plans.

[C] Identify the type, volume, location and availability of construction and reclamation materials for all road construction and road improvement work, related to the development of the Project, within and outside of the Project Area.

2.5 Air Emissions Management

[A] Provide emission profiles (type, rate and source) for the Project's operating and construction emissions including point and non-point sources and fugitive emissions. Consider both normal and upset conditions. Discuss:

a) odorous or visible emissions from the proposed facilities;
b) annual and total greenhouse gas emissions during all stages of the Project. Identify the primary sources and provide examples of calculations;
c) the intensity of greenhouse gas emissions per unit of bitumen produced and discuss how it compares with similar projects;
d) the Project's contribution to total provincial and national greenhouse gas emissions on an annual basis;
e) Devon's overall greenhouse gas management plans;
f) amount and nature of Criteria Air Contaminants emissions;
g) the amount and nature of acidifying emissions, probable deposition patterns and rates;
h) control technologies used to minimize air emissions;
i) emergency flaring scenarios (e.g., frequency and duration) and proposed measures to ensure flaring events are minimized;
j) upset condition scenarios (e.g., frequency and duration) and proposed measures to ensure upset conditions are minimized;
k) gas collection and conservation, and the applicability of vapour recovery technology;
l) applicability of sulphur recovery, acid gas re-injection or flue gas desulphurization to reduce sulphur emissions; and
m) fugitive emissions control technology to detect, measure and control emissions and odours from equipment leaks.

2.6 Water Management

2.6.1 Water Supply

[A] Describe the incremental water supply requirements for the Project, in the context of the existing and approved water supply authorizations for Jackfish and Jackfish 2, including:

a) the expected water balance during all stages of the Project. Discuss assumptions made or methods chosen to arrive at the water balances;
b) the process water, potable water, and non-potable water requirements and sources for construction, start-up, normal and emergency operating situations, decommissioning and reclamation. Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse;
c) the location of sources/intakes and associated infrastructure (e.g., pipelines for water supply);
d) the variability in the amount of water required on an annual and seasonal basis as the Project is implemented;
e) the expected cumulative effects on water losses/gains resulting from the Project operations;
f) potable water treatment systems for all stages of the Project;
g) type and quantity of potable water treatment chemicals used; and
h) measures for ensuring efficient use of water including alternatives to reduce the consumption of non-saline water such as water use minimization, recycling, conservation, and technological improvements.

2.6.2 Surface Water

[A] Describe the surface water management strategy for all stages of the Project, including:

a) design factors considered; such as
    i) site drainage,
    ii) run-on management,
    iii) road, well pad and plant run-off,
    iv) erosion and sediment control,
    v) groundwater and surface water protection,
    vi) groundwater seepage,
    vii) produced water management,
    viii) flood protection, and
    ix) geotechnical stability concerns, and
b) permanent or temporary alterations or realignments of watercourses, wetlands and other waterbodies.

[B] Provide a description of any navigable waterways that may be affected by the Project, other than those previously identified for Jackfish and Jackfish 2, and the results of navigability assessment(s) for those new waterways.

[C] Describe new crossings of watercourses or waterbodies required and provide example diagrams of each type of crossing.

2.6.3 Wastewater Management

[A] Describe changes to the approved wastewater management strategy for Jackfish and Jackfish 2, including:

a) any additional volumes to be disposed of;
b) any new disposal locations and their characteristics;
c) the capacity of existing disposal locations to handle the additional volumes in a)
d) the source, quantity and composition of each wastewater stream from the proposed operation (e.g., bitumen extraction and associated facilities) for all Project conditions, including normal, start-up, worst-case and upset conditions;
e) the proposed disposal locations and methods for each wastewater stream;
f) formations for the disposal of wastewaters;
g) design of facilities that will collect, treat, store and release wastewater streams;
h) type and quantity of chemicals used in wastewater treatment; and
i) sewage treatment and disposal.

2.7 Waste Management

[A] Characterize and quantify the anticipated dangerous goods, and hazardous, non-hazardous, and recyclable wastes generated by the Project, and describe any changes required to the waste management strategy approved for Jackfish and Jackfish 2.

