1.0 INTRODUCTION

Pacific Trail Pipelines Limited Partnership (PTP), on behalf of Pacific Northern Gas Ltd. (PNG) and Galveston LNG Inc. (whose project is referred to as the KLNG Project) is proposing to construct, own and operate the facilities required for the Kitimat to Summit Lake Pipeline Looping Project (KSL Project, KSL or the Project). This document is an Application by PTP to the British Columbia Environmental Assessment Office (BCEAO or EAO) for an Environmental Approval Certificate pursuant to the *B.C. Environmental Assessment Act* for the KSL Project.

The KSL Project consists of a looping of the existing PNG pipeline between Kitimat on the west coast of British Columbia and Summit Lake located north of Prince George in British Columbia's central interior. The approximately 462 km long 914 mm (36 inch) diameter pipeline will transport natural gas from the KLNG regasification plant to be built immediately south of Kitimat, British Columbia to the Spectra Energy Transmission (SET) (formerly Duke Energy) pipeline system at Summit Lake. The KSL pipeline will reduce the current reliance on the Spectra Energy pipeline system and assure a secure natural gas supply to PNG customers. The KSL Project will be bi-directional and thereby enable gas to flow from west to east for delivery to the Spectra Energy natural gas pipeline system as well as east to west. Throughout this document, reference will be made to PNG in the context of studies undertaken for PNG on behalf of the KSL Project. In this context, PNG has been working as an agent for PTP and it should be considered that all work has been performed for PTP.

1.1 Proponent Identification

The applicant for the KSL Project is Pacific Trail Pipelines Limited Partnership. With respect to the project, communications should be sent to:

Pacific Trail Pipelines Limited Partnership #950 – 1185 West Georgia Street Vancouver, B.C. V6E 4E6

Attention: Greg Weeres, P.Eng.

Vice President

Telephone: 604-691-5677
Fax: 604-697-6210
E-mail: gweeres@png.ca

1.2 PURPOSE AND ORGANIZATION

This Application for an Environmental Assessment Certificate for the KSL Project has been prepared pursuant to Section 16(1) of the *B.C. Environmental Assessment Act*. The Application includes a description of the project, an outline of the Public and First Nations Consultation Program and an assessment of the potential environmental, social, economic, and land use effects that may result from the construction, operation and abandonment of the Project. In addition, plans for mitigation and monitoring are included that are designed to avoid or reduce the significance of the identified impacts.

This Environmental Assessment Certificate (EAC) Application has been designed to fulfill the requirements of both the *B.C. Environmental Assessment Act* as well as the *Canadian Environmental Assessment Act (CEA Act)* under the auspices of the Harmonization Agreement under which these two regulatory frameworks operate.

The EAC Application is presented in the following sections in accordance with the Approved Terms of Reference (ATOR) for the Project:

1.0 Introduction

Provides an overview of the project, the name of the Applicant, the organization of the report and the regulatory framework. A concordance table will be provided, linking report sections to the Terms of Reference.

2.0 <u>Information Distribution and Consultation</u>

Provides a description of the public, First Nations and government consultation program as well as what has been undertaken to-date and what is planned for notification and consultation activities.

3.0 Review of Alternatives to the Project

Provides a description of the Need and Purpose of the project, alternatives to the project, alternative means to carry out the project and a summary of the preferred routing alternative.

4.0 Project Description and Scope of Work

Provides information regarding the background and rationale for the project, its location, project components, and project phases including logging and clearing, construction, operation, monitoring and follow-up and decommissioning and abandonment.

5.0 Scope of Environmental Assessment and Study Areas

Provides a description of the scope of the environmental assessment reported on in subsequent chapters of the EA and the study area boundaries used in the assessment.

KSL Project

6.0 Project Setting

Provides a description of the current environmental and socio-economic conditions of the project area.

7.0 <u>Assessment of Project Impacts, Mitigation Requirements, and Residual Effects</u>

Provides a summary of the potential environmental and socio-economic impacts, mitigation measures, and predicted residual effects, including an assessment of their significance. This report section also contains the Cumulative Effects Assessment.

8.0 <u>Cumulative Effects Assessment</u>

Provides an evaluation of potential cumulative environmental effects associated with the KSL Project in relation to the combined effects of unrelated projects or activities that could result in aggregate effects that may be different in nature or extent from the effects of the individual activities.

9.0 Monitoring and Follow-up

Provides an outline of the environmental inspection, education, and monitoring policies to be applied by PTP during construction and operation as well as PTP's follow-up program.

10.0 List of Commitments

11.0 Conclusions

Provides a conclusion of the environmental assessment for the project.

