

Landowner's Information Guide

for Oil and Gas Activities in British Columbia

OIL AND GAS COMMISSION



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The ***Landowner's Information Guide for Oil and Gas Activities in British Columbia*** is a living document. As necessary, it will be updated to ensure it will always be relevant and helpful to landowners. If you notice any way in which this document can be improved, please do not hesitate to contact the Commissioner's Office at 250.261.5729.

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Foreword



It is the responsibility of the Oil and Gas Commission to regulate the oil and gas industry for the benefit of all British Columbians. The Oil and Gas Commission has taken a number of steps to demonstrate respect for surface landowners and managers:

- We have established a Landowner Liaison Inspector who has the authority of an inspector, with the ability to take action and correct problems as they are presented;
- We have expanded the Compliance and Enforcement Branch staff to increase inspections by 25 percent over each of the next three years to ensure that we do our duty; and,
- We have developed this *Landowner's Information Guide for Oil and Gas Activities in British Columbia*.

This guide is designed as an information resource for use by landowners throughout British Columbia. It provides background on the rights and interests of the private landowner, an explanation of oil and gas activities, a description of regulatory processes, reference information for related agencies and legislation, and sample agreements.

We trust that this tool will contribute to more meaningful collaboration between landowners and the oil and gas industry.

Derek Doyle
Commissioner



Introduction

Although landowners in British Columbia may hold title to property, a Certificate of Title rarely includes the subsurface rights controlling what lies beneath the land surface.

Surface title gives landowners full control of a land surface, as well as rights to use or work that land. Unless otherwise stated in a Certificate of Title, landowners are also entitled to soil, sand and gravel found on the land surface.

Who controls subsurface rights to land?

The Crown (Province of British Columbia) owns the majority of subsurface rights, including the rights to below ground materials such as fossils, minerals, coal, oil and natural gas.

The government may grant these rights to certain companies or individuals allowing them access to explore for, develop and produce subsurface resources.

Land title

When considering the purchase of privately or provincially owned land, it is important that a buyer thoroughly research any charges, liens, or interests that may be registered against the land title.

It is also important that a buyer is aware of any oil and gas related facilities (including wells, batteries, compressors, etc) that may already exist on the property. This is because a surface lease for such facilities may or may not be registered against the Certificate of Title.

Do all surface lease agreements automatically transfer to a landowner upon sale of land?

No. When land on which an oil and gas facility exists is sold, existing agreements between the landowner and the oil and gas company relating to that property do not automatically transfer to a new owner.

Unless otherwise specified in property sale documents, the original landowner may continue to hold rights over the existing agreements.

Who must an oil and gas company contact before conducting subsurface activities on private land?

An oil and gas company holding sub-surface rights to property is responsible for contacting only those persons named on the Certificate of Title.

This means that if the landowner rents or leases land to another party (the occupant) and that agreement is not registered against the land title, the occupant has no rights to negotiate or sign any land use agreements on the owner's behalf.



*All companies who
construct oil and gas
projects must complete
a public involvement
process*

Public Involvement Guidelines

The Oil and Gas Commission (OGC) has a duty to regulate oil and gas activities by balancing environmental, economic and social outcomes. All companies who submit applications to construct oil and gas projects for approval by the OGC must complete a public involvement process that allows stakeholders (such as landowners) to express concerns about how the proposed oil and gas operations may affect them. The objective is to resolve any concerns prior to the company submitting the application.

*For further information on the Public Involvement Guidelines, please see:
www.ogc.gov.bc.ca/landowners.asp*

Role of the Ministry of Energy and Mines

The Ministry of Energy and Mines, Oil and Gas Titles Division administers provincially owned oil and natural gas rights.



This Division is responsible for the management of oil and natural gas rights, including the issuance, administration, and continuation of tenures, as well as the collection of rentals and fees associated with those tenures.

Oil and Gas Titles Division and the disposition of subsurface rights

Crown reserve petroleum and natural gas rights are sold for tenure under Section 71 of the *Petroleum and Natural Gas Act*, and are sold once a month by public tender.

Details concerning tenure sales (dispositions) are published in *The British Columbia Gazette* and in notices that are mailed to interested parties approximately six weeks prior to a disposition. A list of accepted offers to purchase rights is released the day following a disposition.

Anyone wishing to be included on the mailing lists for disposition mailing notices or accepted offers may do so by contacting the Oil and Gas Titles Division.

For more information, see the Oil and Gas Titles Division website: www.em.gov.bc.ca/subwebs/Landsale/default.htm or access the ministry's online map-based search tool at www.ptonline.gov.bc.ca

What does land tenure mean?

Land tenure is the right to exclusively occupy and use a particular area of land. Another type of tenure is known as resource tenure, which means that the tenure is limited to certain resources such as timber, and does not include all resources in a given area. Individuals, communities, governments, or corporations may hold tenure.

Disposition of subsurface rights review process

Following the disposition of oil and gas rights, but prior to issuance of tenure, the Oil and Gas Titles Division conducts a process of second party review. This involves submitting the disposition for comment to government ministries other than the Ministry of Energy and Mines, as well as regional districts, municipalities, First Nations and environmental organizations that may be affected by the disposition.



This review allows for early identification of potential land use conflicts and land access constraints. Comments received from second parties may also be included as caveats in a Notice of Public Tender, which may later form part of a land tenure document if tenure is issued.

The sale of subsurface rights

Government controls the disposition of subsurface rights, including to whom the rights may be sold.

Once interested parties are awarded subsurface rights by the Ministry of Energy and Mines, Oil and Gas Titles Division, they are entitled to seek approval to explore for, develop and/or produce petroleum and natural gas.

Role of the Oil and Gas Commission

In 1998, the Province of British Columbia and the Canadian Association of Petroleum Producers (CAPP) collaborated in developing a plan to increase production and stimulate investment in the oil and gas industry in British Columbia.

One component of this plan, The Oil and Gas Development Strategy, called for the creation of the Oil and Gas Commission.

What does the OGC do?

A primary role of the OGC is to regulate the processes by which entry, occupation and use of land by oil and gas companies are permitted. These regulations are drawn from the administration of the *Petroleum and Natural Gas Act* and the *Pipeline Act*, including all associated regulations, as they apply to both Crown and privately held lands.

It is important to regulate the activities associated with oil and gas exploration and development as these activities may affect the people who reside on the land and may disrupt the way in which land is normally used.

The Petroleum and Natural Gas Act

Section 9 of the *Petroleum and Natural Gas Act* deals specifically with the use of privately held land for oil and gas exploration and development.

The OGC regulates the entry, occupation and used of land by oil and gas companies



Section 9(1) of the Act states that:

“a person may not enter, occupy or use land, other than Crown land, to explore for, develop or produce petroleum or gas or explore for, develop or use a storage reservoir unless

(a) the person makes, with each owner of the land, a surface lease in the form and content prescribed authorizing the entry, occupation or use,

(b) the board authorizes the entry, occupation or use, or

(c) as a result of a hearing under Section 20, the board makes an order specifying terms of entry, occupation and use, including payment of rent and compensation.”

Section 9(2) of the Act states that:

“A person who enters, occupies or uses land to explore for, develop or produce petroleum or gas or explore for, develop or use a storage reservoir is liable,

(a) to pay compensation to the land owner for loss or damage caused by the entry, occupation or use, and

(b) if the board so orders, to pay rent for the duration of the occupation or use.”

In the quotes above, “the board” refers to the Mediation and Arbitration Board.

Wellsite size and spacing

The OGC also regulates the size of wellsites and the spacing of wells:

- ✦ Oil wells are normally limited to one well per quarter section of land, or approximately 65 hectares
- ✦ Gas wells are normally limited to one well per section of land, or approximately 260 hectares
- ✦ Wellsite leases are normally 120 metres by 120 metres, or 1.44 hectares



Considerations for Landowners: Oil and Gas Activities

When a landowner is approached by an oil and gas company to discuss the possibility of oil and gas exploration, production or transportation, the landowner may wish to be informed on a variety of matters including:

- The amount of time required to negotiate the necessary lease agreements with the company
- Time that may be needed for an ongoing relationship with the company (including meetings, phone calls, periodic site monitoring, etc.)
- A landowner may have limited influence on the general locations of oil and gas surface leases and pipelines
- A company's right of entry to leased land will be ongoing until a Certificate of Restoration is issued
- Ways in which the effects of oil and gas activities may impact the land
- Ways in which the effects of oil and gas activities may impact livestock or crops

DID YOU KNOW ...?

- An oil and gas company may contract a land agent to work on their behalf?
- The land agent may notify the landowner of a proposed project on behalf of an oil and gas company?
- A land agent may negotiate a surface lease agreement with the landowner on behalf of an oil and gas company?
- An agent may resolve any landowner issues, concerns and/or complaints on behalf of an oil and gas company?
- A land agent may negotiate lease renewals with the landowner?

Questions a landowner may ask companies about oil and gas activities on their land

Questions a landowner may ask companies include but are not limited to:

- What is the name, address and telephone number of the company that would hold title to the subsurface rights?
- What is the name, address and telephone number of the company representative responsible for this area?
- Will a land agent represent the interests of the company holding title to the subsurface rights?
- If so, what is the name, address and telephone of the land agent and his/her company?
- What types of activities are proposed?
- What is the proposed time schedule for the activities, including commencement date?
- What is the expected completion date?



Important

Landowners are urged to become as informed as possible regarding all aspects of any oil and gas activities proposed for their land. This may include asking questions, allowing adequate time to thoroughly review information, and careful consideration of the ways in which a proposed project may impact both the land and the landowner.





Land Survey

Oil and gas companies conduct land surveys to determine locations of geophysical (seismic) exploration lines, wellsites and pipeline right-of-ways. When British Columbia Land Surveyors survey the land for proposed oil and gas facilities, the survey must conform to the requirements outlined in the General Survey Instruction Rules. A pipeline right-of-way must also be surveyed after construction, and the survey must conform to requirements outlined in the General Survey Instruction Rules as well as the Pipeline Act.

Is consent from a landowner necessary for a British Columbia Land Surveyor to conduct land surveys?

No. A land agent or land surveyor may approach the landowner to discuss a project and gain consent to conduct a land survey as part of the planning process. While this process is recommended, it is not mandatory.

The Trespass Act

Section 12 of the *Trespass Act* states that:

“A British Columbia Land Surveyor and a person assisting a surveyor must, when actually engaged in the discharge of duties, be permitted to pass over all land, enclosed or otherwise, without hindrance from any person.”

The OGC encourages all land and oil and gas companies to contact landowners prior to survey work, and to give due consideration to the concerns and needs of landowners.



Geophysical Exploration

Geophysical exploration, commonly called seismic testing, is completed to determine the existence and location of oil and gas in subsurface rock formations. During this process shock waves, also called seismic energy waves, are created using explosive and non-explosive methods at or near the surface of the land.

The seismic energy waves travel below the ground and are reflected back to the surface, while vibration detectors called geophones record them as they pass through different types and densities of rock. Readings are then interpreted to determine the presence or absence of oil and gas trapped in underground rock formations.

Both methods are employed in accordance with government regulations.

Explosive seismic testing

When an explosive testing method is employed, shot holes are drilled into the ground, filled with explosives and detonated.

Non-explosive seismic testing

The most common non-explosive method of seismic testing is called vibroseis. A specially equipped vehicle installed with heavy metal plates vibrates the land surface.

How can geophysical exploration affect a landowner?

An oil and gas company or its agent must first consult with and obtain permission to access the land from the landowner for the purposes of geophysical exploration.

Can a landowner deny a company access to land for purposes of geophysical exploration?

Yes. It is the right of landowners to deny a company access to their property for purposes of geophysical exploration activities.

What activities are associated with geophysical exploration?

Surface and subsurface seismic or geophysical exploration activities may include:

- Mapping proposed seismic lines and access routes
- Clearing vegetation and/or snow from proposed seismic lines or access routes
- Placing surface markers along proposed seismic lines
- Generating subsurface energy waves using explosive or non-explosive methods
- Recording wave vibrations as they are reflected back to the surface

Who is responsible for any damage to the land?

The company is liable for damages to land that may result from its exploration activities.

When any damage is repaired or reclaimed, it is likely that a company will request that the landowner sign a Geophysical Operations Agreement (see Appendix 1, Geophysical Operations Agreement).

If damage to land continues to be apparent after initial damages are repaired, and a release form has been signed, a company continues to be liable. However, it is recommended that the landowner ensure that cleanup is completed under non-frozen conditions. It is also recommended that the landowner allow the OGC to inspect the site to ensure any damage was remedied and that the land was reclaimed according to government regulations.

*It is the right of
landowners to deny a
company access to their
property for geophysical
exploration*

What are the minimum distances a project should be from structures or buildings?

Section 8 of the Geophysical Exploration Regulation in the *Petroleum and Natural Gas Act* states that geophysical or seismic exploration work must meet or exceed the minimum required distances from buildings and structures:



“(1) If geophysical exploration is conducted in the vicinity of any gas, oil or water pipeline or well, electric cable, transmission line, utility, residence or other improvement, every precaution must be taken by the operator to ensure that the pipeline, well, electric cable, transmission line, utility, residence or other improvement is not damaged and that its use is not interrupted.

(2) Despite the generality of subsection (1), any method of geophysical exploration in relation to a facility described in column (1) of the Schedule must not be conducted at a distance less than the minimum distance shown in column (2) or (3).”