2.8 Conservation and Reclamation

[A] Describe any features or characteristics of the Project Area that would require conservation or reclamation measures different from those approved for Jackfish and Jackfish 2. For each of the features or characteristics provide proposed conservation and reclamation measures.

[B] Describe and map as applicable:

a) current land use and capability and proposed post-development land use and capability of the Project Area;
b) post -reclamation vegetation for the disturbed terrestrial and aquatic areas;
c) existing and final reclaimed site drainage plans; and
d) anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these targets will be measured;

[C] Discuss, from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and wildlife habitat, the expected success of establishment and recovery, and the expected differences in the resulting communities.

[D] Discuss uncertainties related to the conceptual reclamation plan.

2.9 Regional and Cooperative Initiatives

[A] Describe new involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional development undertaken by Devon since approval of the Jackfish 1 and Jackfish 2 projects. Include in the discussion new regional monitoring activities initiated in response to adaptive management practices.

3 ENVIRONMENTAL ASSESSMENT

3.1 Air Quality, Climate and Noise

3.1.1 Baseline Information

[A] Discuss the baseline climatic and air quality conditions including:
- a) the type and frequency of meteorological conditions that may result in poor air quality; and
- b) appropriate ambient air quality parameters.

[B] Provide representative baseline noise levels at receptor locations.

3.1.2 Impact Assessment

[A] Identify components of the Project that will affect air quality, and:
- a) describe the potential for reduced air quality (including odours and visibility) resulting from the Project and discuss any implications of the expected air quality for environmental protection and public health;
- b) estimate ground-level concentrations of appropriate air quality parameters;
- c) discuss any expected changes to particulate deposition, nitrogen deposition or acidic deposition patterns;
- d) identify areas that are predicted to exceed Potential Acid Input (PAI) critical loading criteria; and
- e) discuss interactive effects that may occur resulting from co-exposure of a receptor to all emissions.

[B] Identify components of the Project that have the potential to increase noise levels and discuss the implications.

[C] Describe how air quality and noise impacts resulting from the Project will be mitigated.

3.2 Hydrogeology

3.2.1 Baseline Information

[A] Provide an overview of the existing geologic and hydrogeologic setting from the ground surface down to, and including, the oil producing zones and disposal zones, and:
- a) present regional and Project Area geology to illustrate depth, thickness and spatial extent of lithology, stratigraphic units and structural features; and
- b) present regional and Project Area hydrogeology describing:
  - i) the major aquifers, aquitards and aquicludes (Quaternary and bedrock), their spatial distribution, properties, hydraulic connections between aquifers, hydraulic heads, gradients, groundwater flow directions and velocities. Include maps and cross sections,
  - ii) the chemistry of groundwater aquifers including baseline concentrations of major ions, metals and hydrocarbon indicators,
  - iii) the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interaction and areas of Quaternary aquifer-bedrock groundwater interaction,
  - iv) water well development and groundwater use, including an inventory of groundwater users,

v) the recharge potential for Quaternary aquifers,
vi) potential hydraulic connection between bitumen production zones, deep disposal formations and other aquifers resulting from Project operations,
vii) the characterization of formations chosen for deep well disposal, including chemical compatibility and containment potential, injection capacity, hydrodynamic flow regime, and water quality assessments, and
viii) the locations of major facilities associated with the Project including facilities for waste storage, transfer, treatment and disposal (e.g., deep well disposal) and describe site-specific aquifer and shallow groundwater conditions beneath these proposed facilities. Provide supporting geological information.

3.2.2 Impact Assessment

[A] Describe Project components and activities that have the potential to affect groundwater resource quantity and quality at all stages of the Project.

[B] Describe the nature and significance of the potential Project impacts on groundwater with respect to:
a) inter-relationship between groundwater and surface water in terms of surface water quantity and quality;
b) implications for terrestrial or riparian vegetation, wildlife and aquatic resources including wetlands;
c) changes in groundwater quality and quantity, including the potential for thermally mobilized trace elements;
d) conflicts with other groundwater users, and proposed resolutions to these conflicts;
e) potential implications of seasonal variations; and
f) groundwater withdrawal for Project operations, including any expected alterations in the groundwater flow regime during and following Project operations.

