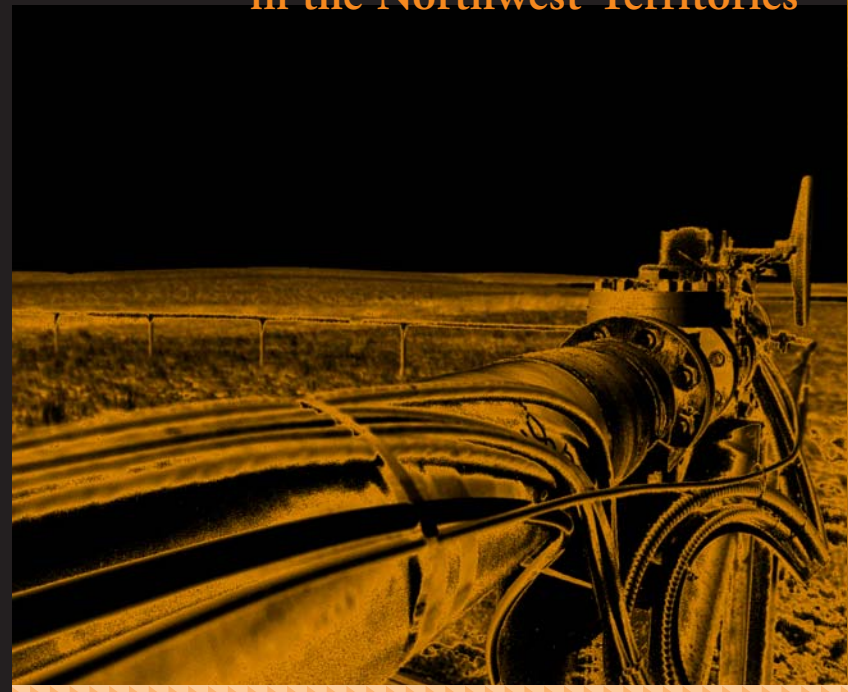




Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

A Citizen's Guide to
Oil and Gas
in the Northwest Territories



An Overview of Northern Oil and Gas

North America's increasing demand for natural gas and crude oil is fuelling renewed industry interest in Canada's northern petroleum resources and the Department of Indian Affairs and Northern Development (DIAND) can help you with your inquiries in this area. This guide was designed to help you understand DIAND's roles and responsibilities concerning oil and gas in the Northwest Territories.

One of DIAND's priorities, in the NWT, is encouraging oil and gas exploration and development. When carried out with the least impact on the northern environment, oil and gas exploration and development offers Aboriginal and non-Aboriginal Canadians many benefits. The Petroleum Development and Benefits Division is ready to help you better understand oil and gas legislation and explain how to obtain rights for exploration and development. The Division will also explain the role of benefits plans in creating opportunities for employment, training and business.

In this booklet, you will find answers to frequently asked questions, contact information and definitions to industry terms.

Please note that if there is any inconsistency or conflict between information contained in this guide and the applicable legislation or its regulations, official legislation and agreements prevail. If you have any questions or would like further clarification, please contact any of the agencies listed in the guide.

For more information please contact:

Manager, Petroleum Development and Benefits Division,
Department of Indian Affairs and Northern Development,
P.O. Box 1500,
4914 - 50th Street,
Yellowknife, NT X1A 2R3
Tel: (867) 669-2618
Fax: (867) 669-2409
Email: petroleum@inac.gc.ca

Search the Department of Indian Affairs and Northern Development's (DIAND) Northern Oil and Gas web site for more information and maps: www.ainc-inac.gc.ca/oil

Please visit www.oilandgasguides.com for information on the Canadian Association of Petroleum Producers and DIAND's Regulatory Roadmaps Project.

Partners in Resource Development

The settling of land claims is contributing to a more stable and predictable land access regime. Government, working in partnership with communities and Aboriginal groups, is focussing on northern participation in oil and gas exploration and development. The oil and gas industry, by developing and implementing benefits plans for its projects is also helping to support the North's economy. These projects, providing new employment and business opportunities for northerners, are the key to sustaining our communities.



Photos: Sharon Clarke/DIAND

What is DIAND's role?