The minimum setback distances for geophysical exploration depends on the type of building or structure, as well as the method of testing:

MINIMUM SETBACK DISTANCE FOR GEOPHYSICAL EXPLORATION				
TYPE OF BUILDING OR STRUCTURE	NON-EXPLOSIVE SEISMIC TESTING (IN METRES)	EXPLOSIVE SEISMIC TESTING		
		CHARGE WEIGHT (IN KILOGRAMS)	DISTANCE (IN METRES)	
Residence, or place of public concourse	50	all	180	
Water well	100 (vibroseis) 50 (all others)	all	180	
Driveway, gateway or buried water pipeline	5	all	10	
Survey monument, buried telephone cable or telecommunication cable	5	all	10	
Oil or gas pipeline (measured from the pipeline centre) or gas well	15	—	≤2	32
		>2	≤4	45
		>4	≤6	55
		>6	≤8	64
		>8	≤10	72
		>10	≤20	101
		>20	≤40	143
		>40	≤100	226



Considerations for Landowners: Geophysical Exploration

Landowners may have a number of considerations and questions in relation to proposed geophysical exploration activities on their land, including how activities may affect:

- ✦ Existing water sources
- ✦ Livestock or crops
- ✦ Buildings, structures or fences



Landowners should also ask how and when land clean up and reclamation will be completed.

Questions a landowner may ask companies about geophysical activities on their land:

- ✦ Where will seismic line(s) be located?
- ✦ How will the company access the seismic lines?
- ✦ If a seismic line is constructed, how will it be constructed?
- ✦ What is the cut line width?
- ✦ Will timber be removed in the construction of a line?
- ✦ What method of seismic testing will be used?
- ✦ When will work start? When will it be completed?
- ✦ Will water quality and quantity testing be conducted on private water wells and/or water sources in the region before construction?
- ✦ Will water testing be conducted after seismic work has been completed?
- ✦ If a water well or water source is affected as a result of seismic work, what measures will the company take to remedy the situation?



- ♦ Will preliminary site cleanup work be started immediately following project completion?
- ♦ Following preliminary site cleanup, when will the site be inspected again?
- ♦ When will final site cleanup be scheduled?
- ♦ What is planned in terms of land restoration? When will this work take place?
- ♦ How and when will damage to land that may appear after the project is completed, be remedied?
- ♦ If seismic testing indicates potential for further exploration and/or development activities, what happens next? When will it happen?





Access Roads

Construction of access roads is often necessary to facilitate oil and gas exploration, development and production work. As road construction, maintenance and deactivation (closure after completion of work) may impact land and its use, it may be necessary for an oil and gas company and landowner to negotiate a Road Use Agreement (see Appendix 2, Road Use Agreement).

Considerations for Landowners: Access Roads

Landowners may have a number of considerations and questions in relation to entering into a Road Use Agreement with an oil and gas company. These may include:

- How access roads may affect livestock, crops, fences
- How road construction may affect existing surface drainage patterns
- What road construction methods will be used to control and prevent erosion
- What types of materials will be used to control and prevent erosion
- The volume and type of traffic using the access road
- Whether the access road location may increase trespass traffic
- Whether the access road location may interfere with normal harvesting patterns
- The potential of gravel from roads migrating into fields and pastures
- The possibility that more than one company may use the road if further development follows

Questions a landowner may ask oil and gas companies about access roads on their land:

- ✦ What type of road will be constructed? Will the road be accessed in winter only, or in all seasons?
- ✦ Where will it be located?
- ✦ Will the road surface be graveled? What size of crushed rock?
- ✦ What kind of vehicles and what volume of traffic are expected on the road?
- ✦ If a road crosses a fence line or natural barrier, how will this be remedied?
- ✦ If a road is closely located to a residence, crops, or livestock, how will dust be controlled?
- ✦ What methods will be used to ensure that surface water run-off is properly controlled?
- ✦ What methods will be used to prevent contaminated fluids from entering water sources, fields, livestock areas, etc?
- ✦ Will the access road right of way be seeded?
- ✦ How will noxious weeds be controlled? (Refer to Noxious Weeds chapter)
- ✦ Will the road be deactivated, partially or completely? When?
- ✦ Will regular road maintenance take place? Will a maintenance schedule be developed? What is the schedule? Will it be followed?
- ✦ Will other companies use the road to access other sites? If so, how will the landowner be notified?
- ✦ If more than one company uses the road, which company will assume primary responsibility for the road? How will this affect road maintenance and compensation to the landowner?



Important

Landowners should be aware that road stability can be affected by improper surface water drainage. To prevent water erosion of road surfaces, it may be necessary to:

- Construct road surfaces with suitable slopes or banks*
- Construct appropriate ditches running adjacent to roads*
- Install metal or plastic culverts to control the effects of excessive water flow, steep road gradients, or unstable or sensitive soils*
- Place rip-rap (rocks) in ditches where soils may be easily eroded*
- Build ditches or water-bars across temporary access roads with a low risk of excessive water flows, gentle road gradients, or stable soils*





Wellsites

When geophysical exploration results indicate that an area has the potential to produce oil or gas, the oil and gas company must obtain approval from the OGC before constructing a wellsite.

If the wellsite is to be located on private land, a company must negotiate a Surface Lease Agreement with the landowner prior to seeking OGC approval, in accordance with Section 9 of the *Petroleum and Natural Gas Act*.

Surface Lease Agreements

If an oil and gas company is planning to build oil and gas facilities on private land, a company representative will contact the landowner to discuss the project and negotiate a Surface Lease Agreement.

This agreement is a legal, binding contract that specifies the terms and conditions for use of the land surface. It also describes how impacts to the land or inconveniences to the landowner associated with the activities will be mitigated.

What is involved in a Surface Lease Agreement?

A Surface Lease Agreement grants a company access to privately owned land for the purposes of constructing and maintaining above ground structures (such as a wellsite or battery) that are necessary for operations (see Appendix 3, Surface Lease Agreement).

The agreement also specifies any conditions relating to the commitments and responsibilities of both the company and the landowner, including the payment of compensation. The minimum contents of an agreement are the prescribed requirements in the Surface Lease Regulation, B.C. Reg. 497/74 in the *Petroleum and Natural Gas Act*.

What if agreement between a landowner and a company cannot be reached?

Should the landowner and company not reach agreement, either the landowner or the company may submit an application to the Mediation and Arbitration Board (See Unresolved Concerns chapter).

Important

It is the responsibility of a landowner to ensure that their rights are protected prior to signing a Surface Lease Agreement. Landowners who may be inexperienced with negotiation practices, or unfamiliar with the terms of a Surface Lease Agreement, are urged to seek guidance and information from those who may be more knowledgeable. Such persons may include but are not limited to lawyers, neighbours, friends, regional district representatives, OGC staff, or members of the Mediation and Arbitration Board.

Disposal of Drilling Waste

An important consideration in negotiating a Surface Lease Agreement with an oil and gas company may be the disposal of drilling waste.

What is drilling waste?

Oil and gas well drilling usually requires the use of drilling fluids, commonly known as “drilling muds.” Drilling muds lubricate and cool the drill bit, carry drill cuttings to the surface, and control subsurface well pressure. Drilling fluids may include water, special types of clays, chemical additives, or other materials; this waste is usually stored in a sump.

Once drilling is completed, the company is responsible for sampling the fluid and solid portions of this waste so that the existence of any pollutants can be measured and the drilling waste can be properly treated and disposed of accordingly.

How does a company dispose of drilling waste?

Drilling waste is commonly disposed of using three processes. The disposal methods must meet the criteria specified in the OGC standards and regulations in the ***British Columbia Oil and Gas Handbook***.

THE PROPER DISPOSAL OF DRILLING WASTE IS IMPORTANT BECAUSE...

- Protects the environment
- Helps to restore the disposal site
- Minimizes the surface disturbance of the land



Land spraying

Slurried drilling waste is spread at low rates onto cultivated or grasslands and then are incorporated into the subsoil. This must not occur within 100 metres of a water source.

Pump off

Clear drilling waste liquids are pumped onto vegetated land, but are not incorporated into the soil. As with land spraying, this must not occur within 100 meters of a water source.

Mix/bury/cover

If the wellsite is located on impermeable soils, drilling waste is mixed with subsoil, buried at the wellsite, and then covered with at least one metre of clean subsoil. The original topsoil is then replaced. The reburial must be at least one metre above the water table.

Is consent from a landowner required for a company to dispose of drilling waste on privately owned land?

Yes, when drilling waste is disposed using either the land spray or pump off process. Landowner consent, however, is *not* required when the mix/bury/cover process is employed.

Important

It is the responsibility of a landowner to be aware of how an oil and gas company proposes to dispose of drilling waste. Any concerns regarding drilling waste should be addressed in a Surface Lease Agreement.

Renegotiation of a Surface Lease Agreement

Section 11 of the *Petroleum and Natural Gas Act* states that rental provisions of a Surface Lease Agreement may be renegotiated after a continuous five-year period of occupation of land by an oil and gas company.



How is renegotiation of a lease initiated?

A company or landowner planning to renegotiate a Surface Lease Agreement may give notice of this in a manner consistent with the original lease agreement. Notice must be given on or after the five-year anniversary date of the original lease agreement.

If a Surface Lease Agreement is not renegotiated within six months of the expiration of this notice, either party may apply for a hearing to the Mediation and Arbitration Board.

Termination of a Surface Lease Agreement

The Surface Lease Regulation specifies the following conditions under which a Surface Lease Agreement may be terminated:

- Surface Lease Regulation, Section 1(c), states the grantor (landowner) may terminate a lease if default on payment (landowner compensation) for the lease exceeds ninety days after a demand for payment is made
- Surface Lease Regulation, Section 1(d), states the lessee (company) may terminate the lease on or after the second anniversary of the lease, having given no fewer than ninety days notice to the grantor

A Surface Lease Agreement may also be terminated with the mutual agreement of all parties.

Certificate of Restoration

When all work at an oil and gas facility has ceased, any land affected by activities must be reclaimed or restored. The common term used in the oil and gas industry for the completion of work is site abandonment.

Section 84 of the *Petroleum and Natural Gas Act* specifies that a wellsite, test hole or production facility is not deemed abandoned until the OGC issues a Certificate of Restoration (CoR).



How does a company get a Certificate of Restoration?

An oil and gas company is required to remove all equipment from the site and restore all land affected by oil and gas activities. Further, a company must apply to the OGC for a CoR before termination of the Surface Lease Agreement.

The OGC may issue a CoR either when an oil and gas company submits a signed release from the landowner, or upon satisfactory examination of the affected land by OGC inspectors.

When oil and gas developments are located on land within the Agricultural Land Reserve, complete reclamation of the site is required before a CoR may be issued.

When is an oil and gas company no longer liable for compensation?

As stated in Section 9(3) of the *Petroleum and Natural Gas Act*, an oil and gas company is no longer liable for compensation to the landowner on the date a CoR is issued.

Considerations for Landowners: Wellsites

Landowners may have a number of considerations and questions in relation to wellsites located on their land and on adjacent land, including:

- Value of land and timber at the time of negotiation or renegotiation of a Surface Lease Agreement
- Impacts to the soil, particularly in relation to admixing and compaction of soil layers during construction and operation
- Ways in which land use may be affected and/or restricted during and after operations (prior to issuance of a CoR)
- Impacts of altering an existing land habitat or land use
- Loss of annual gross profit in relation to the wellsite location
- Direction of prevailing wind
- Whether it may be necessary to have access roads leased areas fenced
- If any additional facilities are to be erected on the site
- How restricted use of or access to adjacent lands may affect land use

*When oil and gas
developments are located
on land within the ALR,
complete reclamation of
the site is required*



- ✦ Extra work or personal time that may be required to travel around leased areas
- ✦ Potential for noxious weeds to be imported to an area
- ✦ Effects of dust
- ✦ Impacts of wellsite activities on certain growing operations (ie certified organic farming)
- ✦ Corrosive effects of sulphur compound emissions on fencing, buildings, etc.
- ✦ Impacts of wellsite activities in relation to personal recreation activities
- ✦ Impact of wellsite activities on existing land drainage patterns
- ✦ Possibility of loss of privacy/enjoyment



Questions a landowner may ask an oil and gas company about having a wellsite on their land:

- ✦ Will an access road and wellsite be located to ensure the least amount of disruption to existing land use operations (close to fence lines, existing trails, property boundaries)?
- ✦ How will topsoil be conserved on a wellsite and access road?
- ✦ Will an access road and wellsite be constructed to ensure that natural water drainage is not impeded?
- ✦ Is the proposed well for oil or gas?
- ✦ If it is a gas well, will it produce sweet or sour gas?
- ✦ What hazards are associated with the proposed activities?
- ✦ What safety precautions will be in place?
- ✦ How will the well be monitored?
- ✦ Will a flare stack or incinerator be located on the site?
- ✦ Will flare testing occur? If so, at what times and for how long?
- ✦ How much advance notice will be given to the landowner before flare testing begins?
- ✦ Will drilling take place on a daily basis? How often during the day will it occur? Twenty-four hours per day? Seven days per week?
- ✦ What are the anticipated noise and odour levels during wellsite operation?
- ✦ What measures will be in place to reduce noise levels?
- ✦ How will the company dispose of drilling waste?
- ✦ Are there alternatives to a drilling sump, such as a fluid containment tank?



- ✦ How will surface water (accumulated precipitation) at the site be managed?
- ✦ How will noxious weeds at the site be controlled?
- ✦ Will a power line be required? If so, will the line be above or below ground?
- ✦ Will existing water wells/sources be tested for quality and quantity before and after drilling is completed?
- ✦ If a water well/source is impacted, what measures will be taken to remedy the situation?
- ✦ Will the company need to drill a water source well?
- ✦ If a wellsite were to produce oil or gas, how will the oil and gas be transported from the site?
- ✦ If a wellsite were to produce oil or gas, what additional surface facilities may be required (compressor, pump jack, tanks)?
- ✦ If a well were to produce oil or gas, will additional wells be installed on or near the site?
- ✦ If a well were to produce oil or gas, will the site be tear-dropped and soils brought back onto the unused portions of the site?
- ✦ If further work is required on the site after it is tear-dropped, how will the soils be conserved?
- ✦ What plans have been made for surface restoration at completion?
- ✦ If a well does not produce, how will the site be restored?
- ✦ Will a company apply for a CoR in a timely manner?
- ✦ If a well located in a treed area does not produce, what are the plans for timber salvage and reforestation?

