SECTION 6.1

METHODS

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6.1 OVERVIEW AND METHODS

This Section details the methods that were used to develop the Environmental Impact Assessment (EIA) for the Star - Orion South Diamond Project (the Project).

6.1.1 Introduction

The methods were guided by the Saskatchewan Ministry of Environment (SMOE) guidelines for EIAs and the Canadian Environmental Assessment Act (CEAA). In undertaking the EIA, the team:

- identified the Project components being assessed;
- identified the key issues of concern;
- conducted baseline studies and described aspects of the Project setting that could be affected by the Project;
- selected valued components (VCs), that describe and represent each important part of the Project setting (i.e., environmental, social, economic, heritage, and health);
- evaluated potential interactions among specific Project components and the Project setting during each Project phase;
- identified potential effects arising from those interactions;
- identified avoidance and mitigation methods and/or measures that could compensate for effects;
- assessed residual effects rating criteria;
- rated residual effects based on effective application of mitigation measures; and
- identified and assessed potential residual cumulative environmental effects (CEE) from other current or future land use activities on the Project setting.

Methods used for predicting impacts in this application for a Ministerial Approval under sections 8 and 15 of the *Environmental Assessment Act* (Saskatchewan), include: mathematical modeling and other quantitative analysis, Aboriginal, public and other informed source participation, traditional knowledge, and professional judgement.

Three key inputs are used for the EIA: baseline data, the Project description, and the VCs. The EIS defines and examines potential interactions between project actions and VCs.

6.1.2 Environmental Impact Assessment Scope

The purpose of this Section is to describe the scope of the environmental assessment by describing the topics on which the assessment is focused. The scope as described is consistent with the Project Specific Guidelines (PSGs) issued by Saskatchewan Ministry of

Environment in November 2009 pursuant to the *Environmental Assessment Act* (EEA). The PSGs are attached as Appendix 1-C. The PSGs also include matters of interest to the Government of Canada pursuant to the *Canadian Environmental Assessment Act* in accordance with the Canada-Saskatchewan Agreement on Environmental Assessment (2005), which provides for a coordinated federal-provincial review. The Saskatchewan Ministry of Environment, Environmental Assessment Branch is the lead agency for the Shore project EIA process and Environmental Impact Statement (EIS) review. In addition to the content of the EIS, the PSGs also describe the role of the EIS in the exercising of the Crown's duty to consult with Aboriginal peoples that may be affected by the Project.

The EIA scope includes issues and interests identified in the PSGs and focuses on those identified through a scoping exercise which included analysis by Shore and engagement with potentially affected and interested parties.

6.1.3 Scope of the Project

The scope of the project includes all Project components and activities, including physical works and monetary expenditures, being proposed by Shore for the Project. Project characteristics most relevant to the EIA are described in detail in Section 2.0 - Project Description, which also addresses the PSGs to describe the objectives, costs and benefits of the Project as well as Project options and alternatives. It should be noted that the power line and related right of way, facilities and activities are not included in the Project scope as these will be covered under a separate EIS to be submitted by Sask Power as an ancillary project.

6.1.4 Assessment Methods

The assessment methods used in the EIA are described in this Section.

6.1.4.1 Approach

The methods used in this EIA were determined by the following factors:

- accepted best practice;
- professional judgment and experience; and
- applicable regulatory requirements and related published guidance.

These factors were applied to the goal of producing an EIS which would be a useful planning and management tool for Shore, regulators, public agencies and potentially affected or interested parties over the life of the Project. This was accomplished by focusing the assessment on issues and interests of the greatest environmental, economic and social importance. The approach used incorporates input from regulators, First Nations and Métis people and stakeholders in the EIS with the objective of contributing to effective Project

management and implementation. It integrates EIA findings with project engineering and design as part of an on-going adaptive environmental management process.

The terms 'environment' and 'environmental effect' are used throughout this EIS and should be understood to be consistent with how these terms are defined under Saskatchewan's EAA and CEAA.

This EIA addresses both project-specific and cumulative environmental effects. Project-specific effects are those which result from project components and/or activities as described in the Project scope. Cumulative effects are those which may be caused by an action of the Project occurring in combination with the effects of other past, present or reasonably foreseeable future projects.

The remainder of this Section will describe the issues scoping process, specific effects assessment criteria, how effect significance was determined, how the cumulative effects assessment was done and the proposed approach to follow-up and monitoring.

