Appendix 9

Consultation

Alberta Environment and Sustainable Resource Development

Operations
Provincial Programs
111 Twin Atria Building
4999 - 98 Avenue
Edmonton, Alberta T6B 2X3
Canada
Telephone: 780-427-5828
Fax: 780-427-9102
www.environment.alberta.ca

July 18, 2013

Bill Betts
Pengrowth Energy Corporation
2100, 222 Third Avenue S.W.
Calgary, Alberta T2P 0B4

Dear Mr. Betts:

Further to your e-mail of July 12, 2013 I wish to advise you that the proposed Lindbergh SAGD Expansion Project is a mandatory activity pursuant to Schedule 1(j) of the *Environmental Assessment (Mandatory and Exempted Activities) Regulation*. Pengrowth Energy Corporation is required, pursuant to Section 44(1)(a) of the *Environmental Protection and Enhancement Act* (EPEA), to prepare and submit an Environmental Impact Assessment (EIA) report for this project. The EIA report is to be prepared in accordance with the provisions of Division 1 of Part 2 of EPEA.

If you have any questions or require further direction about the Environmental Assessment process, please contact Meghan Jurijew at (780) 643-6853.

At this time I would recommend you contact Shauna Sigurdson (780-495-2236) with the Canadian Environmental Assessment Agency to discuss the potential submission of a federal project description and any federal environmental assessment requirements under the *Canadian Environmental Assessment Act, 2012.*

Pengrowth Energy Corporation should also note that Alberta Environment and Sustainable Resource Development's section (Part III) of the *Government of Alberta 's First Nations Consultation Guidelines on Land Management and Resource Development* may apply to this project and accordingly, Pengrowth Energy Corporation may be required to submit a First Nations Consultation Plan to the department. For more information about the First Nations consultation process, please contact Melody Nice at (780)644-8172.

Sincerely,

Corinne Kristensen
Acting Environmental Assessment Team Leader
Regional Integration
(Designated Director under the Act)

cc: S. Thomas (AER)
P. McDonald (AER)
S. Sigurdson (CEAA)
A. Banerjee (ESRD)

M. Styba (ESRD)
M. Nice (SAAB)

Alberta

Regulatory Consultation,
Stewardship Branch
Alberta Departments of Energy, and
Environment & Sustainable Resource
Development
Deerfoot Square, Calgary AB
Telephone: 403.592.2999

September 5, 2013

Bill Betts
Pengrowth Energy Corporation
2100, 222 Third Avenue S.W.
Calgary, Alberta T2P 0B4

RE: Pengrowth Lindbergh SAGD Expansion Project-; Township 59/58, Range 5/4, W4M

Dear Bill Betts:

This letter provides further direction on First Nation consultation on the proposed Pengrowth Lindbergh SAGD Expansion Project. As part of the initial assessment, Alberta Environment and Sustainable Resource Development is requiring consultation with the following First Nations:

- Kehewin First Nation
- Cold Lake First Nation
- Whitefish (Goodfish) Lake First Nation
- Onion Lake Cree Nation
- Frog Lake First Nation
- Saddle Lake Cree Nation

This list of First Nations is based on Alberta's knowledge of the project's potential adverse impacts to Treaty Rights and traditional uses to these First Nations. However, Alberta Environment and Sustainable Resource Development may require Pengrowth Energy Corporation to undertake consultation with other First Nations should new or additional information become known at any time during the regulatory approval process.

Pengrowth Energy Corporation will be required to submit a First Nations Consultation Plan as outlined in the *First Nations Consultation Guidelines on Land Management and Resource Development* that includes the following:

1. Project proponent contact information.
2. A list of specific First Nations to be consulted.
3. Plain language project specific information. This needs to include:
   - Contact information for the proponent;
   - A non-technical plain language description of the proposed project;
   - A map of sufficient scale;
   - A glossary of terms;
   - Clear identification of potential short-term and long-term adverse impacts, if known; and.
   - The proposed consultation schedule.

4. Delivery methods for providing plain language project specific and direct notices to First Nations. This should identify which methods used, which should include a combination of the following:
   - Advertisements in First Nations' newspapers;
   - Community postings;
   - Face-to-face meetings and/or presentations to elected leaders or their delegated representatives; and
   - Any other means that sufficiently informs members of the First Nation about the proposed project and their involvement in the consultation process.
5. Timelines and schedules for consultation activities, including any significant milestones
6. Any pre-consultation activities that you have already undertaken
7. Procedures for reporting to Alberta Environment and Sustainable Resource Development on the progress and results on consultation.
8. Any available information regarding potential adverse impacts to First Nations Rights and Traditional Uses.

In addition, we would like you to consider how your current proposed consultation process will address the requirements of the Public Lands Act consultation for associated surface dispositions (PLA, MSL, etc.) and consultation for possible approvals under the Environmental Protection and Enhancement Act (EPEA) and Water Act.

I am the Consultation Advisor assigned to the proposed Pengrowth Lindbergh SAGD Expansion Project. I can be reached either by phone at 403.592.2999 or by email at shauna.mcgarvey@gov.ab.ca. Please contact me if you have any question on the process of completing your First Nation Consultation Plan.

Upon completion of your plan, Alberta Environment & Sustainable Resource Development will issue a letter of approval and will provide further direction on consultation requirements.

Sincerely,

Consultation Advisor
Regulatory Consultation, Stewardship Branch

cc: Melody Nice, a/Section Lead, Northern Region, Regulatory Consultation, Stewardship Branch
Corinne Kristensen, Team Lead, Environmental Assessment
Doug Willy, Pengrowth Energy Corporation

Pengrowth Energy Corporation
Lindbergh SAGD Expansion Project
First Nations Consultation Plan

Pengrowth Energy Corporation (Pengrowth) is a publically traded Canadian oil and gas exploration and production company based in Calgary, Alberta. Pengrowth operates numerous oil and gas properties that span the Western Sedimentary Basin in Alberta, British Columbia and Saskatchewan, with production averaging 86,000 barrels of oil equivalent per day (boed).

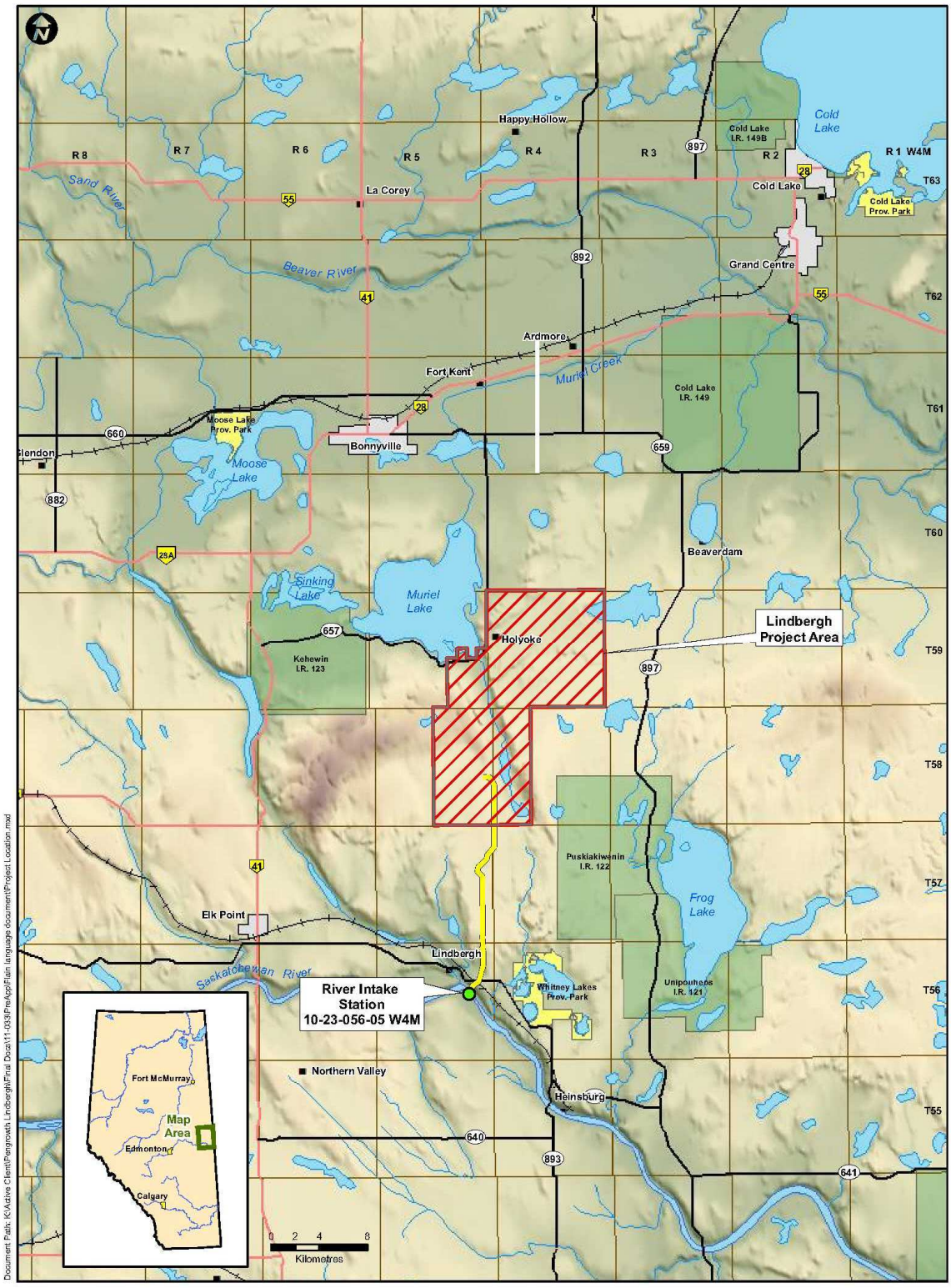
THE PROJECT

The planned facilities Pengrowth is proposing for the Lindbergh SAGD Expansion Project (the Project) include a number of well pads and well pairs, and associated infrastructure including roads, above ground gathering and distribution systems and an expansion of the existing Central Processing Facility (CPF). Existing infrastructure such as the North Saskatchewan River intake, and pipeline will also be utilized for the Project.