OIL AND GAS COMPANY RESTORATION PLANS FOR LAND AFTER COMPLETION OF WORK MAY INCLUDE, BUT ARE NOT LIMITED TO:

- Restoration of surface water drainage patterns to original (natural) drainage patterns or to be compatible with the surrounding landscape
- Tear-dropping the lease site
- Ensuring or restoring site slope stability
- Revegetation of disturbed areas
- Removal of gravel or rocks unless the landowner wants them to remain
- Removal of all garbage and industrial debris





Pipelines

After the successful development of a well, and petroleum and natural gas are subsequently produced, the construction of additional facilities such as a pipeline may be required.

Pipeline construction generally requires the use of additional land to that which had already been leased, so further negotiation and agreement between the company and the landowner concerning land use may be necessary. Also, any above-ground facility that is constructed in association with a pipeline that is not located on a wellsite will also require a surface lease agreement (see Appendix 4, Lease Agreement for a Pipeline Right-of-Way).

Lease agreement for a pipeline right-of-way

An agreement between a company and landowner concerning the construction of a pipeline states the rights and responsibilities of a company in relation to a pipeline right-of-way, including the right to enter land to construct and maintain a pipeline and necessary pipeline facilities.

What is involved in a pipeline right-of-way lease agreement?

Provisions in the agreement may include the number of pipelines (if more than one) to be constructed, issues in relation to pipeline ownership if and when a pipeline is suspended, and compensation for damage to land resulting from pipeline construction and maintenance.

Under Section 8 of the *Pipeline Act*, a company is required to cause as little damage to the land as possible when constructing a pipeline, and to fully compensate a landowner for any damage.

Once an agreement has been negotiated with the landowner, a company will register the pipeline right-of-way as a Statutory Right of Way (easement) under the *Land Title Act*.

Important

A landowner is encouraged to know in advance the type and number of pipeline(s) to be constructed, and which government body is responsible for regulating the pipeline.

While the OGC is a provincial agency responsible for regulating pipelines that remain within provincial boundaries as defined in the Pipeline Act, the Government of Canada's National Energy Board (NEB) is responsible for regulating pipelines used to transport oil, gas or other commodities beyond provincial borders.



A company is required to cause as little damage to the land as possible when constructing a pipeline

What happens if agreement between a landowner and company regarding construction of a pipeline cannot be reached?

If agreement between a company and landowner concerning an OGC regulated pipeline cannot be reached, there are methods of resolving the dispute that are outlined in the Unresolved Concerns chapter.

If agreement between a company and landowner concerning a non-NEB regulated pipeline cannot be reached, a company may appropriate land as prescribed in Section 16 of the *Pipeline Act*.

The *Act* in this regard refers to Part 7 of the *Railway Act*, which describes processes for land expropriation, registration documents with the Land Titles Office, and refers matters of landowner compensation to the Expropriation Compensation Board.

Considerations for Landowners: Pipelines

Landowners may have a number of considerations and questions about negotiating a pipeline lease agreement with an oil and gas company. These may include:

- Value of the land before and after construction
- Value of any timber



- ✦ Impacts to the soil
- ✦ Impacts to land use and habitat
- ✦ Potential introduction of noxious weeds
- ✦ Impacts to crops and/or livestock
- ✦ Use of land adjacent to a pipeline
- ✦ Impacts of construction on surface water drainage patterns

Questions a landowner may ask a company about pipeline construction on their land:

- ✦ How many pipelines are planned?
- ✦ Where will the pipeline(s) be located?
- ✦ What is the pipeline right-of-way width?
- ✦ How will a company access a pipeline right-of-way during and after construction, when performing maintenance?
- ✦ Will construction be suspended during wet weather conditions?
- ✦ Are any above ground facilities associated with the pipeline planned? Where will they be located?
- ✦ How will water run-off be controlled?
- ✦ Will the right-of-way be seeded following pipeline construction?
- ✦ How will noxious weeds be controlled?
- ✦ Will a company ensure adequate pipeline maintenance if the pipeline is suspended?
- ✦ How and when will a company repair effects of water erosion or settling along the pipeline right-of-way after construction?
- ✦ Should a pipeline right-of-way breach an existing fence line or a natural barrier, how will this be remedied?





Unresolved Concerns

As stated in the *Petroleum and Natural Gas Act* and *Pipeline Act*, the landowner and oil and gas company are required to negotiate a Surface Lease Agreement prior to the company making an application to the OGC to construct the pipeline or well-site.

While the OGC encourages the independent resolution of concerns and problems associated with negotiation of these agreements, if agreement is not possible or if there is a dispute, landowners and companies have some alternate processes to help resolve any differences.

Appropriate Dispute Resolution

The OGC encourages the use of Appropriate Dispute Resolution (ADR) when differences between a company and landowner do not involve matters of right-of-entry to land or compensation.

This process attempts to resolve differences between the parties and make decisions on their behalf.

How does the Appropriate Dispute Resolution process work?

A “Notice of Unresolved Concern” is filed with the oil and gas company, and copied to the OGC. This notice documents any disagreement from the point of view of the affected party, including how the party is affected, and is a formal record that is reviewed by the OGC during its decision-making process.

As stated in Section 8 of the *Oil and Gas Commission Act*, the ADR process is meant to assist in helping to resolve disputes. It is a voluntary process requiring participation from

both parties. The process must be completed prior to completion of the OGC's review of the company's application to construct the project.

What is a Request for Reconsideration?

Section 9 of the *Oil and Gas Commission Act* states that after approval has been granted by the OGC for the development of an oil and gas project, the landowner and company, as well as other interested parties, may apply to the OGC Advisory Committee for a "Request for Reconsideration."

This process requires the "Request for Reconsideration" applicant to provide new information or information that may have been overlooked during the original application review. The OGC Advisory Committee examines the request and provides a recommendation to the Commissioner. The Commissioner can order re-examination of the application.

Mediation and Arbitration Board

Should negotiations between the landowner and oil and gas company fail, or should the landowner refuse a company right of entry onto land, or any offer of compensation, an application may be made to the Mediation and Arbitration Board for assistance in resolving the dispute.

What is the role of the Mediation and Arbitration Board?

The Board's principal role is to ensure that when agreement between a landowner and company cannot be reached, the company can gain access to land for the purposes of oil and gas exploration and development and a landowner is fairly compensated.

What is the Board empowered to do?

The Mediation and Arbitration Board is empowered to make decisions on behalf of both parties in relation to issues involving entry onto land, condition of occupation of that land for the development, production and storage of oil and gas, as well as matters involving landowner compensation.



What is involved in a mediation process?

Section 16 of the *Petroleum and Natural Gas Act* outlines the requirements for applying for a hearing by the Mediation and Arbitration Board, while Section 18 outlines procedures governing mediation hearing procedures.

When the Board receives an application, the Board Administrator contacts each party (landowner and company) to clarify the issues behind the dispute and facilitate a resolution. If this process fails, a mediator is appointed.

What is the function of a mediator?

A mediator inspects the property in question and conducts a mediation hearing allowing both parties to present their arguments in person. During this hearing a mediator will attempt to resolve differences and facilitate an agreement.

What happens if a mediator is unsuccessful in achieving agreement?

If the mediator is unable to help resolve differences during a hearing process, the mediator may issue a Right-of-Entry Order granting a company the right to enter, occupy or otherwise use a specified area for purposes of oil and gas exploration and development.

While the Right-of-Entry order gives a company access to land, Section 19 of the *Petroleum and Natural Gas Act* states that a mediator must also order a company to pay compensation to the landowner for loss or damage caused.

What is involved in an arbitration process?

Arbitration is a process in which the Mediation and Arbitration Board hears arguments and weighs the evidence presented by both the parties involved in a dispute. Section 20 of the *Petroleum and Natural Gas Act* outlines the procedures for arbitration hearings, while Section 21 specifies the factors that the board may consider in determining the amount of compensation awarded to the landowner.

THE *PETROLEUM AND NATURAL GAS ACT* SPECIFIES THAT AN OIL AND GAS COMPANY MUST ACQUIRE A SURFACE LEASE OR RIGHT-OF-ENTRY ORDER BEFORE ENTERING PRIVATE LAND.





Agricultural Land Reserve

The Agricultural Land Commission (ALC) is an independent provincial body responsible for the administration of interests of zoned agricultural land, which is called the Agricultural Land Reserve (ALR).

As some oil and gas activities in the province occur on agricultural land, the ALC works cooperatively with agricultural land owners and the oil and gas industry to allow oil and gas industry access to agricultural land as long as that land is properly reclaimed as an equivalent agricultural capability.

ALC/OGC Delegation Agreement

In 2004 the Agriculture Land Commission delegated authority to the OGC to make decisions regarding applications for oil and gas activities on agricultural land. Specifically, the Agriculture Land Commission delegated the OGC to:

- ♦ Receive, consider and make decisions regarding applications for oil and gas within the ALR
- ♦ Receive, evaluate and record pre-disturbance assessments submitted by an oil and gas company in consultation with the landowner
- ♦ Provide information regarding these processes as may be requested by the ALC
- ♦ Evaluate and record post-land reclamation assessment reports submitted by an oil and gas company, prior to issuing Certificates of Restoration or approving pipeline suspension
- ♦ Inspect oil and gas activities on agricultural reserve land and implement appropriate enforcement actions as necessary for non-compliance with regulations as stated in the

Agricultural Land Commission Act, and other Acts and regulations administered by the OGC

- ✦ Respond to and investigate complaints from landowners regarding reclamation of oil and gas sites located on ALR lands

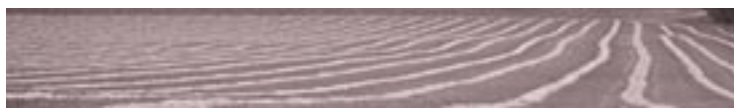
What does this agreement mean for oil and gas companies?

The Delegation Agreement means that oil and gas companies are exempt from making *Agriculture Land Commission Act* applications for the following activities, because they are required to do so under other legislation:

- ✦ Geophysical exploration
- ✦ Construction of pipelines and facilities directly related to the operation of pipelines
- ✦ New oil and gas wells on existing wellsites
- ✦ Construction of up to three stand-alone wellsites per quarter section of land or equivalent area, including access roads and facilities directly related to operation of wells
- ✦ Electric power lines immediately adjacent to access roads

Oil and gas companies are not exempt from making *Agriculture Land Commission Act* applications to the OGC for the following activities because they are very rare and involve the use of substantial land:

- ✦ A fourth stand-alone wellsite per quarter section of land or equivalent area, including access roads and facilities directly related to the operation of the well
- ✦ Batteries, compressor stations, disposal of drilling and production waste, handling processing facilities for produced water and gas, and buildings and structures occupying a combined area lesser than or equal to 450 square metres on the quarter section
- ✦ Wells that change in use to other purposes
- ✦ Electric power lines that are not adjacent to access roads



The Agriculture Land Commission will continue to receive applications from oil and gas companies for the following activities:

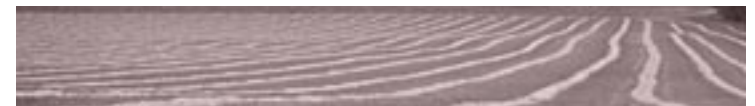
- A fifth (or more) stand-alone wellsite per quarter section of land or equivalent land, including access roads and facilities directly related to the operation of the well
- Batteries, compressor stations, disposal of drilling and production waste, processes and processing facilities in relation to produced water and gas, and buildings and structures greater than 450 square metres
- Commercial waste handling and disposal, including deep well disposal projects
- Facilities not exclusively related to oil and gas production, including material and equipment storage
- Oil and gas activities proposed for a quarter section or sixty-five hectare portion of land in which the combined area of land used for those activities is greater than seven hectares (seventeen acres)
- Change in use from a well to other purposes

Important

The ALC/OGC Delegation Agreement does not exempt oil and gas companies from submitting necessary applications, documents or other materials required by other provincial legislation regulated by the OGC.

THE PURPOSE OF THE AGRICULTURE LAND COMMISSION IS:

- *To preserve agricultural land*
- *To encourage farming in collaboration with other interested communities*
- *To advocate that all levels of government enable and accommodate the use of agricultural land for farming in their plans, bylaws and policies*





Sour Gas



Sour gas is natural gas containing hydrogen sulphide (H_2S). H_2S is a colourless and toxic gas that is formed when breakdown of organic material occurs without the presence of oxygen.

In addition to being found in natural gas, H_2S is found in oil, sewage, swamps, stockyards, and in pulp and paper manufacturing processes. It is often identified by its rotten egg smell.

How is sour gas formed?

Many subsurface rock formations containing oil and gas also contain iron, which bonds to the sulphur found in H_2S . If large quantities of iron exist, oil and gas will contain little or no H_2S , and is called sweet oil or sweet gas. When only small quantities of iron exist, toxic sour gas is formed, as there is not enough iron to neutralize it.

Why can it be dangerous?

As H_2S is slightly heavier than air, it does not disperse quickly when contained in enclosed spaces. For this reason risk of exposure to H_2S is greatest when it is contained in storage tanks, tank trucks and buildings.

Risk of exposure to toxic concentrations decreases when sour gas is in open areas, allowing it to disperse into the atmosphere.

Can sour gas be removed from gas?

Yes. Gas processing plants are used to remove H_2S , water and carbon dioxide from raw gas. In Canada, over 97 percent of H_2S is converted into elemental sulphur that is used to manufacture phosphate fertilizers and products such as plastics and matches.