12.0 References and Supporting Documentation

This EA Report was prepared by Westland Resource Group Inc. on behalf of PTP with the assistance of the following companies and individuals:

Project Description and Environmental Policy
Aboriginal Engagement and Public Consultation
Geophysical Environment
Soil Survey and Assessment
Air Quality
Paleontological Assessment
Fish and Fish Habitat
• Forestry
Archaeology and Heritage Assessment
Socio-economic
Contaminated Sites Assessment
Pipeline Engineering and Design

KSL Project

Pipeline Technologies Inc.	Compressor Station Engineering and Design
Chinook Engineering	Meter and Control Station Engineering and Design
Kennedy & Bouchard Research Consultants	First Nations Research
Salmo Consulting Inc.	Cumulative Effects Assessment
TRD Advisory Group Ltd.	Coordination of Traditional Use Studies
Mesh Environmental Ltd.	Metal Leaching and Acid Rock Drainage
Matrix Projects Ltd.	Acoustic Environment
Timberline Forest Inventory Consultants	Terrestrial Ecosystem Mapping
Solander Ecological Research	Fisheries and Fish Habitat Effects Assessment

Technical reports supporting this environmental assessment and conclusions are listed in the Table of Contents and are available upon request to PTP. The technical reports provide discipline-specific data as well as the methodology and results of field surveys and research undertaken in support of this report. The authors of the technical reports also participated in the identification and assessment of potential impacts and mitigation measures within their respective disciplines.

Table 1.5-1 provides a Concordance Table with the Approved Terms of Reference and the contents of this report.

1.3 PROJECT OVERVIEW

The purpose of the KSL Project is to deliver natural gas that is received at the Kitimat Liquefied Natural Gas (KLNG) facility, located immediately southwest of the City of Kitimat, to the Spectra Energy Inc. (SET) pipeline facilities located east of the Village of Summit Lake. To accommodate the construction and operation of the KSL Project, PNG and KLNG have jointly formed a new company, Pacific Trail Pipelines Limited Partnership that will own and operate the pipeline loop as well as the existing PNG transmission system.

The construction of the KSL Project will enable PNG to increase the capacity of the existing natural gas transmission pipeline to meet shipper demand as well as to reverse the direction of flow so that the existing pipeline as well as the new pipeline loop can flow natural gas in both a westerly as well as an easterly direction.

The project involves the construction of approximately 462 km of 914 mm (36-inch) diameter pipeline (see Figure 1.4-1) and includes the construction of Permanent Facilities including a new Compressor Station near KP 246 on the KSL Pipeline and the installation of associated aboveground facilities including block valves at specific locations within the designated right-of-way. Construction of the project will require Temporary Facilities including construction camps and stockpile sites. No ground disturbing work is required in regard to the existing PNG pipeline. The construction of a 10 inch diameter pipeline lateral approximately 2 km in length (referred to as the Methanex Lateral) and a meter and control station including odorant injection will also be required in order to connect the new KSL pipeline to the existing PNG pipeline. The meter and control station and odorant injection system will use the same site on Methanex property that was previously used for those purposes. Because there will be no substantive changes at this previously disturbed site, this station has not been assessed in the environmental assessment.

PTP will be regulated under the *B.C. Utilities Commission Act* and the KSL Project is subject to review under the *B.C. Environmental Assessment Act* (*BCEA Act*) as well as the *Canadian Environmental Assessment Act* (*CEA Act*). This review and approval process will be conducted under the auspices of the Harmonization Agreement administered jointly by the *B.C. Environmental Assessment Office* (BCEAO) and the Canadian Environmental Assessment Agency (CEA Agency). Application will be made to the BCEAO for an Environmental Assessment Certificate (EAC) for the purposes of constructing and operating the KSL Project.

1.4 REGULATORY FRAMEWORK

The proposed pipeline loop will cross provincial and private lands in British Columbia. The new Compressor Station and the Methanex Lateral will be constructed on provincial land.

In addition to requiring an Environmental Approval Certificate pursuant to the *B.C. Environmental* Assessment Act and a Certificate of Public Convenience and Necessity pursuant to the *B.C. Utilities* Commission Act, the project also requires approvals and authorizations which trigger the Canadian Environmental Assessment Act, including:

- authorization pursuant to Section 35(2) of the Fisheries Act; and
- approval pursuant to subsection 5(1) of the Navigable Waters Protection Act.

Other Permits, Licences, and Approvals required will include, but may not be limited to, the following:

- approval under the Water Act for water withdrawal and for works in and about a stream;
- approval for timber harvesting and disposal under the Forests Act;
- approval under the Heritage Conservation Act for various activities;
- compliance with the Wildlife Act;
- compliance with the Migratory Birds Convention Act;
- compliance with the Environmental Management Act; and
- Statutory Right-of-Way Agreements under the Land Act.

PTP will be regulated under the requirements of the *Oil and Gas Commission Act*. Legislation and Regulations that are enabled by the *Oil and Gas Commission Act* and for which Permits and Approvals are required will be sought by PTP from the Oil and Gas Commission (OGC).