Raw water will be treated at the CPF and used to generate steam which is sent to each of the well pads via above ground pipelines for injection into the individual well pairs. Produced fluids (bitumen, water, gas) will be transported from the well pads to the CPF via above ground pipelines. The bitumen, water and gas will be separated at the CPF. The produced gas will be burned in the steam generators, the bitumen will be blended and trucked to a marketing point until a sales pipeline is constructed. The water will be treated and recycled for steam generation.

The Lindbergh SAGD Expansion Project will produce a maximum annualized bitumen rate of 30,000 barrels per day over an expected project life of 25 years. During the life of the Project there will be 305 well pairs drilled from approximately 41 well pads. This Project is expected to produce approximately 275 million barrels of bitumen over the project life. The cumulative steam to oil ratio (CSOR) for the Project is expected to be 3.62.

PROJECT LOCATION MAP



THE CONSULTATION PLAN

Pengrowth has been actively consulting with communities adjacent to the Project site since they purchased the property in 2004. Pengrowth has a stakeholder relations philosophy that is consistent throughout operations in Western Canada, which ensures that all stakeholders adjacent to their operations are fully informed with regards to all aspects of their operations from exploration to development to production and reclamation. As a company, Pengrowth works hard to be a good neighbour, a responsible partner and a valued member of every community where operations occur. Pengrowth has an excellent operating and safety record and is strongly committed to protecting the health and safety of team members and the public, preserving the quality of the environment and supporting valued community groups and initiatives. Pengrowth's goal is to work with its neighbours and partners to ensure that corporate activities foster strong communities.

In 2010 Pengrowth developed a plan to ensure that all First Nation communities and members would have the opportunity to receive information relating to plans for the Lindbergh site. Pengrowth plans on continuing its involvement in the area for the next 25 years. The company's objective is to build and operate a commercial SAGD facility to produce bitumen. In support of the development of this project a number of exploration programs will be undertaken to support the project development process.

Pengrowth will consult with the following First Nations Communities during the course of the Project:

- Frog Lake First Nation;
- Cold Lake First Nation;
- Kehewin Cree Nation;
- Saddle Lake Cree Nation;
- Whitefish (Goodfish) Lake First Nation I.R. 128; and
- Onion Lake Cree Nation.

The consultation will be ongoing for the life of the Project, including timely, open dialogue between company decision makers and leadership, staff and community members. The objective of consultation will continue to be the provision of understandable information on all aspects of the Project to the affected stakeholder communities. Those from Pengrowth involved in consultation will listen and collect input from the community ensuring it is recorded and incorporated where appropriate in plans for the Lindbergh SAGD Expansion Project.

Pengrowth will ensure that topics of discussion on the Project include education, training, employment and economic development as appropriate to the size of the Project and the Corporation.

Consultation on all projects regardless of location or ownership should adhere to a number of common principles. Pengrowth's plan will abide by these principles:

1. Consultation with the First Nations communities will comply with all Consultation Guidelines as outlined by the Province of Alberta.
2. Recognize that all First Nations are different and have their own manner of doing business. Pengrowth will take these differences into consideration when consulting with each First Nation.
3. Pengrowth is committed to long term programs and policies that will establish mutually beneficial relationships for the life of the Project.
4. Records of meetings, discussions and other forms of communication will be compiled as appropriate.
5. The schedule of consultation will take into account the busy schedules of the communities and people involved.
6. Traditional Land Use information shared by the First Nations communities during the consultation process will be treated in a proprietary manner.

Pengrowth will meet with the Chief and Council of each of the First Nations designated in the plan. Pengrowth recognises that each community has their own way of addressing consultation with considerations such as schedules, capacity, funding, population and location and Pengrowth will seek advice from each community on how best to address their respective consultation processes. Pengrowth will explain current and future project plans to the leadership of each community. If and when requested, community representatives will be given tours of the site to ensure that everyone understands the impact the Project will have on the lands. These tours will allow the First Nation Elders to identify any traditional or cultural locations or medicines that are located on the land to be disturbed. At minimum, Pengrowth will adhere to *Alberta's First Nation Consultation Guidelines on Land Management and Resource Development.*

Pengrowth will direct all correspondence to the official consultation contact endorsed by each First Nation listed on the IIAR website at http://www.aboriginal.alberta.ca/576.cfm.

Pengrowth will be using a variety of plain language story boards, power point presentation material, handouts and maps at the open houses and community meetings. Presenters attending these meetings will be schooled in plain talk and attentive listening skills prior to participating. Managers and professionals involved in the Project will participate at these meetings to ensure they hear firsthand what is discussed. Face to face conversation where possible will ensure proper communication during the consultation process.

Pengrowth will advertise information addressing the Lindbergh SAGD Expansion Project in the local newspapers including the Alberta Sweetgrass and/or Windspeaker, Elk Point Review, St Paul Journal, Cold Lake Sun and the Bonnyville Nouvelle.

Proposed Project Schedule	
First Nations Consultation	Q3 2013 to Q4 2014 and ongoing
Baseline environmental and engineering	Q1 2012 to Q4 2013
Regulatory submission and review	Q4 2013
Regulatory approval	Q4 2015
Construction and drilling	Q4 2015
Commissioning and production	Q1 2017

Consultation Schedule		
Project Activity	Description	Timing
Identify FN communities adjacent to the Project	Discussions with communities and government	Q3 2013
Community meetings/open houses/formal and informal meetings	Distribute Project information, listen to and record input, document and mitigate issues.	Q3 2013 to Q4 2014
Distribute Application to First Nations	Distribute application document and answer any questions that may arise.	Q1 2014
Future updates	Pengrowth will meet at least twice per year with each designated First Nation to review Project progress and discuss any related projects.	Q3 2013 and ongoing

ONGOING FOLLOW UP

Pengrowth will continue the relationship formally on an ongoing basis to listen and talk to the First Nations and their members for as long as the Project is active. On topics of business, employment and training Pengrowth will continue discussions on a monthly basis as required. Pengrowth will commit in writing to meet formally with the First Nations at least twice per year. One of these meetings could be on the Lindbergh site.

ESRD REPORTING SCHEDULE

Pengrowth will submit an ongoing consultation report to Alberta Environment and Sustainable Resource Development (ESRD) every two months (Bi-Monthly Consultation Reports) until the regulatory approval process is completed, copying individual reports to each Consultation Group. The content of the consultation reports will be based on the information required under Section 5.0 of Part III of *Alberta's First Nations Consultation Guidelines on Land Management and Resource Development*. A Final Consultation Report will be submitted once the consultation efforts for the planning and regulatory approval processes are complete.

CONTACT INFORMATION

Pengrowth Energy Corporation
2100, 222 3rd Avenue SW
Calgary, AB T2P 0B4

Doug Willy
Stakeholder Relations Consultant
(403) 269-5023 - Direct
(403) 813-1638 - Cell
Doug.willy@pengrowth.com

PENGROWTH

PENGROWTH ENERGY CORPORATION

Lindbergh SAGD Expansion Project

Project Description

PENGROWTH

PENGROWTH ENERGY CORPORATION

Pengrowth Energy Corporation (Pengrowth) is a publically traded Canadian oil and gas exploration and production company based in Calgary, Alberta. Pengrowth operates numerous oil and gas properties that span the Western Sedimentary Basin in Alberta, British Columbia and Saskatchewan, with production averaging 86,000 barrels of oil equivalent per day (boed).

Pengrowth's property portfolio contains some of the highest quality assets in Canada's energy sector with an average reserve life index of approximately ten years on a proved plus probable basis. Pengrowth's strong suite of conventional assets (approximately 50% natural gas and 50% crude liquids) is balanced by an expanding inventory of unconventional resources including coalbed methane and oilsands interests.

Our operational expertise is in the Western Canadian Sedimentary Basin. We rely on our expertise to help offset production declines in our conventional oil and natural gas properties as well as develop new production in less mature properties. Our inventory of undeveloped land and opportunities provides future drilling opportunities for the short and mid-term.

Our strategy is to utilize cash flow from conventional operations to support our dividend and partially fund the development of our Lindbergh Thermal Project, whose low declines, long reserve life and capital efficiencies are expected to produce long-term stable cash flow.

PENGROWTH

PROJECT DESCRIPTION

In February 2012, Pengrowth began steam injection into our two well pair Lindbergh SAGD Pilot Project. Since that time the results outperformed expectations as the two well pairs:

- together produced in excess of 500,000 barrels of bitumen since commencing production in June 2012;
- combined, as of February 28, 2013, were producing in excess of 1,600 barrels per day (bpd) of bitumen, with an ISOR of 1.7;
- demonstrated faster than expected reservoir response to steam; and
- demonstrated lower than expected steam/oil and diluent blending ratios.