6.1.4.2 Issues and Interests Identification and Scoping

Issues and interests were identified by First Nations and Métis communities, government agencies, potentially affected municipalities, non-government organizations, and the general public. Key areas that influenced issues identification include:

- community engagement by Shore for the Project, including issues scoping workshops;
- engagement by Shore with regulatory agencies;
- existing regional scientific literature and publicly available statistical data;
- professional judgment of the assessment team based on experience in the region and/or with similar projects;
- lessons learned from similar projects;
- evaluation of the interaction between Project components and the Project setting (biophysical, technical, social, economic, heritage, health).

Potential interactions between the Project characteristics and the Project setting are analysed as a tool to narrow the scope of the EIA. This approach was used to identify valid connections among potential ecosystem and socio-economic effects. An impact in the context of this EIA is any action as a result of project development that causes a positive or negative change to a receptor (e.g., a change in habitat due to construction of the mine infrastructure). An effect is a positive or negative response of the receptor to the impact. In human environment disciplines, it is conceivable that a mere perception of positive or negative project-related change (which may be unrelated to the actual potential for such

change) might be sufficient to lead to an identified effect. Only impacts that can potentially cause effects are of concern.

6.1.4.3 Issues Scoping

The purpose of scoping is to focus the EIA on important issues which are determined by the physical project, the natural environmental setting, and the social and cultural context of the Project as described above. The scoping process was carried out in the following steps:

- evaluation of Project components by Project phase;
- identification of key issues which are associated with each project component determined through professional judgement, and the results of engagement with government agencies, First Nations and Métis, the public and other tenure holders;
- determination of the VC(s) that interact with each Project component;
- provision of the basis (rationale) for VC(s) selection.

To confirm the issues carried forward in the EIA, those aspects of the Project setting (environment, social, economic, heritage and health) that will be or could be affected by mine development, and therefore warrant assessment were itemized and described. These were reviewed and supplemented using the PSGs and the results of Shore's Aboriginal and stakeholder engagement activities.

The specific issues and interests relevant to each discipline will be outlined at the beginning of each section of the assessment. Specific issues not considered and the rationale will also be addressed.

6.1.5 Effects Assessment

The effects assessment process followed for this EIA is described in this section.

6.1.5.1 Identification of Project Components and Activities to be Assessed

Table 6.1-1 presents a summary by phase of the main Project components and activities which were considered in the EIA.

Table 6.1-1: List of Project Components and Activities

Phase	Component/Activity
Construction	Land clearing, excavating & grading; soil and till salvage, handling and storage
	Surface infrastructure installations
	Access development and transportation/traffic
	Machinery and construction equipment
	Water source and waste water management
	Fuels and hazardous materials storage and management
	Pit excavation and development
	Overburden and rock storage and processed kimberlite piles
	Processing plant and facilities
	Solid waste management
	Water management reservoir
	Emissions and dust generation (equipment operation and movement)
	Capital expenditures
	Employment and training
	Workforce accommodation and transportation
	Procurement
Operations	Transportation and access
	Mining equipment
	Fuels and hazardous materials storage and management
	Surface water management
	Water supply and distribution
	Mine dewatering
	Erosion control and soils/till stockpile management
	Overburden and rock storage management
	Fine and Coarse PK management
	Waste water management and drainage control
	Processing Plant
	Emissions dust generation and use of explosives
	Solid waste management
	Operations expenditures
	Employment and training
	Workforce accommodation and transportation
	Procurement

Phase	Component/Activity
Closure & Decommissioning	Pit closure and reclamation
	Mine roads decommissioning and reclamation
	Equipment and machinery removal, recycling, disposal
	Hazardous substances removal
	Processed Kimberlite facility reclamation
	Surface and groundwater management
	Site reclamation and re-vegetation
	Stream drainage restoration
	Monitoring and maintenance of water discharge flow and quality
	Monitoring and maintenance of soil/terrain stability and vegetation
	Monitoring and maintenance of overburden and rock storage piles
	Monitoring and maintenance of Fine and Coarse PK piles
	Closure expenditures
	Employment and workforce adjustment
	Procurement

These components and activities will be reviewed and discussed for their specific relevance to each VC in the appropriate sections of the assessment.

The rationale for including or excluding other projects or human activities is described in section 9.0 - Cumulative Effects Assessment.

6.1.5.2 Selection of Valued Components

Valued components are key descriptors of issues surrounding development that are selected as the focus of an EIA. VCs describe each important part of the Project setting (i.e., environmental, social, economic, heritage, and health).