KSL Project

Figure 1.4-1. Study Area Fort St. James NISAGA'A **Forest District** MEMORIAL LAVA BED Skeena Stikine **Forest District** SMITHERS & Kalum Forest District TELKWA Prince George Forest District TERRACE FORT ST. JAMES KP 50 HOUSTON KP 450 KP 462.16 BURNS KP 25 KP 100 KP 125 KP 400 KP 175 KP 150 **KP 200 KP 250** KP 350 KP 225 KP 325 KP 275 KP 300 KP 375 PRINCE GEORGE KP 0 KITIMAT VANDERHOOF Morice Lake Nadina Location of the KSL Project Forest Northern Vanderhoof PACIFIC TRAIL Interior District **Forest** Forest Region District Proposed KSL Pipeline Route City/Town Municipal Boundary Village, Hamlet & Locality Ministry of Forests Districts Road Ministry of Forests Regions — Railway Ministry of Environment Regions Watercourse Waterbody Parks and Protected Areas Skeena Base mapping: Government of British Columbia; Geopolitical Boundaries: Government of British Columbia 2007; Parks and Protected Areas: Government of British Columbia; Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product listly used to generate this product or in the product itself, users of these data are advised that errors in the data may be present. Quesnel Forest SCALE 1: 1,700,000 District QUESNEI North Island -WESTLAND 55 50
Kilometres
(All Locations Approximate) Cariboo Central Coast Southern Interior **Forest District** Forest Region June 2007 Projection: BC Albers PTP_pol_bnd_270607.mxd

1.5 TABLE OF CONCORDANCE

Table 1.5-1
Table of Concordance for the EAC Application with Approved Terms of Reference

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
Preface	Reference to purpose and intent of conducting an EA for the Project, as related to sustainability commitments.	Preface
	Indication that the Project is subject to review under the BCEAA pursuant to an Order issued under Section 10 of BCEAA and consistent with an Order issued under Section 11 of the BCEAA.	Preface
	Indication that the Project is subject to review under the CEA Act – note the federal agencies involved in the review.	Preface
	Information provided will enable federal agencies to make a determination under the CEA Act.	Preface
	Statement that the Application has been developed pursuant to the ATOR approved by EAO, and any other relevant instructions provided in the Section 11 Order.	Preface
	General indication of the agencies, First Nations, and other parties who have been involved in the development of the Application.	Preface
	Provision of a Table of Concordance which cross-references the information presented in the Application with the information requirements identified in the ATOR.	1.5
Executive Summary	A concise description of all key facets of the Project suitable for use as a stand-alone document.	Executive Summary
	A general outline of key impact issues and proposed mitigation strategies and measures; including biophysical and socio-economic effects as well as cumulative effects.	Executive Summary, 7.2
	A succinct description of information distribution activities, including government agency, First Nations, and public consultation measures undertaken.	Executive Summary, 2
	A summary of issues raised, and solutions suggested, during these consultations.	Executive Summary, 2
	Proponent's conclusions.	Executive Summary, 11

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
List of Abbreviations	N/A	List of Abbreviations
Glossary of Terms	N/A	Glossary of Terms
1.0	Introduction	1.0
1.1	Proponent Identification	1.1
	Proponent information (i.e. name, address, phone, fax, email). Include name of company representative managing the Project.	1.1
1.2	Purpose and Organization	1.2
	Introduction to Application and its structure.	1.2
	Summary of Project planning and review history to date.	Executive Summary
	Summary of any legal orders and agreements applying to the review.	1.3, 1.4
1.3	Project Overview	1.3
	A brief description of the Project, its purpose, rationale and key components, including location, size and main features.	1.3
	Clear identification and listing of project elements included in the Project Scope.	1.3
	Whether or not the Project requires use of Crown land or is located on Private land.	1.4
	Maps showing both a regional context and site-specific setting.	1.4
	Estimation of the total labour force required (direct jobs only) during construction and operation.	Executive Summary, 4.4
	Estimated capital cost of the Project.	Executive Summary, 4.4
	Project benefits.	Executive Summary
1.4	Regulatory Framework	1.4
	A summary of federal and provincial legislation, policies and regulations which form the underlying regulatory framework for the Project, and any applicable local government Official Community Plan and zoning requirements.	1.4, Appendix A, Appendix B

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Outline of future licenses/permits/authorizations needed for Project construction and operation.	1.4
	Advise if a request for concurrent permitting is requested under the BCEAA.	1.4
1.5	Table of Concordance	1.5
	A concordance table will be provided showing where in the Application the specific items and sections listed in the Approved Terms of Reference can be found.	1.5
2.0	Information Distribution and Consultation	2.0
2.1	Overview of Public, First Nations and Government Consultation	2.1
	Brief description of the consultation undertaken with the public, First Nations and government agencies at the pre-application stage.	2.1, 2.2, Appendix D, Volume II: Socio-Economic Technical Report (3.1.2)
	List of significant events and measures, and summary of results, including a discussion of First Nation capacity requests.	2.2, Appendix D
2.2	Pre-Application Consultation	2.2
	Description of efforts undertaken to distribute Project material to the public, to stakeholder groups and to First Nations.	2.2, Appendix D, Volume II: Socio- Economic Technical Report (3.1.2)
	Record and reporting of public, stakeholder groups' and First Nations' responses and issues.	2.2, 2.4
	Documentation of any consultation agreements with First Nations (excluding confidential information).	2.2,2.4
	Detailed record of consultation with federal, provincial, and local government representatives, and the issues raised.	2.2, 2.4
	Documentation of how issues raised that are applicable to the EAC Application have been addressed and the respective views of the Proponent and other parties to the review of those issues. Issues will be tabulated and a reference will be provided that identifies where in the Application the documentation on each issue can be located.	2.2, 2.4