These excellent pilot results and reserve potential have given Pengrowth the confidence needed to accelerate and expand the first 12,500 bpd phase of commercial development, approved by the Board of Directors on January 10, 2013. This project remains on schedule and on budget, with an Environmental Protection and Enhancement Act (EPEA) approval received in May 2013 and significant production expected by late 2014.

The planned facilities for the Lindbergh SAGD Expansion Project (the Project) include a number of well pads and well pairs, and associated infrastructure such as roads, above ground gathering and distribution systems and an expansion of the existing Central Processing Facility (CPF). Existing infrastructure such as the North Saskatchewan River intake, pump station and pipeline will also be utilized for the Project.

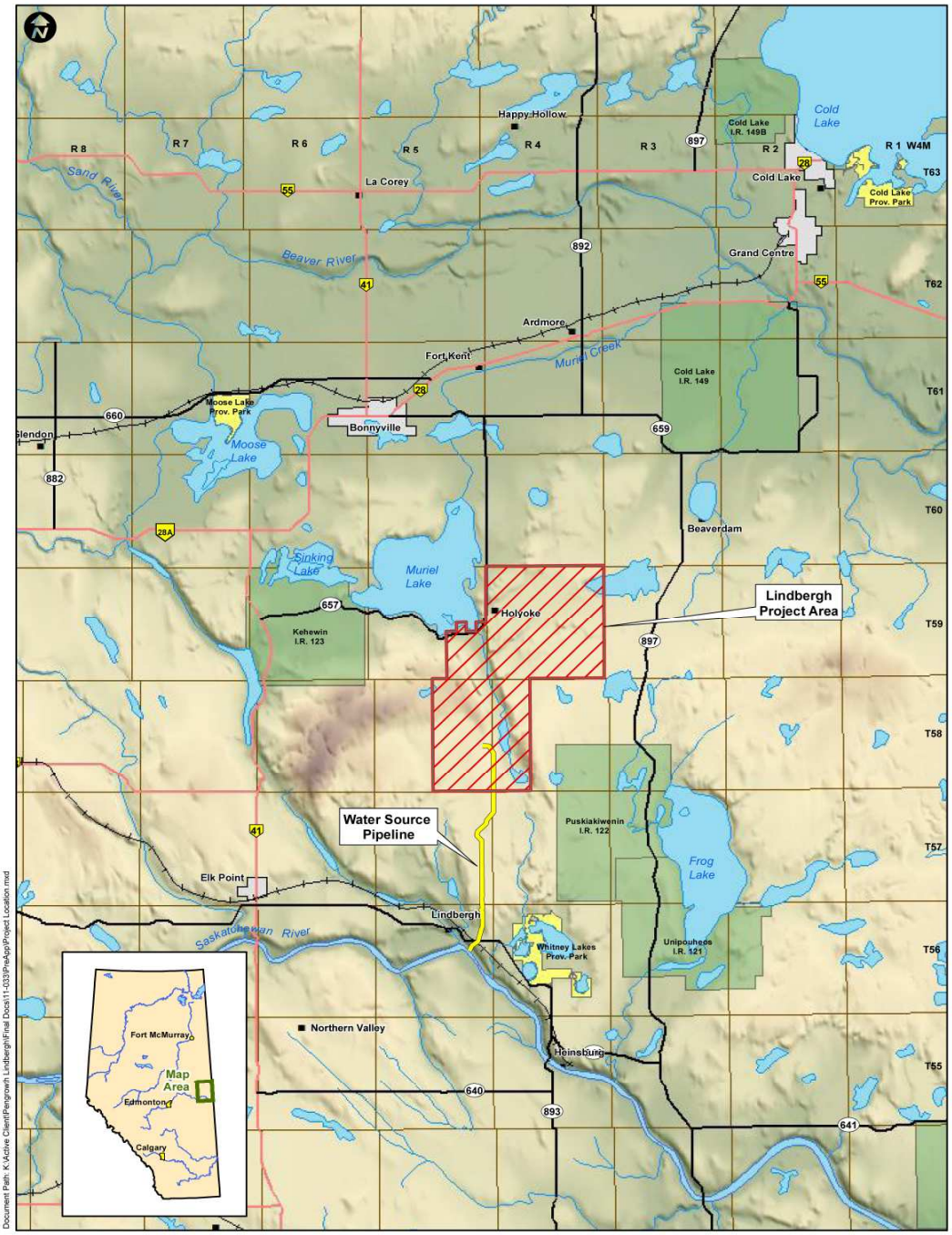
Raw water will be treated at the CPF and used to generate steam which is sent to each well pad via above ground pipelines for injection into the individual well pairs. Produced fluids (bitumen, water, gas) will be transported from the well pads to the CPF via above ground pipelines. The bitumen, water and gas will be separated at the CPF. The produced gas will be burned in the steam generators, the bitumen will be blended and trucked to a marketing point until a sales line is constructed, and the water will be treated and recycled for steam generation. All of these processes are used in the approved 12,500 bpd facility. The equipment for the expansion is not meaningfully different.

The Project will produce a maximum annualized bitumen rate of 30,000 bpd over an expected project life of 25 years. During the life of the Project it is anticipated that well pairs drilled from approximately 41 well pads producing 30,000 bpd for approximately 25 years will produce approximately 275 million barrels of bitumen. The cumulative steam to oil ratio (CSOR) for the Project is expected to be 3.62.

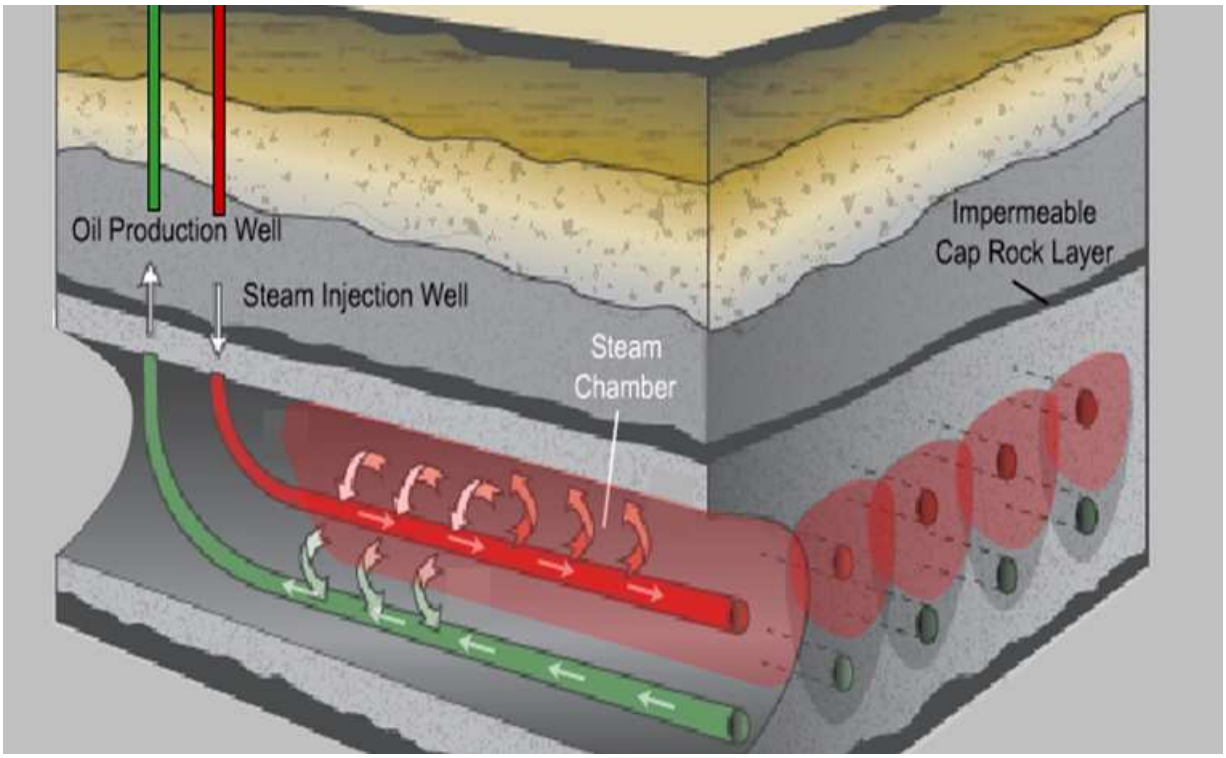
PENGROWTH

LINDBERGH PROJECT LOCATION

The Project is located approximately 24 km southeast of Bonnyville, Alberta, 18 km north of Lindbergh, and 19 km east of the town of Elk Point in the County of St. Paul in the eastern-central region of Alberta.



PENGROWTH



SAGD PROCESS

Steam Assisted Gravity Drainage (SAGD) is an in-situ thermal process used to recover heavy oil from rock and/or soil formations. The process utilizes multiple well pairs which are drilled both horizontal and parallel, such that one wellbore is located directly above the other. The process begins with a short circulation phase where steam is circulated through both the upper (injection) and lower (production) wells, until the space between them, and immediately surrounding them, becomes heated.

The heat decreases the viscosity of the heavy oil allowing gravity to drain it down towards the production well where it can then flow to the surface. As the oil moves down, steam fills the empty pore spaces, eventually creating a "steam chamber" as the entire space between the two wells is filled.