Health Effects of H₂S

In British Columbia a gas pipeline, well or processing facility is designated a sour gas operation if gas contains more than 1% H₂S, which is equal to 10,000 parts per million (ppm).

The following table documents the effects of exposure to H₂S relative to concentration levels, should sour gas be accidentally released into the atmosphere.

EFFECTS OF EXPOSURE TO H ₂ S	
AMOUNT OF H ₂ S (IN PARTS PER MILLION)	EFFECT ON HUMANS
1–10 ppm	Moderate to strong odour of rotten eggs This odor may cause nausea, headaches and/or tearing of eyes The Workers Compensation Board allows workers to work unprotected at H ₂ S levels of 10 ppm or below
10–20 ppm	Strong offensive odour Increased lung and eye irritation Workers are required to wear appropriate protection to work at H ₂ S levels above 10 ppm
50–100 ppm	Effects may include headache and burning sensations in the eyes and throat
100–500 ppm	Effects become more severe Temporary loss of smell may occur
Over 500 ppm	Rapid unconsciousness Breathing stops Death will result without immediate rescue

IF A 375 ML CAN OF POP IS DRAINED INTO A SWIMMING POOL (APPROXIMATELY 375,000 LITRES OF WATER), THE CONCENTRATION OF POP IN THE POOL WOULD BE 1 PPM. To reach a concentration of 10,000 ppm, 10,000 cans of pop would have to be emptied into the pool.



Important

If a sour gas smell is detected, it is important to leave a site immediately and, if possible, move upwind and/or to higher ground. Leave the site before attempting to contact the company or the OGC. Do not attempt rescue of others at a site where sour gas is detected unless protective equipment is available and rescuers have received appropriate training.

Emergency Response Plans For Sour Gas Development Areas

Section 58(1) of the Drilling and Production Regulation requires an oil and gas company to develop emergency response procedures if a well, pipeline, plant or other facility has the potential for an accidental release of H₂S that will effect public health or safety, or cause environmental damage.

Section 5 of the Sour Pipeline Regulations requires that “each company that has a sour gas pipeline must, before the pipeline is open for service, prepare and implement an emergency response plan that has the approval of the chief inspecting engineer.” The type of emergency response plan required by a company operating a sour gas site is determined by the potential for the accidental release of H₂S. The plans establish how people within the emergency planning zone will be alerted, supported and assisted in evacuating the area.

It is the responsibility of the OGC to review and approve all emergency response plans associated with sour gas drilling activities, wellsites, production facilities and pipelines.

*The Drilling and
Production Regulation
requires that an oil and
gas company develop
emergency response
procedures*



What are the responsibilities of an oil and gas company in developing an emergency response plan?

An oil and gas company developing or operating a sour gas well or pipeline will provide information to residents within the designated emergency planning zone. This information should include:

- The potential that may exist for the accidental release of H₂S
- The possibility of any adverse effects to health
- Evacuation procedures
- The approximate time after drilling begins that sour gas zones may be penetrated

A company is also required to contact residents in an emergency planning zone to collect or confirm the following confidential information:

- The location of the residence
- The names and number of residents, home telephone number, business telephone number
- Any existing health problems, especially if respiratory in nature
- The need for assistance or transportation during evacuation procedures

In addition to collecting information from residents, a company is required to provide information to residents living in an emergency response plan zone. This includes:

- The name of the company, of the company contact and a 24 hour emergency contact number
- The location of the facility
- The approximate timing of operations
- A description of potential hazards of a accidental release of H₂S and SO₂
- The characteristics and risks of H₂S and SO₂
- A description of potential emergency situations and corresponding emergency response plans



- Actions that residents may take if H₂S or SO₂ is suspected in the area
- An explanation of evacuation plans, including evacuation of schools, hospitals, and homes for the elderly
- Location of reception centre(s)
- Contact number for the Provincial Emergency Program (PEP) 24 Hour Emergency Coordination Centre
- Map of the surrounding area

Any personal information (such as health problems, unlisted telephone numbers, or the age of any children) obtained from the residents should be clearly marked as confidential in all copies of the emergency response plan. This information must be provided to any company personnel involved in evacuation procedures.





Complaints about Oil and Gas Activities

If the landowner identifies a problem or concern about oil and gas activities, including oil and gas installations and production facilities, the landowner should not hesitate to contact the company to report the concern.

Potential complaints may include the presence of odour, noise, environmental damage, and trespassing situations.

Should a company fail to respond to the complaint, the landowner should contact the OGC for assistance.

What will the OGC do with complaints from landowners?

- ♦ Review and respond to complaints expressed by landowners about oil and gas exploration, development, transportation, and production activities
- ♦ Respond to issues and questions that may arise as oil and gas activities approved by the OGC evolve through stages of development. These may include land survey, geophysical testing, drilling and completion activities, land restoration and abandonment
- ♦ Conduct field inspections of oil and gas operations located on both private and adjacent Crown lands to ensure compliance with the *Petroleum and Natural Gas Act*, the *Pipeline Act*, as well as other associated regulations and applicable legislation
- ♦ Issue remedial and/or stop-work orders when oil and gas activities are deemed to be in contravention of applicable regulations or legislation

What can't OGC do about complaints from landowners?

The OGC cannot provide legal advice, nor can it mitigate issues or concerns that are not within the mandate of the OGC.

Upon investigation, the OGC does transfer concerns to other agencies (Workers' Compensation Board, Water, Land and Air Protection, Department of Fisheries and Oceans, etc.) where concerns fall outside the OGC's mandate.

These may include but are not restricted to matters of compensation and conditions of third party agreements, such as surface lease agreements between the landowner and oil and gas company.

How can a landowner register a complaint with the OGC?

Concerns or complaints may be registered by telephone, mail, fax or in person at the offices of the OGC. Complaints can be registered in person or by fax from 8:30 am to 4:30 pm on Monday to Friday, except statutory holidays. Complaints can be registered by phone 24 hours a day, 7 days a week at 250.261.5700.

The following information should be included in a complaint:

- ✦ Description of the nature and extent of the problem
- ✦ Date and time the problem was first noticed
- ✦ Location of the issue (town, section, township, range, etc.)
- ✦ Possible causes of the problem, if known
- ✦ Name of the company operating in the area, if known
- ✦ Description of any prior contact with a company regarding the problem
- ✦ Complainant contact information (name, telephone number, address)
- ✦ Any additional information that may be relevant

Complaints can be registered by phone 24 hours a day, 7 days a week, at 250.261.5700







Waste Gas Flaring

Flaring is a process in which natural gas waste, those products that may neither be processed nor sold, is eliminated in a controlled burn. Flaring is used throughout all stages of oil and gas activities, and generally takes one of three forms.

Solution gas flaring

Solution gas is the natural gas that is contained in crude oil. When possible, it is recovered and transported to a processing facility. When transporting solution gas is not possible due to economic considerations, it is eliminated by flaring or in an incinerator.

Solution gas flaring normally occurs at batteries, where products from one or more well-sites are processed and stored. As flaring at these sites is generally continuous, the OGC ensures that companies monitor and re-evaluate the volume and economic necessity of flaring on an ongoing basis.

Gas plant flaring

Gas processing plants remove water, H_2S , carbon dioxide and liquids from raw natural gas to produce market ready natural gas. Flaring at gas plants will dispose of any unmarketable gasses.

Flares at gas processing plants also function as a safety measure to safely eliminate gas during emergency situations that may occur and disrupt normal plant operations. Flaring in emergency situations generally lasts for only a few hours.

Sour gas facilities usually have a small yellow flame burning continually at the top of a flare stack. This is a pilot light that ensures that any released gases are immediately eliminated. Some facilities now use an automatic igniter instead of a pilot light.

Well test flaring

Well test flaring is a standard practice in a testing process that determines what types of fluids a well may produce, the pressure and flow rates of those fluids, and other characteristics associated with an oil or gas reservoir.

Information from well test flaring determines the economic value of a well, the size of pipeline, and the type of production facility required. Flaring for well testing purposes generally lasts for only a few days.



Important

Efficient flaring is indicated by a lack of visible smoke, while black smoke indicates incomplete combustion. Inefficient burning may be caused by wind, water, impurities in the fuel, or poor mixing with air. Flaring is regulated under the Environmental Management Act and the Drilling and Production Regulations.







Coalbed Gas

Coalbed gas (CBG), also referred to as coalbed methane (CBM), is the natural gas found in coal seams. In most cases CBG is pure methane, a clean-burning fuel considered to be more environmentally friendly than oil, coal or conventional natural gas. As CBG contains few, if any impurities, it requires minimal processing.

How is coalbed gas recovered?

Pressure from surrounding subsurface rock formations, as well as water found in coal seams ensures the natural containment of this gas in coal seams.

Gathering the gas requires drilling a hole into a coal seam. The hole (well bore) is lined with cement and casing, preventing the exchange of fluid or gas between the bore and the surrounding formation, and protecting the subsurface water.

Once the hole is drilled, water is pumped in and forced into natural fractures in the coal seam. These become enlarged, allowing CBG to be drawn into the well bore and transported to the surface. If water is already present in the coal seams, removing the water will reduce the natural pressure and the CBG can be drawn into the well bore.

How is the gas processed?

At the surface, the gas and water are separated and piped to a facility that measures its production volume. While the gas itself may be transported off-site for distribution, water used in its recovery may be either discharged onto land or re-injected underground after testing. Both of these processes are controlled by government regulations, and if the produced water is discharged on the land surface it must meet stringent standards set by the Ministry of Water, Land and Air Protection.

When water is present in coal seams, a CBG well in the initial stages of operation may produce large volumes of water and minimal volumes of gas. As the volume of water decreases, gas volume increases to resemble that of a conventional gas well.

What is the productive life of a CBG well?

The productive life of a well will vary widely depending on the nature of the oil or gas reservoir. While a conventional gas well typically remains in operation for between five and 25 years, evidence suggests that CBG wells may remain in operation from 10 to 40 years.

*For further information on CBG, please see:
www.ogc.gov.bc.ca/siteupdates.asp?update=195*

Also, the OGC is preparing a compendium of information on CBG which will be available in September, 2005.

*Coalbed gas is pure
methane, a clean-burning
fuel considered to be
more environmentally
friendly than oil, coal or
conventional natural gas*



Notes





Noxious Weeds

The *Weed Control Act* and *Weed Control Regulation* identifies noxious weed plants found in the province. When an oil and gas company occupies an area for the purpose of oil and gas activities, it is the responsibility of the company to control noxious weeds. This is outlined in the *Pipeline Act*.

Is it important for a landowner to be informed about noxious weeds?

Yes. The introduction of noxious weeds should be avoided. Becoming knowledgeable about noxious weeds, as well as how to identify and control them, will assist the landowner in negotiations with an oil and gas company.

Prevention and Control of Noxious Weeds

There are many techniques that may prevent the introduction of noxious weeds onto land, or control noxious weeds once they are present.

How may noxious weed infestations be prevented?

The introduction of noxious weed infestations may be prevented in a number of ways, including:

- ♦ Ensuring that soil, sand, gravel or rock is from verifiable weed-free locations. If a company is unable to verify that a location is weed-free, the landowner may ask to inspect the proposed location or request that an alternative verifiable weed-free location be identified and used
- ♦ Minimizing soil disturbances and restoring vegetation on disturbed land as soon as possible. Disturbed land should be reseeded using an appropriate domestic or native seed mixture

- ✦ Negotiating in advance the methods a company will use to eradicate noxious weeds from wellsites, access roads and/or pipeline right-of-ways
- ✦ Using appropriate cleaning procedures for equipment and vehicles before they enter private land

How may noxious weed infestations be controlled?

Noxious weed infestations already present on land may be controlled employing the following techniques:

Mechanical and cultural

These techniques involve the physical disturbance of the plants or the interruption of their reproductive cycles by destroying root reserves. Mechanical techniques include mowing, plowing, chopping and crushing, while cultural techniques include selective grazing, irrigation and deliberate flooding, mulching, hand-pulling and burning.

Both techniques are time and labor intensive, and may require multiple treatments to have effect. Re-seeding of disturbed areas created when using these techniques reduces the amount of exposed soil and therefore the risk of reintroduction of noxious weeds.

Biological

This technique involves bio-agents, which control weeds naturally to reduce weed infestations. Bio-agents are collected in their native regions before being propagated and adapted for a designated environment prior to their use. This process may take up to ten years.

While bio-agents rarely kill noxious weeds outright, they reduce the strength of weeds and weaken their abilities to reproduce. This technique is considered a long-term control solution as it may take years and many releases to be effective.

As for mechanical and cultural control techniques, it is important to ensure soils exposed during this process are re-seeded, to prevent invasion of new noxious weeds.

Bio-agents are not available for all noxious weeds found in British Columbia. Of those agents that are available, not all are successful in all situations.

Ministry of Agriculture Photo



Scentless Chamomile is one of the most invasive of all noxious weeds.



Herbicide

A variety of herbicides are available for spot treatment of noxious weeds. Deciding on the appropriate herbicide depends on the species of noxious weed, as well as environmental factors such as proximity to water, slope, soil type and adjacent vegetation.

Use of herbicides is regulated by the *Pesticide Control Act* and associated regulations that are administered by the Ministry of Water, Land and Air Protection.

Considerations for Landowners: Noxious Weeds

Landowners may have a number of considerations and questions about noxious weed they might wish to discuss with an oil and gas company. These may include:

- Soil, sand, gravel or rock materials required for operations should be from verifiable weed-free locations. If a company is unable to verify that a location is weed-free, another location should be identified and used
- Company employees and contract workers should be knowledgeable about noxious weeds, particularly in recognizing the early stages of noxious weed growth
- Methods to minimized soil disturbances and plans to reseed vegetation
- Methods a company will use to eradicate noxious weeds from wellsites, access roads or pipeline right-of-ways
- Where and how company equipment and vehicles will be cleaned prior to entering onto private land

For more information on the control of noxious weeds, contact the regional office of the Ministry of Agriculture, Food and Fisheries; Ministry of Forests; Ministry of Water, Land and Air Protection; or Regional District.

