



Planning and Construction Guide

For Oil and Gas Operations
in British Columbia

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OIL & GAS
COMMISSION

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1. Introduction

The Planning and Construction Guide is a supplement to the Wells and Test Hole Manual, the Pipeline and Facilities Manual and the Road Application Guide.

2. Purpose

The purpose of the Planning and Construction Guide is to describe typical maximum disturbance allowances for the development of:

1. Wellsites;
2. Access routes;
3. Pipeline rights-of-way; and,
4. Associated project requirements such as remote sumps, decking sites, campsites, and borrow pits.

3. Objectives

The objective of the Planning and Construction Guide is:

1. To encourage companies, construction contractors and service firms to reduce their environmental footprint and to consider land use and water management techniques in development plans and operational strategies;
2. To specify acceptable parameters for typical oil and gas development activities; and,
3. To help identify routine and non-routine applications.

4. Expected Outcomes

Applications conforming to the Planning and Construction Guide and meeting “routine” requirements identified in their respective manuals will be screened as routine through the streamlined B.C. Oil and Gas Commission (Commission) application process.

Applications not conforming to criteria in the Planning and Construction Guide will be screened as non-routine and, as part of the application, will require justification or rationale explaining why the criteria are not being met.

The Commission recommends the practice of field scouting by construction supervisors in order to provide comprehensive and accurate information in applications.

5. Wells and Access Roads

5.1 Definitions

Compactable fill (borrow): defined in accordance with the Unified Classification System for Soils as soils containing less than half by weight particle sizes that are smaller than 0.075mm through a sieve screening test using U.S. Standard sieves (A.S.T.M.).

Gravels: defined in accordance with the Unified Classification System for Soils as soils containing more than half by weight particle sizes that are larger than 0.075mm through a sieve screening test using U.S. Standard sieves (A.S.T.M.).

High-grade access: permanent production access surfaced with gravel.

Low-grade access: temporary drilling/construction access constructed in non-frozen ground conditions with a minimal grade and adequate drainage control. In special circumstances, low-grade access may be constructed in frozen ground conditions.

Winter access: temporary access constructed in frozen ground conditions with minimal soil disturbance for seasonal production or drilling purposes.

5.2 Setbacks

5.2.1 From other wells

The minimum well-to-well distance is 25 meters. If well-to-well spacing is less than 25 meters and there is a Multi-well Pad Concurrent Operations Plan in place, then the minimum setback requirements will have been satisfied. The Multi-well Pad Concurrent Operations Plan must be available at the request of the Commission.

If a Multi-well Pad Concurrent Operations Plan is *not* in place, then the application will be deemed 'non-routine' and rationale regarding the proposed safe operating procedures for the life of a well must be submitted.

A Multi-well Pad Concurrent Operations Plan is often site-specific, addresses operational safety and fire risks and may consist of, but is not limited to, the following:

- 1) Minimum wellhead separation distance being used;
- 2) Regulatory requirements related to operational spacing, fire control requirements and risk assessments;
- 3) Safe well drilling, servicing and operating procedures including emergency procedures;
- 4) Drilling or workover operations: consideration of adjacent wellbores for such things as injection pressures and collision avoidance;
- 5) Communication and coordination with other operators if well(s) owned by different companies;
- 6) Chain of command and responsibilities for the site; and

- 7) Physical and fire safety protection of in-place wellheads, facilities, etc. when working on adjacent well(s).

5.2.2 From roads

Well centers must be a minimum of 80 meters from any public road, or the right-of-way or easement of any road allowance (see [Drilling and Production Regulation, section 5](#)), and 100 meters if the content of a well is sour. See also [Emergency Response Planning and Requirements for Sour Wells - Oil and Gas Handbook, Section 11 \(11.2.3 Minimum Separation Distance Requirements\)](#).

5.2.2.1 Exemptions from road setback criteria

The following are exemptions from the criteria described above for road setbacks:

1. Well centers may be located a minimum of 60 meters from the surveyed boundary of an existing low-grade oil and/or gas well access road utilized only for oil and gas purposes. This distance is not acceptable if there are other industrial users utilizing the road (i.e. forestry or mining users), or if the road is a major access to a multi-well oil and/or gas field.
2. Within the Agricultural Land Reserve (ALR), a well center may be located 40 meters from an existing well access road where the operator of a well and access are common and access is used exclusively for servicing a well. If this is not the case, a 60 meter minimum setback is required.
3. Winter access through a wellsite may be constructed to a minimum 40-meter distance between a well center and surveyed access boundary. Written consent must be provided if crossing a wellsite operated by a different company. This distance is not acceptable for a traditional or major winter access road leading to a different field with other oil and gas or multi-industrial users. In the latter case, a 60-meter minimum setback is required.