In the Northwest Territories and the northern offshore areas, the legislated responsibility for petroleum resource management rests with the Department of Indian Affairs and Northern Development (DIAND). It is DIAND's goal to help communities and Aboriginal groups work with industry towards sustainable economic development. DIAND's Northern Oil and Gas Directorate in Hull, Quebec and the Petroleum Development and Benefits Division, based in Yellowknife, manage oil and gas development under the *Canada Petroleum Resources Act (CPRA)* and the *Canada Oil and Gas Operations Act (COGOA)*.

For Crown lands in the NWT, DIAND administers exploration and production rights, approves benefits plans and establishes and collects royalties.

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What does DIAND's Petroleum Development and Benefits Division do?

Our oil and gas advisors can assist with the following:

- give advice about legislation and regulatory requirements for northern oil and gas exploration and development;
- help communities and Aboriginal groups understand oil and gas rights issuances and development plans;
- advise industry and consult with communities and Aboriginal groups about oil and gas benefits plans including the requirements for training, employment and business opportunities; and
- provide information to communities and deliver workshops on oil and gas.



partners in resource development

3

Frequently Asked Questions

What is petroleum?

Petroleum is the generic term used to describe **crude oil, natural gas and bitumen from oil sands**, all of which are hydrocarbons. Petroleum is buried in various rock formations at different depths and can be either liquid, gas or solid.

How is petroleum formed?

It is believed that as ancient marine and plant life died, their remains were covered with other sediments that eventually turned to rock. In time, underground pressure, heat and other factors caused chemical changes in the sediments containing these remains. Eventually the organic materials in the sediments became **hydrocarbons** – organic chemicals composed only of the elements hydrogen and carbon.

What is natural gas?

“Pure” natural gas, also known as methane, is a colourless, odourless, highly combustible and clean burning hydrocarbon. Natural gas is used to heat homes and businesses, to power major industries and as a raw material for the petrochemical industry. When used as a fuel, natural gas is scented so that, in the event of a leak, it may be detected quickly.

What is crude oil?

Crude oil is the liquid form of petroleum and is a mixture of many different hydrocarbon compounds. Crude oil is refined and processed to remove impurities like sulphur and to develop products that are useful to the consumer and industry such as gasoline and diesel fuel.

What is a seismic survey?

In a seismic survey, a geophysical contractor’s crew lays out a line or several lines of sensitive receivers, called geophones or “jugs”. Mechanical vibrations are created and the geophones record the energy bounced back as seismic waves from rock layers at various depths.

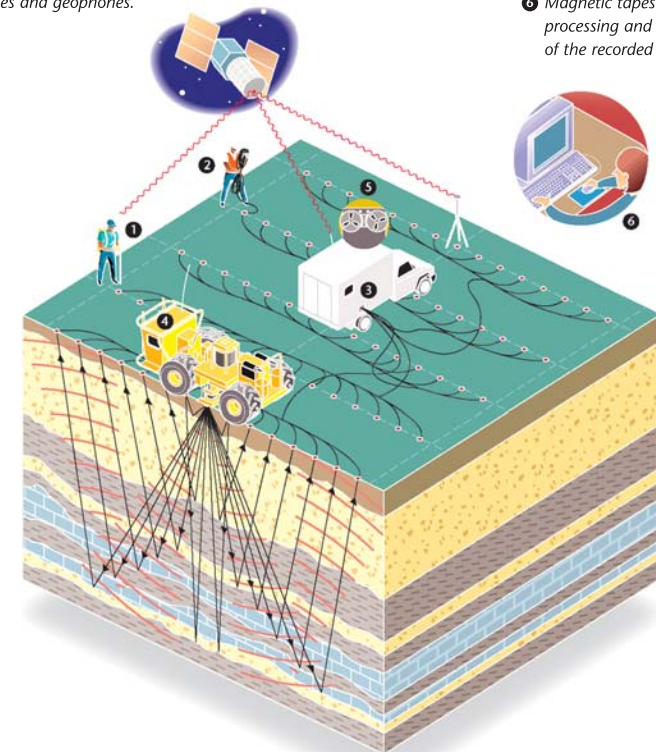
What is 3-D imaging?