Once the steam chamber has been formed, steam injection in the bottom well is stopped and a pump is installed. Steam is still injected into the top injection well and as the steam chamber grows oil is mobilized from as far as 50 meters away. All of this oil drains into the lower production well and is then pumped to the surface.

SAGD production offers advantages over conventional and surface mining, such as greater per well production rates, recoveries, and reduced water treating costs. Compared to surface mining SAGD also has substantially less surface disturbance.

PENGROWTH

Picture: Post reclamation of an old well facility at the Lindbergh site

THE ENVIRONMENT

At Pengrowth, we believe in making a positive impact on every project; this is especially true when it comes to our environmental impact.

Our goal is to eliminate or minimize the environmental footprint in all activities. We strive not only to leave the land in an equivalent or better condition than it was found, but also to promote environmentally friendly, sustainable development in the communities where we work and live. We know that the actions taken today can have an impact today, tomorrow and long into the future.

Currently a well and facility abandonment and site restoration program is in place, under which we continue to assess and remediate sites impacted by historical operations.

On our Lindbergh site we have taken this further, by restoring lands that had been disturbed prior to our project. We believe that this aids in reducing adverse cumulative effects, and aligns with our goal to minimize or eliminate our environmental footprint.

As part of our Environmental Impact Assessment (EIA) process we will also be performing baseline assessments to determine the potential impacts on:

- Air Quality;
- Groundwater;
- Aquatic Resources;
- Vegetation & Wetlands;
- Soils & Terrain;
- Wildlife;
- Hydrology
- Historical Resources;
- Land Use;
- Human Health ;
- Socio-economic: and
- Noise.

Picture: Seeding of an old well facility at the Lindbergh site

PENGROWTH

COMMUNITY AND STAKEHOLDER ENGAGEMENT

At Pengrowth we have a stakeholder relations philosophy that is consistent throughout our operations in Alberta. We ensure that all stakeholders adjacent to our operations are fully informed with regards to all aspects of the operations, from exploration to development to production and reclamation.

As a company, we work hard to be a good neighbour, a responsible partner, and a valued member of every community where operations occur. We have an excellent operating and safety record and are strongly committed to protecting the health and safety of team members and the public, preserving preserving the quality of the environment, and supporting valued community groups and initiatives.

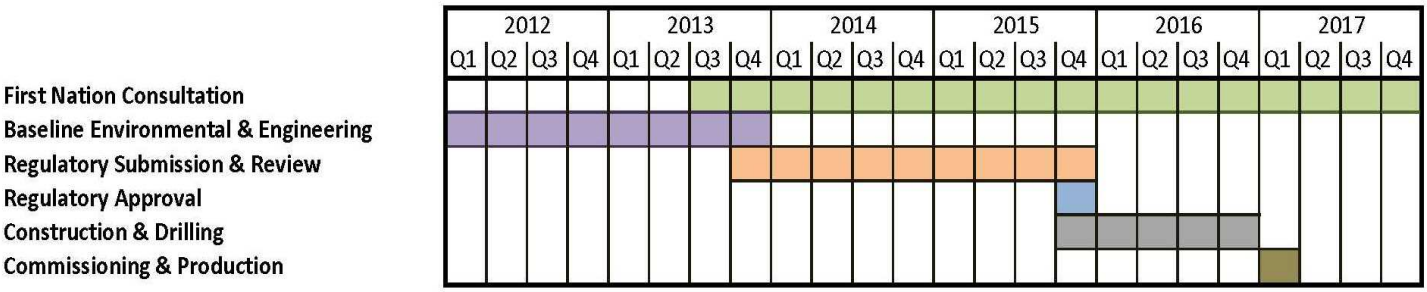
As a company, our goal is to work with neighbours and partners to ensure that corporate activities foster strong communities. We have successfully concluded a consultation plan for the 12,500 bpd Project. This will be continued and expanded on throughout the EIA application process. In order to ensure there is dialogue that allows the identified communities to be fully engaged, we will plan a series of meetings, presentations and open houses as appropriate to listen and record ideas, issues and concerns that individuals and groups may have.

BENEFITS OF THE PROJECT

The Project's main benefits will be seen in a growing number of job opportunities during construction, operation and decommissioning, as well as significant economic benefits to Alberta through taxes and royalties. It is our intention to make these benefits available to surrounding communities and peoples within the area. This may be done through certain policies, such as a minimum percentage of full time employees/contractors being local to the area.

PENGROWTH

PROJECT DEVELOPMENT SCHEDULE



CONTACTS

Steve De Maio
Vice President, In Situ Oil Development and Operations

Bill Betts
Project Manager, Lindbergh

Doug Willy
Stakeholder Relations Consultant

Pengrowth Energy Corp.
2100, 222 Third Avenue SW
Calgary, AB T2P 0B4
Canada
Phone: (403) 233-0224
Email: Lindbergh@Pengrowth.com

PENGROWTH

GLOSSARY OF TERMS

Bitumen	A highly viscous, tarry, black hydrocarbon material having an API gravity of about 9° (specific gravity about 1.0). It is a complex mixture of organic compounds. Carbon accounts for 80 to 85% of the elemental composition of bitumen, hydrogen - 10%, sulphur - 5%, and nitrogen, oxygen and trace elements the remainder.
Equivalent land capability	Means that the ability of the land to support various land uses after conservation and reclamation is similar to the ability that existed prior to an activity being conducted on the land, but that the individual land uses will not necessarily be identical.
In Situ	Also known as “in place”, refers to methods of extracting deep deposits of oil sands without removing the groundcover. The in situ technology in oil sands uses underground wells to recover the resources with less impact to the land, air and water than traditional oil sands methods.
Injection well	A well used for injecting fluids (air, steam, water, natural gas, gas liquids, surfactants, alkalines, polymers, etc.) into an underground formation for the purpose of increasing recovery efficiency.
Production Well	A well used to extract bitumen after it has been heated with steam from the injection well.
Reclamation	The restoration of disturbed or wasteland to a state of useful capability. Reclamation is the initiation of the process that leads to a sustainable landscape, including the construction of stable landforms, drainage systems, wetlands, soil reconstruction, addition of nutrients and revegetation. This provides the basis for natural succession to mature ecosystems suitable for a variety of end uses.
SAGD	Steam Assisted Gravity Drainage is an in-situ oil sands recovery technique that involves drilling two horizontal wells, one to inject steam and a second to produce the bitumen.

PENGROWTH

ACRONYMS

boed	Barrels of oil equivalent per day
bpd	Barrels per day
CPF	Central Processing Facility
CSOR	Cumulative Steam Oil Ratio
EIA	Environmental Impact Assessment
EPEA	Environmental Protection and Enhancement Act
Pengrowth	Pengrowth Energy Corporation
Project	Lindbergh SAGD Expansion Project
SAGD	Steam Assisted Gravity Drainage

Government of Alberta

Memorandum

SREM Aboriginal Affairs Branch
Alberta Departments of Energy, Environment and Sustainable Resource Development
Main floor Twin Atria
4999 – 98 ave
Edmonton, Alberta T6KB 2X3
Telephone: 780 – 643-1708
www.alberta.ca

From: Vince Biamonte, Consultation Advisor,
SREM Aboriginal Affairs Branch

To: Doug Willy Stakeholder Relations Consultant
Pengrowth Energy Corporation

Date: September 23, 2013

Subject: Approval of Consultation Plan – *Pengrowth Energy Corporation Lindberg SAGD Expansion Project*

The ESRD Stewardship Branch has reviewed the Aboriginal Consultation Plan submitted on September 9th, 2013 for the proposed *Lindberg SAGD Expansion Project*. On the basis of our review, we have concluded that the First Nation Consultation Plan is consistent with the requirements outlined in Part III of Alberta's First Nations Consultation Guidelines on Land Management and Resources Development for Alberta Environment and Sustainable Resource Development.

All consultation activities with First Nations must be carried out in the manner described by the Guidelines and must proceed according to the approved Consultation Plan. The Stewardship Branch may require further consultation based on the receipt of new or additional information at any time during the regulatory approval process.

Pursuant to the Government of Alberta's First Nations Consultation Policy and Guidelines, the Stewardship Branch will remain responsible for all substantive aspects of consultation, and any procedural aspects not delegated to the proponent. The responsibilities include:

- Providing advice and making information available to proponent, as able, regarding potential adverse impacts to Rights and Traditional Uses;
- Ensuring potentially affected First Nations receive early and adequate notification regarding the project application(s);
- Reviewing and approving the Consultation Plan;
- Overseeing the consultation process by evaluating reports submitted by the proponent; and
- Assessing adequacy of First Nation consultation and making recommendations to Alberta Environment and Sustainable Resources Development.

November 1st, 2013 is the first reporting period and every two months following this date, you are required to provide me with a report that outlines all of your First Nations consultation activities for the proposed project. I will send you an example template bi-monthly report and advice regarding bi-monthly content. Please ensure that your bi-monthlies are submitted using

this format. We also require that these bi-monthly consultation reports are shared with those First Nations that are identified in the consultation plan.

If you have any questions about the First Nations consultation process or required documentation, please contact me at 780-643-1708 or by email at vince.biamonte@gov.ab.ca.

