Crowsnest Conservation Society's Specific Critique of

'Proposed Terms of Reference Environmental Impact Assessment Report For Northback Holdings Corporation Proposed Grassy Mountain Project'

PURPOSE OF THE TERMS

The purpose of this document is to identify for Northback Holdiings Corporation (Northback), the specific Indigenous communities and to name the other stakeholders, the information required by NAMED government agencies for an Environmental Impact Assessment (EIA) report prepared under the *Environmental Protection and Enhancement Act* ***(EPEA)*** and other applicable federal and provincial acts for the Grassy Mountain Project (the Project).

The proposed project, located in southwest Alberta within the area locally known as the Crowsnest Pass, is an open pit mine, a coal processing plant, a coal transport conveyor system, with a rail load-out facility. Northback's current focus of exploratory, technical and environmental work centres on the proposed surface mine area for the project.

The Crowsnest Pass, running east-west through Crowsnest Ridge, is a valley that has the southernmost rail and highway routes through the Canadian Rockies. The majority of the proposed mining activities are in the Municipal District of Ranchland, with some of the infrastructure located int the Municipality of Crowsnest Pass. The proposed mine and coal processing plant would be about 7 kilometers (km) north of the community of Blairmore. The project would occur on lands that are privately owned (mostly by Northback), as well as on Crown Land. The proposed mine permit boundary (areas within which all activities will occur) is about 6121 hectares (ha) in size, while the total disturbance is estimated to be less than 2000 ha.

SCOPE OF THE EIA REPORT

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

The EIA report shall be prepared considering all applicable provincial and federal legislation, codes of practice, guidelines, standards, policies 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. where appropriate the EIA shall comply with all applicable federal and provincial legislation, including but not limited to the water act, fisheries act, species at risk act, and other acts whose jurisdiction may apply to any aspect of the project. The EIA report will form part of Northback's application to the Alberta Energy Regulator (AER). An EIA report summary will also be included as part of the AER Application.

Northback shall refer to the *Guide to Preparing Environmental Impact Assessment Reports in Alberta,* published by Alberta Environment and Parks (the Guide) and these Terms of Reference when preparing the Environmental Impact Assessment report. In any case, where there is a difference in requirements between the Guide and these Terms of Reference, the *Guide to Preparing Environmental Impact Assessment Reports in Alberta* shall take precedence.

CONTENT OF THE EIA REPORT

1. PUBLIC ENGAGEMENT AND INDIGENOUS CONSULTATIONS

(A) Describe the concerns and issues expressed by the Alberta public and Indigenous communities, and the actions taken to address those concerns and issues, including how public and Indigenous input was incorporated into the Project development, impact mitigation, and monitoring.

(B) Describe plans to maintain the public and Indigenous engagement process following completion of the EIA report to ensure that the public will have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project. Such engagement activities shall occur in all communities that may receive wind and/or water borne materials originating in the Project area.

(C) Provide details on how funding will be provided to cover the ongoing remediation expenses that will occur in the first 50 years post-closure. This shall include total amounts and how those amounts were determined, the way in which the money will be secured to ensure it is continuously available for authorized expenses, which entity will have custody, how expenses will be authorized and verified, and when the funds will be deposited with the chosen holding authority. Such funds shall be over and above the required payments to the *Mine Financial Security Program (MFSP).*

2. PROJECT DESCRIPTION

2.1 Overview

(A) Provide a detailed project description in sufficient detail to provide context for the EIA, including but not limited to:

a) existing infrastructure including but not limited to: leases and clearings, exploration clearings, old mine waste dumps, prior and new excavation areas, new and old roads and trails, informal trails (e.g. atv, snowmobile, wildlife, hiking, etc)
b) proposed mining excavation(s) and dump areas, mine access routes
c) proposed coal processing facilities
d) other new buildings and associated infrastructure (e.g. Pipelines, conveyors, and utilities)
e) temporary structures
f) transportation and access routes
g) onsite hydrocarbon and hazardous material storage
h) containment structures such as retention ponds, future end pit lakes, and storage structures.

i) water wells/intakes, pipelines (water and other materials), and storage structures
j) dewatering and water control facilities, flow routes for water overflow
k) sources of aggregate resources, borrow material and other construction materials, whether acquired on or off the project area. Locations of any stockpiles that will be developed.
l) waste storage, transfer, treatment and disposal sites, both on and off the project area.
m) recycling and/or storage facilities

(B) Provide detailed maps and/or drawings of the Project components and activities including, but not limited to:
a) existing infrastructure including but not limited to: leases and clearings, exploration clearings, old mine waste dumps, prior and new excavation areas, new and old roads and trails, informal trails (e.g. ATV, snowmobile, wildlife, hiking, etc)
b) proposed mining excavation(s) and dump areas, mine access routes
c) proposed coal processing facilities
d) other new buildings and associated material storage.
e) temporary structures
f) transportation and access routes
g) onsite hydrocarbon and hazardous material storage sites
h) containment structures such as retention ponds, future end pit lakes, and storage structures.
i) water wells, intakes, pipelines (water and other materials), and storage structures.
j) dewatering and water control structures, flow routes for water overflow
k) sources of aggregate resources, borrow materials and other construction materials. whether acquired on or off the project area. Locations of any stockpiles that will be developed.
l) waste storage, transfer, treatment, and disposal sites, both on and off the project area.
m) recycling and/or storage facilities.

(C) Provide a detailed development plan that includes:
a) the phases of development
b) the extent of mine excavations and dump areas in each stage of the Project
c) tailings management, including descriptions and maps of areas at risk in the event that management failures occur.
d) overburden storage areas, including but not limited to heights, slopes, geotechnical assessments of slope stability.
e) dewatering and water control facilities, including but not limited to details of the nature of such structures and identification of areas at risk in the event that a facility failure occurs.
f) processing facilities
g) power generation facilities
h) infrastructure (pipelines, access roads, power lines)
i)other buildings and structures
j) field maintenance operations, and
k) complete listing of all activities associated with each stage of the Project

(D) Describe the proposed method to transport product to market, including but not limited to: moving product from the processing facility to the load out facility, storage of the product at the load out facility, movement of the product around the facility and onto

the transport system, the process to load the product onto the transport vehicle, methods used to secure the product during transport.