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
2.3	Consultation Planned During Application Review	2.3
	Outline of Proponent's proposed public and First Nations consultation program during the Application review stage, following submission.	2.3
	Documentation of the proposed process for attempting to resolve outstanding issues.	2.3
	Proposed program for consultation with government agencies.	2.3
	Proposed program for consultation with forest licensees and other tenure holders, and documentation of mitigation measures.	2.3
3.0	Review of Alternatives to the Project	3.0
3.1	Need and Purpose of the Project	3.1
	A discussion of the need for the Project and the purpose of the Project.	3.1
3.2	Alternatives to the Project	3.2
	A review of the alternatives to the project and the reasons behind selecting the preferred alternative.	3.2
3.3	Alternative Means of Carrying Out the Project	3.3
	Address routing options that are technically and economically feasible; provide analysis of alternative options including geotechnical data where applicable; discuss the rationale for selecting the preferred route.	3.3
	Discuss rationale for route selection on the basis of accommodating other pipeline projects in the same corridor (specifically the Pembina Condensate Project).	3.3
	Outline the environmental effects of identified alternative means.	3.3
3.4	Summary of Preferred Alternative	3.4
	A concise rationale for the selection of the preferred routing alternative.	3.4
4.0	Project Description and Scope of Project	4.0
4.1	Project Background and Rationale	4.1
	Information on the Project history	4.1
	Rationale for the Project.	4.1
	Outline of the Project objectives.	4.1

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Description of the sustainability principles which have guided Project planning.	4.1
	Information on land tenure crossed by the pipeline.	4.3, Appendix J
4.2	Location of Project	4.2
	 A description of the location of the Project, including location maps at appropriate scales showing the layout of project components and activities, and a reference to mapping containing land tenure information. 	4.2, Appendix J
	The proximity to designated environmentally sensitive areas or cultural sites, such as provincial/regional parks, heritage sites, or other designated sensitive areas will be shown on maps.	Appendix J
4.3	Project Components	4.3
	Description supported by plans and diagrams of the essential components of the Project including the right-of-way, cathodic protection, mainline block valves along the right-of-way, access roads, temporary facilities, Methanex Lateral, measurement and odorant facilities at the Methanex Station, and the Compressor Station.	4.3, Appendix J
	Clear outline of the footprint of the Project and its access roads and temporary facilities.	4.4, Appendix J
	Description of preliminary design and engineering concepts, outlining appropriate design codes and results of any onsite investigations intended to establish construction and design parameters (e.g. hydrology assessments; HDD investigations).	4.3
	Identification and characterization of predicted air emissions and water discharges.	4.3, 4.4, 6.2.4
4.4	Construction Phase Activities	4.4
	Identification of proposed schedules and activities related to Project construction, including but not limited to, access road upgrading, right-of-way clearing and preparation, pipeline installation, and hydrostatic testing of the pipeline.	4.4, Appendix G
	Identification of proposed schedules and activities related to Compressor Station construction.	4.4
	Description of intended approaches for delivery of services for the construction phase and associated logistics, including construction camps, and associated water or power supply and waste management, temporary access, and emergency services.	4.4, Appendix H

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
4.5	Operation Phase Activities	4.5
	Identification of proposed activities associated with operation monitoring and maintenance of the pipeline and Compressor Station including but not limited to vegetation management along the ROW, line patrol and periodic maintenance to the pipeline as required.	4.5
4.6	Restoration Phase Activities	4.6
	Identification of activities associated with the restoration and revegetation of the right-of- way and working space.	4.6, 9.3
4.7	Decommissioning and Abandonment Activities	4.7
	Identification of proposed activities associated with the decommissioning and abandonment of the Project.	4.7
5.0	Scope of Environmental Assessment and Study Area	5.0
5.1	Scope of Environmental Assessment	5.1
	Within the general framework of the scope of assessment, as outlined above, a discussion of the influence of consultations with the public, First Nations and government agencies on the scoping of issues being addressed in the Application.	5.1
5.2	Study Area Boundaries	5.2
	Identification of the spatial boundaries or study area(s) to be employed for impact assessment purposes in the EA Application.	5.2
	Spatial boundaries will be confirmed with provincial and federal agencies, Forest Licensees, and First Nations prior to the submission of the Application.	5.2
	Discussion of the influence of consultations with the public, First Nations and government agencies on study area definition.	5.2
	Description of the temporal boundaries or time frames for assessments within specified study area boundaries, adhering to the general principles outlined in the Preamble above.	5.2