Regards,

Vince Biamonte, Region lead,
Lower Athabasca South
Stewardship Branch

CC: Melody Nice, Section Lead,
Lower Athabasca Region
Stewardship Branch

Bi-monthly Reports

Pursuant to the Government of Alberta's First Nations Consultation Policy and Guidelines, Part III, the proponent is responsible for documenting and reporting First Nation consultation. Documentation shall include, at a minimum, the following information:

i. A list of First Nations who were provided with project specific information;
ii. Copies of the plain language, project specific information provided to First Nations contacted;
iii. How and when information was provided to First Nations involved in the consultation process;
iv. All dates and locations of activities and/or meetings undertaken throughout the consultation process;
v. Names of individuals and/or groups contacted within the First Nation and lists of attendees at all meetings;
vi. All documented records-of-decision, or minutes compiled throughout the consultation process by either the project proponent or the First Nation;
vii. A summary of consultation efforts and outcomes including any information regarding potential adverse impacts to First Nations Traditional Rights and Uses;
viii. Proposals for addressing the interests and/or concerns of First Nations involved in the consultation process (i.e. avoidance or mitigation);
ix. Where agreement has not been reached with respect to avoidance or mitigation of potentially adverse impacts, written reasons be provided to the Crown;
x. Any proposed follow-up with First Nations (if applicable); and
xi. At the discretion of the Director, any other information that may be deemed necessary to determine the adequacy of consultation.

Here are some finer points to consider regarding Bi-monthly content.

a. You need a good story in the bi-monthly report regarding what First Nation concerns are. These meetings are a venue to provide the First Nation an opportunity to express their concerns, but they must be solicited for their input. Be sure to document in your bi-monthly report that you ask what their site specific concerns are. The bi-monthly must document what these concerns are.

b. Be as specific as reasonable in the bi-monthly reports regarding concerns raised by First Nations and mitigation efforts by the company. This will help in the final consultation adequacy review of your file.

c. You can provide me with meeting notes or other documentation at any time to further detail concerns and accommodations, in addition to/or rather than going into great detail in the bi-monthly report.

d. Document in your bi-monthlies evidence that you have discussed the nature and scope of the potential adverse impacts of the project and that they were understood by the First Nation.

e. The bi-monthly is not about discussing financial agreements or projects; however it does not hurt to have it in the report. Remember the adequacy review is based on evidence of First Nation concern mitigation.

Remember that the determination of consultation adequacy is based on a comparison of the contents of your bi-monthly reports against the following criteria.

1. Consultation was conducted in a meaningful way that supports the spirit of collaboration.

2. The information provided to First Nations was project specific, provided in a timely manner and presented in a plain language form.

3. The nature and scope of the potential adverse impacts of the proposed project were effectively communicated and understood by all parties.

4. Rights and activities that could be potentially adversely impacted were specifically identified and understood.

5. Reasonable efforts were made on the part of the project proponent to avoid or mitigate First Nations concerns.

6. The extent of involvement by First Nations, including the nature and degree of their participation in the process.

Record of Consultation Log (EXAMPLE)

Company/Proponent name;
Project/activity name;
First Nation consulted;

Date	*Proponent primary lead/contact*	*First Nation Representative (include names of individuals with whom consultation was undertaken)*	*Method of Contact and/or activity (Direct mail; Phone Call; Email; Meeting*; Other)*	*Issues and Concerns Raised or Identified by First Nation connected to hunting, fishing, and trapping for food, gathering, ceremonial locations, etc.*	*Strategies for Mitigation or Avoidance of Impact or Potential Impact*	*Outcomes / Comments*

Note: Each Record of Consultation Log must be specific to one First Nation only.
If multiple First Nations have been consulted, additional Record of Consultation Logs must be submitted as part of the Consultation Summary.

TERMS OF REFERENCE
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR PENGROWTH ENERGY CORPORATION'S PROPOSED

LINDBERGH SAGD EXPANSION PROJECT

Approximately 24 km from Bonnyville, Alberta

ISSUED BY: **Pengrowth Energy Corporation**

DATE: **AUGUST 19, 2013**

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PURPOSE OF THE TERMS OF REFERENCE

The purpose of this document is to identify for Pengrowth Energy Corporation, Aboriginal communities and appropriate stakeholders the information required by government agencies for an Environmental Impact Assessment (EIA) report prepared under the *Environmental Protection and Enhancement Act* (EPEA) for the Lindbergh SAGD Expansion Project (the Project).

Pengrowth Energy Corporation (Pengrowth) is a publically traded Canadian oil and gas exploration and production company based in Calgary, Alberta. Pengrowth operates numerous oil and gas properties that span the Western Canadian Sedimentary Basin in Alberta, British Columbia and Saskatchewan, with production of approximately 86,000 barrels of oil equivalent per day. Pengrowth owns a 100% working interest in the 11,190 ha of oilsands mineral leases in the Lindbergh and Muriel fields.

The proposed Lindbergh SAGD Expansion Project (the Project) will be an expansion of the Approved Lindbergh SAGD Project, which will produce a maximum annualized bitumen rate of 1,987 m^3/day (12,500 barrels per day (bpd)) and is located in the Cold Lake oilsands region in the County of St. Paul. The plant site will expand on the plant site that is to be constructed as part of the initial phase of the Lindbergh SAGD Project and will be located approximately 24 km southeast of Bonnyville. The Project will increase the bitumen production from an initial 1,987 m^3/day (12,500 bpd) with the Lindbergh SAGD Project to 4,770 m^3/day (30,000 bpd).

The Project will be comprised of well pads, observation wells, water disposal wells, a Central Processing Facility (CPF), a storm water pond, administration and maintenance buildings, a camp, and a parking area. The existing water source will be used for the expansion. The CPF will be located on the east side of the lease in the west half of Section 25, Township 58, Range 5, West of the 4^{th} Meridian, on the same footprint as the CPF for the approved Lindbergh SAGD Project.

Natural gas will be used for steam generation. A third-party supplier will provide power. Access to the Project will be via the existing access road that enters the facility from Range Road 50. Initial production will be transported by truck, and thereafter by pipeline or rail.

Subject to regulatory approval, construction of the Project is expected to commence in 2015 with an anticipated operational start date in 2017. When fully constructed, there will be an anticipated 305 well pairs drilled from approximately 41 well pads. The Project is expected to produce approximately 275 million barrels during its projected 25 year operation.

SCOPE OF THE EIA REPORT

The Proponent 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, and the *Canadian Environmental Assessment Act* if applicable. The EIA report will form part of the Proponent's application to the Alberta Energy Regulator (AER). An EIA report summary will also be included as part of the AER Application.

The Proponent shall refer to the *Guide to Preparing Environmental Impact Assessment Reports in Alberta* published by Alberta Environment and Sustainable Resource Development (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 Terms of Reference shall take precedence.

CONTENT OF THE EIA REPORT

1 PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION

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

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

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

2 PROJECT DESCRIPTION

2.1 Overview

[A] Provide a brief project description in sufficient detail to provide context for the EIA, including:

a) proponent information;
b) proposed extraction and bitumen processing technology;
c) amount and source of energy required for the Project;
d) water supply and disposal requirements, including process water and potable water requirements;
e) proposed method to transport product to markets; and
f) development plan and schedule.

[B] Provide maps and/or drawings of the Project components and activities including:

a) existing infrastructure, leases and clearings, including exploration clearings;
b) proposed central processing/treatment and field facilities;
c) other buildings and infrastructure (e.g., pipelines and utilities);
d) temporary structures;
e) transportation and access routes;
f) on-site hydrocarbon storage;
g) containment structures such as retention ponds and storage ponds (e.g., lime sludge, stormwater runoff, boiler blow-down);
h) water wells/intakes, pipelines, and storage structures;
i) sources of aggregate resources, borrow material and other construction material and locations of any stockpiles that will be developed; and

j) waste storage area and disposal sites.

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

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

[E] Provide the adaptive management approach that will be implemented throughout the life of the Project. Include how monitoring, mitigation and evaluation were incorporated.

2.2 Constraints

[A] Discuss the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints. Include the following:
a) any applicable *Alberta Land Stewardship Act* Regional Plan;
b) how this project aligns with the *Comprehensive Regional Infrastructure Sustainability Plan for the Cold Lake Oil Sands Area*;
c) land use policies and resource management initiatives that pertain to the Project;
d) Aboriginal traditional land use;
e) all known traplines;
f) the environmental setting;
g) cumulative environmental impacts in the region;
h) cumulative social impacts in the region;
i) results of Project-specific and regional monitoring;
j) potential for new or additional technology to increase resource recovery at later times; and
k) potential for changes in the regulatory regime.

[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.

[C] Provide a list of facilities for which locations will be determined later. Discuss the selection criteria that will be used to determine the specific location 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.

[B] Describe opportunities for sharing infrastructure (e.g., access roads, utility corridors, water infrastructure) with other resource development stakeholders. Provide rationale where these opportunities will not be implemented.

2.4 Transportation Infrastructure

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

[B] Describe background traffic and consider the cumulative effects of traffic impacts due to other existing and planned developments using the same highways and accesses.

[C] Discuss anticipated changes to highway traffic (e.g., type, volume) due to the Project.

[D] Assess potential traffic impacts for all stages of the Project (e.g., construction, operation, maintenance, expansion, shutdown).

[E] Determine any necessary improvements and methods to mitigate traffic impacts.

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

a) discuss the alternatives and the rationale for selection for the preferred alternative;
b) discuss compatibility of the preferred alternative and Alberta Transportation's immediate and future plans;
c) describe the impacts to local communities of the changes in transportation and infrastructure; and
d) provide a proposed schedule for the work.