(E) Provide a detailed list of chemical products to be manufactured, processed or otherwise used for the project and describe specifically how these products will be stored and managed. Identify products containing substances that are:

a) listed on the *Canadian Environmental Protection Act, Schedule 1, List of Toxic Substances.*
b) listed on the *National Pollutant Release Inventory*
c) dangerous goods as defined by the federal *Transportation of Dangerous Goods Act*
d) on the *Domestic substances List* and categorized as requiring further assessment under Canada's *Chemicals Management Plan*
e) listed by the state of California as causing or being likely to cause cancer

(F) Describe the nature and amount of on-site hydrocarbon storage. Describe in detail containment and other environmental protection measures,

(G) **Delete. Cancellation or delay of the project is not an impact of the project**

(H) Describe the benefits of the Project, including jobs created, local training, employment and business opportunities, and royalties and taxes generated that accrue to:

a) Northback, including the proportion of profit that can be credited to non-Canadian shareholders
b) local and Regional communities, including Indigenous Communities in the Oldman Watershed, including but not limited to (Crowsnest Pass, Pincher Creek, Cardston, Lundbreck, Cowley, Brocket, Glenwood, Hillspring, Mountain View, Laverne, Standoff, Raymond, Magrath, Stirling, Lethbridge, Monarch, Nobleford, Granum, Claresholm, Stavely, Parkland, Nanton
c) the local authority (MD of Pincher Creek, MD of Ranchland, MD of Willow Creek, Cardston County, Lethbridge County, Municipality of Crowsnest Pass)
d) Alberta (including the amount of taxes and royalties to be paid on coal from freehold CIMI is in place, other fees to be paid for leases on crown land)
e) Canada

(I) Provide the adaptive management approach that will be implemented throughout the life of the Project and following closure for fifty years. Include how monitoring, mitigation and evaluation were incorporated. Include the location of all types of monitoring systems (air, water and land), how often monitoring records are reviewed, what levels of change would trigger adaptive changes, what methods will be used to mitigate impacts that may not be subject to successful remediation such as the release of persistent pollutants into major water courses.

2.2 Constraints

A) Discuss the process and criteria used to identify legal, ecosystem, and human health constraints to development, and how the Project has been designed to accommodate those constraints. Include the following:

a) any applicable *Alberta Land Stewardship Act* Regional Plan, as well as others such as the *Approved Water Management for the South Saskatchewan River*

Basin (Alberta) and discuss how recent changes to the *water act* may impact the project.

b) land use policies and resource management initiatives that pertain to the Project
c) Indigenous traditional land and water use
d) all known traplines
e) the environmental setting including detailed descriptions of all terrestrial and aquatic ecosystems within 50 km of the lease boundaries
f) Cumulative environmental impacts in the region, which shall include all lands and water courses and water bodies within 50 km of the lease boundaries
g) cumulative social impacts both positive and negative in the region, which shall include all lands within 50 km of the lease boundaries.
h) results of project specific and regional monitoring
i) potential for new or additional technology to increase resource recovery at later times, specifically to include the possible expansion of the mine beyond the limits outlined in the current project application
j) potential for changes in the regulatory regime, specifically including lowered tolerance limits for release of selenium and other toxic materials through air or water from the mine area, including changes that may come into effect after mine closure.

B) Discuss the selection criteria used, options considered, and rationale for selecting
a) location of facilities and infrastructure, (including linear infrastructure); and
b) thermal energy and electric power required for the Project, including how the power will be generated, how it will be brought to the project
c) provide a list of facilities for which locations will be determined later and discuss why locations cannot be determined at this time. Discuss the selection criteria that will be used to determine the specific locations of these facilities.

2.3 Regional and Cooperative Efforts

A) Discuss the Proponent's involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional development such as access roads, utility corridors, water infrastructure with other resource development stakeholders (provide names of such stakeholders). Provide rationale why these opportunities will not be implemented.

2.4 Transportation Infrastructure

A) Prepare a Traffic Impact Assessment as per Alberta Transportation's *Traffic Impact Assessment Guidelines (*http://www.transportation.alberta.ca/613.htm*)*

a) Describe background traffic and consider the cumulative effects of traffic impacts due to other existing and planned developments using the same highways and accesses.
b) Discuss anticipated changes to highway traffic (e.g. type, volume) due to the Project. Pay particular attention to both the centre access in Blairmore and the area where the rail line will cross Highway 3 to reach the loadout.
c) assess potential traffic impacts for all stages of the project (e.g. Construction, operation, maintenance, expansion, shutdown).
d) determine any necessary improvements and methods to mitigate traffic impacts

e) provide each of the above factors with the existing highway and with the proposed new alignment.

2.5 Air Emissions Management

A) Discuss the selection criteria used, options considered, and rationale for selecting control technologies to minimize air emissions and ensure air quality management.

B) Provide emission profiles (type, rate, frequency/duration and source) for the Project's operating and construction emissions including point and non-point sources and fugitive emissions (including mine faces). Consider both normal and upset conditions.

Discuss:

a) odorous, visible and non-visible (e.g. <2.5 microns) from the proposed facilities.
b) annual and total greenhouse gas emissions for all stages of the project. Identify the primary sources and provide examples of calculations.
c) the project's contribution to total provincial and national greenhouse gas emissions on an annual basis
d) the Proponent's overall greenhouse gas management plans, including how emissions will be reduced over time, in line with provincial and national targets
e) the Proponent's plans to manage emissions from the mining fleet, including the types of equipment (gas/diesel, electric, automated, self-driving etc)
f) amount and nature of criteria air contaminants emissions; and
g) the amount and nature of acidifying and particulate matter emissions, probable deposition patterns, and rates. such reports to show both weights and number of emitted particles in multiple size categories (<1.0, <2.5, <10 microns) the chemical composition of such particles, and the differing distribution patterns and rates for each category.

2.6 Water Management

2.6.1 Water Supply

A) Describe the water supply requirements for the Project; including

a) the criteria used, options considered, and rationale for selection of water supply. Such report to consider the future effects of anticipated changes in climate (temperatiure, precipitation amounts/types, winds, etc) on surface and ground water regimes. Discuss possible water sharing agreement impacts on water supply.
b) the expected water balance during all stages of the project, including post-closure. Discuss assumptions made or methods chosen to arrive the water balances.
c) the process water, potable water and non-potable water requirements and sources for construction, camp(s), and plant site, start-up, normal and emergency operating situations, decommissioning, and reclamation. Discuss amounts required under various weather conditions for dust control. Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse.
d) the location of sources/intakes and associated infrastructure (e.g. pipelines for water supply). Specifically identify off-site sources, their hydrologic profile, any possible

required infrastructure construction, and the impacts on traffic, and future alternative uses of such off-site sources.

e) the variability in the amount of water required on an annual and monthly basis as the project is implemented. Discuss the effects of recent droughts, if continuing, on the water supply for the project.

f) the expected cumulative effects on water losses/gains resulting from the project operations, including impacts on agricultural and municipal uses downstream for 100 km, at least.

g) potable water treatment systems for all stages of the project. if the project will use potable water from a municipal system, discuss the possible effects on system capacity, any limitations on municipal growth, how any necessary upgrades to the municipal system will be funded.

h) type and quantity of potable water treatment chemicals used: and

i) measures for ensuring efficient use of water inducing 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) runoff management. This shall include design criteria adequate to deal with a rain event at least 50% larger than the flood event in 1995

iii) road and plant runoff. This shall include design criteria adequate to deal with a rain event at least 50% larger than the flood event in 1995.

iv) erosion/sediment control, such design being adequate to handle a rainfall event at least 200% larger than that causing damage to Rock Creek in August 2022.

v) geotechnical stability concerns

vi) groundwater and surface water protection, the design for dewatering of old tunnels, dewatering of the mine pit areas, shall be adequate to prevent the release of contaminated water (selenium and other metals, acid generating drainage, etc)

vii) groundwater seepage must be contained so that no selenium escapes the mine lease boundaries

viii) flood protection, must be adequate to handle a flood event with rainfall more than 50% larger than the flood event of 1995. Design must also ensure that structure failures from extreme rainfall events do not result in debris flows that reach/cross the current Highway 3.

b) permanent or temporary alterations or realignments of watercourses, managing thermal regimes to protect fish populations, wetlands and other waterbodies;

c) the pre- and post-disturbance alignment and condition of all ephemeral and permanent streams (including the riparian vegetation communities), wetlands and waterbodies including those created by the project, and

d) factors used in the design through decommissioning of water management facilities with respect to the *Water (Ministerial) Regulation,* and where relevant, the *Alberta Dam and Canal Safety Directive,* including consequence classification and expected flood (reference 1995 and 2013) and flood protection.