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.0	Project Setting	6.0
6.1	Geophysical Environment	6.1
6.1.1	Physiography and Topography	6.1.1
	Description of regional/area setting.	6.1.1, Volume II: Physiography and Geological Processes
	Description of key terrain features, including mountains, rivers, lakes, etc.	6.1.1, Appendix J, Volume II: Physiography and Geological Processes
6.1.2	Soils	6.1.2
	Provision of general soils information for the Project area.	6.1.2, Appendix J, Volume II: Soil Assessment
	Inclusion of soil classification, topsoil conservation measures, and erosions potential.	6.1.2, Appendix J, Volume II: Soil Assessment
6.1.3	Geology	6.1.3
	Provision of general geotechnical/ stability information for the Project area.	6.1.3, Volume II: Physiography and Geological Processes, Volume II: Paleontological Resources Assessment
	Description of bedrock geology and regional geochemistry.	6.1.3, Volume II: Physiography and Geological Processes, Volume II: Acid Rock Drainage and Metal Leaching Assessment
6.1.4	Hydrogeology and Groundwater	6.1.4
	Description of the general hydrogeology and groundwater flow regimes.	6.1.4, Volume II: Physiography and Geological Processes
6.1.5	Natural Hazards	6.1.5
	Background information on seismology and earthquake potential, slope instability issues, avalanche potential, flood hazard, and any other potential natural hazards.	6.1.5, Volume II: Physiography and Geological Processes

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.2	Atmospheric Environment	6.2
6.2.1	Climate	6.2.1
	Description of prevailing climate conditions and identification of recording stations used for the Project impact assessment.	6.2.1
6.2.2	Winds	6.2.2
	Description of predominant wind conditions including, where data if available, direction, velocity, seasonal variations, and wind roses.	6.2.2
6.2.3	Precipitation	6.2.3
	Provision of data on area precipitation (snow, rain, etc.) including volume and frequency.	6.2.3
	Identification of data sources and location of sampling stations.	6.2.3
6.2.4	Air Quality	6.2.4
	If available, description of existing ambient conditions.	6.2.4, Volume II: Air Quality Assessment
	Provision of basic information about the level of activities associated with air emissions	6.2.4, Volume II: Air Quality
	such as the size and type of equipment used for various project phases; (e.g. clearing, construction, burning, transport trucks).	Assessment
	Determination of compressor emissions; (e.g. NOx, CO, CO², SOx, VOC).	6.2.4, Volume II: Air Quality Assessment
	 Quantitative estimate of the magnitude of resulting ambient concentrations of emissions including consideration of NOx, SOx, PM_{2.5}, TPM, VOC, CO as well as air pollutants on Schedule 1 (Toxic Substances List) of CEPA 1999 (to aid in determination of impact significance). 	6.2.4, Volume II: Air Quality Assessment
6.3	Aquatic Environment	6.3
6.3.1	Fish and Fish Habitat	6.3.1
	Description of ponds/streams/lakes/rivers/wetlands within the Study Area; the description of existing conditions will provide information on any habitat degradation resulting from previous land use activities.	6.3.1, Appendix J, Volume II: Fish and Fish Habitat Investigations

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Description of existing fisheries resources in the Study Area, including First Nations' fisheries values (if provided in existing studies and the Aboriginal Interest and Use Studies to be completed).	6.3.1, 6.7, Volume II: Fish and Fish Habitat Investigations
	Description of study methods, habitat surveys, fish sampling, and results of field work, describing existing fishery resource values.	6.3.1, Volume II: Fish and Fish Habitat Investigations
	Outline of program for further data collection and sampling, if required. Review material to include consideration of benthic invertebrates and periphyton, if information is available.	6.3.1, Volume II: Fish and Fish Habitat Investigations
6.3.2	Surface Hydrology	6.3.2
	Provision of information on surface hydrology, including quantified estimates of flow and any proposed extraction volumes for hydro-static testing purposes. Information on the use of water for hydro-static testing will include generalized information such as: volume, locations of withdrawal, likely timing, discharge locations, rate of discharge, and quality of discharge water.	6.3.2, Appendix G
	Description of the receiving environment.	6.3.2
6.3.3	Water Quality	6.3.3
	Provision of baseline information on water quality, including information on any water quality deterioration resulting from previous land use activities.	6.3.3, Volume II: Fish and Fish Habitat Investigations
	Identification of any sources, types, and concentrations of effluents.	6.3.3
	Discussion of any potential for Metal Leaching or Acid Rock Drainage (ML/ARD).	6.3.3
6.4	Terrestrial Environment: Wildlife and Wildlife Habitat; Vegetation	6.4
6.4.1	Wetlands	6.4.1
	 Locations of wetlands will be identified, classified and their ecological/physical functions described. This investigation will be discussed in concert with other wildlife, wildlife habitat, and aquatic habitat investigations. 	6.4.1, 6.4.2, 6.4.5, Volume II: Fish and Fish Habitat Investigations, Volume II: Vegetation Technical Report (3.3, 4.1, , 4.3 and Appendix A)