5.2.3 From flare stacks or ends of flare lines

Flare stacks or ends of flare lines must be at least 50 meters from a well center (see [Drilling and Production Regulation, section 62\(c\)\(i\)](#)) and must have a sufficient area beneath the flare stack that is free of combustible materials and vegetation (see [Drilling and Production Regulation, section 62\(n\)](#)). For further information on flaring requirements in forest and range areas, refer to the Wildfire Act. ([Wildfire Act](#), [Wildfire Regulation](#)).

A distance of 80 meters must be maintained between a surveyed access boundary and flare stacks, or ends of flare lines (see [Drilling and Production Regulation, section 62\(c\)\(iv\)](#)).

5.2.4 From water courses

Wells must not be drilled within 100 meters of the normal high water mark of a body of water without the written approval of an authorized commission employee. (see [Drilling and Production Regulation, section 5\(3\)](#)).

On Crown land, a wellsite edge (and other associated disturbances) must be set back from the breaks or banks of classified streams and water bodies as per the minimum reserve zone distances identified for each class of stream, lake or wetland in the Forest Practices Code. If any portion of the clearing or wellsite is located within the Riparian Management Area (RMA) of a stream, justification must be provided, including the construction methods proposed for a wellsite to ensure all surface runoff and hazardous fluids are contained on location. For more details on riparian management, refer to the [Forest Practices Code Riparian Management Area Guidebook](#). For specific RMA setback details, click [here](#).

It is expected that the same setbacks and precautions will be followed for activities proposed on watercourses located on private land.

Wellsite design and construction must ensure that surface water drainage does not impact streams or cause erosion to stream-banks.

5.2.5 From pipelines

Wellsites may be located over existing pipeline rights-of-way. Tenure holder consent is required if constructing over a pipeline right-of-way operated by a different company. A copy of this consent should be included with the application.

5.2.6 From wellsite trailers (i.e.: first aid, drilling engineer)

Trailers located on wellsites must be a minimum of 25 meters from well centers and flares. For more information on setback distances for wellsite trailers, see [OGC Information Letter OGC04-18](#).

5.3 Typical disturbance parameters

Applicants are reminded that in all cases where a rationale is required, the application will be treated as non-routine.

Note: The following parameters do not apply for applications on private land but if the application is within the ALR it will still need to meet Agricultural Land Commission (ALC) requirements.

5.3.1 Wellsite - Refer to IRP#20 Wellsite Spacing Recommendations

Apply for the appropriate size and configuration to ensure the surface positioning setbacks relating to drilling and completions operations are followed.

5.3.2 Temporary winter access

Roads intended to provide temporary winter access should be a maximum of 10 meters in width. Provide rationale if the terrain requires increased width.

5.3.3 Low-grade summer access

Roads intended to provide low-grade summer access should be no wider than 15 meters if utilizing a fully padded (overland) construction technique. A 20-meter-wide low-grade access is acceptable if utilizing a full ditch cut technique, or ditch cut with additional fill

material required from alternate borrow sources other than the road right-of-way. Provide rationale if a width of more than 20 meters is required.

When a 20-meter-wide low-grade access is applied for with one or more borrow pits, indicate if the borrow pit or pits are proposed for an access road and/or a wellsite.

5.3.4 High-grade access

Roads intended to provide high-grade access should be a maximum of 20 meters wide. Provide rationale if increased width is required.

5.3.5 Standard corridor width

The Commission encourages multi-use corridors. For access roads with an adjacent pipeline right-of-way or linear use, the standard corridor width is 30 meters if there is a minimum of five meters of overlap. The standard corridor width can be increased up to 35 meters with a minimum of five meters overlap for Petroleum Development Roads (PDRs), Forest Service Roads (FSRs), and public highways. Provide rationale if additional width is required (i.e.: terrain, safety, or other reasons).

5.3.6 Variable width access

In areas with challenging terrain or other features where extra operating area is required, variable width access may be considered. Provide rationale.

5.4 Planning Considerations

5.4.1 Water use (for drilling purposes, winter access freeze-in, dust control, etc.)

In accordance with the *Water Act*, if diversion or use of water is required for a term not exceeding 12 months, the operator must make an application to the Commission for a Section 8 Approval. ([Link: Application for Short-term Use of Water](#))

5.4.2 Supporting information

Reports, photographs of the project area, assessments and/or studies must be provided upon request with the application (i.e.: pre-scouting reports, fish habitat assessments).