SECTION 38(2)(A) OF THE *PIPELINE ACT* STATES THAT EVERY COMPANY MUST: "... ROOT OUT AND DESTROY EACH YEAR, BEFORE THEY HAVE MATURED TO SEED, THISTLES AND NOXIOUS WEEDS GROWING ON ITS LAND ADJACENT TO ITS PIPELINES."





Agencies

Oil and Gas Commission

24 hour main switchboard: 250.261.5700
200, 10003 – 110 Avenue
Fort St John, BC V1J 6M7
www.ogc.gov.bc.ca

The OGC has offices in Fort St. John, Fort Nelson, Kamloops and Victoria, but the main office is located in Fort St. John.

Executive Office:

- ✦ Stakeholder Relations Advisors
- ✦ Client Services

Operations Division

- ✦ Project Assessment Branch
- ✦ Compliance and Enforcement Branch
- ✦ Operations Engineering Branch
- ✦ Resource Conservation Branch
- ✦ Program Development Branch
- ✦ Aboriginal Relations and Land Use Branch

Corporate Services Division

- ✦ Finance and Administration Branch
- ✦ Strategic Planning and Performance Reporting

- Human Resources
- Financial Planning Branch
- Information Systems Branch
- Science and Community Environmental Knowledge Fund Administration
- Advisory Committee Administration

Ministry of Water, Land and Air Protection

Peace Regional Office
Room 400, 10003 – 110th Avenue
Fort St. John BC V1J 6M2
Phone: 250.787.3411
Fax: 250.787.3490
wlapwww.gov.bc.ca/

Ministry of Agriculture

Room 350, 10003 – 110th Ave.
Fort St. John, BC
V1J 6M7
Tel: 250.787.3240
Fax: 250.787.3299
www.agf.gov.bc.ca

Agricultural Land Commission

33-4940 Canada Way
Burnaby, BC V5G 4K6
Tel: 604.660.7000
Fax: 604.660.7033
www.alc.gov.bc.ca/



Ministry of Energy and Mines , Oil & Gas Titles

Director, Oil and Gas Titles

Titles Division
Ministry of Energy and Mines
PO Box 9326, Stn Prov Govt,
Victoria, BC, V8W 9N3.
Phone: 250.952.0335
Fax: 250.952.0331

Mediation and Arbitration Board

10142 – 101 Avenue, Fort St. John, BC, V1J 2B3
Telephone No: 250.787.3403
Fax No: 250.787.3228

*Mediation and Arbitration offices are open between 10:00 a.m. and 2:00 p.m.
Monday to Thursday, closed on statutory holidays.*





Definitions

Term	Definition
Abandoned	A well that is permanently closed off when it is depleted and is no longer capable of economic production.
Access Road	A road that is required to access a wellsite or any other production facility.
Battery	Various pieces of machinery used for the purpose of separating and/or measuring petroleum and/or gas products. Includes separators, dehydrators, tanks, surface reservoirs, pumps, pressure maintenance facilities, etc.
Battery Site	A portion of land that contains separators, treaters, dehydrators, storage tanks, pumps, compressors and other surface equipment in which fluids coming from a well are separated, measured or stored.
Blowout	An uncontrolled flow of reservoir fluids into the well bore, sometimes catastrophically, to the surface. A blowout may consist of salt water, oil, gas or any combination of the three.
Blowout Prevention (BOP)	Casing-head equipment that prevents the uncontrolled flow of oil, gas, and mud from the well by sealing the hole.
Borehole	The well bore itself, including the open hole or uncased portion of the well. Borehole may refer to the inside diameter of the well bore wall. The well bore wall is the rock face that bounds the drilled hole.
Bottom Hole	The deepest part of the borehole.
Bridge Plug	A downhole tool that is located and set to isolate the lower part of the well bore. Bridge plugs may be permanent or retrievable, enabling the lower well bore to be permanently sealed from production or temporarily isolated from a treatment conducted on an upper zone.
Casing	A large steel pipe that is placed in the borehole to prevent it from collapsing and to prohibit the flow of drilling fluids into the borehole. Casing pipe is usually 30 feet long and sections are cemented in place by pumping cement into the space between the casing and borehole walls.
Casing String	A long section of connected pipe that is lowered into a well bore and cemented.
Certificate of Title	A document stating that the title or interest in property is vested in a designated person, and showing outstanding liens, charges or other encumbrances.

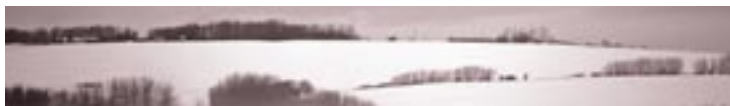
Term	Definition
Christmas Tree	The set of valves, spools and fittings connected to the top of a well to direct and control the flow of formation fluids from the well. Christmas trees are available in a wide range of sizes and configurations, such as low or high-pressure capacity and single or multiple-completion capacity.
Completion	The process of finishing a well so that it is ready to produce gas or oil. After reaching total depth, the casing is run and cemented; the casing is perforated opposite the producing zone; tubing is run, and control and flow valves are installed at the wellhead.
Compressor	A device that raises the pressure of air or gas. A compressor normally uses positive displacement to compress the gas to higher pressures so that the gas can flow into pipelines and other facilities.
Compressor Station	A facility consisting of many compressors, auxiliary treatment equipment and pipeline installations that pumps gas under pressure over long distances. A compressor plant is also called a compressor station. Several compressor stations can be used to repressurize gas in large interstate gas pipelines or to link offshore gas fields to their final terminals.
Condensate	Hydrocarbons that are in the gaseous state under reservoir conditions and which become liquid when temperature or pressure is reduced.
Crown Land	Crown or public land that belongs to the government and has not been granted, whether or not any water flows over or covers it.
Crude Oil	See Petroleum
Dehydrator	An apparatus designed and used to remove water and water vapors from raw gas.
Derrick	A steel structure built over a wellsite to provide support for drilling equipment; a tall mast for raising and lowering pipe.
Directionally Drilled Well	A well bore that requires the use of special tools or techniques to ensure that the well bore path hits a particular subsurface target, typically located away from (as opposed to directly under) the surface location of the well.
Disposal Well	A well, often a depleted oil and gas well, into which waste fluids can be injected for safe disposal. Disposal wells are subject to regulatory requirements so that freshwater aquifers are not contaminated.
Drill Bit	The tool attached to the lower end of the pipe; a heavy steel head equipped with various types of cutting or grinding teeth. A hole in the bottom of the drill permits the flow of drilling mud that is being pumped down through the pipe to wash the cuttings to the surface and also to cool and lubricate the bit.
Drill Pipe	Tubular steel conduit fitted with special threaded ends called tool joints. The drill pipe connects the rig surface equipment with the bottom-hole assembly and the bit. It pumps drilling fluid to the bit and is able to raise, lower and rotate the bottom-hole assembly and bit.
Drilling Rig	A machine that is used to drill and service wells.



Term	Definition
Drill String	See String
Easement	A non-possessing interest held by one individual or company in the land of another whereby the first individual or company is granted partial use for a specific purpose. (ie: water lines, electric power or pipelines.)
Egress	The right to leave or go out.
Emergency Plan-ning Zone (EPZ)	An area surrounding a sour pipeline for which an emergency response plan must be devel-oped to protect the public and workers within that zone from the possible release of H ₂ S.
Emergency Response Plan (ERP)	A comprehensive plan to protect the public. It includes criteria for assessing an emergency situation, procedures for mobilizing response personnel, and procedures for establishing com-munications and coordination.
Encumbrance	Anything that affects or limits the fee simple title to property, such as mortgages, easements, liens, or any other restrictions.
Fee Simple	The greatest interest that one can hold in real property.
Field	A pool or group of pools of hydrocarbons or other mineral resources in a subsurface rock formation. A hydrocarbon field consists of a reservoir in a shape that will trap hydrocarbons and that is covered by an impermeable sealed rock formation.
Flare	The controlled burning of gas waste that can't be processed or sold. The gas is burned through a pipe that is also called a flare.
Flow Line	A pipeline that connects a wellhead to a production facility or connects a wellhead to another pipeline.
Formation	An underground reservoir containing an accumulation of petroleum or gas or both; it is separated (or apparently separated) from another reservoir or accumulation. This is also a general term for the rock around the borehole.
Fracturing (Frac-ting)	The process of injecting fluids into a well bore at high pressures to create a more fractured and permeable area. The fluids are mixed with sand, which hold the fractures open allowing reservoir fluids to flow more easily into the well bore.
Gas Well	A producing well with gas as the primary commercial product. Most gas wells produce some condensate (gas liquids such as propane and butane) and occasionally produce some water.
Hydrocarbon	Compounds containing only hydrogen and carbon atoms, occurring in solid, liquid or gaseous form. Petroleum is a complex mixture of hydrocarbons. The term is mainly used in a catch-all sense for oil, gas and condensate.
Hydrogen Sulphide (H ₂ S)	A toxic, colourless gas that is odourless at high concentrations but smells like rotten eggs at low concentrations. Hydrogen sulfide is produced during the decomposition of organic matter and occurs with hydrocarbons in some areas.
Ingress	The right or permission to enter.



Term	Definition
Injection Well	A well used to inject fluids (usually water) or gas into subsurface formations to increase reservoir pressure, thereby stimulating production.
Kelly	A square or hexagonal steel pipe that is about 43 feet (13 meters) long. It transmits torque from the rotary table to the drill string to rotate the string and drill bit.
Kick	A well is said to “kick” if the formation pressure exceeds the pressure exerted by the mud column.
Landspraying	A method for the disposal of drilling waste. The waste is spread onto cultivated land or grasslands at very low application rates and then incorporated into the sub-soil. Must not occur within 100 meters of a water source.
Mud, Drilling Mud, or Drilling Fluid	A special mixture of clay, water, refined oil and chemical additives pumped down-hole through the drill pipe. It is used to transport the drilled cuttings to the surface, control subsurface pressure, and cool and lubricate the drill bit.
Mix-Bury-Cover	A method for the disposal of drilling waste. The waste is mixed with subsoil, then buried on the wellsite and covered with at least one meter of clean sub-soil.
National Energy Board (NEB)	A federal agency that regulates the construction, operation and maintenance of pipelines that carry oil, gas, and commodities across provincial and international borders.
Gas	Petroleum in gaseous form consisting of light hydrocarbons often found in association with oil. Methane is the dominant component.
Oil Well	A producing well with oil as its primary commercial product. Oil wells almost always produce some gas and frequently produce water. Most oil wells eventually produce mostly gas or water.
Perforate	To pierce holes through a well casing within an oil or gas-bearing formation by means of a perforating gun lowered down the hole and fired electrically from the surface. The perforations permit production from a formation that has been cased off.
Permeability	The ability of rock formation to transmit fluids through pore spaces.
Petroleum	A complex mixture of naturally occurring hydrocarbon compounds found in rock. Petroleum can range from solid to gas, but the term is generally used to refer to liquid crude oil. Impurities such as sulfur, oxygen and nitrogen are commonly contained in petroleum. There is considerable variation in the colour, gravity, odour, sulfur content and viscosity of petroleum from different areas.
Pig	A cylindrical device inserted into a pipeline to inspect the pipe or to sweep the line clean of water, rust or other foreign matter. Pipeline inspection and cleaning devices are called pigs because early models squealed as they moved through the pipe.
Plug	A permanent plug, usually either cast iron or cement, set in a borehole. The plug blocks the flow of fluids so that sections of the well can be isolated or to permanently plug a dry hole or depleted well.
Pool	See Formation



Term	Definition
Processing Plant	A plant designed to extract hydrogen sulphide, helium, ethane, gas liquids or other substances from gas.
Production Line	A pipeline that crosses provincial or international borders.
Production Tubing	Steel pipe inside the casing used to flow the petroleum from the producing zone to the surface.
Pump-off	A method of disposing drilling waste. Clear drilling waste liquids are pumped off-site onto vegetated land but are not incorporated into the soil. Must not occur within 100 meters of a water source.
Pump Jack; Rod Pump; Sucker Rod Pump	An artificial-lift pumping system using a surface power source to drive a down-hole pump assembly. The pump moves a cable and rod up and down in the well, providing the lifting pressure required to bring fluid to the surface.
Pump Station	A system of equipment located along a main pipeline to maintain flow.
Right of Entry Order	An order by the Mediation and Arbitration Board granting a company the use of a certain area of land surface for operations such as well drilling.
Rotary Table	The revolving or spinning section of the drill-floor that provides power to turn the drill-string in a clockwise direction (as viewed from above).
Service Rig	A truck-mounted rig, usually smaller than a drilling rig. It is used to complete construction of a well, to perform maintenance, to replace equipment or to improve production.
Set Casing	A method of cementing casing in the hole. The cement is pumped down-hole to the bottom of the well and is forced up a certain distance into the space between the casing and the rock wall of the drill hole. It is then allowed to harden, thus sealing off upper formations that may contain water. The small amount of cement in the casing is drilled out in preparation for perforating to permit the oil to enter the casing.
Setback Distance	The minimum required distance between a well, pipeline, or other facility and a surface improvement, permanent dwelling, unrestricted country development, urban centre, or public facility.
Sour Gas	Gas which contains at least 1% H ₂ S.
Spud-In	The operation of drilling the first part of a new well.
Stand of Pipe	Two, three, and sometimes four joints of pipe fastened together, called a double, thribble, or fourble, respectively.
String; Drill String	The entire length of pipe that extends from the bit to the kelly and carries the mud down to, and rotates, the bit.
Sump	A surface pit or tank used to hold water, drilling mud, drill cuttings, and sludge from drilling operations.