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.4.2	Vegetation	6.4.2
	Provision of information on study methodology, results of the vegetation study and any ecological reserves.	6.4.2, 6.8.2, Volume II: Vegetation Technical Report, Volume II: Terrestrial Ecosystem Inventory Compilation and Mapping
6.4.3	Forest Health	6.4.3
	Confirm forested areas with mountain pine beetle infestations along the proposed pipeline alignment.	6.4.3, 6.8
	Discussion of consultation with appropriate agencies to ensure pipeline project activities are compatible with local forest health management objectives.	6.4.3, 6.8
6.4.4	Invasive Plant Species	6.4.4
	Document the location and density of priority invasive plant species.	6.4.4, Volume II: Vegetation Technical Report (4.4)
6.4.5	Wildlife	6.4.5
	Documentation of wildlife inventories, including regionally important mammalian fauna, amphibians, reptiles and birds, and species of interest to First Nations.	6.4.5, 6.7.3, Volume II: Wildlife and Wildlife Habitat Technical Report
	Confirmation of wildlife suitability ratings based on habitat mapping exercise, and discussion of any environmentally-sensitive areas.	6.4.5, Appendix J, Volume II: Wildlife and Wildlife Habitat Technical Report
6.5	Species and Ecosystems at Risk	6.5
6.5.1	Aquatic	6.5.1
	Identify red-, blue- and COSEWIC-listed organisms found in the vicinity of the Project. This information will be used to analyze potential impacts on the species and present mitigation measures, as well as any relevant requirements under the Species at Risk Act (SARA).	6.5.1, 6.3, Volume II: Vegetation Technical Report (3.3, 4.2, Appendix A)

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.5.2	Plants and Plant Communities	6.5.2
	Identify red-, blue- and COSEWIC-listed organisms found in the vicinity of the Project. This information will be used to analyze potential impacts on the species and present mitigation measures, as well as any relevant requirements under the Species at Risk Act (SARA).	6.5.2, 6.4, Appendix J
6.5.3	Wildlife	6.5.3
	Identify red-, blue- and COSEWIC-listed organisms found in the vicinity of the Project. This information will be used to analyze potential impacts on the species and present mitigation measures, as well as any relevant requirements under the Species at Risk Act (SARA).	6.5.3, 6.4, Volume II: Wildlife and Wildlife Habitat Technical Report
6.6	Archaeological and Heritage Resources	6.6
	Provision of a non-confidential summary of the archaeological assessments of the project area.	6.6, Volume II: Archaeological Overview Study
	The assessment will include an Archaeological Overview Assessment (AOA) as well as an Archaeological Impact Assessment (AIA).	6.6, Volume II: Archaeological Overview Study
6.7	First Nations Community and Land Use	6.7
6.7.1	Identification of First Nations: Territories and "Shared or Overlap" Lands	6.7.1
	Series of maps depicting each First Nations' traditional territory as well as a map of Treaty 8 boundaries in relation to the Project Route.	6.7.1
	One overall map showing the territories overlap.	6.7.1
	Discussion of original 'language families' or language groupings in the area of the Project at the time of first contact with Europeans, to address information needs for time of first contact.	6.7.1, Appendix I
6.7.2	Historic Uses of Land, Water, and Resources	6.7.2
	Historical information on cultural origins and organizations for resource use in the traditional territories	6.7.2, Appendix I
	Information gathered from literature review.	6.7.2, Appendix I

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Supplemental information regarding known sites (if deemed not confidential) from the TUS work.	6.7.2
6.7.3	Current Uses of Land, Water, and Resources	6.7.3
	Detailed information on non-commercial use of lands and resources based on TUS work.	6.7.3
	Information on significance of sites and resource uses relative to other parts of the traditional territory, if provided by First Nations.	6.7.3
	Commitment to undertake baseline "toxicological" analyses of plants used by First Nations as so-called "Country Foods" in a manner that will enable a determination of impacts that may have resulted from the construction of the KSL Project.	2.4
6.7.4	First Nations Future Land Use	6.7.4
	Discussion of First Nations future use of land where provided by First Nations.	6.7.4
	Discussion of areas of incompatibility between First Nation Use Plans and the Project plans, if expressed by First Nations.	6.7.4
6.7.5	First Nations Aboriginal Rights and Title and Treaty 8 Rights	6.7.5
	Views expressed by First Nations on Aboriginal Rights and Title.	6.7.5
	Treaty 8 Rights.	6.7.5
6.8	Land and Resource Use	6.8
6.8.1	Land and Resource Plans	6.8.1
	Description of the land use planning context for the Project area, including relevant land	6.8.1,
	use plans and/or designations as they exist or are proposed by government agencies	Volume II: Socio-Economic
	and/or First Nations specifically including land and resource plans prepared by the forest	Technical Report (3.1.5), Volume II:
	industry.	Forestry Technical Report (3.0)
6.8.2	Current Use of Land Resources	6.8.2
	Discussion of current land uses within the Project local study area (e.g. forestry,	6.8.2, Appendix J,
	recreation/tourism, mining, hunting and trapping, etc.)	Volume II: Socio-Economic
		Technical Report (3.1), Volume II: Forestry Technical Report (3.0)