Computers identify different rock layers and structures by calculating the intensity of the reflected sound waves and the time it takes for them to travel through the rocks and back to the surface. Processing the data creates a three-dimensional image of the layers and location of these structures.

Vibroseis 3D seismic method

Key steps:

- 1 Surveyors use satellite-based global positioning system (GPS) to find precise locations for vibration source and geophones.
- 2 Seismic crew lays out cables and geophones.
- 3 Cables are attached to recording system.
- 4 Vibrator trucks generate a controlled vibration force of up to 32 tonnes at each source point.
- 5 Underlying geologic structures reflect some of the vibrations back to the surface where the geophones convert them into electrical impulses that are recorded on magnetic tape.
- 6 Magnetic tapes are sent for processing and interpretation of the recorded data.



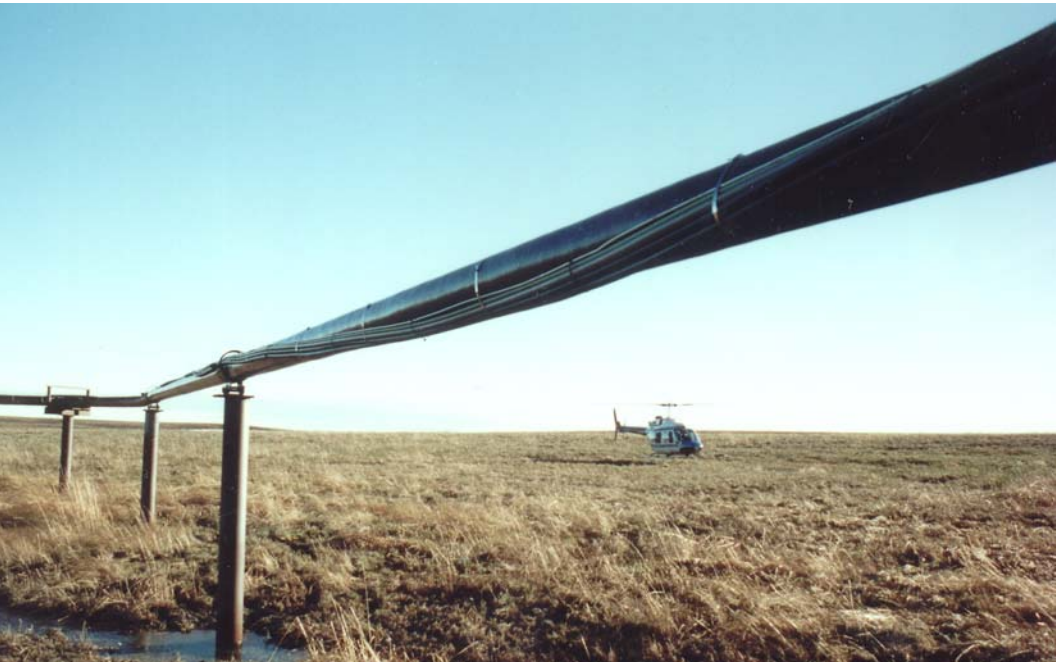
Courtesy of the Petroleum Communication Foundation

What is exploration?

Exploration includes geological field work, examining and analysing existing wells, reviewing nearby oil producing fields and reviewing other geophysical and seismic surveys about the area. In the Northwest Territories, permits and authorizations must be in place before exploring on Crown or private lands. Please contact the Petroleum Development and Benefits Division of DIAND for assistance.

Exploration Wells

- Wildcat: a well drilled in an area where no oil or gas production exists nearby.
- Exploration: a well drilled to prove the existence of an oil or gas field.
- Discovery: a well that establishes a new oil or gas field.



Photos: Sharon Clarke/DIAND

How does a company get the right to explore a parcel of land?

A company can get an exploration licence through the bid process with the federal government, or through negotiations with Aboriginal groups on private lands in the Inuvialuit Settlement Region, the Gwich'in Settlement Region and the Sahtu Settlement Region.

How does a company get the rights to access surface lands?

Surface access through an exploration licence requires a land use permit and other authorizations from the appropriate land and water board and other agencies. On private lands, companies require access through agreements with Aboriginal landowners.