Term	Definition
Surface Casing	First string of casing set in a well. It is cemented into place and serves to shut out shallow water formations and as a foundation for well control.
Suspension	The temporary cessation of operations at a well, pipeline, or facility; includes measures required to ensure that the well, pipeline, or facility is left in a safe and secure manner.
Tear-dropping	After well construction and drilling is completed, the company may restore an active lease to as close to original condition as possible, while still allowing ample space for the well production equipment. This is generally done by spreading the topsoil around the leased area, surrounding the well head in the shape of a tear drop.
Tripping	Tripping is the operation of hoisting a pipe out of, and returning it to, the well bore. A pipe trip is usually done when the bit has dulled or has otherwise ceased to drill efficiently and must be replaced.
Well Bore	The hole made by the drilling bit.
Well Head	The equipment used to maintain surface control of a well. It consists of the casing head, tubing head, and surface valves.
Wellsite	The land required for the exploration, development or production of oil and gas.
Workovers or Well Servicing	Work performed on a well after a rig finished its work. This refers to any repairs to down-hole equipment or any other operational activities where the well has not been abandoned.







References

In the development of this publication, the following publications or websites were referenced:

Petroleum Communication Foundation: *Sour Gas Questions + Answers*, Calgary, Alberta, 2000

Petroleum Communication Foundation: *Flaring Questions + Answers*, Calgary, Alberta, 2000

Alberta Energy and Utilities Board: www.eub.gov.ab.ca/bbs/default.htm

Ministry of Energy and Mines: www.em.gov.bc.ca/subwebs/oilandgas/

Ministry of Agriculture, Food and Fisheries and Ministry of Forests: *Field Guide to Noxious and Other Selected Weeds of British Columbia*, 2000

Ministry of Forests: www.for.gov.bc.ca/hfp/noxious/introduc.htm

Schlumberger Oil Field Directory: www.glossary.oilfield.slb.com/default.cfm

Oil and Gas Well Drilling and Servicing e-Tool: www.osha.gov/SLTC/etools/oilandgas/index.html

How Drilling Works: science.howstuffworks.com/oil-drilling3.htm

Agricultural Land Commission and OGC Delegation Agreement:
www.alc.gov.bc.ca/commission/oil-gas_ALR.htm

British Columbia Oil and Gas Handbook: www.ogc.gov.bc.ca/pubdoc.asp?view=16

Public Involvement Guidelines: www.ogc.gov.bc.ca/landowners.asp

In the development of this publication, the following Province of British Columbia statutes were referenced:

Oil and Gas Commission Act

Petroleum and Natural Gas Act

Geophysical Exploration Regulation

Surface Lease Regulation

Drilling and Production Regulation

Pipeline Act

Pipeline Regulation

Sour Pipeline Regulation

Trespass Act

Weed Control Act

Weed Control Regulation

Railway Act

Land Title Act

General Survey Instruction Regulation

Agricultural Land Commission Act

Pesticide Control Act

Environmental Management Act

*A complete listing of statutes and regulations can be found located at:
www.qp.gov.bc.ca/statreg/default.htm*









Appendices

APPENDIX 1: Geophysical Operations Agreement

The following sample agreement is not a regulation under the *Petroleum and Natural Gas Act* and is not intended to provide legal advice or direction. These documents are for informational purposes only. If a form is prescribed under the *Petroleum and Natural Gas Act*, the prescribed form shall prevail.

For up-to-date versions of the following forms, please visit the Canadian Association of Geophysical Contractors' website: www.cagc.ca. The forms are found under the sub-title "Documents".



PERMIT TO CONDUCT GEOPHYSICAL OPERATIONS

Approved by CAGC,
CAFP, SEPNAC, FAD, SIRD

I/W/ _____ Page _____ of _____

of _____
of _____
(hereinafter called the "Grantor") being the Owner Lessee or Representative in possession of the lands (hereinafter called the "Lands") described below and on the attached Geophysical Operations Plan(s), agrees to grant to the Licensee (holder of exploration license) and the personnel and equipment of its subcontractors (hereinafter collectively called the "Grantee") the right and authority to enter onto the Lands for the purposes of conducting all phases of a single geophysical operation.

- Owned Leased Rented of Section _____ TWP. _____ RGE. _____ W. _____ M.
- Owned Leased Rented of Section _____ TWP. _____ RGE. _____ W. _____ M.
- Owned Leased Rented of Section _____ TWP. _____ RGE. _____ W. _____ M.
- Owned Leased Rented of Section _____ TWP. _____ RGE. _____ W. _____ M.

Furthermore, the Grantor and Grantee hereby covenant the following terms and conditions:

- The Grantee agrees to compensate the Grantor the following Permit Fees:
 \$ _____ / Mile _____ Recorded Source Line \$ _____ / Mile Off-Line Access
 \$ _____ / Mile _____ Fence Cut / Drop \$ _____ / Mile _____

These monies are compensation for Permit Fees and not for damages beyond normal wear and tear, and shall be paid within _____ days following the completion of the geophysical operations. In the event that the Grantee does not enter onto the Lands or portions of the Lands permitted, the Grantee shall not be obliged to make any payment to the Grantor for those lands not entered.

The Grantor agrees to compensate the Grantor for any damage in excess of normal wear and tear that may occur as a result of this operation. If damages occur, they will be compensated for at fair market value.

The Grantee will conduct all operations in a careful, diligent and responsible manner, in accordance with all applicable laws, geophysical regulations and present approval conditions in the province of _____

ALBERTA B.C. MANITOBA SASKATCHEWAN OTHER _____

The Grantee shall indemnify and save the Grantor harmless from any actions, claims, losses or demands by a third party arising from acts or omissions of the Grantee in respect of its operations and for any loss, damage, cost and expense to the Grantor in respect of such operations.

It shall be the responsibility of the Grantor to accompany the Grantee and to inspect the permitted Lands upon completion of the operation, to establish and agree upon the amount of compensation. A signed Geophysical Operations Release is required from the Grantor before any compensation for damages will be made by the Grantee.

The Grantor grants a working area as shown and off-line conditions as specified on the Geophysical Operations Plan(s). All operations shall take place in a working area which is approximately _____ feet / meters wide (_____ feet / meters for cat cutting or snowplowing).

This permit is in effect from the date endorsed by the Grantor until _____, 20____, excluding a reasonable amount of time to perform a final cleanup which is delayed due to weather conditions.

Any additional terms, express or implied, shall have no force or effect unless made in writing and agreed to by the Grantor and Grantee as stated below or on the attached Geophysical Operations Plan(s) which form part of this document.

I declare that I have the legal authority or the consent of the Owner, or party lawfully in possession of the Lands, to execute this form and accept payment of permit fees and damage fees of which part or all may be payable on behalf of the Owner or such party. I further do hereby understand and agree to this statement.
As required by legislation, be aware that you, the Grantor, are giving consent for the collection and use of the personal information on this form for the purpose of conducting and completing geophysical operations.

Owner Signature: _____ Date: _____, 20____
 Residence Location: _____ Phone: (____) _____
 Lessee/Renter/
 Representative Signature: _____ Date: _____, 20____
 Residence Location: _____ Phone: (____) _____


PROJECT NAME: _____ FILE NO.: _____
 Company Name: _____ Line Number(s): _____
 Contact Person: _____ Phone: (____) _____
 Address: _____
 Permit Agent: _____ Phone: (____) _____
 Permit Agent Signature: _____ Certificate No.: _____

Please direct any concerns you may have to the above contacts as soon as possible.

The "Baseline Operations and Farmers' Rights" decoder is available from the Permit Agent or from the Office of the Farmers' Advocate (T80) 427-3433.

DESIGNATIONS
Exploration Services, Unearth Energy (403) 367-6614





DESIGNATIONS

GEOPHYSICAL OPERATIONS PLAT

Approved by CAGC,
CAPP, SEPAC, FAO, SRD

YES HO 2D 3D
 HELICOPTERS 24 HR OPERATIONS

BUILDINGS: Concrete Foundation/Pads
 Other: _____

WATER: Other may include natural or man-made waterways
 Creeks, River Sloughs, Low areas, Mudflat
 Irrigation, Canals, Water Lines, U/G Power
 Prior Flowing Holes depth
 Drill Water Temporary Diversion Lic.

LIVESTOCK: Comments e.g. Type, Cows, etc.
 Livestock

VEGETATION:
 Clippings
 Trees/Brush: Cat Cut Hand Cut

Comments: _____

DELETE, SHIFT or OFFSET LINE(S); Shift line(s) up to _____ meters; Offset Receiver and / or Source Points
(See legend on p. 11 of attached Permit)

Owned Leased Rented
 Owned Leased Rented

ENERGY SOURCE: Dynamite Vibroseis OTHER: _____

ACCESS: _____ (road/trail)
 Access or detour as required
 Crew Staging / mag site

WATER SUPPLY: In Use _____ Location and Comments _____
 Domestic Well
 Livestock Well
 Spring
 Dugouts
 Wells in Pits

OTHER INTERESTED PARTIES: e.g. Other Landowners (Other to Purpose, Parties, Neighbours etc.)


FENCES: owner will be compensated to repair fences XX (XX)
 Cut; Drop; Use Gates; Cut only as shown

UTILITIES: _____ m
 Pipelines Power Lines Overhead Underground
 Gas/Oil Wells Offset Receiver and / or Source Points

SNOWPLOWING: Cat Tractor
 Width _____ approx. m.
 Snow Cover to be left _____ cm.

Page _____ of _____

Note: The Features on this Plat are approximate in scale. The location of the seismic line(s), source points and access may vary depending upon the survey, the terrain and obstacles. Cross-hatched portions of the plat do not relate to this permit.



1/4 Section
 1 Section (1:10000)
 4 Sections
 Other

I declare that I have the legal authority or the consent of the Owner, or party holding in possession of the Lands, to execute this form and accept payment of compensation on behalf of the Owner or such party, and I understand and agree to this statement.
 As required by legislation, be aware that you, the Grantor, are giving consent for the collection and use of the personal information on this form for the purpose of conducting and completing geophysical operations.

Owner Name: _____
Lessee/Renderer/ Representative Name: _____
Permit Agent Signature: _____ Date: _____, 20____

Owner Signature: _____
Lessee/Renderer/ Representative Signature: _____

PROJECT NAME: _____ **FILE NO.:** _____



GEOPHYSICAL OPERATIONS RELEASE

Approved by CAGC,
CAPP, SEPAC, FAO, SHD
Page ____ of ____

I/We, the "Grantor" _____ (Print Name)
of _____ (Full Address)
in the Province of _____ in consideration of the sum of _____ Dollars

(\$ _____) do hereby release and forever discharge _____ (Licensee)
and its subcontractors from any and all manners of actions, claims and demands resulting from operations
conducted by _____ up to and including the date hereof
on the lands described below.
Comments:

Final cleanup is complete. YES NO Clean up to be completed by: _____
(Please contact Company 10 days prior to commencement of Spring field work.)

- Owned Leased Rented of Section _____ TWP _____ RGE _____ W _____ M
- Owned Leased Rented of Section _____ TWP _____ RGE _____ W _____ M
- Owned Leased Rented of Section _____ TWP _____ RGE _____ W _____ M
- Owned Leased Rented of Section _____ TWP _____ RGE _____ W _____ M

Allocation of Payment:

Line No: _____ Source Line _____ mile(s) @ \$ _____ per mile = \$ _____
 Receiver Line _____ mile(s) @ \$ _____ per mile = \$ _____
 Access _____ mile(s) @ \$ _____ per mile = \$ _____
 @ \$ _____ = \$ _____
 Sub-Total = \$ _____

Damages / Comments: _____

Line No: _____ Source Line _____ mile(s) @ \$ _____ per mile = \$ _____
 Receiver Line _____ mile(s) @ \$ _____ per mile = \$ _____
 Access _____ mile(s) @ \$ _____ per mile = \$ _____
 @ \$ _____ = \$ _____
 Sub-Total = \$ _____

Damages / Comments: _____

Damage Sub-Total = \$ _____

PREPAYMENT AMOUNT () **★ TOTAL:** \$ _____

I declare that I have the legal authority or the consent of the Owner, or party lawfully in possession of the lands, to execute this form and accept payment of compensation on behalf of the Owner or such party, and further do hereby understand and agree to this statement. As required by legislation, be aware that you, the Grantor, are giving consent for the collection and use of the personal information on this form for the purpose of conducting and completing geophysical operations.

Owner Signature: _____ Phone #: (____) _____ Date: _____, 20 ____
 Lessee/Rentier/
 Representative Signature: _____ Phone #: (____) _____ Date: _____, 20 ____

PROJECT NAME: _____ FILE NO.: _____
 Permit Agent: _____ Phone: () _____
 Permit Agent Signature: _____ Certificate No.: _____

Amount \$ _____ Date _____, 20 ____ Cheque # _____
 Amount \$ _____ Date _____, 20 ____ Cheque # _____

DESIGNATIONS



APPENDIX 2: Road Use Agreement

The following sample agreement is not a regulation under the *Petroleum and Natural Gas Act* and is not intended to provide legal advice or direction. This document is for informational purposes only. If a form is prescribed under the *Petroleum and Natural Gas Act*, the prescribed form shall prevail.

ROAD USE AGREEMENT

AGREEMENT made this _____ day of _____, _____.