[G] Describe any infrastructure or activity that could have a potential impact on existing roads (e.g., pipelines or utilities crossing provincial highways, any facilities in close proximity of the highways, any smoke, dust, noise, light or precipitation generated by the Project that could impact the highway and road users).

[H] Provide a summary of any discussions with Alberta Transportation in regards to the Project and its traffic impacts.

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

2.5 Air Emissions Management

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

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

a) odorous and visible emissions from the proposed facilities;
b) annual and total greenhouse gas emissions during all stages of the Project. Identify the primary sources and provide detailed calculations;
c) the intensity of greenhouse gas emissions per unit of bitumen produced;
d) the Project's contribution to total provincial and national greenhouse gas emissions on an annual basis;
e) the Proponent's overall greenhouse gas management plans;
f) amount and nature of Criteria Air Contaminants emissions;

g) the amount and nature of acidifying emissions, probable deposition patterns and rates;
h) control technologies used to reduce emissions;
i) emergency flaring scenarios (e.g., frequency and duration) and proposed measures to ensure flaring events are minimized;
j) upset condition scenarios (e.g., frequency and duration) and proposed measures to ensure upset conditions are minimized;
k) gas collection and conservation, and the applicability of vapour recovery technology;
l) applicability of sulphur recovery, acid gas re-injection or flue gas desulphurization to reduce sulphur emissions; and
m) fugitive emissions control technology to detect, measure and control emissions and odours from equipment leaks.

2.6 Water Management

2.6.1 Water Supply

[A] Describe the water supply requirements for the Project, including:
a) the criteria used, options considered and rationale for selection of water supply sources(s);
b) the expected water balance during all stages of the Project. Discuss assumptions made or methods chosen to arrive at the water balances;
c) the process water, potable water, and non-potable water requirements and sources for construction (including, but not limited to, road construction, winter road construction, lease construction, production well drilling and dust suppression), camp(s) and plant site, start-up, normal and emergency operating situations, decommissioning and reclamation. Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse;
d) the location of sources/intakes and associated infrastructure (e.g., pipelines for water supply);
e) the variability in the amount of water required on an annual and seasonal basis as the Project is implemented;
f) the expected cumulative effects on water losses/gains resulting from the Project operations;
g) contingency plans in the event of restrictions on the Projects water supply source (e.g., due to license conditions, source volume limitations, climate change or cumulative impact water deficits);
h) potable water treatment systems for all stages of the Project;
i) type and quantity of potable water treatment chemicals used; and
j) measures for ensuring efficient use of water including alternatives to reduce the consumption of non-saline water such as water use minimization, recycling, conservation, and technological improvements.

2.6.2 Surface Water

[A] Describe the surface water management strategy for all stages of the Project, including:
a) design factors considered; and

b) permanent or temporary alterations or realignments of watercourses, wetlands and other waterbodies.

[B] Describe and map all roadway, pipeline, powerline and any other utility crossings of watercourses or waterbodies.

2.6.3 Wastewater Management

[A] Describe the wastewater management strategy, including:

a) the criteria used, options considered and rationale for the selection of wastewater treatment and wastewater disposal;
b) the source, quantity and composition of each wastewater stream from each component of the proposed operation (e.g., bitumen extraction and associated facilities) for all Project conditions, including normal, start-up, worst-case and upset conditions;
c) the proposed disposal locations and methods for each wastewater stream;
d) geologic formations for the disposal of wastewaters;
e) design of facilities that will collect, treat, store and release wastewater streams;
f) type and quantity of chemicals used in wastewater treatment; and
g) sewage treatment and disposal.

2.7 Waste Management

[A] Discuss the selection criteria used, options considered, and rationale for waste disposal.

[B] Characterize and quantify the anticipated dangerous goods, and hazardous, non-hazardous, and recyclable wastes generated by the Project, and describe:

a) the composition and volume of specific waste streams and discuss how each stream will be managed;
b) how the disposal sites and sumps will be constructed; and
c) plans for pollution prevention, waste minimization, recycling, and management to reduce waste quantities for all stages of the Project.

2.8 Conservation and Reclamation

[A] Provide a conceptual conservation and reclamation plan for the Project. Describe and map as applicable:

a) current land use and capability and proposed post-development land use and capability;
b) anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these targets will be measured;
c) constraints to reclamation such as timing of activities, availability of reclamation materials and influence of natural processes and cycles including natural disturbance regimes;
d) a revegetation plan for the disturbed terrestrial, riparian and wetland areas;
e) reclamation material salvage, storage areas and handling procedures; and
f) existing and final reclaimed site drainage plans.

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

[C] Describe how the Proponent considered the use of progressive reclamation in project design and reclamation planning.

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

3 ENVIRONMENTAL ASSESSMENT

3.1 Air Quality, Climate and Noise

3.1.1 Baseline Information

[A] Discuss the baseline climatic and air quality conditions including:

a) the type and frequency of meteorological conditions that may result in poor air quality; and
b) appropriate ambient air quality parameters.

3.1.2 Impact Assessment

[A] Identify components of the Project that will affect air quality, and:

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

[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 AER, and:

a) identify the nearest receptor used in the assessment; and
b) discuss the design, construction and operational factors to be incorporated into the Project to comply with the AER's *Directive 38: Noise Control*.

3.2 Hydrogeology

3.2.1 Baseline Information

[A] Provide an overview of the existing geologic and hydrogeologic setting from the ground surface down to, and including, the oil producing zones and disposal zones, and:

a) present regional and Project Area geology to illustrate depth, thickness and spatial extent of lithology, stratigraphic units and structural features; and
b) present regional and Project Area hydrogeology describing:
    i) the major aquifers, aquitards and aquicludes (Quaternary and bedrock), their spatial distribution, properties, hydraulic connections between aquifers, hydraulic heads, gradients, groundwater flow directions and velocities. Include maps and cross sections,
    ii) the chemistry of groundwater aquifers including baseline concentrations of major ions, metals and hydrocarbon indicators,
    iii) the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interaction and areas of Quaternary aquifer-bedrock groundwater interaction,
    iv) water well development and groundwater use, including an inventory of groundwater users,
    v) the recharge potential for Quaternary aquifers,
    vi) potential hydraulic connection between bitumen production zones, deep disposal formations and other aquifers resulting from Project operations,
    vii) the characterization of formations chosen for deep well disposal, including chemical compatibility and containment potential, injection capacity, hydrodynamic flow regime, and water quality assessments, and
    viii) the locations of major facilities associated with the Project including facilities for waste storage, treatment and disposal (e.g., deep well disposal) and describe site-specific aquifer and shallow groundwater conditions beneath these proposed facilities. Provide supporting geological information.

3.2.2 Impact Assessment

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

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

3.3 Hydrology

3.3.1 Baseline Information

[A] Describe and map the surface hydrology in the Project Area.

[B] Identify any surface water users who have existing approvals, permits or licenses.

3.3.2 Impact Assessment

[A] Describe the extent of hydrological changes that will result from disturbances to groundwater and surface water movement, and:

a) include changes to the quantity of surface flow, water levels and channel regime in watercourses (during minimum, average and peak flows) and water levels in waterbodies;
b) assess the potential impact of any alterations in flow on the hydrology and identify all temporary and permanent alterations, channel realignments, disturbances or surface water withdrawals;
c) discuss the effect 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 watercourses; and
d) identify any potential erosion problems in watercourses resulting from the Project.

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

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

3.4 Surface Water Quality

3.4.1 Baseline Information

[A] Describe the baseline water quality of watercourses and waterbodies and their seasonal variations. Consider appropriate water quality parameters.

3.4.2 Impact Assessment

[A] Describe the potential impacts of the Project on surface water quality.

3.5 Aquatic Ecology

3.5.1 Baseline Information

[A] Describe and map the fish, fish habitat and aquatic resources (e.g., aquatic and benthic invertebrates) of the lakes, rivers, ephemeral water bodies and other waters. Describe the species composition, distribution, relative abundance, movements and general life history parameters of fish resources. 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 Sustainable Resource Development);
b) listed in Schedule 1 of the federal *Species at Risk Act*;
c) listed as “at risk” by COSEWIC; and
d) traditionally used species.

[B] Describe and map existing critical or sensitive areas such as spawning, rearing, and over-wintering habitats, seasonal habitat use including migration and spawning routes.

[C] Describe the current and potential use of the fish resources by Aboriginal, sport or commercial fisheries.

3.5.2 Impact Assessment

[A] Describe and assess the potential impacts of the Project to fish, fish habitat, and other aquatic resources, considering:
- a) habitat loss and alteration;
- b) increased fishing pressures in the region that could arise from the increased human activity and improved access from the Project. Characterize the current use of local and regional fisheries resources to support the assessment of potential changes in angling pressure;
- c) increased habitat fragmentation;
- d) acidification;
- e) groundwater-surface water interactions; and
- f) entrapment and entrainment of fish at water intakes.

[B] Identify the key aquatic indicators that the Proponent used to assess project impacts. Discuss the rationale for their selection.

[C] Identify plans proposed to offset any loss in the productivity of fish habitat. Indicate how environmental protection plans address applicable provincial and federal policies on fish habitat including the development of a "No Net Loss" fish habitat objective.