[C] Describe programs to manage and protect groundwater resources including:
a) the early detection of potential contamination; and
b) groundwater remediation options in the event that adverse impacts are detected.

3.3 Hydrology

[A] Describe and map the surface hydrology in the Project Area. Describe the extent of hydrological changes that will result from disturbances to groundwater and surface water movement:
a) include changes to the quantity of surface flow, water levels and channel regime in watercourses (during minimum, average and peak flows) and water levels in waterbodies;
b) assess the potential impact of any alterations in flow on the hydrology and identify all temporary and permanent alterations, channel realignments, disturbances or surface water withdrawals;
c) discuss both the Project and cumulative effect of these changes on hydrology (e.g., timing, volume, peak and minimum flow rates, river regime and lake levels), including the significance of impacts for downstream watercourses; and
d) identify any potential erosion problems in watercourses resulting from the Project.

[B] Describe impacts on other surface water users resulting from the Project. Identify any potential water use conflicts.

[C] Discuss the impact of low flow conditions and in-stream flow needs on water supply and water and wastewater management strategies.

[D] Describe mitigation measures to address impacts during all stages of the Project including:

a) alteration in flow regimes;
b) potential water use conflicts; and
c) increased sediment loadings.

3.4 Surface Water Quality

[A] Based on baseline surface water quality information gathered for Jackfish and Jackfish 2, describe the potential impacts of the Project on surface water quality and proposed mitigation measures to maintain surface water quality at all stages of the Project.

3.5 Biophysical Resources

3.5.1 Baseline Information

[A] Describe and map the biophysical resources in the Project Area (based on existing data gathered for Jackfish 1 and Jackfish 2 as well as additional data gathered pursuant to approval conditions) including:

a) the fish, fish habitat and aquatic resources of the lakes, rivers, ephemeral water bodies and other waters;
b) vegetation communities, wetlands, rare plants and the ecosite phases where they are found, old growth forests and communities of limited distribution;
c) wildlife resources (amphibians, reptiles, birds and terrestrial and aquatic mammals) and their use and potential use of habitats; and
d) terrain and soils conditions.

[B] Describe and map all existing habitat disturbance (including exploration activities) and identify those habitat disturbances that are related to existing and approved Jackfish Project operations.

[C] Identify key indicators (fish, vegetation, wildlife) as well as the terrestrial and aquatic biodiversity metrics that Devon used to design the Project and proposes to use to monitor impacts. Discuss the rationale for their selection. Address those species:

a) listed as "at Risk, May be at Risk and Sensitive" in *The Status of Alberta Species* (Alberta Sustainable Resource Development);
b) listed in Schedule 1 of the federal *Species at Risk Act*; and
c) listed as "at Risk" by COSEWIC.

3.5.2 Impact Assessment

[A] Describe any features or characteristics of the Project Area that would require construction, operation, decommissioning or reclamation measures different from those approved for Jackfish and Jackfish 2.

[B] Assess the incremental impacts of the project on key indicator species identified in 3.5.1 [C] considering all impacts identified for the approved Jackfish 1 and Jackfish 2 projects.

[C] Provide a strategy and mitigation plan to minimize impacts on fish and wildlife considering:

a) a schedule for the return of habitat capability to areas impacted by the Project;
b) the use of setbacks to protect riparian habitats;
c) interconnectivity of habitat and the unimpeded movement by wildlife species using the habitat; and
d) anticipated access controls or other management strategies to protect fish and wildlife during and after Project operations.

3.6 Land Use and Management

3.6.1 Baseline Information

[A] Describe and map the current land uses in the Project Area, including all Crown land and Crown Reservations (Holding Reservation, Protective Notation, Consultative Notation).

[B] Indicate where Crown land dispositions may be needed for roads or other infrastructure for the Project.

[C] Identify and map unique sites or special features in the Project Area and Local Study Area such as Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmentally Significant Areas, culturally significant sites and other designations (World Heritage Sites, Ramsar Sites, Important Bird Areas, etc).

[D] Describe and map land clearing activities, showing the timing of the activities.

[E] Describe the status of timber harvesting arrangements, including species and timing.

[F] Describe access control measures proposed for the Project Area.