VCs represent species or processes of the biophysical environment representative of healthy ecosystem functioning or of key importance to people, such as water quality. They can also represent the characteristics, sensitivities, or management requirements of a broad range of species, communities, landscapes and the associated physical environment or processes.

VCs include valued social components which represent aspects of the human condition or elements of community life which are important to the potentially affected people. In many

instances, these can be easily related to the concepts of community wellness and sustainable development.

The following questions, among others, were considered in selecting VCs:

- Have they been identified as important issues or interests by Aboriginal communities, government agencies or the general public?
- Are they identified in the scope (i.e., the PSGs or scoping document) of the EIA?
- Do they represent an environmental management concern (ecological, social or economic) based on professional judgement?
- Are they vulnerable to the potential impacts of the Project and other activities in the region based on professional judgement?
- Have they been identified as important issues or interests for other mining or regional environmental assessments?
- Is there sufficient information available to adequately assess effects on the proposed VC?

The results of community and regulatory engagement by Shore were used to assist selection of VCs as was professional judgment and prior experience with approval and permitting of Project planning activities.

The following is a list of the environmental disciplines and subjects under which the selected VCs are categorized in the EIS:

- Traditional Knowledge and Traditional Land Use;
- Terrain, Soils and Geology;
- Climate and Air Quality;
- Noise;
- Water Resources:
  - Hydrology;
  - Hydrogeology and Groundwater Quality; and
  - Surface Water and Sediment Quality;
- Fish and Aquatic Resources;
- Vegetation and Plant Communities;
- Rare Plants;
- Wildlife;
- Biodiversity;

- Archaeological and Cultural Heritage Resources;
- Provincial Economic Effects;
- Government Revenues;
- Employment and Income;
- Housing;
- Services;
- Infrastructure;
- Family and Community Well-Being;
- Transportation;
- Non-Traditional Land Use;
- Visual and Aesthetic Resources;
- Environmental Health;
- Human Health;
- Navigable Waters; and
- Effects of the Environment on the Project.

The VCs and related key indicators or measurable parameters selected for assessment and the rationale for their selection are described in each discipline or subject matter section.

6.1.5.3 Temporal and Spatial Boundaries

Temporal boundaries are time limits for the environmental assessment. Temporal boundary selection is based on a reasonable expectation of the time over which the Project is likely to have effects on the biophysical and human environment.

Temporal boundaries are based on project-related activities. This includes exploration through construction and operations to closure and decommissioning. Baseline biophysical and human environment data from 2000 through 2010 were used to characterize the Project setting. The open pit, plant and infrastructure will be developed over a four year time line (currently assumed for costing and economic effects assessment purposes to be from 2012 to 2016), and is scheduled to produce ore at a rate of 14.3 Mtpa for 20 years commencing in Year 4. The life of the plant and associated infrastructure may also be extended beyond 20 years in order to either process other inferred and probable reserves in the Star and Orion South Kimberlites and/or mine other kimberlites in the area.

The proposed schedule applies to the Project:

- Construction and Commissioning – Year 1 to Year 4;

- Operation – Year 4 through Year 24; and
- Closure and Decommissioning – Year 24 through Year 27.

Spatial boundaries are limits to the geographic areas evaluated based on reasonable expectation and professional judgment as to the potential geographic extent of effects. For the cumulative effects assessment, boundaries are selected based on the zone of influence for project-specific effects that overlaps those of another project or human activity. For the biophysical assessment, the following three general study area boundaries were established:

- a local study area (LSA), which includes the Project footprint plus a buffer zone encompassing direct Project-specific effects;
- a regional study area (RSA), established to include the Project and surrounding region encompassing the maximum likely zone of influence for Project-specific effects that can be reasonably predicted or measured; and
- a cumulative effects study area (CESA), established as the area within which spatial and temporal overlaps with past, present and reasonably foreseeable future human activities are likely to result in residual effects or impacts on each VC and can be reasonably assessed. Only those human activities that have residual effects which have a temporal and spatial overlap with the Project's residual effects are considered.

For the human environment, effects will be assessed for a socio-economic regional study area (SRSA) which encompasses a broader region. The SRSA is defined in Section 5.4.1 and includes permanent communities which are expected to be directly affected by the Project. The exceptions are provincial level economic effects and the study area used to assess land use effects which will be aligned with the study area boundaries used for the terrestrial-based bio-physical effects.