3.6 Vegetation

3.6.1 Baseline Information

[A] Describe and map the vegetation communities, wetlands, rare plants, old growth forests, and communities of limited distribution. Identify the occurrence, relative abundance and distribution 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 Sustainable Resource Development);
- b) listed in Schedule 1 of the federal *Species at Risk Act*;
- c) listed as "at risk" by COSEWIC; and
- d) traditionally used species.

[B] Describe and quantify the current extent of habitat fragmentation.

3.6.2 Impact Assessment

[A] Describe and assess the potential impacts of the Project on vegetation communities, considering:
- a) both temporary (include timeframe) and permanent impacts;
- b) the potential for introduction and colonization of weeds and non-native invasive species;
- c) potential increased fragmentation and loss of upland, riparian and wetland habitats; and
- d) implications of vegetation changes for other environmental resources (e.g., terrestrial and aquatic habitat diversity and quantity, water quality and quantity, erosion potential).

[B] Identify key vegetation indicators used to assess the Project impacts. Discuss the rationale for the indicator's selection.

3.7 Wildlife

3.7.1 Baseline Information

[A] Describe and map the wildlife resources (amphibians, reptiles, birds, and terrestrial and aquatic mammals). Describe species relative abundance, distribution and their use and potential use of habitats. 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 Sustainable Resource Development);
b) listed in Schedule 1 of the federal *Species at Risk Act*;
c) listed as "at risk" by COSEWIC; and
d) traditionally used species.

[B] Describe 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 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 improved or altered access may affect wildlife;
c) how increased habitat fragmentation may affect wildlife. Considering edge effects, the availability of core habitat and the influence of linear features and infrastructure on wildlife movements and predator-prey relationships;
d) potential effects on wildlife resulting from changes to air and water quality, including both acute and chronic effects to animal health; and
e) potential effects on wildlife from the Proponent's proposed and planned exploration, seismic and core hole activities, including monitoring/4D seismic.

[B] Identify the key wildlife and habitat indicators used to assess Project impacts. Discuss the rationale for their selection.

3.8 Biodiversity

3.8.1 Baseline Information

[A] Describe and map the existing biodiversity.

[B] Identify the biodiversity metrics, biotic and abiotic indicators that are used to characterize the baseline biodiversity. Discuss the rationale for their selection.

3.8.2 Impact Assessment

[A] Describe and assess the potential impacts of the Project to biodiversity considering:

a) the biodiversity metrics, biotic and abiotic 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 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 conditions in the Project Area.

[B] Describe and map soil types in the areas that are predicted to exceed Potential Acid Input critical loading criteria.

3.9.2 Impact Assessment

[A] Describe Project activities and other related issues that could affect soil quality (e.g., compaction, contaminants) and:

a) indicate the amount (ha) of surface disturbance from plant, field (e.g., pads, pipelines, access roads), aggregate and borrow sites, camps, drilling waste disposal and other infrastructure-related construction and operational activities;
b) discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use;
c) identify the potential acidification impact on soils and discuss the significance of predicted impacts by acidifying emissions; and
d) describe potential sources of soil contamination.

[B] Discuss:

a) the environmental effects of proposed drilling methods on the landscape and surficial and bedrock geology;
b) the potential for changes in the ground surface during steaming and recovery operations (e.g., ground heave and/or subsidence) and their environmental implications; and
c) the potential impacts caused by the mulching and storage of woody debris considering, but not limited to, vulnerability to fire, degradation of soil quality, 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] Indicate where Crown land dispositions may be needed for roads or other infrastructure for the Project.

[C] Identify and map unique sites or special features such as Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmentally Significant Areas, culturally significant sites and other designations (e.g., World Heritage Sites, Ramsar Sites, Internationally Important Bird Areas).

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

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

[F] Describe existing access control measures.

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 in public access arising from linear development, including secondary effects related to increased hunter, angler and other recreational access and facilitated predator movement;
- 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 Area;
- e) the amount of commercial and non-commercial forest land base that will be disturbed by the Project, including the Timber Productivity Ratings for the Project Area. Compare the baseline and reclaimed percentages and distribution of all forested communities in the Project Area;
- f) how the Project impacts Annual Allowable Cuts and quotas within the Forest Management Agreement area;
- g) the operations of any agricultural crown leases and provincial grazing reserves;
- h) anticipated changes (type and extent) to the topography, elevation and drainage patterns within the Project Area; and
- i) access control for public, regional recreational activities, Aboriginal land use and other land uses during and after development activities.

[B] Describe how Integrated Land Management has been used (e.g., sharing of infrastructure, access requirements).

[C] Provide a fire control plan highlighting:
- a) measures taken to ensure continued access for firefighters to adjacent wildland areas;
- b) forest fire prevention, detection, reporting, and suppression measures, including proposed fire equipment;
- 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 on the *FireSmart Field Guide for the Upstream Oil and Gas Industry*.

4 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 palaeontological records.

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

[C] Provide an overview of previous Historical Resources Impact Assessments that have been conducted within the Project Area, including:
- a) a description of the spatial extent of previous assessment 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.

[D] Identify locations within the Project Area that are likely to contain previously unrecorded historic resources. Describe the methods used to identify these areas.

4.2 Impact Assessment

[A] Describe Project components and activities that have the potential to affect historic resources at all stages of the Project.

[B] Describe the nature and magnitude of the potential Project impacts on historical resources, considering:

a) effects on historic resources site integrity; and
b) implications for the interpretation of the archaeological, historic and palaeontological records.

5 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE

[A] Provide:

a) a map and description of traditional land use areas including fishing, hunting, trapping and nutritional, medicinal or cultural plant harvesting by affected Aboriginal peoples (if the Aboriginal 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 Aboriginal 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) Aboriginal 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

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.

[B] Document any health concerns raised by stakeholders during consultation on the Project.

[C] Document any health concerns identified by Aboriginal communities or groups resulting from impacts of existing development and of the Project, specifically on their traditional lifestyle. Include an Aboriginal receptor type in the assessment.

[D] Describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills.

6.2 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 minimize adverse environmental effects, including emergency reporting procedures for spill containment and management;
b) document any safety concerns raised by stakeholders during consultation on the Project;
c) describe how local residents will be contacted during an emergency and the type of information that will be communicated to them;
d) describe the existing agreements with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual aid programs and municipal emergency response agencies; and
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 region.

[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 rationale 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;
b) availability and quality of health care services;
c) local and regional infrastructure and community services;
d) recreational activities;
e) hunting, fishing, trapping and gathering; and
f) First Nations and Métis (e.g., traditional land use and social and cultural implications).

[B] Describe the socio-economic effects of any new or existing camp(s) required for the Project and identify:

a) its location;
b) the number of workers it is intended to house;
c) whether the camp will service the Project only or other clients;
d) the length of time the camp will be in service;
e) describe the services that will be provided in the camp (e.g., security, recreation and leisure, medical services), including a description of the impacts on Municipal or other external services; and
f) outline the emergency services and evacuation plan that will be in place.

[C] Describe the need for additional Crown land.

[D] Discuss opportunities to work with First Nation and Métis communities and groups, other local residents and businesses regarding employment, training needs and other economic development opportunities arising from the Project.

[E] Provide the estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada.

8 MITIGATION MEASURES

[A] Discuss mitigation measures planned to avoid, minimize or eliminate the potential 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.

9 RESIDUAL IMPACTS

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

10 MONITORING

[A] Describe the Proponent's current and proposed monitoring programs, including:

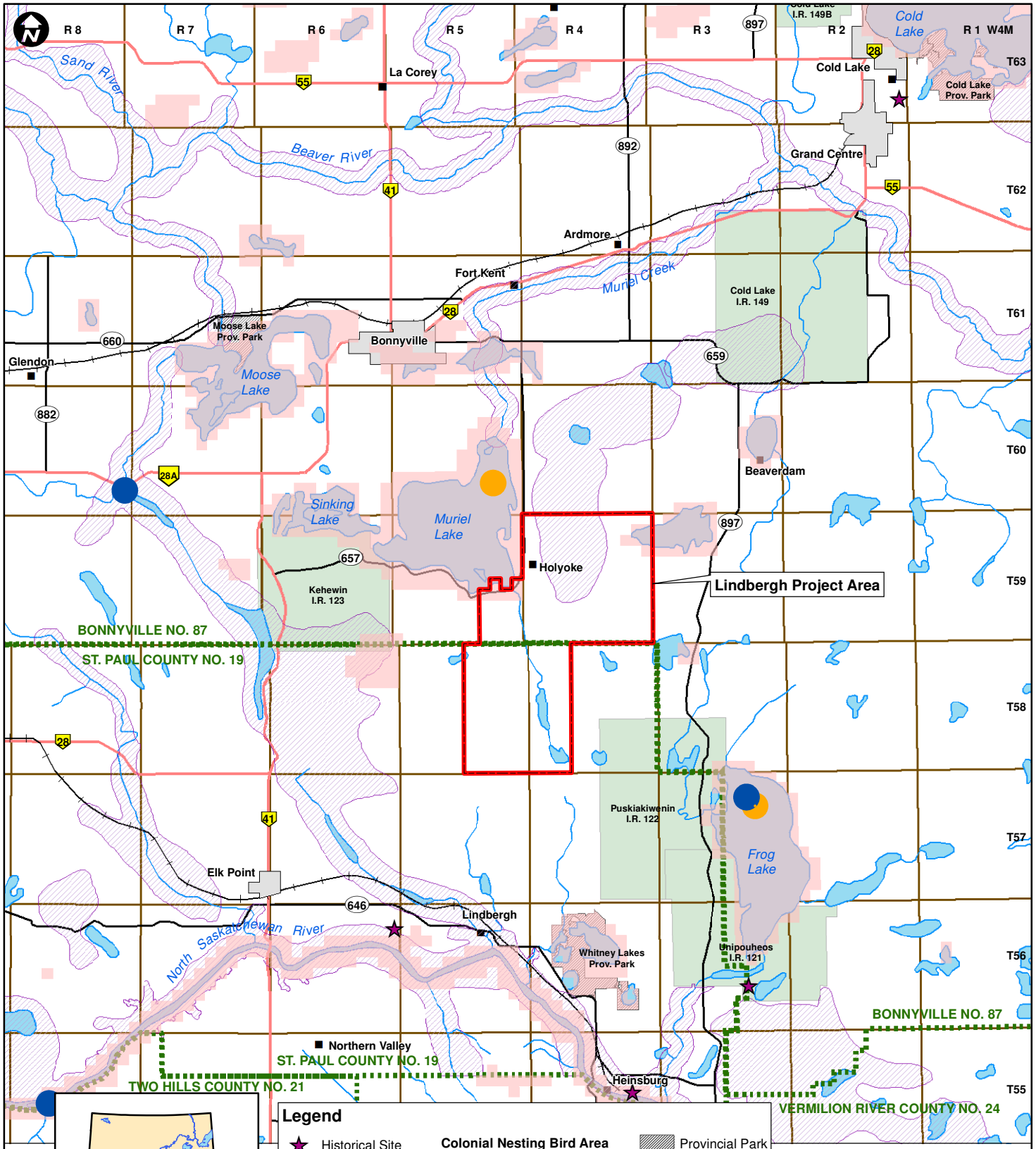
a) how the monitoring programs will assess any project impacts and measure the effectiveness of mitigation plans. Discuss how the Proponent will address any Project impacts identified through the monitoring program;
b) how the Proponent will contribute to current and proposed regional monitoring programs;
c) monitoring performed in conjunction with other stakeholders, including Aboriginal communities and groups;
d) new monitoring initiatives that may be required as a result of the Project;
e) regional monitoring that will be undertaken to assist in managing environmental effects and improve environmental protection strategies;
f) how monitoring data will be disseminated to the public, Aboriginal communities or other interested parties; and

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

Project Summary Table			
Proponent Name:	Pengrowth Energy Corporation	Date:	August 15, 2013
Project Name:	Lindbergh SAGD Expansion Project	Company Contact Name and Information:	Steve De Maio VP, In Situ Oil Development and Operations 2100, 222-3rd Avenue SW Calgary, AB T2P 0B4 Telephone: (403) 233-0224 Email: Lindbergh@Pengrowth.com
Name of Company that will hold Approval:	Pengrowth Energy Corporation	Company Website:	www.pengrowth.com
Type of Project (e.g., in-situ, mine, quarry, upgrader, etc.):	In-Situ	New Project, Expansion, Additional Phase or Modification:	Expansion
Projected Construction Start (Month/Year):	Q4, 2015	Projected Operation Start (Month/Year):	Q1, 2017
Life of Project (# years, YYYY – YYYY):	25 years, 2017 - 2042	Project Location (Legal Land Description and Longitude/Latitude) and Municipality:	Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31, and 32 of Twp. 58, Range 4, W4M; Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36 of Twp. 58, Range 5, W4M; Twp. 59, Range 4, W4M; and Sections 1, 2, 11, 12, 13, and 14 of Twp. 59, Range 5, W4M
Total Project Area (ha):	18,837 ha	Private, Federal or Provincial Land:	Private and Provincial Land
Nearest Residence(s) (km):	Nearest residence is located approximately 4.4 km from the Central Processing Facility.	Types of Activity (major project processes, components including capacity/size, if available):	Central Processing Facility (CPF), well pads, tankage, co-gen plant, disposal wells, product line, powerline, roads, camps.
Nearest First Nation Reserve(s) and Métis Settlements (name and km):	Kehewin I.R. 123, 6.7 km Unipouheos I.R. 121, 8.9 km Puskiakiwenin I.R. 122, 1.9 km Cold Lake I.R. 149, 10.8 km	Project Products:	Bitumen.
Power Source (if on site power generation describe quantity (MW) and facilities):	On-site co-gen. An additional 13 MW will be generated.	Method of Product Transport (e.g., pipeline, rail, truck, etc.):	Truck or pipeline.
Average Production Capacity per Year (specify units):	Additional increase in capacity of 17,500 bpd for a total project production of 30,000 bpd (4,770 m^3/d)	Infrastructure Requirements (e.g., roads, pipelines, water intake, storage, tankage, etc.):	Roads, pipelines, powerlines, roads.

Location of End Market:	Various, according to market conditions.	Expected Types of Air Emissions (e.g., SO_2, NO_X, CO_2, etc.):	SO_2, NO_X, CO, $PM_{2.5}$.
Project By-Products:	Sulphur, water treatment waste or sludge, drilling waste.	Types of Wastes Generated:	Sulphur, water treatment waste or sludge, drilling waste, off-spec oil.
Expected Types of Effluent Releases (note the water bodies the effluent will be released to):	None. Excess stormwater not consumed in the CPF will be released to surroundings if it meets approved standards.	Nearest Waterway/Waterbody (name and km):	Garnier Lake, Bullet Lake, Dion Lake, portions of Muriel Lake, Reita Lake and Michel Lake, as well as a number of streams lie within the Project Area.
Waste Management Facilities (i.e., Disposal Well, Salt Caverns, Landfill, or Third-Party):	Disposal Well, Third-Party	EPEA Approval Required (Y/N/Unknown):	Yes
Watercourse Crossings (type of crossing, any Class A to C waterbodies):	Class C.	*Water Act* Licence Required (Y/N/Unknown. If yes, purpose, source and estimated volumes):	No. Pengrowth has sufficient source water with the approved Lindbergh SAGD Project.
Regulatory Board(s) (ERCB/NRCB/AUC):	AER & AUC.	Waterbodies Required (Y/N/Unknown/NA. If yes, # and ha):	No. Existing CPF storm water and source water ponds will continue to be used.
Water Act Approval Required (Y/N/Unknown. If yes, purpose):	Unknown.	Will any of the components or activities associated with the project affect fish and/or fish habitat? (Y/N):	No.
Identify applicable sections in the Schedule to the Federal *Comprehensive Study List Regulations*: (Y/N/Unknown):	No.	Identify applicable federal legislative or regulatory requirements referred to in the *Law List Regulations* (i.e., permits, licenses, authorizations):	None.
Are any works or undertakings proposed to take place in, on, over, under, through or across a navigable water? (Y/N):	No.	Nearest Water Well (km) (Domestic and Commercial):	The nearest registered domestic wells are located in SW 15-058-05-W4M, approximately 4.1 km from the CPF. The nearest registered industrial well is located in NE 13-058-05-W4M, approximately 2.5 km from the CPF.
Nearest Provincial Highway (# and distance):	Highway #657 runs through the northern portion of the Project Area.	Access Improvements to Provincial Highway:	None.
Traffic Impact Assessment Required (Yes/No/Unknown):	Yes.	Total Area to be Disturbed (ha):	813 ha

Identify Existing Land and Water Use(s), Resource Management, or Conservation Plans Within or Near the Project site:	Cattle grazing, agricultural, oilfield production, recreational, private land, traditional uses.	Post-reclamation Land Use(s):	Cattle grazing, agricultural, oilfield production, recreational, private land, traditional uses.
Decommissioning Start and End (YYYY-YYYY):	2042 - 2043	Reclamation Start and End (YYYY - YYYY):	2020 - 2050
Unique Environmental or Social Considerations (Describe or None):	Private land, traditional use, grazing lease and trapping.	Historic Resources Impact Assessment Required (Y/N/Unknown):	Yes.
Estimated Construction Person-Years of Employment:	400	Estimated Operation Persons-Years of Employment:	40
Construction or Operation Camp Required (Y/N/Unknown. If yes, on-site or off-site):	Yes. On-site.	Method of Transport of Employees to Site (Construction and Operation):	Vehicle Transport.
Will the project involve the manufacture and storage of explosives (Y/N):	No.	Is there any federal authority that is, or may be, providing financial support to the Project (Y/N. If yes, identify the federal authority):	No.
Date Stakeholder Engagement Started (Public/Aboriginal):	Q3 2013.	Aboriginal Groups Involved in Stakeholder Engagement:	• Kehewin Cree Nation, I.R.123 • Onion Lake First Nation, I.R. 120 • Frog Lake First Nation, I.R. 122 • Saddle Lake Cree Nation, I.R. 125 • Whitefish (Goodfish) Lake First Nation, I.R. 128
Public Groups involved in Stakeholder Engagement:	• LICA • County of St. Paul • MD of Bonnyville • Town of Elk Point • Town of Bonnyville • Grazing lease holders • Other companies • Trappers • Freehold land owners • Muriel Lake Basin Management Society		



REF: Geobase, 2010.

PROJECT: PENGROWTH

Lindbergh SAGD Expansion Project

TITLE:

Project Location

DRAWN:	KD
CHECKED:	JN
DATE:	July 12/13
PROJECT:	11-033

FIGURE: 1

Document Path: K:\Active Client\Pengrowth Lindbergh\Final Docs\11-033\PreApp\Fig 1 Project Location_v2.mxd