3.6.2 Impact Assessment

[A] Identify the potential impact of the Project on land uses, including:

a) impacts to unique sites or special features;
b) impacts caused by changes in public access arising from linear development, including secondary impacts related to increased hunter, angler and other recreational access, decreased access to traditional use sites and facilitated predator movement;
c) potential impacts to aggregate reserves that may be located on land under Devon's control and reserves in the region;
d) the impact of development and reclamation on commercial forest harvesting and fire management in the Project Area;
e) the amount of commercial and non-commercial forest land base that will be disturbed by the Project, including the Timber Productivity Ratings for the Project Area. Compare the pre-disturbance and reclaimed percentages and distribution of all forested communities in the Project Area;
f) how the Project impacts Annual Allowable Cuts and quotas within the Forest Management Agreement area; and

g) impacts of the Project on public access, regional recreational activities, aboriginal land use and other land uses during and after development activities.

[B] Discuss possible mitigation strategies to address:

a) the need for, and plans to address, access management during and after Project operations;
b) the need for and plans to implement setbacks from environmentally-sensitive areas;
c) the process for addressing the needs of other land users in both the Project Area and the Local Study Area;
d) measures to mitigate Project impacts on land use; and
e) how potentially-affected aggregate reserves will be salvaged and stockpiled with input provided by Alberta Sustainable Resource Development.

[C] Provide a fire control plan and maps including any new infrastructure.

4 HISTORIC RESOURCES

[A] Describe the Historic Resource Impact Assessment (HRIA) work done to date for the Project, and provide a schedule for any future work.

[B] Describe the implications of the findings of the HRIA work on Project design and scheduling.

[C] Describe any Project uncertainties arising from the need for future HRIA work.

5 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE

[A] Provide:

a) a map of traditional land use areas (if the aboriginal community or group is willing to have these locations disclosed);
b) a map of cabin sites, spiritual sites, graves and other traditional use sites considered historic resources under the *Historical Resources Act* (if the aboriginal community or group is willing to have these locations disclosed), as well as traditional trails and resource activity patterns;
c) a description of the extent of traditional use of land and biological resources in the Project Area, including fishing, hunting, trapping, nutritional or medicinal plant harvesting, and cultural use by affected aboriginal peoples; and
d) a discussion of:
    i) access to traditional lands in the Project Area during all stages of the Project,
    ii) the vegetation and wildlife used for traditional, food, ceremonial, medicinal and other purposes, and
    iii) aboriginal views on land reclamation.

[B] Determine the impact of the Project on traditional uses and culture and identify possible mitigation strategies.

6 PUBLIC HEALTH AND SAFETY ASSESSMENT

[A] Describe those aspects of the Project that may have implications for public health or the delivery of regional health services. Determine whether there may be implications for public health arising from the Project. Specifically:

a) assess the potential health implications of the compounds that will be released to the environment from the Project in relation to exposure limits established to prevent acute and chronic adverse effects on human health;
b) provide the data, exposure modeling calculations, and describe the methods Devon used to assess impacts of the Project on human health and safety;
c) provide information, including chemical analyses and modeling results, on samples of selected environmental media (e.g., soil, water, air, vegetation, wild game, etc.) used in the assessment;
d) discuss the potential for changes to water quality, air quality and soil quality to increase human exposure to contaminants taking into consideration all Project activities;
e) identify the human health impact of the potential contamination of country foods and natural food sources taking into consideration all Project activities;
f) document any health concerns raised by stakeholders during consultation on the Project;
g) document any health concerns identified by aboriginal communities or groups resulting from impacts of existing development and of the Project specifically on their traditional lifestyle and include an aboriginal receptor type in the assessment;
h) assess the cumulative human health effects to receptors, including First Nations and Métis receptors;
i) as appropriate, describe anticipated follow-up work, including regional cooperative studies. Discuss how such work will be implemented and coordinated with ongoing air, soil and water quality initiatives;
j) describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills; and
k) discuss mitigation strategies to minimize the potential impact of the Project on human health.