Spatial boundaries for the Project were defined by using the following criteria:

- the physical extent of the Project, including offsite activities;
- the extent of potential effects arising from the Project;
- the extent of the aquatic and terrestrial ecosystems, economic systems, communities and First Nations and Métis interests potentially affected by the Project; and
- the size, nature and location of past, present and reasonably foreseeable projects and activities which could interact with the Project's effects.

The Regional and Local Study Areas that are generally used for the bio-physical assessment are shown in Figures 3.3-1 and 3.3-2. The Regional Study Area for the Human Environment is shown in Figure 3.3-3. The precise boundaries of these areas may vary

slightly depending on the discipline or subject matter under discussion and will be described in each section of the assessment. For example, Figure 3.3-2 shows that the RSA for the terrestrial disciplines is focussed on the FalC forest area, while the Groundwater RSA is larger to consider the potential effects on groundwater levels in the area.

6.1.5.4 Cases to Assess

The EIA compares three scenarios to determine Project specific and cumulative effects:

- the 'Base Case' which considers existing conditions in the biophysical and human environment study areas in 2006-2010 (unless otherwise indicated in baseline studies for each discipline);
- the Base Case with the addition of the Project (the 'Project Case'); and
- the Project Case with the addition of all reasonably foreseeable projects acting in combination with the Project (the 'Cumulative Case').

A comparison of the first two scenarios establishes Project-specific effects. Comparison of the first and third cases provides the basis for analyzing cumulative effects.

The effects assessment proceeds as follows:

- all potential impacts are screened to determine whether there is a valid interaction between the Project components and VCs;
- potential impacts that could reasonably be expected to cause effects are assessed using measures established by CEAA (1997) and according to accepted best practice;
- mitigation measures are developed to address potential effects;
- residual effects after mitigation are then assigned a significance rating based on established metrics; and
- Cumulative Environmental Effects (CEE) are assessed from the sum of residual effects of the Project on a VC and from the subset of residual effects that could reasonably be expected to overlap spatially and/or temporally with other activities.

6.1.5.5 Effect Attributes

The CEAA environmental assessment process requires the residual effects (those remaining after mitigation that have a valid link with an environmental, social or economic effect) to be subjected to descriptive measures of effect attributes, or rating criteria, as follows:

Magnitude: describes the nature and extent of the environmental effect. The magnitude of an effect is quantified in terms of the amount of change in a parameter or variable from an appropriate threshold value, which may be represented by a guideline or baseline condition.

Geographic extent: is similar to the spatial boundaries of the assessment (e.g., LSA or RSA).

Duration: is defined as a measure of the length of time that the potential effects could last. It is closely related to the Project phase or activity that could cause the effect.

Frequency: associated with duration and defines the number of occurrences that can be expected during each phase of the Project.

Reversibility: the ability of the physical parameter, biological or social community to return to conditions that existed before the environmental effect.

Ecological Context: a measure of the relative importance of the affected ecological component to the ecosystem, or the sensitivity of the ecosystem to disturbance. It indicates the degree to which an effect on the component would affect the ecosystem. It applies to the biophysical environment only.

Level of Confidence/Certainty: This is evaluated based on a review of project specific data, relevant literature, and professional opinion. To arrive at a high level of confidence for an effect rating, it is desirable to apply rigorous scientific and/or statistical methods (quantitative approach). Where such methods are not feasible, professional judgment is used (qualitative approach). The level of confidence or certainty of an effect assessment rating is an additional step that helps to justify or substantiate assessment findings.

Probability of Effects: is the likelihood that the effect will occur. Three categories are considered:

- **low**: the effect on the VC is well understood and there is a low probability of effect on the VC as predicted;
- **high**: the effect on the VC is well understood and there is a high probability of effect on the VC as predicted; and
- **unknown**: the effect on the VC is not well understood and based on potential risk to the VC, effects will be monitored and adaptive management measures taken as appropriate.

For this Project, all potential residual effects have been subjected to these measures. Other metrics considered in the assessment include direction and mitigation measures. Effect attributes are defined in Table 6.1-2 and 6.1-3.