BETWEEN: _____

(hereinafter called the "Grantor")

AND: _____

(hereinafter called the "Grantee")

WHEREAS the mutual agreements and considerations hereinafter set forth, the Grantor does grant unto the Grantee the right to use the Grantor's road system as shown outlined in red on the attached Plan (hereinafter called the "said road") over certain parcels of land lying and being in the Province of British Columbia and described as follows:

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

The Grantee's use of the said road system is to be in common with the Grantor. The Grantee may use the said road system for the purpose of ingress and egress thereupon for all purposes incidental to the Grantee's operations regarding exploration, construction, drilling, production and abandoning or completing of Site _____ (hereinafter called the "said site"), subject to the following terms and conditions:

1. Upon execution hereof, in due course, the Grantee shall pay to the Grantor the sum of _____ (\$ XXXXXX) dollars for the First Year of the term which shall include annual compensation, signing consideration and maintenance of the said road system.
2. For each subsequent year during the continuance of this Agreement, the Grantee shall pay in advance on or before the anniversary date hereof, a sum of _____ (\$XXXXXX) dollars.
3. This Agreement relates solely to the said site and not any other site.
4. The Grantee agrees to pay to the Grantor the full cost of restoring or repairing the said road system in the event of damage thereto which, in the opinion of the Grantor and the Grantee is caused by the Grantee or any of the Grantee's servants, agents or contractors of their subcontractors of than ordinary wear and tear.
5. The Grantee may authorize the use of the said road system by the Grantee's servants, agents, contractors, and their subcontractors.
6. The Grantor, however, may request an increase in annual compensation as determined by the Grantor based upon actual records thereof,

resulting from extra ordinary wear and tear to the said road system, which in the opinion of the Grantor, is attributable to the Grantee, its employees, agents, contractors or subcontractors.

7. The Grantee shall have the right at any time to surrender and terminate this Agreement not less than _____ days written notice to the Grantor and in such event there shall not be a refund to the Grantee of any rental which may have been paid in advance.
8. The Grantee covenants and agrees to indemnify and save harmless, the Grantor from any and all liabilities, damages, costs, claims, suits or actions arising out of the Grantee's operations, now or in the future, on the said road system save and except liabilities, damage costs, claims, suits or actions arising out of gross negligence or willful misconduct of the Grantor, its agents, servants, employees or contractors.

IN WITNESS WHEREOF the parties have caused the Agreement to be executed the day and year written above.

SIGNED, SEALED AND DELIVERED

(witness signature)

(Grantor signature)

(witness signature)

(Grantor signature)

By a Duly Authorized Signatory of the **GRANTEE**:

PER: _____

(Authorized signatory)

PER: _____

(Authorized signatory)

APPENDIX 3: Surface Lease Agreement for Wellsites

The following sample agreement is not a regulation under the *Petroleum and Natural Gas Act* and is not intended to provide legal advice or direction. This document is for informational purposes only. If a form is prescribed under the *Petroleum and Natural Gas Act*, the prescribed form shall prevail.

Include with each surface lease agreement, a Form C: General Instrument Part 1 needs to be completed. This document must be completed to ensure the lease is properly registered against the land title. The latest version of the Form C can be located at the following website: srmwww.gov.bc.ca/landtitle/EFS_web_site/e_forms.htm .

PART 2

**TERMS OF INSTRUMENT
PROVINCE OF BRITISH COLUMBIA
SURFACE LEASE**

This AGREEMENT made this ___day of _____, __.

BETWEEN:

**THE PARTY OF THE FIRST PART BEING DESCRIBED IN ITEM (5)
OF FORM C
(hereinafter called the Owner)**

AND

**THE PARTY OF THE SECOND PART BEING DESCRIBED IN ITEM
(6) OF FORM C
(hereinafter called the Company)**

WHEREAS:

A. the Owner is the registered Owner (or entitled to become the registered Owner under an agreement for sale, unregistered transfer, or otherwise) of and in that parcel of land in the Province of British Columbia described as:

THE LAND AS DESCRIBED IN ITEM (2) OF FORM C

(hereinafter referred to as "the Lands")

B. the Owner has agreed to grant an option to lease a portion of the Lands on the terms set out herein.

OPTION TO LEASE

1. In consideration of the sum of \$_____, the Owner grants to the Company:

(a) An Option to Lease that part of the Lands described either:

(i) as shown outlined in bold on the sketch attached hereto (hereinafter called "the Leased Area"); provided however, that in the event that the Company registers a reference plan of the Leased Area shown on the attached sketch, the Company shall complete Subclause (a)(ii) below, and in such event the description of the Leased Area in Subclause (a)(ii) shall supersede and replace the description in this Subclause,

or

(ii) as shown on a reference plan in the Land Titles Office at Prince George, British Columbia, as Plan Number _____, which area corresponds to the area outlined in bold ("the Leased Area") on the sketch attached hereto, for a term of 20 years commencing on the date of execution of this Agreement for any and all purposes as may be necessary or incidental for the exploration, development, production and storage of petroleum, gas, related hydrocarbons, substances and admixtures produced in association therewith, abandonment and restoration, as is necessary for the operation and maintenance of the Company's undertaking.

(b) The Right to enter upon the Lands and conduct land surveys for the purpose of surveying the Leased Area.

2. This Option may be exercised within 180 days of the date hereof by delivery to the Owner of a cheque made payable to the Owner in the sum of-----~~XXXXXXXXXXXXXXXX~~----- (~~XXXXXXXXXXXX~~) Dollars for damages to the Leased Area, inconvenience and disturbance to the Owner, signing consideration, and Annual Consideration, which includes loss of use and severance of the Leased Area. No further documentation is required to be executed or delivered by the Company to confirm the exercise of the Lease.

LEASE TERMS

Annual Consideration

3. The Company shall pay to the Owner as consideration in advance the sum -----~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~----- (~~XXXXXXXXXXXX~~) Dollars (the Annual Consideration) commencing on the first anniversary date of the signing of this Agreement and continuing on each anniversary date the term of the Lease.

USE

4. The Annual Consideration shall include use of the Leased Area by the Company for access and the drilling operation of a single well or a substitute well if required by the Company. Before a change in use is implemented, the Owner must be notified.

For the purpose of this clause, a change in use shall include:

- (a) development of an additional well (other than a substitute well);
- (b) construction and operation of a multi well satellite, battery or other structure servicing numerous wells, or the removal of such operations;
- (c) construction and operation of compressor facilities, or the removal of such operations;
- (d) construction and operation of a plant or processing facility, or the removal of such operations;
- (e) construction, operation or servicing of additional facilities using existing access roads

If a change in the use of the Leased Area results in an adverse affect on either party to this Agreement, then that party shall have the right to renegotiate the Annual Consideration by serving written notice upon the other. The notice shall include the specific change of use and a proposed Annual Consideration believed to be fair in the circumstances. The change in Annual Consideration will be effective as of the next anniversary date of the lease. Renegotiations under this clause shall not apply if the next anniversary date is the date upon which the Annual Consideration is reviewed in accordance with Section 19 of this Agreement.

5. The Company shall operate and maintain the Leased Area in accordance with good oil field and environmental practices.

Fencing

6. If reasonably required and requested by the Owner, the Company shall erect on the boundary of the Leased Area or part thereof, a good substantial fence and livestock guard or gate. The Company shall replace any existing fences it has moved for its purposes and repair all fences it may damage. The Company shall ensure that its agents and servants close and lock all gates as required by the Owner.

Topsoil

7. The Company shall conserve the top soil in accordance with good oil field, environmental and farm practices, and the applicable legislation.

Weed Control

8. The Company shall be responsible for the general maintenance and weed control of the Leased Area. Soil sterilants may be used only with the consent of the Owner in writing, and only in accordance with applicable legislation.

Roadways

9. All roadways on the Leased Area shall be used only for the rights granted, and the Owner or his authorized agents shall have free access to the Leased Area to gain access to adjacent lands, provided that such use shall be at the Owner's or his agent's sole risk and the Owner or his agent shall be responsible for any damage caused by such use, normal wear and tear excepted.

Taxes

10. The Company shall promptly pay and satisfy all taxes, rates and assessments that may be assessed or levied against the Leased Lands as a result of its use and occupation of the Leased Lands.
11. If the Owner is a non-resident of Canada, the Owner agrees that the Company may deduct income, withholding or other taxes from any payment to the Owner in compliance with the provisions of the Income Tax Act, tax agreements or treaties or other statutes of Canada or its Provinces as are from time to time enacted and amended, whereupon the timely remittance by the Company of the balance of the payment to the Owner shall be deemed to constitute full performance by the Company in respect of such payment.

Discharge of Encumbrances

12. The Company may, at its option and with the Owners consent, pay any taxes which may be assessed against the Lands, from time to time, if the owner is about to forfeit title pursuant to the Province of British Columbia "Tax Act". The Company shall set off the amounts so paid against any sums payable to the Owner by the Company under the terms of this Lease.

Removal of Equipment and Material

13. At all times during the term or any renewal of this lease, the Company shall have the right to remove from the Leased Area all equipment and material of every kind which it may have placed in, on or under the Leased Area.

Early Termination

14. *Provided the Company is not in default, the Company shall have the right to surrender and terminate this Lease at any time on or after the expiration of the second year of the term, and upon not less than 90 days written notice to the Owner. In such event, there shall be no refund to the Company of any rental which may have been paid in advance.*

Abandonment and Restoration

15. *Prior to abandoning the Leased Area, the Company shall remove all above ground equipment and excavations shall be filled in, in compliance with the existing regulations. The Company shall restore the Leased Area to the same condition that existed immediately prior to the Company's entry, to the extent that it is reasonably practicable to do so.*

Compensation for Damages

16. *The Company shall pay to the Owner compensation for damages suffered by the Owner to that portion of the Lands which are not included in the Leased Area as a result of the actions of the employees, servants, agents or contractors of the Company. Damage may include damage to livestock, growing crops, fences, buildings, or other improvements of the Owner, upon the Lands outside of the Leased Area.*

Indemnification

17. *The Company indemnifies and saves harmless the Owner from any and all liabilities, damages, costs, claims, suits, or actions arising out of the Company's operations, now or in the future on the Lands or the Leased Area save and except liabilities, damages, costs, claims, suits, or actions arising out of the gross negligence or wilful misconduct of the Owner, its agents, servants, employees, or contractors.*

Quiet Enjoyment

18. *The Owner warrants that he has good title to the Lands, has full power to grant and lease the Lands, and that the Company, upon observing and performing the promises on the Company's part and is not in default, shall peaceably possess and enjoy the Leased Area and the rights granted during the term of this Lease and any renewal without any disturbance or interruption from the Owner.*

Review of Annual Compensation

19. *Notwithstanding anything contained in this Lease to the contrary, upon the request of either party the amount of Annual Consideration payable shall be subject to periodic review as provided for in applicable legislation.*

Default

20. *The Company shall not be in default in the performance of any of its obligations under this Lease, excepting the payment of Annual consideration, unless the Owner has notified the Company either by a telephone call, which must be followed up by written notice that includes the date and time of the telephone call or only by written notice of such default, and the Company has failed to commence meaningful actions to remedy the same or to deny the default.*

In the event the default relates to the late payment of Annual Consideration, the Company is in default without notification from the Owner. The damages payable for late payment of Annual Consideration shall be the rate determined in accordance with the Province of British Columbia Court Order Interest Act, effective the date the Annual Consideration was due.

Assignment

21. *The parties may delegate, assign, or convey to other persons or corporations, any of the powers, rights, and interests granted by this Lease, and may enter into all agreements or contracts and perform all necessary acts to give effect to the provisions of this clause. The assigning party shall provide written notice within 30 days to the other assignment any delegation, assignment, or conveyance of the this lease.*

Renewal

22. *If the Company is not in default, the term of this Lease shall be automatically extended for a further twenty year term. All clauses and amendments, including this renewal clause, shall continue in effect for the renewal term.*

Time

23. *Time is of the essence.*

Notices

24. All notices must be in writing. Notices may be delivered personally, faxed or by letter addressed to the party to whom the notice is to be given. Any such notice shall be deemed to be delivered to the addressee ten days after mailing by prepaid regular mail, or three days after transmission of fax.

Addresses

25. Unless changed by written notice, the addresses of the parties are:

Company: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XX
XX
XX
XXXXXXXXXXXX

Fax: XXXXXXXXXXXXXXXX
Telephone: XXXXXXXXXXXXXXXX

Owner: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XX
XX
XX
XX
XX

Fax: XXXXXXXXXXXXXXXX
Telephone: XXXXXXXXXXXXXXXX

Severability

26. The invalidity or unenforceability of the whole or any part of any clause of this Lease shall not affect the validity or enforceability of the whole or any part of any other clause or the remainder of such clause.

27. The headings of the clauses of this Lease have been inserted for reference only and do not define, limit, alter or enlarge the meaning of any provision of this Lease.

Enurement

28. This Lease shall enure to the benefit of and be binding upon the Owner, his heirs, executors, successors and assigns and upon the Company, its successors and assigns.

Entire Agreement

29. This Lease constitutes the entire agreement between the parties. Any additional terms or conditions shall be attached as Schedule "A" and shall form part of this Lease.

IN WITNESS WHEREOF the parties have caused this agreement to be executed the day and year first above written.

SIGNED AND DELIVERED

by the Owner in the presence of:

)
)
)
)

(Signature of Witness) Signature of Owner
)

)

)

)
)

(Business Address of Witness)

by a duly Authorized Signatory of Company Name.

Per: _____
(Authorized Signatory)

APPENDIX 4: Lease Agreement for Pipeline Right-of-Ways

The following sample agreement is not a regulation under the *Petroleum and Natural Gas Act* and is not intended to provide legal advice or direction. This document is for informational purposes only. If a form is prescribed under the *Petroleum and Natural Gas Act*, the prescribed form shall prevail.