B). Describe and map all crossings of watercourses or waterbodies including roadways, pipelines, powerlines and any other utilities. Show how impacts will be mitigated before, during and after mine development, should the project be permitted.

C). Describe discharges to the surrounding watershed from existing, reclaimed including potential end-pit lakes, and the management strategy for handling such releases. Also describe the expected movement of water from surface to sub-surface aquifers, the amounts of water moving into the sub-surface environment, and how that sub-surface water will be monitored for contamination, and how it will be treated should contamination be detected.

D) Describe how the *Alberta wetland policy* was considered in the assessment of impacts, including but not limited to:

a) avoidance, minimization, reclamation or replacement of wetlands in accordance with the *Alberta Wetland Mitigation Directive;*
b) temporary and permanent alterations (direct and indirect) to wetlands classified under the *Alberta Wetlands Classification System;*
c) any expected changes in wetland class and cause for this change, including changes that may occur in wetlands beyond the lease boundaries which are hydrologically connected to the project
d) consideration of cumulative effects in the watershed to wetlands

2.6.3 Wastewater Management

A) Describe the wastewater management strategy for each, including:

a) the criteria used, options considered and rationale for the selection of wastewater treatment, and wastewater disposal and a discussion of why other options were notchosen
b) the source, quantity, and composition of each wastewater steam from each component of the proposed operation (e.g. Coal mining, coal processing) for all Project conditions including normal, startup, worst-case, and upset conditions.
c) the proposed disposal locations and methods for each wastewater stream
d) geologic formations for the disposal of wastewater. If this method is chosen, include an assessment of the risk of induced seismicity.
e) design of facilities that will collect, treat, store and release wastewater streams. Include wastewater volumes and methods used to protect against overflow from storage facilities in the event of upset conditions
f) the type and quantity of chemicals used in wastewater treatment, including measures taken in the design to prevent or minimize potential impacts to the environment;
g) sewage treatment and disposal. If off-site disposal is planned, indicate how the sewage will be transported and the location of ultimate disposal;
h) the options for the disposal of wastewater in the context of best management practices and best available technologies, including the rationale for choosing the preferred option and the measures taken to prevent impacts on potable groundwater, aquatic ecosystems, and vegetation.
i) how makeup water requirements and disposal volumes are minimized. If makeup water is required, indicate sources and volumes as well as times of year when makeup water may be required

j) planned life-of-mine as well as post-closure discharges to the surrounding watershed from existing and future sites, including reclaimed areas, the tailings management areas and end-pit leaks and the management strategy for handling such releases for 50 years post-closure
k) a monitoring plan for wastewater releases, including the rationale used to determine the frequency of sampling and the parameters to be measure, as well as a response plan should problems be detected by monitoring
l) the drinking water treatment system for both the construction and operation stages.

2.7 Waste Management

A) Discuss the selection criteria used, options considered, and rationale for disposal of the various types of waste that will be generated by the project
a) the location, availability of both on-site and off-site waste disposal; and
b) site suitability from a water quality protection perspective, geotechnical perspective and with regard to existing and potential human activities.

B) Characterize and quantify the anticipated dangerous goods and hazardous, non-hazardous, and recyclable wastes generated why the project and describe
a) the composition, weight and volume of specific waste streams and discuss how each stream will be managed
b) the management plan for exploratory drilling wastes, overburden and other mining wastes, as well as any by-products
c) how each disposal site will be constructed
d) plans for pollution prevention, waste minimization, recycling, and management to reduce waste quantities at all stages of the project. include plans for funding the monitoring and management of waste disposal sites for 50 years post-closure.

C) Describe the nature and amount of on-site and off-site hydrocarbon storage. discuss containment strategies, and the methods to be used to monitor for spills, and how any spills will be managed.

2.8 Conservation and Reclamation

A) Provide a conceptual conservation and reclamation plan for the Project. Describe and map, as applicable. In the plan, discuss how at-risk plant and animal (terrestrial and aquatic) communities will protected where possible, and re-established where disturbance is unavoidable. Pay particular attention to those communities (e.g. Fescue grasslands) that may be particularly difficult to re-establish.
a) current land use and capability, and proposed post-closure and use and capability
b) integration of operations, decommissioning, reclamation planning and reclamation activities, including plans for monitoring and adjusting processes following project closure
c) anticipated timeframes for completion of reclamation stages and lease of lands back to the crown including an outline of key milestone dates for reclamation and how progress to achieve these milestones will be measured. Describe the state the lands will be in when they are returned to the crown, and how reclaimed lands will be monitored for 50

years after they are returned to the crown, to ensure that such lands continue to be in an acceptable state.

d) constraints to reclamation such as timing of activities, availability and quality of reclamation materials and influence of natural processes and cycles, including natural disturbance regimes. Indicate where make-up materials may be sourced to supplement inadequate on-site supplies. Indicate which planned reclamation communities may be most susceptible to damage by changed in climatic factors, and how those risks have been accounted for in the planning.

e) post-development land capability with respect to:
   i) self-sustaining topography, drainage and surface watercourses representative of the surrounding area.
   ii) existing traditional use with consideration for traditional (e.g. five needle pines, foothills fescue) vegetation and wildlife in the reclaimed landscape
   iii) end pit lakes
   iv) wetlands
   v) self-sustaining vegetation communities representative of the surrounding area capable of ecological succession, and
   vi) deforestation and forest productivity, with such plans being synchronized with the provincial *Hazardous Fuels Reduction Program (HFRP))*

f) reclamation material salvage, storage areas, and handling procedures,

g) reclamation material replacement indicating depth, volume and type. Include the source and volume of any material sourced off-site, and how it may be handled prior to placement

h) management of both suitable and unsuitable overburdens

i) existing drainage(s) and the final reclaimed site drainage plan

j) integration of surface and near-surface drainage within and adjacent to the project area, and

k) promotion of biodiversity

B) Provide a conceptual revegetation plan for the disturbed terrestrial, riparian and wetland areas. Consider factors such biological capability, and diversity, natural disturbance regimes and end land use objectives. Discuss the potential for vegetation to bioaccumulate diverse contaminants, and how such contaminated vegetation will be dealt with should this occur.

C) Provide a map of the predicted ecosites for the post-reclamation landscape considering potential land uses, including traditional uses and how the landscape and soils have been designed to accommodate future land use. Show the likely changes due to ecological succession over the 50 years post-reclamation.