What is a surface hole?

Wells are normally drilled in stages, anywhere between 60 to 400 metres deep depending on the total depth of the well. The surface hole is drilled past the lowest natural occurrence of fresh water. A steel pipe, called a "casing", is then inserted into the hole and the space between the pipe and the walls of the hole is cemented to protect the environment from contamination and prevents the hole from collapsing.

How does oil or gas enter a well?

If a well contains oil or gas, a steel pipe is inserted and the area around the hole is cemented to seal it. The next step is 'perforation'. A special tool shoots holes through the steel pipe and cement and allows petroleum to enter the well. It is then pumped to the surface and recovered.



What is the process for acquiring the rights to explore for oil or gas?

In the NWT and the northern offshore areas, the process for acquiring the rights to explore for oil or gas on Crown lands is called the Rights Issuance Process. It consists of:

- Expression of Interest by the Applicant
- Consultation
- Call for Nominations
- Call for Bids
- Issuing the Exploration Licence

I. Expression of Interest by Applicant

The rights issuance process begins with an expression of interest by industry.

II. Consultation

Rights are issued in the NWT and northern offshore areas, by the Minister of DIAND, a process which includes consultation with Aboriginal communities and designated Aboriginal organizations.

Consultation with Aboriginal people and community leaders is of particular importance. Communities and Aboriginal organizations are consulted and notified prior to opening any lands in their traditional area for oil and gas exploration.

III. Call for Nominations

Based on the results of consultation, the federal minister may move ahead with the rights issuance process and issue a Call for Nominations, or reject the proposal for issuance.

A Call for Nominations is generally open for a period of 30 to 90 days, and provides industry with the opportunity to identify specific blocks of land to be posted for bidding. Unique or sensitive areas may be excluded from nomination. Nominations received through this process are considered in a Call for Bids.

IV. Call for Bids

If the minister proceeds with a Call for Bids on exploration rights to specific parcels of land, an Exploration Licence will be awarded to the successful bidder. Legislation requires that a Call for Bids remains open for a minimum of 120 days.

The bid must be at least \$1 million for exploration work. A 25% deposit must accompany the bid. When the bidding closes, the highest bid is selected for each parcel.

V. Exploration Licences

An Exploration Licence is issued when a bid is successful. The licence applies to an identified parcel of land and may be issued for a term of up to nine years.

rights issuance process



Photos: Sharon Clarke/DIAND





Land Tenure Instruments

The following licences may be granted with respect to a specific block of Crown land:

Exploration Licence (EL)

- the right to explore for, and the exclusive rights to drill for and test for, petroleum;
- an exclusive right to develop lands for petroleum production; and
- the exclusive right to obtain a Production Licence.

Significant Discovery Licence (SDL)

- the right to explore for, and the exclusive rights to drill for and test for, petroleum;
- an exclusive right to develop lands for petroleum production; and
- the exclusive right to obtain a Production Licence.

Production Licence (PL)

- the right to explore for, and the exclusive rights to drill for and test for, petroleum;
- an exclusive right to develop lands for petroleum production;
- the exclusive right to produce petroleum from those lands; and
- title to the petroleum produced.

Photo: Sharon Clarke/DIAND

Why is the term of the Exploration Licence so long?

The term is divided into two periods. The first period allows enough time to undertake an exploration program and drill a well to maximize benefits occurring from the exploration program.

In regions where operations are affected by ice conditions, access across sensitive terrain or other environmental factors, the first period of the licence may be longer.



Photo: David Watt Photography

Oil and Gas Legislation

Petroleum resource management on Crown lands in the Northwest Territories, Nunavut and northern offshore areas is exercised under two federal statutes: the *Canada Petroleum Resources Act* (CPRA) and the *Canada Oil and Gas Operations Act* (COGOA). The responsibility for managing oil and gas on Crown lands in the Yukon has been transferred to the Yukon Government.