Include with each lease agreement, a Form C: General Instrument Part 1. This document must be completed to ensure the pipeline right-of-way is properly registered against the land title. The latest version of the Form C can be located at the following website: srmwww.gov.bc.ca/landtitle/EFS_web_site_e_forms.htm

GENERAL INSTRUMENT – PART 2

AGREEMENT made this _____ day of
Month _____, Year _____

BETWEEN: _____

**THE PARTY OF THE FIRST PART BEING DESCRIBED IN ITEM
(5) OF FORM C
(Hereinafter called the “Grantor”)
OF THE FIRST PART**

AND: _____

**THE PARTY OF THE SECOND PART BEING DESCRIBED IN ITEM
(6) OF FORM C
(Hereinafter called the “Grantee”)
OF THE SECOND PART**

WHEREAS:

A) *The Grantor is the registered owner, or entitled to become the registered owner of an estate in fee simple, subject, however, to such encumbrances, liens, or interest as are notified by memorandum herein or registered against the title thereto, in all that certain parcel or tract of land situated in the Province of British Columbia, being:*

THE LAND AS DESCRIBED IN ITEM (2) OF FORM C

(hereinafter referred to as the “Grantor’s Land”)

B) *The Grantor has agreed to grant to the Grantee a Statutory Right-of-Way for the purpose of laying down and maintaining a pipeline and ancillary equipment necessary for the operation and maintenance of the Grantee’s undertaking.*

*NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of _____**Amount for ROW @ \$?/acre**_____*

_____ (**\$XXXXX**) dollars paid to the Grantor (the receipt whereof is hereby acknowledged by the Grantor) and in consideration of the mutual covenants and conditions hereinafter set forth, **THE GRANTOR DOES HEREBY GRANT AND TRANSFERS AND CONVEYS** unto and to the Grantee the right, licence, liberty, privilege and easement by way of a **STATUTORY RIGHT-OF-WAY** on, over, under and through the **GRANTOR’S LAND**, to lay down, construct, operate, maintain, inspect, remove, replace, reconstruct and repair a pipeline or flowline as may be necessary or convenient in connection therewith for the carriage, conveyance, transportation and handling of petroleum or petroleum products, water and/or gas through or by means of the same, (together with all such stations, structures, drips, valves, fittings, meters and other equipment and appurtenances as may be necessary or convenient in connection therewith for the transportation and handling of petroleum products, water, gas and other substances) and the right of ingress and egress, for all purposes incidental to the grant, and from the date hereof and for so long thereafter as the Grantee may desire to exercise the rights and privileges hereby given.

The Grantor and Grantee agree that the Grantee shall in laying down the initial pipeline in the exercise of the foregoing authority, the rights, licences, liberties, privileges and easement hereby granted, except as hereinafter otherwise specified, shall thereupon and thereafter be confined and restricted to the following portion of the GRANTOR’S LAND

**As stipulated in Clauses 1), 2) and 3) of this agreement
(hereinafter called the “Right-of-Way”)**

The Grantee shall have and is hereby given the right to use such portion of the Right-of-Way as may reasonably be required by the Grantee in connection with the construction, repair or replacement of the pipeline and for ingress to and egress from the Right-of-Way for its servants, agents, contractors and subcontractors with vehicles, supplies and equipment for all purposes useful or convenient in connection with or incidental to the exercise and enjoyment of the rights and privileges herein granted for so long as Grantee desires to exercise the same.

The aforesaid rights and easement are hereby granted as and from the date hereof and for so long thereafter as the Grantee desires to exercise the same on the following terms, stipulations and conditions which are hereby mutually covenanted and agreed to by and between Grantor an Grantee.

FILING PLAN OF SURVEY

- 1) *The Grantor and Grantee mutually agree that when and so soon as the Grantee shall deposit a plan of the Right-of-Way based upon a survey in accordance with the requirements of the Land Title Act, R.S.B.C. 1979, and regulations of the Surveyor General in the proper Land Title Office, such plan and the survey upon which it is based defining the Right-of-Way hereinabove referred to shall in all respects thereafter establish, govern and define the Right-of-Way, and the remaining Grantor's Land shall, save as aforesaid, thereupon be released and discharged from the easement hereby granted.*
- 2) *The Registrar of Land Titles is authorized to make such entries in the register as may be necessary to give effect to the foregoing.*
- 3) *The Grantor accepts the accuracy of the said survey and the plan so deposited without examination or further approval and authorises the appropriate Registrar of Land Titles to accept the plan for deposit without his signature thereon.*

NON-FILING OF SURVEY PLAN

- 4) *In the event the Grantee shall not have either deposited a plan of the RIGHT-OF-WAY, as provided for in **Clause 1** above, or shall not have commenced operations upon the Grantor's Land for the laying of the pipeline within three years from the date hereof, this easement and the rights, licences, liberties and privileges hereby granted shall thereupon terminate, and the Grantee agrees thereupon to execute and file such documents as may be necessary to effect a termination of its rights and interests in the Grantor's Land under this Agreement.*

CLEARING OF RIGHT-OF-WAY

- 5) *The Grantee shall have the right to do whatever may be requisite for the enjoyment of the rights herein granted, including the right of clearing the said Right-of-Way of timber.*

PROTECTION OF RIGHT-OF-WAY

- 6) *The Grantor shall not, without the prior written consent of the Grantee (such consent not to be unreasonably withheld), excavate, drill install erect, construct or permit to be excavated, drilled, installed, erected*

or constructed, on or under the said Right-of-Way any pit, well, foundation, pavement, building or other structure, or installation, but otherwise the Grantor shall have the right fully to use and enjoy the said Right-of-Way subject always to and so as not to interfere with the easements, rights and privileges hereby granted and conferred upon the Grantee. The Grantor will not be restricted from fencing across the Pipeline Right of Way if required at a later date.

DAMAGES

- 7) *The Grantee shall compensate the Grantor for damage done to any soil, buildings, crops, fences, timber and livestock on the said GRANTOR'S LAND whether or not within the Right of Way by reason of the exercise of the rights hereinbefore granted.*
- 8) *The Grantee shall prevent and destroy weeds from entering onto the Grantor's land during pipeline construction and will assume all responsibility for the control of noxious weeds brought onto the Pipeline Right of Way by the Grantee.*

LIABILITIES

- 9) *The Grantee covenants and agrees to indemnify and save harmless the Grantor from any and all liabilities, damages, costs, claims, liens, suits, or actions arising out of the Grantee's operation now, or on the future other than through wilful damage or gross negligence by the Grantor.*

DISPUTES SUBMITTED TO DISINTERESTED ARBITRATORS

- 10) *In the event of any disputes arising from the terms and conditions contained herein, which cannot be mutually agreed to, both parties can submit such disputes to arbitration and the matter at issue shall be determined by three disinterested arbitrators; one to be appointed by the Grantor, one by the Grantee, and the third by the two arbitrators so appointed. In any event, the arbitration costs shall be determined by the arbitrators. The decision of any two of such three arbitrators shall be final and conclusive unless the party appealing, shall, within THIRTY (30) DAYS after the date of the arbitration decision, cause a notice of appeal to be filed in the office of the Registrar of the County Court, in the judicial district in the Registrar of the County Court, in which the land is situated, PROVIDED THAT in all other respects, the provisions of arbitration legislation then in force in the Province of British Columbia shall apply to each submission.*

ABOVE GROUND INSTALLATION

- 11) *The Grantee shall, so far as may be practicable locate any above ground installation in such a fashion as to provide a minimum of inconvenience to the Grantor. The Grantee agrees to compensate the Grantor for such above ground installation by separate agreement and failing such agreement within SIXTY (60) DAYS from the date of such installation, the matter of compensation shall be submitted to arbitration as hereinbefore provided.*

REMOVAL OF PROPERTY

- 12) *Notwithstanding any rule of law or equity, the pipe (which term includes all pipeline, drips, valves, fittings, connections, meters and all other equipment and appurtenances brought on and/or erected upon or buried in or under said Right-of-Way of the Grantee) shall at all times remain the Property of the Grantee notwithstanding that the same may be annexed or affixed to the freehold, and shall at any time and from time to time be removable in whole or in part by the Grantee, its successors and assigns.*

DISCONTINUANCE AND ABANDONMENT

- 13) *In the event that the Grantee abandons the pipeline, the Grantee may, if it so elects, leave the pipe or any part thereof in place.*
- 14) *Upon the discontinuance of the use of the said Right-of-Way and of the exercise of the rights hereby granted, the Grantee shall and will restore the surface of said lands to the same condition, except as provided in sub-paragraph (a), so far as may be practicable to do so, as the same were in prior to the entry thereon and the use thereof by the Grantee.*

QUIET ENJOYMENT & DRAINAGE

- 15) *The Grantor hereby covenants with the Grantee for quiet enjoyment, however it is agreed that the Grantee is familiar with the drainage of the land and agrees not to interfere with or cause to interfere with that drainage without prior written permission from the Grantor, and hereby agrees that any soil erosion problem caused by the pipeline or its appurtenances or by the construction of same will be immediately rectified upon receiving written notice of same; and the Grantor hereby covenants to do all acts and execute all such further assurances as may be required to have effect to the within grant.*

PIPE-LINES ACT

- 16) *Neither this Instrument nor anything herein contained shall affect or prejudice the Grantee's statutory rights, present or future, to acquire the said Right-of-Way or any other portion or portions of the GRANTOR'S LAND under the provisions of the Pipeline Act of British Columbia or any other laws, which rights the GRANTEE MAY EXERCISE IN ITS DISCRETION.*

NECESSARY WORKS TO BE CARRIED OUT

- 17) *Nothing herein contained shall be deemed to vest in the Grantee any title to mines, ore, metals, coal, slate, oil, gas or other minerals in or under the lands comprising the said Right-of-Way except only the part thereof that is necessary to be dug, carried away or used in the construction of the works of the Grantee.*

INTEREST IN LAND

- 18) *If at the date hereof the Grantor is not the sole owner of the GRANTOR'S LAND, this Instrument shall nevertheless bind the Grantor to the full extent of his interest therein, and if he shall later acquire a greater or the entire interest this Instrument shall likewise extend to such after-acquired interest.*

NOTICES

- 19) *All notices to be given hereunder may be given personally or by registered letter addressed to the party to whom the notice is to be given, and when mailed, any such notice shall be deemed to be given to, and received by the addressee seven (7) days after mailing thereof, postage prepaid.*

ADDRESSES

- 20) *Unless changed by written notice the addresses of the parties hereto shall be as set forth on the first page hereof.*

NUMBER AND GENDER

- 21) *Whenever the singular or masculine is used, it shall be construed as if the plural or feminine or the neuter, as the case may be, has been used where the context or the party or parties hereto so require, and the rest of the sentence shall be construed as if the grammatical and terminological change thereby rendered necessary had been made.*

DEFAULT

22) *Notwithstanding anything herein contained to the contrary, the Grantee shall not be in default in the performance of any of its covenants or obligations under this Agreement, unless and until the Grantor has notified the Grantee in writing of such default and the Grantee has failed to commence action to remedy the same within thirty (30) days of the receipt of such notice. For the purpose of this clause, a letter by the Grantee of its intent to remedy a fault shall not constitute a commencement of action to remedy the said default.*

FORCE MAJEURE

23) *Neither party shall be considered in default in performance of its obligations under this agreement, to the extent that the performance of such obligations or any of them, is delayed by circumstances, existing or future, which are beyond the control of the Grantor or the Grantee.*

ADDITIONAL TERMS

24) *Any additional terms, expressed or implied, shall be of no force or effect unless made in writing and agreed by the Grantor and the Grantee.*

ASSIGNMENT

25) *All the covenants and conditions herein contained, shall extend to, be binding upon, and enure to the benefit of, the executors, administrators, successors, and assign of the Grantor and the Grantee respectively.*

NON-ENTRY BY GRANTEE

26) *Should the Grantee not enter upon the Grantor's land, except for survey purposes, within _____ of the date of this Statutory Right-of-Way agreement, the Grantee shall pay to the Grantor the sum of _____ (\$XXXXXX) Dollars for the right to survey and all other inconveniences and the said Statutory Right-of-Way agreement shall terminate.*

TAXES

27) *The Grantee shall promptly pay and satisfy all taxes, rates and assessments that may be levied against the Pipeline Right of Way*

on the Grantor's land.

WORKING SPACE AREA

28) *The Grantor does hereby grant to the Grantee a temporary working space area as indicated on the attached Pipeline Individual Ownership Plan as shown outlined in green for the sum of*

~~-----Work space only @ ?/acre-----~~
- (\$XXXX) dollars required for temporary use during construction, installation and clean up of the Pipeline Right of Way on the Grantor's land.

ENTIRE AGREEMENT

29) *This Statutory Right of Way constitutes the entire agreement between the parties. Any additional terms or conditions shall be attached as SCHEDULE "A" and shall form part of this Statutory Right of Way.*

SCHEDULE "A"

Attached to and made part of an Agreement dated this _____, day of
March _____, 2001 between **Owner** _____ as Grantor
 and **Oil Company** _____, as Grantee.

Additional Terms and Conditions:

IN WITNESS WHEREOF the parties have caused this agreement to be
 executed the day and year first above written.

SIGNED AND DELIVERED

by the Grantor in the presence of:

_____) GRANTOR

(*Signature of Witness*)

)
)
)
 _____)
 (*Business Address of Witness*)

*by a duly Authorized Signatory
 of the GRANTEE:*

Per: _____

- (*Authorized Signatory of the Company*)

Insert Individual Ownership Plan (IOP) from Survey Company

Affidavit of Witness

To Wit:

I,Land Agent....., of the Land Agent Address
....., in the Province of British Columbia, make oath and say:

1. I was personally present and did see the within instrument duly signed and executed by the part thereto, for the purposes named therein.
2. The said instrument was executed at
3. I know the said part..., and that is of the full age of 19 years.*
4. I am the subscribing witness to the said instrument and am of the full age of 16 years.

Sworn before me at)

in the Province of British Columbia,)

.....[date].)

.....*

* Write name and qualifications under Section 48, eg: A Commissioner for Taking Affidavits for British Columbia

NOTE: This affidavit must be sworn by a witness who is not party to the instrument.

OIL AND GAS COMMISSION