D) Provide a conceptual plan to monitor reclamation performance and success (including soils, vegetation, wildlife and aquatic resources throughout mining operations and for 50 years post-closure.

E) Describe how the use of progressive reclamation was considered in project design and reclamation planning.

F) Discuss uncertainties related to the conceptual reclamation plan, and how such uncertainties may impact microbiomes, different successional stages, and how changes in climate might affect the uncertainties.

2.9 Environmental Management Systems

A) Summarize the Proponent's existing or proposed environmental health and safety management system.

B) Describe adaptive management plans, which will be used as a last resort, that minimize the impact of the project. Describe how management adaptations will be triggered, and the timelines for such triggers to be activated. Describe the flexibility built into the project to accommodate future modifications required as a result of:
   a) any change in environmental standards, limits and guidelines; and
   b) findings from project-specific regional monitoring programs, with detailed descriptions of such regional monitoring programs, either existing or which will be created to deal with the project
   c) indicate how frequently adaptive management may be necessary

C) Describe the Proponent's current and proposed monitoring programs with respect to:
   a) air emissions, including fugitive emissions, with programs designed to monitor emissions downwind to 50 km or such greater distance as modelling indicates may be necessary.
   b) wastewater treatment and release, including modifications that can be activated in the event of problematic high or low flows in receiving water bodies, elevated temperatures in receiving water bodies, etc
   c) hazardous and non-hazardous waste treatment and storage.

D) Describe emergency response system that will be used to minimize adverse environmental effects while protecting the safety of personnel.

3 ENVIRONMENTAL ASSESSMENT

3.1 Air Quality, Climate and Noise

3.1.1 Baseline Information

A) Discuss the baseline climatic and air quality conditions, with specific data on the sizes and numbers of particulate material in the air downwind of the mine for at least 50 km, including:
   a) seasonal variations in temperature and precipitation
   b) extreme precipitation statistics, including the extreme rainfall events of 1995 and 2013, and the drought data for recent years.
   c) projected changes due to climate change in temperature and precipitation (amounts, timing, types), including extreme precipitation statistics over the life of the project, and for 50 years beyond closure.

d) the type and frequency of meteorological conditions that may result in poor air quality and
e) appropriate ambient air quality parameters, including how the Proponent will monitor such parameters in real time to allow effective response to adverse air quality events.
f) indicate how frequently the extreme winds this area is famous for may adversely impact the local study area, the regional study area, and such other areas as modelling may suggest could experience adverse effects from such winds.

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. Include a discussion of the health effects of particulate matter of differing sizes (<1.0, <2.5, <10 microns) and of the mineral materials that may be attached to such particles.
b) estimate ground-level concentrations of appropriate air quality parameters
c) discuss any expected changes to particulate deposition, nitrogen deposition, or acidic deposition patterns. Show these changes to a distance of at least 50 km downwind of the project and express the results both in weights and numbers of particles per unit area.
d) identify areas that are predicted to exceed potential acid input critical loading criteria, as well as areas receiving annual polycyclic aromatic hydrocarbons (PAH) inputs exceeding 10 mcg per square meter.
e) discuss interactive effects that may occur resulting from co-exposure of a living (plant or animal) receptor to all emissions, and
f) describe the air quality impacts resulting from the project, and their implications for other climate parameters, including frequency and severity of extreme weather events and discuss the potential impacts of the life of the project and for 50 years post-closure.

B) Identify stages or elements of the Project that are sensitive to changes or variability in climate parameters, including frequency and severity of extreme weather events and discuss the potential impacts over the life of the Project.

C) Summarize the results of the noise assessment conducted for the project and:

a) identify the receptors used in the assessment;
b) discuss the design, construction and operational factors to be incorporated into the project to comply with the AER's *Directive 38 Noise Control*, and
c) identify components of the project that have the potential to increase noise levels and discuss the implications, including:
    i) potentially affected people and wildlife
    ii) an estimate of the potential for increased noise resulting from the development, including a discussion of how increased noise, even at very low levels, may adversely affect the quality of life for persons exposed to project-

related industrial noise for extended periods of time. discuss potential methods to mitigate such impacts on quality of life.
iii) strategies to monitor and mitigate any increased noise levels in real time

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 coal zones, and if applicable, to the base of any deeper Strata that would be potentially impacted by mining. Document any new hydrogeologic investigations, including methodology and results, undertake as part of the EIA. Describe how blasting may impact hydrogeology below active mining levels and outside the mine boundary. Describe the effects of repeated blasting over many years could impact turtle mountain, an area already known to be prone to large rock falls. Discuss the potential impacts of such blasting on fault lines within 50 km of the project.

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 acquirers, 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. Identify zones with the potential to generate acid mine drainage.
- III) the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interactions and areas of Quaternary aquifer-bedrock groundwater interaction
- iv) water well development and groundwater use, including an inventory of groundwater users within 10 km of the project boundaries
- v) the recharge potential for Quaternary aquifers.
- vi) potential hydraulic connections between the coal zones and other aquifers resulting from project operations and
- vii) the locations of major facilities associated with the Project including facilities for waste storage, 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
- viii) provide information on any potential groundwater connections between the project area and the watersheds for Daisy and Gold Creeks

3.2.2 Impact Assessment

A) Describe project components and activities that have the potential to affect groundwater resource quantity and quality at all stage of the Project, including post-closure for 50 years.

B) Describe the nature and significance of the potential project impacts on groundwater with respect to:
   a) inter-relationships between groundwater and surface water in terms of both groundwater and surface water quality and quantity. Include possible impacts on flow regimes
   b) implications for terrestrial or riparian vegetation, wildlife and aquatic resources including wetlands
   c) changes in groundwater quality, quantity and flow regimes
   d) conflicts with other groundwater users, and proposals to resolve these conflicts.
   e) potential implications of seasonal variations as well as anticipated climate changes leading to alterations in precipitation amounts, forms and timing.
   f) groundwater withdrawal, including from flooded mine tunnels for project operations, including any expected alterations in the groundwater flow regime during and following (for 50 years) project operations

C) Describe programs to manage and protect groundwater resources including
   a) the early detection of potential contamination, with detailed definitions of alert levels, hazard levels, and how the Proponent will respond to breaches of each level.
   b) see a)
   c) monitoring groundwater levels and associated changes due to production or dewatering impacts.

3.3 Hydrology

3.3.1 Baseline Information

A) Describe and map the existing surface hydrology in the Project Area

B) Identify any surface water users who have existing approvals, permits of licenses

C) Provide surface flow baseline data including:
   a) seasonal variation, low average and peak flows for watercourses, and surface waters catchment areas. Include minimum required flows for maintenance of aquatic life in the surface watercourses. Include expected changes in surface flows over the next 50 years due to both the project and anticipated climate change.

3.3.2 Impact Assessment

A) Describe the extent of hydrological changes that will result from Project disturbances, including licensed water diversions, to groundwater and surface water movement, and
   a) include changes to the quantity and timing 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 the effects of these changes on hydrology (e.g. Timing, volume, peak and minimum flow rates, river regime and lake levels), including the significance of effects for downstream water courses and water users; 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, including downstream users, such as irrigators and municipal water systems.
Identify any potential water use conflicts.