- The CPRA governs allocating Crown lands to the private sector, defines the term of the allocated rights, and provides the basis for managing royalties. It is administered by the Minister of Indian Affairs and Northern Development.
- The COGOA regulates oil and gas activities with respect to resource conservation, environmental protection and worker safety. It is administered by the National Energy Board and stipulates the need for Benefits Plans associated with Section 5.2. The Minister of Indian Affairs and Northern Development approves Benefits Plans.

What is a benefits plan?

Companies must submit a benefits plan describing the employment, training and business opportunities arising from its proposed activity to the DIAND minister for approval. In the North, particular attention is given to maximizing opportunities for northerners and northern businesses which includes both Aboriginal and non-Aboriginal people and business firms.

As a matter of policy, benefits plans also indicate the actions a

company would take to consult with, and inform communities and businesses, before and during the proposed activity. Companies are also required to submit an annual report, detailing the actual training, employment and business benefits.

The benefits plan is developed by the company in consultation with Aboriginal groups and with the affected communities where the proposed oil and gas activity would occur.



Photo: David Watt Photography

What does the National Energy Board do?

The National Energy Board authorizes activities such as seismic surveys, drilling, field development, production and gathering system pipelines under the *Canada Oil and Gas Operations Act*. Pipelines that cross provincial or territorial

borders may be approved by the National Energy Board under the *National Energy Board Act*.

Consult the Board's web site: www.neb-one.gc.ca for weekly status report of activities.

Who do I contact at DIAND for information on northern benefits plans, regulatory processes in the North and public consultation activities?

Yellowknife:

Manager, Petroleum Development and Benefits, Department of Indian Affairs and Northern Development, P.O. Box 1500, Yellowknife, NT X1A 2R3
Phone: (867) 669-2618
Fax: (867) 669-2409

Hay River:

Petroleum Development and Benefits Advisor, Department of Indian Affairs and Northern Development, 31 Capital Drive, Suite 209 Hay River, NT X0E 1G2
Phone: (867) 874-6996
Fax: (867) 874-6993



Photo: Rob Walker/DIAND

Who do I contact about the environment or using the land?

The following DIAND district contacts can answer your oil and gas related questions or direct you to the proper authority.

North Mackenzie District:

North Mackenzie District, P.O. Box 2100, Inuvik, NT X0E 0T0
Phone: (867) 777-3361
Fax: (867) 777-2090

South Mackenzie District:

South Mackenzie District Office, 16 Yellowknife Airport, Yellowknife, NT X1A 3T2
Phone: (867) 669-2760
Fax: (867) 669-2720

Who should I contact for information on the rights issuance process, upcoming rights issuance initiatives and to receive copies of Calls for Nominations and Calls for Bids?

Northern Oil and Gas Directorate, Department of Indian Affairs and Northern Development, 10 Wellington Street, 6th floor, Hull, Quebec K1A 0H4
Phone: (819) 997-0877
Fax: (819) 953-5828

Who do I call about oil and gas operations and pipeline developments?

For information on operational authorizations, and regulatory requirements for development, production, pipelines, information on wells drilled, and reports on geophysical and geological programs, and sampling of geological materials, contact:

National Energy Board

Chief Conservation Officer, 444 - 7th Ave. SW
Calgary, AB T2P 0X8
Phone: (403) 292-4800
Fax: (403) 292-5503

Who can I ask about oil and gas geology and potential of the NWT?

The C.S. Lord Northern Geoscience Centre of Yellowknife can provide detailed petroleum geology information on specific regions of the NWT. Geological analyses, tailored to specific user needs, can be provided by contacting:

C.S. Lord Northern Geoscience Centre

P.O. Box 1500, 4601-B 52nd Avenue, Yellowknife, NT X1A 2R3
Front Desk: (867) 669-2636
Fax: (867) 669-2725
cslord_centre@gov.nt.ca

More Contact Information in the Northwest Territories

In the Mackenzie Valley:

Mackenzie Valley Environmental Impact Review Board

P.O. Box 938,
Yellowknife, NT X1A 2N7
Phone: (867) 669-0506
Fax: (867) 873-6610
<http://www.mveirb.nt.ca>

Gwich'in Land and Water Board

P.O. Box 2018,
Inuvik, NT X0E 0T0
Phone: (867) 777-4954
Fax: (867) 777-2616
<http://www.glwb.com>