Table 6.1-2: Impact Assessment Attributes and Definitions

Attribute	Ranking	Ranking Definition
Direction	Adverse	Effect is worsening or is not desirable
	Neutral	Effect is not changing compared with baseline conditions and trends
	Positive	Effect is improving or is desirable
Magnitude[1]	Negligible	Does not have a measurable effect on the environmental component
	Low	<1% change in environmental component.
	Moderate	1 – 10% change in environmental component.
	High	>10% change in environmental component.
Duration	Short-term	Effect is expected to last during the construction period(s).
	Long-term	Effect extends throughout operations phase or longer.
Geographic Extent	Local	Effect is limited to the local study area.
	Regional	Effect extends throughout the regional study area.
	Beyond regional	Effect extends beyond the regional study area.
Frequency	Rare	Effect occurs infrequently and is difficult to predict.
	Intermittent	Effect occurs infrequently but when it will occur can be predicted.
	Continuous	Effect occurs continuously.

While the same terminology for effect attributes is used throughout the EIS, the nature of socio-economic VCs requires that the assessment use ratings criteria that differ slightly in their definitions. For example, the ratings for magnitude that are used to assess the effects of the Project on socio-economic components are presented in Table 6.1-3.

[1] Quantitative ratings of magnitude are not always applicable to socio-economic VCs; these are provided in Table 6.1-3

Table 6.1-3: Definition of Magnitude for Socio-Economic Effects

Magnitude	Negligible	Does not have a measurable effect on the socio-economic component
	Low	Low level effects; individuals are affected. Effect occurs but may or may not be detectable, and is within the normal range of variability
	Moderate	Effect is clearly distinguishable but is unlikely to pose a serious risk to the VC or represent a management challenge
	High	Effect is likely to pose a serious risk to the VC and represents a management challenge

Assessing the potential impacts of the Project involves evaluating potential changes in a VC. For each, one or more measurable parameters are selected to evaluate the potential effects. Quantifiable parameters are indicators used to determine the level or amount of change to a VC (e.g., predicted sediment in water discharged from the mine and the potential infusion of income from employment into the economy). Qualitative parameters are used as subjective assessments of the state of a VC as a result of Project effects (e.g., perception of aesthetic impacts on viewscapes, and the quality of a wilderness experience).

6.1.5.6 Determining the Significance of Environmental Effects

The framework for determination of significance consists of three general steps:

- Step 1: deciding whether the environmental effects are adverse;
- Step 2: deciding whether the adverse environmental effects are significant; and
- Step 3: deciding whether the significant adverse environmental effects are likely.

An assessment of the significance of Project-specific or cumulative effects requires the identification of ecological thresholds, management objectives or community/societal standards against which the level of an effect can be evaluated. Whenever possible, quantitative thresholds have been used to evaluate significance. Established standards, such as Saskatchewan water quality guidelines, are used where they exist. Other metrics include government regulations, scientific literature, land use plans, and resource management agency goals.

Thresholds or regional objectives are not available for some VCs. Where established thresholds are not available, professional judgement is used to provide a qualitative classification based on a weight of evidence approach. The approach is based on the Magnitude, Spatial Extent, and Duration of expected change in the VC as a result of the project. Two categories are established:

- not significant; and
- significant.

In general, to be considered to have potential for a significant effect, the residual effect on the VC being assessed must meet one of the following criteria:

- have a moderate magnitude at a regional spatial extent and have a long term or permanent duration;
- have a high magnitude at a local spatial extent and be long term or permanent in duration;
- have a high magnitude at a sub-regional spatial extent and be medium term, long term or permanent in duration; or
- have a high magnitude of any duration at a regional extent.

The results of evaluating an effect are discussed and then summarized in tabular form in each discipline or subject matter area. A separate rating is provided for each VC. Since significance determination does not apply to effects that are positive in direction, a different approach is required to assess the beneficial effects that the Project has on some socio-economic VCs. This approach results in a determination of the overall importance of the effect on the VC using above criteria.

6.1.6 Cumulative Environmental Effects Assessment

Various human activities, which individually are considered to cause insignificant effects on a valued component, may combine within a period of space and time to cause changes on that valued component. The CEAA defines cumulative effects as:

> *"changes to the environment that are caused by an action in combination with other past, present and future human actions"* (CEAA 1999).

Under this definition "actions" include human projects and activities. Projects are typically some form of commercial or industrial development that is planned, constructed, and operated – a mine development or resource access road, for example. Activities may either be part of a project or may arise over time because of ongoing human presence in an area. (CEAA 1999).

