

Oil, Shale Gas and Natural Gas exploration in New Brunswick

Environmental Review and Approval Processes

New Brunswick Department of Environment
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In recent years, in Canada and other North American jurisdictions, there has been lots of interest in exploration and development of natural gas found in shale deposits located far below the surface. These are commonly referred to as shale gas or unconventional gas deposits.

Shale gas is natural gas stored in organic-rich, very fine-grained rocks such as shale, mudstone or laminated siltstones. The natural gas molecules are held in the microscopic pores of the reservoir rock.

Shale gas can be found in most sedimentary basins in North America where conventional natural gas resources exist. In many cases, the shale-bearing formations are the source of the natural gas being produced from conventional reservoirs located above the shale deposits.

In New Brunswick, shale deposits are normally found one to three kilometres below the surface.

Companies engaged in exploration, development and production of oil, shale gas and natural gas resources in New Brunswick are required to follow standard geophysical, drilling, development and production practices. They must also meet all legislative and approval requirements.

The Department of Environment regulates oil, shale gas and natural gas exploration, development and production operations through a series of legislative regulations and approvals.

PHASED EIA PROCESS

Oil, shale gas and natural gas companies engaged in exploration, development and production in New Brunswick will be required to register their projects for a Phased Environmental Impact Assessment (EIA) review.

The process will identify potential environmental impacts at the early stages before a project is implemented so that negative environmental impacts can be avoided or reduced to an acceptable level.

The Phased EIA review will begin prior to well pad construction and will include the location of the well pads. Public involvement and stakeholder engagement will commence at this stage.

A typical Phased EIA registration would include but not be limited to the following:

- location of proposed drill targets;
- description existing environment within the drill target areas including environmental constraints (wetlands, watercourses, wildlife resources and habitat), location of sensitive areas and additional proposed exploration activities;
- details about the construction and operation of the well pads, access roads and associated infrastructure;
- details associated with drilling activities;
- details regarding waste management;
- process and potable water requirements and water sources;
- material handling and shipping;
- sewage treatment facilities;
- Any past, current, or future projects or activities in the project area whose effects may interact with those of the project under review;
- commercial extraction, pipelines, gas processing or well decommissioning;
- and any other applicable details/aspects of the project as the project develops.

Information requirements will be phased and relevant to the activities of the phase under review.

Public consultation and stakeholder engage-

ment will be on-going throughout the review.

Benefits of the Phased EIA include: a review of activities at an earlier stage; consideration of cumulative impacts; avoidance of sensitive areas.

APPROVALS AND PERMITS

Oil, shale gas and natural gas companies are also required to obtain applicable Approvals to Construct and Operate. The Approval contains conditions intended to reduce impacts from the project, as well as requirements from the EIA. The following submissions are required by companies to comply with the approval to operate:

- A Chemical and Waste Management Plan: describes the methods for storage, handling and disposal of all types of chemicals to be used, as well as waste (including hazardous waste) and waste water to be generated;
- A Water Management Plan: this is for the water to be used for fracing. It must describe the water source, the withdrawal rate, transfer method and disposal of flow back water;
- A Containment systems plan: describes how fluid or material contaminants will be contained within the facility during construction, drilling and production activities;
- A Private Well Water Sampling and Analysis Program: private wells near the site must be tested prior to any activities;
- A Rehabilitation Plan: describes site closure activities for land to be returned to landowner;
- A Background and Operational Noise Assessment Program: to determine the noise level in the vicinity of the facility before and during construction, drilling and production activities; and
- A Quarterly Environmental Report: which includes the volume of flaring, an estimate of combustion gases (SO₂, CO₂, NO_x, VOC), a

summary report of all waste (including volume of waste and location of disposal), a summary of all spills and/or leaks (including volume and clean up method), a schedule of planned activities for the next quarter (made available to all nearby residential owners upon request) and an updated map of all well pad locations.

Other conditions in the approval include ensuring odour, light, dust, noise, flaring and site runoff do not adversely impact off-site receptors as well as notifications in the event of complaints, spills, leaks and environmental emergency situations.

Further requirements can also include:

- Wetland and Watercourse Alteration Permits: permits are required for activities within 30 metres of a watercourse or wetland;
- Applicable zoning: construction, drilling and production activities must meet zoning requirements.

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