Mackenzie Valley Land and Water Board

P.O. Box 2130,
Yellowknife, NT X1A 2P6
Phone: (867) 873-9029
Fax: (867) 920-4721

Sahtu Land and Water Board

P.O. Box 1,
Fort Good Hope, NT X0E 0H0
Phone: (867) 598-2413
Fax: (867) 598-2325
<http://www.slwb.com>

In the Inuvialuit Settlement Region:

Inuvialuit Land Administration

P.O. Box 290,
Tuktoyaktuk, NT X0E 1C0
Phone: (867) 977-2202
Fax: (867) 977-2467

Environmental Impact Screening Committee

P.O. Box 2120,
Inuvik, NT X0E 0T0
Phone: (867) 777-2828
Fax: (867) 777-2610

Environmental Impact Review Board

P.O. Box 2120,
Inuvik, NT X0E 0T0
Phone: (867) 777-2828
Fax: (867) 777-2610

DIAND issues land use permits on Crown lands in the Inuvialuit Settlement Region through its North Mackenzie District office. See page 14 for contact information.



The NWT Water Board issues water licenses in the Inuvialuit Settlement Region:

NWT Water Board

P.O. Box 1500,
4916 - 47th Street, 2nd Floor Goga Cho Bldg.,
Yellowknife, NT X1A 2R3
Phone: (867) 669-2772
Fax: (867) 669-2719

Photos: Sharon Clarke/DIAND



Oil and Gas Related Web Sites

Federal and Territorial Governments:

Department of Indian Affairs and Northern Development Northern Oil and Gas	www.ainc-inac.gc.ca/oil
Canadian Environmental Assessment Agency	www.ceaa.gc.ca
C.S. Lord Northern Geoscience Centre	www.nwtgeoscience.ca
Geological Survey of Canada	www.nrcan.gc.ca/gsc
Government of the Northwest Territories Department of Resources, Wildlife and Economic Development	www.gov.nt.ca/rwed/mog/ www.liardresources.nt.ca
National Energy Board	www.neb-one.gc.ca
Natural Resources Canada – Energy Sector	www.nrcan.gc.ca/es
Beaufort – Mackenzie Delta Mineral Development	www.bmmda.nt.ca

Land, Water and Review Boards:

Fisheries Joint Management Committee	www.fjmc.ca
Gwich'in Land and Water Board	www.glwb.com
Mackenzie Valley Environmental Impact Review Board	www.mveirb.nt.ca
Mackenzie Valley Land and Water Board	www.mvlwb.com
Sahtu Land and Water Board	www.slwb.com

Industry Associations:

Canadian Association of Geophysical Contractors	www.cagc.ca
Canadian Association of Oilwell Drilling Contractors	www.caodc.ca
Canadian Association of Petroleum Producers	www.capp.ca
Canadian Energy Pipeline Association	www.cepa.com
Canadian Gas Association	www.cga.ca
Petroleum Communication Foundation	www.pcf.ab.ca
Petroleum Industry Training Service	www.pits.ca
Pipe Line Contractors Association of Canada	www.pipeline.ca
Small Explorers and Producers Association of Canada	www.sepac.ca

Glossary

Words and terms associated with applicable oil and gas legislation, or that are commonly used in the oil and gas industry, are defined below.

Aboriginal Peoples

The descendants of the original peoples of Canada. Section 35 (2) of the *Constitution Act, 1982*, defines the Aboriginal peoples of Canada as Indians, Inuit and Métis. The Aboriginal peoples of the NWT are grouped into six major regions and speak seven major Aboriginal languages.

access agreement

Formal consent to make use of surface area on private lands.

benefits plan

A plan that describes how the employment, training and business opportunities arising from the proposed activity will be maximized for northerners and other Canadians and their businesses. Benefits plans require approval from the Minister of DIAND.

Call for Bids

The process required by legislation before Crown land can be released for oil and gas exploration.

Call for Nominations

The process required by legislation asking industry to identify parcels of land it would like posted for bidding.