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Documentation of any historic sites and special landscape features.	6.8.2, Appendix J, Volume II: Socio-Economic Technical Report (3.1.6.9)
	Documentation of any ecological reserves.	6.8.2, Appendix J, Volume II: Socio-Economic Technical Report (3.1.8)
	Description of Crown land requirements for the Project, and any private land acquisition needs.	6.8.2, Appendix J, Volume II: Socio-Economic Technical Report (3.1.3, 3.1.4, and 3.1.11)
6.8.3	First Nations Commercial Interests	6.8.3
	Discussion of First Nations Forestry Agreements and other economic initiatives for First Nations separate from more traditional resource uses.	6.8.3, Volume II: Socio-Economic Technical Report (3.1.2.2)
6.8.4	Domestic Water Supply and Quality	6.8.4
	Description of all registered uses of water in the Local Study Area including registered points of diversion and wells.	6.8.4, Appendix J, Volume II: Socio-Economic Technical Report (3.1.9)
	To the extent practicable, identify all users in addition to those that are "registered" that may be affected by the KSL Project.	6.8.4, Volume II: Socio-Economic Technical Report (3.1.9)
	If available, description of baseline water quality conditions.	6.8.4, 6.11.2, Volume II: Socio- Economic Technical Report (3.3.2)
6.8.5	Contaminated Sites	6.8.5
	Description of contaminated sites identified in the BC MOE Site Registry that are in the Local Study Area.	6.8.5, Volume II: Contaminated Sites Inventory

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.9	Community and Regional Infrastructure and Services	6.9
6.9.1	Community, Utilities and Services	6.9.1
	A brief description of existing services, such as healthcare, education, justice, policing and fire protection, and community development agencies and business development organizations.	6.9.1, Volume II: Socio-Economic Technical Report (3.4.1, 3.4.4, and 3.4.5)
	Information on social support services, such as family and children, counselling and emergency services within the Project area.	6.9.1, Volume II: Socio-Economic Technical Report (3.4.1 and 3.4.4)
	The status of existing emergency services will be investigated and a determination will be made of the capacity of response agencies to effectively manage an emergency related to the Project.	6.9.1, Volume II: Socio-Economic Technical Report (3.4.1)
6.9.2	Accommodation	6.9.2
	Description of existing housing and accommodation supply.	6.9.2, Volume II: Socio-Economic Technical Report (3.4.2 and 3.4.3)
6.9.3	Transportation and Transmission	6.9.3
	Description of existing transportation infrastructure and traffic patterns/volumes.	6.9.3, Volume II: Socio-Economic Technical Report (3.4.6)
	Provision of information on transportation, traffic flows and pedestrian use and safety, and other relevant transportation infrastructure and programs in the Project area.	6.9.3, Volume II: Socio-Economic Technical Report (3.4.6)
	Specific reference will be made to railway crossings in terms of their type, location, and ownership.	6.9.3, Appendix J, Volume II: Socio-Economic Technical Report (3.4.6.2 and 3.4.6.3)
6.10	Employment and Economy	6.10
6.10.1	Local and Regional Economy	6.10.1
	Description of the regional and area economy, including profiles and conditions in communities likely to be impacted by the Project.	6.10.1, 6.9, Volume II: Socio-Economic Technical Report (3.5.1 and 3.5.2)

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Description of key economic trends projected in the area without the Project.	6.10.1, Volume II: Socio-Economic Technical Report (3.5.1 and 3.5.2)
	Estimation of spending triggered by the Project, as basis for estimating economic impacts, including potential spin-off economic development.	6.10.1, Volume II: Socio-Economic Technical Report (4.0)
6.10.2	Jobs and Labour Force	6.10.2
	Inclusion of information on the labour market (unemployment, labour supply, skills, training, etc.)	6.10.2, Volume II: Socio-Economic Technical Report (3.5.1 and 3.5.2)
6.11	Human Health and Safety	6.11
	 Description of the general public health setting and characteristics, including air quality, noise, and water quality, the impact of existing public utilities (water/waste/etc.), and the status of health and emergency services. This section of the report will integrate all aspects of the Project that may impact factors related to human health. 	6.11, Volume II: Socio-Economic Technical Report (3.3 and 3.4)
6.11.1	Air Quality	6.11.1
	See above.	6.11.1, Volume II: Socio-Economic Technical Report (3.3.1)
6.11.2	Water Quality	6.11.2
	See above.	6.11.2, Volume II: Socio-Economic Technical Report (3.3.2)
6.11.3	Noise	6.11.3
	See above.	6.11.3, Volume II: Socio-Economic Technical Report (3.3.3), Volume II: Acoustic Environment Assessment
6.11.4	Human Safety	6.11.4
	See above.	6.11.4, Volume II: Socio-Economic Technical Report (3.3.4)