C) Discuss changes in sedimentation patterns in receiving waters, including a discussion of changes in the storage volumes in the Oldman River reservoir resulting from sediment created and released by the project.

D) Discuss the impact of low flow conditions and in-stream flow needs on water supply and water and wastewater management strategies.

3.4 Surface Water Quality

3.4.1 Baseline Information

A) Describe the baseline water quality of watercourses and waterbodies. Discuss the effects of seasonal (temporal), spatial, flow and other factors on water quality. Consider appropriate water quality parameters and provide enforceable targets for those parameters.

3.4.2 impact assessment

A) identify project components that may influence or impact water quality, including indirect impacts such as air-derived contaminants and altered melt patterns.

B) describe the potential impacts of the project on surface water quality, including
a) changes in water quality that may exceed relevant Alberta guidelines
b) changes in water quality that may exceed the *Environmental* Quality *Guidelines for Alberta Surface Waters* or the *Canadian Water Quality Guidelines for the Protection of Aquatic Life* where relevant Alberta guideline do not exist, or where federal jurisdiction prevails such as but not limited to the Species At Risk Act
c) seasonal, thermal and spatial variation
d) project-related and cumulative impacts of acidifying and other air emissions such as but not limited to PAH, and
e) changes in surface runoff and groundwater discharge

3.5 Aquatic Ecology

3.5.1 Baseline Information

A) Describe and map the existing fish and fish habitat (e.g. Aquatic and benthic invertebrates) of the lentic and lotic ecosystems, including intermittent and ephemeral

water bodies. Describe the species composition, distribution, relative abundance, movements and general life history parameters, including their use and potential use of habitats. Provide the methods used and rationale for the baseline data collection. Also discuss other vertebrate life forms (mammals, birds, amphibians, and birds) that are dependent on aquatic environments for at least part of their life cycle. Discuss the habitat for such animals in similar detail to that for fish and their habitat.

B) Describe any species that are:

a) through e) absent

f) listed as 'at Risk, May be at Risk and Sensitive' in the *General Status of Alberta Wild Species (*Alberta Environment and Parks)

g) identified by the *Alberta Wildlife Act* as 'Endangered', 'Threatened', or 'Species of Special Concern';

h) listed in Schedule 1 of the federal *Species at Risk Act*

i) listed as 'at risk' by COSEWIC, and

j) traditionally used species

C) Describe and map existing aquatic habitat including critical or sensitive areas as well as Habitat disturbances that are related to proposed, existing and approved projects overlain on surface hydrology.

D) Describe the current and potential use of the fish resources as well as the water dependent mammals, birds, amphibians and reptiles by Indigenous or recreational harvesters.

E) Describe and quantify the extent of current aquatic habitat fragmentation, and indicate how the Proponent and predecessor companies has contributed to this fragmentation over the past decade and how they plan to mitigate fragmentation going forward

3.5.2 Impact Assessment

A) Describe and assess the potential impacts of the Project to fish, fish habitat, aquatic and benthic invertebrates and key indicators, including but not limited to:

a) habitat loss and alteration, including that due to physical and chemical changes since the Proponent and preceding companies began work on the project

b) potential water quality and quantity changes, including those attributable to discharges from legacy mines on the lease area

c) potential impacts on riparian areas that could affect aquatic resources and productivity

d) changes to benthic invertebrate communities

e) increased fishing pressures in the region that could arise from the increased human activity and improved access from the Project

f) increased habitat fragmentation

g) acidification and/or eutrophication, including measures planned to prevent these changes from occurring

h) groundwater-surface water interactions

i) potential for thermal plumes to affect aquatic habitat

j) fish tainting, survival of e.g.gs and fry, chronic or acute health effects including those due to PAH, selenium and other potential contaminants, and

increased stress on fish populations from release of contaminants, sedimentation, flow alterations, and /or changes in temperature

k) concretion of stream beds due to contaminants entering the stream from the lease area

B) Discuss the rational for the selection of key indicators, as well as showing what other possible key indicators were not selected and why they were not selected.

C) Discuss the design, construction and operational factors to be incorporated into the project to minimize effects to fish, mammals, birds, amphibians and reptiles that are dependent on aquatic environments and habitat and protect aquatic resources.

D) Identify proposed plans to offset any loss in productivity as a result of the project. Indicate how environmental protection plans address applicable provincial and federal policies on fish habitat, including but not limited to the SARA-mandated requirements regardinghadd.

3.6 Vegetation

3.6.1 Baseline Information

A) Describe and map the existing vegetation communities, wetlands, rare plants and rare plant communities, old growth forests, and communities of limited distribution. Identify the occurrence, relative abundance and distribution of each vegetation community and identify any species that are:

a) listed as 'at Risk, May be at Risk and Sensitive' in the *General Status of Alberta Wild Species (*Alberta Environment and Parks)
b) listed in Schedule 1 of the federal *Species at Risk Act*
c) listed as 'at risk' by COSEWIC, and
d) traditionally and currently used species
e) list any plant species found within the project lease area or within 10 km of that area which are of limited distribution in Alberta
f) describe how the project vegetation management plan will be linked to the *Hazardous Fuels Reduction Plan*

B) Describe and quantify the current extent of habitat fragmentation. Identify how much of that fragmentation is the result of activities of Northback and its predecessor companies over the past decade

C) Discuss the potential of each ecocide phase to support rare plant species for traditional, medicinal, and cultural purposes, old growth forests, and communities of limited distribution. consider their importance for local and regional habitat, sustained forest growth, rare plant habitat and the hydrologic regime. Discuss how the various plant communities identified above will be protected through the life cycle of the Project, or re-established through reclamation.

D) Describe regional relevance of landscape units and plant species that are described as rare.

E) Provide timber productivity ratios for both the project area and the local study area, including identification of productive forested, non-productive forested and non-forested lands. Describe how each of these land types will be changed as a result of the Project and/or the *Hazardous Fuels Reduction Program* and how the effected lands will be reclaimed.

3.6.2 Impact Assessment

A) Identify the amount of vegetation and wetlands to be disturbed during the life of the Project

B) Describe and assess the potential impacts of the Project on vegetation communities

C) Describe the potential impacts of the Project on uncommon, rare or endangered plant species

D) Identify key vegetation indicators used to assess the Project impacts. Discuss the rationale for the selection of the key indicator, and also the rationale for not selecting other potential key indicators.

E) Discuss temporary (include timeframe) and permanent changes to vegetation and wetland communities and comment on:

a) the impacts on other environmental resources (habitat diversity and quantity, water quality and quantity, erosion potential)
b) the impacts on recreation, Indigenous and other uses
c) the sensitivity to disturbance (including by acid deposition and fugitive dust/PAH deposition) as well as techniques used to estimate sensitivity to disturbance and reclamation of each vegetation community, specifically including but not limited to whitebark and limber pine and fescue grasslands.

F) Describe the regional impact of all ecosite phases to be removed, either temporarily (<5 years) or for extended times (5-50 years) or permanently (>50 years)

G) Discuss, from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and the expected differences in the resulting vegetative community structures. Include a detailed discussion of any agronomic plant species to be used in reclamation and provide a rationale for using them.