COGOA

Canada Oil and Gas Operations Act

commercial discovery

A discovery of petroleum that contains enough reserves to make it economical to bring to production.

consultation

Refers to the power or duty to consult.

conventional crude oil

Liquid petroleum that flows naturally or that can be pumped without further processing.

CPRA

Canada Petroleum Resources Act

Crown lands

Lands to which the federal government owns the surface and/or subsurface rights.

Declaration of Commercial Discovery

A discovery that can be commercially produced is eligible for a Declaration of Commercial Discovery. The declaration defines the area to be developed and is required before an application can be made for a production licence.

Declaration of Significant Discovery

When exploration results in a petroleum discovery, an application may be made for a Declaration of Significant Discovery. The Declaration defines the area of the discovery and is required prior to application for a Significant Discovery Licence.

development

Refers to activities carried out on land or water.

development well

A well drilled next to a producing well to increase petroleum production in that oil or gas field.

drill

A modern (well) drilling unit with a bit attached to a rotating column of steel pipe.

dry hole

A well that cannot produce commercial quantities of oil or gas.

environmental assessment

Examination of a development proposal's environmental, social and economic effects.

environmental impact review

Examination for a development proposal undertaken by a review panel.

Exploration Licence (EL)

Gives the holder the right to explore, and exclusive right to drill, test, and develop lands for petroleum production and to obtain a production licence.

First Nation

The Gwich'in First Nation, the Sahtu First Nation or bodies representing other Dene or Métis of the North Slave, South Slave or Deh Cho region of the Mackenzie Valley.

First Nation lands

Settlement lands of the first nation; or lands situated within boundaries of a local government and referred to in a first nation's land claim agreement as municipal lands.

gathering lines

Pipelines that move raw petroleum from wellheads to processing plants and transmission facilities.

geophones (or jugs)

Sensitive vibration-detecting instruments used in conducting seismic surveys.

hydrocarbons

Liquid, solid or gaseous organic compounds, containing only hydrogen and carbon, and are the basis of almost all petroleum products.

licence

An agreement between two or more parties where the owner of the land gives another party certain rights relating to oil and gas exploration on the parcel of land for which the licence applies.

local government

Any local government established under the laws of the Northwest Territories, including a city, town, hamlet or village, charter community or settlement, whether incorporated or not.

methane

The simplest hydrocarbon and the main component of natural gas. Methane is also produced when organic matter decomposes.

National Energy Board (NEB)

The National Energy Board is the independent regulatory body that regulates oil and gas activity in the NWT and northern offshore areas under *Canada Oil and Gas Operations Act*, and transboundary pipelines under the *National Energy Board Act*.

permit

Authorization for the use of land or water.

petroleum

Naturally occurring mixture composed mostly of hydrocarbons in the gas, liquid or solid phase.

preliminary screening

Examination of the technical and environmental aspects of a development proposal.

Production Licence (PL)

Can be issued in relation to a commercial discovery and gives the holder exclusive rights to explore, drill, test, develop and produce petroleum as well as exclusive title to the petroleum produced.

regulatory authority (RA)

Refers to the body or person responsible for issuing a licence, permit or other authorization required for development under any federal or territorial law, but does not include a designated regulatory agency or local government.

responsible minister

Any minister of the Crown or of the territorial government having jurisdiction in relation to the development under federal or territorial law.

rights issuance

Refers to a process that describes how formal rights to explore for petroleum resources are issued on Crown lands.

seismic surveys

Refers to activities that gather and record patterns of induced shock wave reflections from underground layers of rock which are used to create detailed models of the underlying geological structure.

service rig

Truck-mounted rig that is brought in to complete a well, perform maintenance or improve production.

Significant Discovery Licence (SDL)

A license that enables the holder to retain the oil and gas discovery indefinitely.

sour gas

Natural gas containing hydrogen sulphide in measurable concentrations.

surface rights

The rights to work on the surface of the land.

vibroseis

The process of producing seismic shock waves with “thumpers” or vibrator vehicles.

waters

Any inland waters, in a liquid or frozen state, on or below the surface of the land.

Western Canada Sedimentary Basin

Canada's largest region of sedimentary rocks; the largest source of current oil and gas production.

wildcat

A well drilled in an area where no oil or gas production exists nearby.

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