[B] Describe those aspects of the Project that may have implications for public safety. Determine whether there may be implications for public safety arising from the Project. Specifically:

a) describe Devon's emergency response plan, including public notification protocol and safety procedures, to minimize adverse environmental effects, including emergency reporting procedures for spill containment and management;
b) document any safety concerns raised by stakeholders during consultation on the Project;
c) describe how local residents will be contacted during an emergency and the type of information that will be communicated to them;
d) describe the existing agreements with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual aid programs and municipal emergency response agencies;
e) describe the potential safety impacts resulting from higher regional traffic volumes; and
f) discuss mitigation plans to ensure workforce and public safety for all stages of the Project. Include prevention and safety measures for wildfire occurrences, water saturated plume from cooling towers, icy roads in the winter months, accidental

release or spill of chemicals to the environment and failures of structures retaining water or fluid wastes.

7 SOCIO-ECONOMIC ASSESSMENT

7.1 Baseline Information

[A] Describe the existing socio-economic conditions in the region and in the communities in the region.

[B] Describe factors that may affect existing socio-economic conditions including:

a) population changes;
b) Devon's policies and programs regarding the use of regional and Alberta goods and services;
c) workforce requirements for the Project, including a description of when peak activity periods will occur; and
d) planned accommodations for the workforce for all stages of the Project.

7.2 Impact Assessment

[A] Describe the socio-economic impacts of construction and operation of the Project, including:

a) impacts related to:
    i) housing,
    ii) recreational activities,
    iii) hunting, fishing, trapping and gathering, and
    iv) effects on First Nations and Métis (e.g., traditional land use and social and cultural implications);
b) estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada;
c) impacts of the Project on the availability of affordable housing and the quality of health care services. Provide a summary of any discussions that have taken place with the local municipalities and the local environmental public health office of Alberta Health Services concerning housing availability and health care services respectively;
d) the impact on local and regional infrastructure and community services, including consideration of municipal "hard services", education/training services, social services, urban and regional recreation services, law enforcement and emergency services; and
e) describe municipal growth pressures as they relate to the Project and the need for additional Crown land to meet these needs.

[B] Describe the socio-economic impacts of any construction camp required for the Project and identify:

a) its location,
b) the number of workers it is intended to house,
c) whether the camp will service the Project only or other clients,
d) the length of time the camp will be in service, and

e) describe what services will be provided in the camp (e.g., security, recreation and leisure, medical services).

[C] Discuss options for mitigating impacts including:

a) Devon's policies and programs regarding the use of regional and Alberta goods and services;
b) plans to work with First Nations and Métis communities and groups and other local residents and businesses regarding employment, training needs, and other economic development opportunities arising from the Project;
c) steps that have been undertaken by industry, the municipality, provincial government or through regional and cooperative initiatives to address socio-economic concerns and impacts to local and regional transportation infrastructure;
d) the potential to avoid overlap with other Projects that are reasonably anticipated during all stages of the Project;
e) mitigation plans that will be undertaken to address issues related to the availability of affordable housing and the quality of health care services; and
f) strategies to mitigate socio-economic concerns raised by the local municipality and other stakeholders in the region.

8 RESIDUAL IMPACTS

[A] Describe the residual impacts of the Project following implementation of Devon's mitigation measures and Devon's plans to manage those impacts.

9 MONITORING

[A] Describe Devon's current and proposed monitoring programs with respect to:

a) source air emissions, including fugitive emissions;
b) wastewater treatment and release;
c) hazardous and non-hazardous waste storage, transfer, and treatment;
d) ongoing effects on fish and wildlife and the effectiveness of mitigation measures; and
e) reclamation performance and success (including soils, vegetation, wildlife and aquatic resources).

[B] Describe the monitoring programs proposed to assess any Project impacts and to measure the effectiveness of mitigation plans.

[C] Discuss Devon's regional monitoring activities including:

a) monitoring that will be undertaken to assist in managing environmental impacts, confirm performance of mitigative measures and improve environmental protection strategies;
b) monitoring done independently by Devon;
c) monitoring performed in conjunction with other stakeholders, including aboriginal communities and groups; and
d) new monitoring initiatives that may be required as a result of the Project.

[D] Discuss:

a) how monitoring data will be disseminated to the public, aboriginal communities or other interested parties; and

b) how the results of monitoring programs and publicly available monitoring information will be integrated with Devon's environmental management system.