H) Provide a map of the predicted ecosites that shows the reclaimed vegetation. Comment on the importance of size, distribution and variety of the reclaimed landscape units from both a local and regional perspective. Discuss and identify areas or communities that may require ongoing interventions (fertilizer, weed control, etc) to maintain the desired plant communities.

I) Discuss the impacts of any loss of wetlands, including how the loss will affect the land use. Describe any net gains in wetlands including their bathymetric and vegetative profiles. Describe the ongoing monitoring program that will be employed to ensure that wetland water and vegetation are impacted by leachate from mine spoils.

J) Discuss weeds and non-native invasive species and describe how these species will be assessed and controlled in all stages of the project. If chemical control is anticipated, list the proposed chemicals, along with an assessment of potential risks to human health (e.g. Are any of them listed by the state of California as being a carcinogen, or being a likely carcinogen)

K) Discuss the predicted changes to upland, riparian and wetland habitats resulting from increased fragmentation.

3.7 Wildlife

3.7.1 Baseline Information

A) Describe and map the existing wildlife resources (amphibians, reptiles, birds and terrestrial and aquatic mammals. Describe the species composition, relative abundance, distribution, seasonal movements, movement corridors, specific habitat requirements (birthing areas, winter range areas, etc), key habitat areas, general life history and their use and potential use of habitats. for birds, discuss the known and potential raptor and waterfowl migration routes within 10 km of the project boundaries. Also identify any species that are;

a) listed as 'At Risk, May be At Risk and Sensitive' in the *General Status of Alberta Wild Species* (Alberta Environment and Parks)
b) listed in Schedule 1 of the federal *Species at Risk Act;*
c) listed as 'at Risk' by COSEWIC;
d) species of traditional and current use and cultural keystone species

B) Describe quantify and map existing wildlife habitat and habitat disturbance including exploration activities. Identify habitat disturbances that are related to existing and approved projects.

3.7.2 Impact Assessment

A) Describe and assess the potential impacts of the Project to wildlife populations and wildlife habitats, considering:
a) how the Project will affect wildlife relative abundance, habitat availability, mortality movement patterns, and distribution for all stages of the Project
b) how altered or improved access may affect wildlife, including potential obstruction of movements, increased vehicle-wildlife collisions, and increased hunting pressure.
c) how increased habitat fragmentation may affect wildlife. Consider edge effects, the availability of core habitat and the influence of linear features and infrastructure on wildlife movements and predator-prey relationships.
d) the use of setbacks
e) potential effects on wildlife resulting from changes to air and water quality, including both acute and chronic effects to animal health
f) the spatial and temporal changes to habitat availability (e.g. winter range) and habitat effectiveness (types, quality, quantity, diversity and distribution)

g) the resilience and recovery capabilities of wildlife populations and habitats to disturbance; and
h) the potential for the project to be returned to its existing state with respect to wildlife populations and their habitat. Include estimates for the time to recover to the maximum likely proportion.

B) Identify the key wildlife and habitat indicators used to assess project impacts. Discuss the rationale for their selection and discuss why other possible indicators were not selected.

C) Comment on the availability of species for traditional use considering habitat loss, habitat avoidance, vehicle-wildlife collisions, increased non-Indigenous hunting pressure, and other Project related impacts on wildlife populations

3.8 Biodiversity

3.8.1 Baseline Information

A) Describe the terrestrial and aquatic biodiversity metrics that will be used to characterize the existing ecosystems and potential impacts of the Project, and
a) describe the process and rational used to select biotic and abiotic indicators for biodiversity within selected taxonomic groups.
b) determine the relative abundance of species in each ecosite phase, and describe the process used to determine that relative value.
c) provide locations and lists of species, as well as summaries of observed and estimated species richness and evenness for each ecosite phase
d) provide a measure of biodiversity on baseline sites that are representative of the proposed reclamation cosines, and explain how those baseline sites were selected.
e) rank each ecological unit for actual and potential biodiversity. describe techniques used int the ranking process,
f) describe the current level of habitat fragmentation, along with the expected level of fragmentation at 5-year intervals during mine operation and for 50 years after closure.

3.8.2 Impact Assessment

A) Describe the physical, chemical and biological metrics used to assess the potential impacts of the Project. Discuss the contribution of the Project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems.

B) Describe and assess the potential impacts of the Project to biodiversity, at relevant scales (site specific at landscape level), considering
a) the biodiversity metrics, biotic and physical and chemical indicators selected;
b) the effects of fragmentation on biodiversity potential
c) the contribution of the project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems; and

d) effects during construction, operations and post-reclamation (for a period of 50 years) and the significance of these changes in a local and regional context.

3.9 Terrain and Soils

3.9.1. Baseline Information

A) Describe and map the terrain and soils condition, including

a) surficial geology and topography
b) soil types and their distributions. Provide an ecological context for the soils by supplying a soil survey report to survey intensity Level 2 within the Project area and for 10 km beyond the lease boundaries.
c) suitability and availability of reclamation material (soils, suitable overburden) within the project area for reclamation. also indicate potential sources for reclamation material that cannot be obtained within the study area. Provide details on the volumes of reclamation materials needed for the full reclamation area, from both on-site and off-site sources.
d) soils that could be affected by the project, with emphasis on potential acidification by soil type; and
e) descriptions and locations of erosion-sensitive soils, with particular attention to those areas sensitive to wind erosion.
f) describe for each type of reclamation material how it will be salvaged, transported, stored and how it will be protected during storage. describe how it will be transported and spread for reclamation. indicate what methods will be used to ensure newly placed 'soil' remains in place during wind, rain and melt events. How will 'soil' be treated to encourage successful revegetation and what will be done to ensure that the reclaimed area supports a thriving and weed free cover for 50 years after mine closure.

3.9.2 Impact Assessment

A) Describe project activities and related issues that could affect soil quality (e.g. Compaction, contaminants) and;

a) indicate the amount (ha) of surface disturbance from the plant, mine, overburden disposal, reclamation material stockpiles, infrastructure (e.g. Pipelines, power lines, access roads) aggregate and borrow sites, construction camps, water disposal and other construction and operation activities.
b) provide an inventory of the pre- and post-disturbance land capacity classes for soils in both the Project Area and the Local Study Area and describe the impacts to land capability resulting from the Project. Indicate the size and location of soils types and land capability classes that will be disturbed
c) discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use resulting from disturbance during the life of the Project, and for 50 years post-closure.
d) identify the potential acidification impact on soils and discuss the significance of predicted impacts by acidifying emissions.

e) discuss the potential for soil erosion during the life of the project, with particular attention to the potential for wind erosion to transport particulate matter and associated contaminants beyond the project boundaries.

f) describe the impact of the project on soil types and reclamation suitability and the approximate volumes of soil materials for reclamation. discuss any constraints of limitations to achieving vegetation/habitat reclamation based on anticipated soil conditions (e.g. compaction, contaminants, salinity, soil moisture nutrient depletion, erosion, absence/changes to soil microbiome, etc)

g) describe potential sources of soil contamination, including but not limited to PAH, metals, explosive residues, etc.