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
6.12	Navigable Waters Considerations	6.12
	Identification of the waterways to be affected by the Project, waterway dimensions at the points of crossing, and identification and relative position of any man-made or natural obstructions that block a waterway.	6.12, 6.3, Volume II: Fish and Fish Habitat Investigations
	Method of pipeline crossing, including secondary methods where appropriate.	6.12, 6.3.1.2
	Provision of photos of any proposed crossing sites.	Volume II: Fish and Fish Habitat Investigations (Appendix B)
	Indication of GPS position of any proposed crossing points.	Volume II: Fish and Fish Habitat Investigations (Appendix B)
	 Provision of heights above the Q100 flood level for structures crossing the waterway, including temporary bridges. 	6.12
	Documentation of any known current or past usage of waterways.	6.12
6.13	Aesthetics and Viewsheds	6.13
	A description of the current aesthetic conditions in the LSA.	6.13, Volume II: Socio-Economic Technical Report (3.1.10)
	Outline of BC MOFR VQOs.	6.13, Volume II: Socio-Economic Technical Report (3.1.10)
	Use digital photos of project area to describe existing conditions.	6.13, Volume II: Socio-Economic Technical Report (3.1.10)
6.14	Permanent Facilities	6.14
	Discussion of land areas required for the proposed Compressor Station at KP 246.5 cathodic protection facilities, mainline block valves, the Methanex Lateral, as well as metering and odorant facilities.	6.14
6.15	Temporary Facilities for Construction	6.15
	Discussion of biophysical and socio-economic characteristics of land areas required on a temporary basis for construction including but not limited to construction camps, access roads, as well as stockpile and equipment storage areas.	6.15

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
7.0	Assessment of Project Impacts, Mitigation Requirements, and Residual Effects	7.0
7.1	Impact Assessment Methodology	7.1
7.2	Effects Assessment - Pipeline and Permanent Facilities	7.2
7.2.1	Geophysical Environment	7.2.1
7.2.2	Atmospheric Environment	7.2.2
7.2.3	Aquatic Environment	7.2.3
7.2.4	Terrestrial Environment: Wildlife and Wildlife Habitat; Vegetation	7.2.4
7.2.5	Species and Ecosystems at Risk	7.2.5
7.2.6	Archaeological and Heritage Resources	7.2.6
7.2.7	First Nations Community and Land Use	7.2.7
7.2.8	Land and Resource Use	7.2.8
7.2.9	Community and Regional Infrastructure and Services	7.2.9
7.2.10	Employment and Economy	7.2.10
7.2.11	Human Health and Safety	7.2.11
7.2.12	Navigable Waters	7.2.12
7.2.13	Aesthetics and Viewsheds	7.2.13
7.3	Effects Assessment – Temporary Facilities	7.3
7.4	Effects Assessment – Accidents and Malfunctions	7.4
7.5	Effects of the Environment on the Project	7.5
7.6	Effects on the Capacity of Renewable Resources	7.6
7.7	Summary of Environmental and Socio-economic Effects Assessment	7.7
8.0	Cumulative Effects Assessment	8.0
8.1	Introduction	8.1
8.2	Methodology	8.2
8.3	Results and Discussion	8.3
8.4	Conclusions	8.4

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
8.5	References	12.0
9.0	Monitoring and Follow-up	9.0
9.1	Environmental Policy	9.1
	Outline of PTP's health, safety, and environmental policy.	9.1
9.2	Environmental Protection Plan Outline	9.2
	Outline of the EPP that will be developed for clearing and construction.	9.2
	This section will include the Environmental Work Sheets that will specify site-specific environmental protection and mitigation measures outlined in the EAC Application.	Appendix J
9.3	Restoration Plan Framework	9.3
	Outline of guiding principles that will be applied for the preparation of the Restoration Plan, including the determination of restoration units.	9.3
9.4	Environmental Inspection During Construction	9.4
	Outline of the structure, skill levels, and reporting framework for environmental inspection during clearing and construction.	9.4
9.5	Post-Construction Monitoring	9.5
	Outline of the Post-Construction Monitoring Program (PCMP) that will include an assessment of restoration, erosion control, and any problem weed areas.	9.5
9.6	Emergency Preparedness and Response	9.6
	Outline of PTP's plans and programs related to emergency planning and response during construction and operation of the KSL Project.	9.6
10.0	List of Commitments	10.0
11.0	Conclusions	11.0
12.0	References and Supporting Documentation	12.0
13.0	Appendices	13.0
	Section 11 Order	Appendix A
	Approved Terms of Reference	Appendix B
	Project Photo Index	Appendix C

Approved Terms of Reference Sections	Elements of Section Requiring Description	Location in the EAC Application
	Consultation Materials	Appendix D
	Watercourse Crossings Effects Assessment	Appendix E
	Conceptual Compensation Plan for Fish Habitat	Appendix F
	Hydrostatic Testing Plan	Appendix G
	General Outline of PTP Purchasing Policy and Employment and Contracting Opportunities for the KSL Project	Appendix H
	A Literature Review of First Nations in the Environs of the KSL Pipeline Looping Project	Appendix I
	Environmental Work Sheets	Appendix J