The cumulative effects assessment (CEA) for the Project was conducted to assess any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out taking into consideration the following factors/questions:

- whether there is likely and measurable residual effect on a VC caused by the Project;

- whether the Project-specific residual effect is likely to act in combination with the effects of other past, present or future projects or human actions to create a temporal or spatial overlap, and thus, a cumulative effect; and
- whether the Project's contribution to that cumulative effect is significant.

Central to carrying out CEA is the determination of what past, present and reasonably foreseeable future projects and other human actions may result in residual effects that overlap spatially and/or temporally with those of the Project. The Project Inclusion List guides the specific CEA considerations and the quantitative assessment of:

- Forestry within the FALC, and
- Shore's on-going exploration activities.

In addition, there will be a qualitative assessment of further mining of other kimberlites, which are reasonably foreseeable induced actions related to the Project, and of a possible dam by the James Smith Cree Nation as a hypothetical future action. Although the possible hydroelectric dam has been mentioned in the local media, no project proposal has been filed. As a result, while there will not be sufficient information to undertake a quantitative assessment, a discussion of this potential project will be included in the CEA. The CEA considered information available prior to the cut-off date for this EIS of October 15th, 2010.

It is also possible that there might be future mining of other kimberlite bodies in the immediate vicinity of the Project. As a result, the mining of Orion Center, Orion North and Taurus also will be included as a hypothetical project for qualitative discussion. For this hypothetical project, it is likely that these deposits would be mined by open pit methods and that Shore would keep only two open pits operational at any time (i.e. one pit for active mining and the other for backfilling).

Prior to conducting the CEA, effects on VCs are reviewed individually by each discipline and then linked by the aggregated (i.e., cumulative) effects of the various actions on each VC. Appropriate parameters are selected for each VC that adequately characterize their present condition. The probabilities of occurrence, probable magnitudes and probable durations of identified effects, in combination with existing and approved human actions, are described for each VC. The following tasks are typical of the effects analysis (Hegmann and Yarranton, 1994):

- complete the collection of regional baseline data;
- assess effects of proposed action on selected VCs;
- identify mitigation measures which could be implemented by Shore, Shore acting in cooperation with other proponents, governments, Aboriginal groups or public stakeholders or by the latter parties independently; and

- assess potential residual effects of all selected projects/actions on selected VCs.

The residual cumulative effects identified were then rated using the same attribute descriptions and significance criteria as for Project-specific effects where possible.

In order to prepare the CEA, the following four steps were followed:

- **Step 1:** A review all the residual effects identified for VCs and development of a rationale for including (or not including) each VC in the CEA. Detailed assumptions, data, and calculations that were used to understand the complex relationships and interactions reviewed for the CEA are provided.
- **Step 2:** A detailed CEA for each discipline or subject matter area was prepared taking into consideration potential linkages and/or overlaps with residual effects carried forward by other disciplines.
- **Step 3:** Potential linkages/overlaps between the VCs under analysis and other human activities and projects occurring within the same timeframe and in the same area were reviewed and described.
- **Step 4:** All the available CEA information provided for all disciplines was compiled into an integrated CEA. The integrated CEA Section summarizes all of the research and discusses the significance of any of the residual effects carried forward into the CEA for each discipline.

6.1.7 Follow-up and Monitoring

Follow-up and monitoring programs may be required at various Project phases to verify the results of the EIA and/or determine if proposed mitigation is being effective. There are two types of monitoring:

- compliance monitoring to determine whether all regulatory standards and terms and conditions, and proponent's policies are being implemented and commitments met; and
- effects monitoring to confirm the accuracy of the effect predictions in the EIA and assess the effectiveness of mitigation and enhancement measures.

Both types of follow-up and monitoring will help the regulators assess compliance and Shore to carry out the Project. Effects monitoring will be an important part of the Construction and Operations Plans for the Project to facilitate adapting management measures and processes to produce better environmental and socio-economic outcomes.

6.1.8 Assessment of Impacts of Accidents and Malfunctions

Identified potential impacts from possible accidents and malfunctions were assessed for each reasonable scenario that could occur during each Project phase. Identified potential

impacts from possible accidents and malfunctions of materials or products, mechanisms, and the consequent factors, mitigation measures, and contingency measures will be discussed and described in the Environmental Risk Management Section.

6.1.9 Effects of the Environment on the Project

The EIA also considers the effects that the environment may have on the Project including:

- forest fires;
- geo-hazards;
- seismicity; and
- climate change.

These factors are addressed in both Section 2.0 - Project Description as design considerations and in discipline and subject matter assessments, particularly in development of mitigation measures, where appropriate.