B) Discuss the potential impacts caused by mulching and storing of woody debris considering but not limited to: vulnerability to fire, degradation of soil quality and increased footprint.

3.10 Land Use and Management

3.10.1 Baseline Information

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

B) Describe the existing land and resource uses and potential conflicts that exist considering oil and gas development (specifically including information on wells drilled north of the Crowsnest Pass Health Centre in recent years) agriculture, forestry, tourism and outdoor recreational activities

C) Indicate where Crown land dispositions may be needed for roads or other infrastructure for the project

D) Identify and map unique sites or special features within at least 10 km of the mine. such mapping will include but not be limited to Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmental Significant Areas, Culturally Significant Sites and other designations (Eg. World Heritage Sites, Ramsar Sites, Internationally Important Bird Areas, any areas supporting life forms that are listed under SARA, COSEWIC, Provincial Registries of Sensitive, Threatened or Endangered Species.

E) Identify any land use policies and resource management initiatives that pertain to the Project and discuss how the Project will be consistent with the intent of these initiatives.

F) Describe and map existing land clearing activities, showing the timing of the activities. This shall specifically include but not be limited to areas included under the Hazardous Fuels Reduction Program.

G) Describe the status of timber harvesting arrangements, whether part of the Hazardous Fuels Reduction Program or separate from it, including species and timing.

H) Describe existing and planned access control measures, including those for mine-related exclusion zones in areas with limited or no formal public access

3.10.2. Impact Assessment

A) Identify the potential impacts of the Project on land uses, including:
   a) unique sites or special features
   b) changes to public access arising from linear development, including secondary effects related to increased or decreased hunter, angler and other recreational access and facilitated predator movements.
   c) aggregate reserves that may be located on land under the Proponent's control and reserves in the region
   d) development and reclamation on commercial forest harvesting and fire management in the Project, including how this will be coordinated with the Hazardous Fuels Reduction Program
   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 baseline and reclaimed percentages and distribution of all forested communities in the Project Area. Show these values for the areas inside and outside the Hazardous Fuels Reduction Program lands that overlap with project lands
   f) how the project in combination with the Hazardous Fuels Reduction Program impacts the annual allowable cuts and quotas within the forest
   g) anticipated changes (type and extent) to the topography, elevation and drainage patterns within the project area, and
   h) access control for public, regional recreational activities, Indigenous land use and other land uses during and after development activities. Indicate which areas may need to be off-limits permanently during mining activities, if those are allowed. Also show areas that may be permanently closed to public access following closure.

B) provide a fire control plan highlighting:
   a) measures taken to ensure continued access for firefighters to adjacent woodland areas
   b) forest fire prevention, detection, reporting and suppression measures, including proposed fire equipment. Describe conditions that would require suspension of all mine activities in order to minimize fire risk.
   c) measures for determining the clearing width of power line rights-of-way; and
   d) required mitigative measures for areas adjacent to the Project Area based *Firesmart Wildlife Assessment System*
   e) Insurance coverage to compensate other landowners that may suffer damage as a result of any fires that originate on Project lands. Such coverage to be applicable to landowners up to a minimum of 50 km downwind of such a fire, considering the large areas affected by wind-driven fires in southern Alberta in the last 30 years (e.g. Pincher Station to Granum,1999)

4.0 HISTORIC RESOURCES

4.1 Baseline Information

A) Provide a brief overview of the regional historical resources setting including a discussion of the relevant archaeological, historic and paleontological records.

B) Describe and map known historic resources sites in the Project Area, considering
   a) site type and assigned Historic Resource Values; and
   b) existing site-specific *Historical Resources Act* requirements

C) Provide an outline of the program and schedule of field investigations that Alberta Arts, Culture and the Status of Women may require the Proponent to undertake to further assess and mitigate the impacts of the Project on historic resources

D) Document any historic resources raised during consultation on the Project

E) Provide an overview of previous Historic Resources Impact Assessments that have been conducted within the Project Area and adjacent lands, including:
   a) a description of the spatial extent of previous assessments relative to the Project Area, noting any assessment gap areas, and
   b) a summary of *Historical Resources Act* requirements and/or clearances that have been issued for the Project to date

F) Identify locations within the Project Area that are likely to contain previously unrecorded historic and/or paleontologic resources. Describe the methods used to identify these areas.

4.2 Impact Assessment

A) Describe the project components and activities that have the potential to affect historic and/or paleontologic resources, at all stages of the Project.

B) Describe the nature and magnitude of the potential Project impacts on historical and/or paleontologic resources, considering
   a) effects on historic/paleontologic resources site integrity, and
   b) implications for the interpretation of the archeological, historic and paleontological records.

5 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE

A) Provide:
   a) a map and description of traditional land use areas including fishing, hunting, trapping, water use (e.g. For drinking, cooking and navigation) and nutritional, medicinal or cultural plant harvesting by affected Indigenous people (if the Indigenous community or group is willing to have these locations disclosed.
   b) a map of cabin sites, spiritual sites, cultural sites, graves and other traditional use sites considered historic resources under the *Historical Resources Act* (if the Indigenous community or group is willing to have these locations disclosed). As well as traditional trails and resource activity patterns; and
   c) a discussion of:

i) the availability of vegetation, fish and wildlife species for food, traditional, medicinal and cultural purposes in the identified traditional land use areas considering all project related impacts
ii) access to traditional lands in the Project Area during all stages of the Project, and
iii) Indigenous views on land reclamation

B) Describe how Traditional Ecological Knowledge and Traditional Land Use Information was incorporated into the Project, EIA development, the conservation and reclamation plan, monitoring and mitigation.

C) Determine the impacts of the Project on traditional, medicinal and cultural purposes and identify possible mitigation strategies.

6 PUBLIC HEALTH AND SAFETY, HUMAN HEALTH

6.1 Public Health

A) Describe aspects of the Project that may have implications for public health or the delivery of regional health services. Determine quantitatively whether there may be implications for public health arising from the Project. Such determinations will review the work of Michael Hendryx and others in the eastern United States relating to health effects of residing near open pit coal mines. References to these studies were provided to the Joint Review Panel (JRP). As well, the work in western Canada by Colin Cooke and others relating to PAH distribution downwind of hydrocarbon extraction operations (e.g. Cooke, C.A., K.M. Holland, C.A. Emerton, P.E. Drevnick, A.S. Criscitiello, B. Newton; 2024. *Envir. Sci. Tech*. 58:11718-11724) must be incorporated into the risk assessment regarding public health.

B) Discuss the implications for human health that arise from the work in Appalachia by Hendryx and others, as well as the work in western Canada by Cooke and others relating to the downwind distribution of PAH from hydrocarbon extraction operations. Include recent finding showing that fish in Crowsnest Lake have such high selenium levels, presumably secondary to legacy mining effluent from Tent Mountain, that they are unfit for human consumption.

C) Document any health concerns identified by stakeholders during consultation on the Project.

D) Document any health concerns identified by Indigenous communities or groups resulting from impacts of existing development and of the Project, specifically but not exclusively on their traditional lifestyle. Include an Indigenous receptor type in the assessment. Review concerns regarding human health expressed by Indigenous communities (e.g. Fort Mackay and Fort Chipewyan) and medical professionals (e.g. Dr. John O'Connor) and show how these types of concerns might be mitigated in southwest Alberta.

E) Describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills. Describe the expected changes in traffic types and volumes that will result from the Project in its various stages and the health risks resulting from such changes.

F) Describe how the Proponent will work with the local medical community and the relevant health authorities to develop a response plan to respond to any mine-related mass casualty incident. Demonstrate how the Proponent will fund any response plan related costs (staff, equipment, training, etc.).

G) Describe how the Proponent plans to minimize the risks to workers and area residents from long-term chronic and terminal illnesses, such as black lung, lung cancer, heart attacks, strokes, asthma, etc. These illnesses and others are all strongly linked to working in or residing near coal mines (see Hendryx and others, as noted in files to the JRP).

6.2.1 Public Safety

A) Describe aspects of the Project that may have implications for public safety. Specifically:

a) describe the emergency response plan including public notification protocol and safety procedures to ensure public safety and minimize adverse environmental effects, including emergency reporting procedures for spill containment and management, flood threats, slope failures and other potential hazards originating in or transiting through the project area.

b) document any safety concerns raised by stakeholders during consultation on the project and the actions taken to address those concerns

c) describe how local and area residents will be contacted during and 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 or other industry partner emergency response/spill response agreements. Include discussions of plans with the local and regional EMS system to respond to mass casualty incidents

e) describe the potential safety impacts resulting from higher regional traffic volumes

7 SOCIO-ECONOMIC ASSESSMENT

7.1 Baseline Information

A) Describe the existing socio-economic conditions in the region and in the communities in the Oldman Watershed, Including but not limited to (Crowsnest Pass, Lundbreck, Cowley, Pincher Creek, Fort Macleod, Nanton, Stavely, Parkland, MD of Ranchland, MD of Pincher Creek, MD of Willow Creek, Cardston, Cardston County, Monarch, Lethbridge, Lethbridge County, Granum, Claresholm, Hillspring, Glenwood, Laverne, Standoff)

B) Describe factors that may affect existing socio-economic conditions, including

a) population changes;
b) workforce requirements for all stages of the Project, including a description of when peak activity periods will occur;
c) planned accommodations for the workforce for all stages of the Project. Discuss the rational for their selection,
d) the Proponent's policies and programs regarding the use of local, regional and Alberta goods and services
e) the project schedule, and;
f) the overall engineering and contracting plan for the Project;

7.2 Impact Assessment

A) Describe the effects of construction and operation of the Project on:

a) Housing, including but not limited to rental and permanent housing, short-stay accommodation such as hotels and motels, bed and breakfast etc. Discuss the effects that increased demand for housing may have on local residents, both full-time and part-time.
b) availability and quality of health care services, describe planning processes undertaken with local health care providers and the relevant provincial ministries responsible for different types of health care, specifically but not exclusively including acute and emergency care, family medicine, addictions and mental health, etc.
c) local and regional infrastructure and community services, including but not limited to schools, utilities, swimming and skating facilities and other services
d) recreational activities including but not limited to downhill and cross-country skiing, mountain biking, hiking, climbing, spelunking, etc.
e) hunting, fishing, trapping, and gathering
f) First Nations and Metis (e.g. traditional land use and social and cultural implications), and
g) local training, employment and business opportunities, including but not limited to consulting with local and regional educational authorities such as Livingstone Range School Division, Lethbridge Polytechnic, University of Lethbridge, etc. and determining how best to meet the educational needs associated with the Project
h) provide an independent analysis of the future of tourism in the Crowsnest and Oldman River valleys, with and without a coal mine
i) discuss the impacts on southwest Alberta of changes in water quality and quantity, flow regimes, specifically including but not limited to effects on irrigation agriculture, dry land farming, ranching, and municipal growth projections.
j) discuss the impacts of airborne contaminants (e.g. PAH, metals, etc) on soils and crops, including but not limited to cereals, hay, specialty crops, native pasture, etc
k) discuss the value of ecological goods and services that will be lost due to project related land disturbance. This may be achieved by applying the *Ecological Goods and Services Calculator* recently developed by Oldman Watershed Council.
l) describe which Indigenous companies are currently working for the Proponent, and how this will change if a mine is approved.

B) Discuss the need for additional Crown land, including but not limited to areas where no coal will be extracted. Enumerate the direct financial benefits to the Crown of such land dispositions.

C) Discuss opportunities to work with First Nations and Metis communities and groups, other local residents and businesses regarding employment, training needs, and other economic development opportunities arising from the project. Discuss the negative socio-economic impacts of resource extraction projects that have been documented elsewhere (increased violent crime, increased substance abuse, etc) and how the Proponent will mitigate such impacts.

D) Provide the estimated project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentages of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada. Indicate how much will be paid to Alberta and Canada in taxes and fees. Indicate the percentage of profits and dividends that will be paid to beneficial owners with addresses outside of Alberta and Canada, based on current share ownership.

8 MITIGATION MEASURES

A) Discuss mitigation measures planned to avoid, minimize or eliminate the potential negative social and economic impacts for all stages of the project.

B) Identify the mitigation objectives for each associated impact and describe those mitigation measures that will be implemented. Provide rationale for their selection, including a discussion on the effectiveness of the proposed mitigation. Also describe the other mitigation measures that were considered, along with the rationale for not using these options.

9 RESIDUAL MPACTS

A) Describe the residual impacts of the Project following implementation of the Proponents's mitigation measures and the Proponent's plans to manage those residual impacts. Such descriptions to include a time frame of at least 50 years post-closure. The area included in this description will include all lands and communities within 50 km of all lands disturbed during the project, should a mine be approved. This will also include any and all lands that may be included in any mine expansion that might be approved in the future (e.g. the Gold Creek and Daisy Creek watersheds).

10 MONITORING

A) Describe in detail the Proponent's current and proposed monitoring programs, including locations, equipment, sampling frequency, analytical methods, etc.

a) how the monitoring programs will assess any project impacts and measure the effectiveness of mitigation plans. Discuss how the Proponent will address any project impacts identified through the monitoring program. Provide a response matrix showing in detail how the Proponent will respond to any situations (of varying seriousness) where monitoring shows imperfect mitigation.

b) how the Proponent will contribute to current and proposed regional monitoring programs. Where the Proponent is not responsible for the full cost of such programs,

indicate which other agencies are participating. Explain why the Proponent is not paying the full costs.

c) monitoring performed in conjunction with other stakeholders, including Indigenous communities and groups. The Proponent must explain why they are not covering all monitoring costs for science-based monitoring programs conducted by academic, Indigenous, NGO groups, in situations where that is the case.

d) new monitoring initiatives that may be required as a result of the Project

e) detailed descriptions of regional monitoring that will be undertaken to assist in managing environmental effects and improve environmental strategies

f) how monitoring data will be disseminated to the public, Indigenous communities or other interested parties. Provide details on how 'interested parties' will be identified, timelines for notifications of adverse data, etc.

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

h) provide a detailed explanation of how the monitoring and notification systems will be financed and maintained for 50 years following closure.