5.4.3 Watercourses

Watercourses in the immediate vicinity (within 100 meters) of all proposed disturbances must be identified and classified. Non Classified Drainages (NCD'S) and streams identified on TRIM maps that cannot be identified in the field are exempt from this requirement.

5.4.4 Temporary workspaces

For tenuring purposes on Crown land only, temporary workspaces located adjacent to wellsites must be incorporated into a wellsite area.

The temporary workspace area does not have to be incorporated into a wellsite area for tenure purposes if the temporary workspace is:

- only connected with the construction or drilling of a well (i.e.: short term storage of strippings pulled back at the initial clean-up of wellsite), or is
- temporary in nature (it will never be used in connection with operating or servicing a well [i.e.: cleared area around the outside fencing of a wellsite within a range tenure to allow for cattle movement]).

The purpose of the temporary workspace must be identified on the construction plan.

5.4.5 Existing wellsites

When the surface area of a new wellsite overlaps a portion or the entire surface area of an existing wellsite owned/operated by a different company, an application must be submitted for the entire area required to operate and service the new wellsite. A separate surface tenure document will be issued over the entire area required for each well. This only applies to wells on Crown land.

5.4.6 Proposed pipeline rights-of-way

Identify the proposed route of potential pipeline rights-of-way with a well application, where possible.

5.4.7 Existing open seismic lines

Use existing open seismic lines, cleared rights-of-way, existing abandoned trails, and/or other open corridors where they present a feasible access routing option.

5.4.8 Access route

Include details of the access route such as the presence and percent of slopes, width and condition of seismic lines to be used, and vegetation description in applications.

5.4.9 Minimizing Disturbance

Use existing clearings and multi-well pad drilling where possible.

Disturbances are to be located in clearings or brush types to mitigate impacts to forested land base according to the following priorities:

1. Natural openings or existing development;
2. Brush types;
3. Non-commercial types or non-marketable vegetation/timber (i.e. black spruce, tamarack/larch);
4. Mature Conifer or Deciduous types; and
5. Immature Conifer or Deciduous types, including plantations.

5.5 Construction Techniques

For stream crossing procedures, refer to the [Stream Crossing Planning Guide](#) and the [Fish Stream Crossing Guidebook](#) on the Commission web site.

Use low-impact construction techniques such as ice pads or matting materials where feasible.

Avoid cutting new access to water removal sites. Wherever possible, existing access should be used. The existing access can be upgraded for safety purposes and turnaround areas may be added if necessary. In all cases the amount of disturbance must be kept to a minimum. If new access is necessary or existing access has been upgraded, it must be de-activated with erosion control measures in place when access is no longer required.

Whenever possible, permanent access routes and pipelines should share a common corridor.

Whenever possible, feather the edges of new-cut clearings.

Whenever new construction methods are proposed, a concise supplement detailing material, design and operational information should be included with the application.

Note: Materials with the potential to cause environmental damage or contamination by way of function, nature or composition (i.e.: aspen corduroy) will not be approved unless the Commission is satisfied that measures have been taken to ensure no damage will result from their use.

5.6 Permanent high-grade wellsite access road application process

Upon submission the proposed access may be identified as temporary/permanent access. If permanent access is requested in the initial application, it must be clearly identified.

The area required for both temporary and permanent access must be clearly identified on the survey plan. Access must also be included in the area table along with public road access connected to a well application (i.e.: padding and/or gravel surfacing).

A permanent access application must connect to an existing or proposed permanent access and not to a temporary or seasonal access.

Permanent access with the associated borrow pits/decking sites may be submitted with new well applications. Prior to construction commencement, written notification must be submitted to the Commission identifying a successful well on the prescribed form. This process applies only to permanent, high-grade roads accessing wellsites where permanent access was identified at the time of a well application.

If permanent access was not identified on the original application and is required subsequent to a new well application submission or approval, permanent access may be requested as an amendment to the original well application.

In sensitive or Special Management Areas, companies are expected, where possible, to coordinate access plans with other users. In some cases, a Land and Resource Management Plan (LRMP) or other planning initiative may provide specific direction on access management to minimize impacts.

Note: Gravel sources require a separate authorization Permit under the *Land Act*.

5.7 Multi-season application process

Applications covering multiple seasons must include seasons of construction (i.e.: area required for winter and summer must be clearly identified on construction plans) and stream crossing methodology with supporting information. Refer to the [Stream Crossing Planning Guide](#) on the Commission web site.

When applying for a low-grade access road to a well with significant probability of becoming a producer, ensure culverts and/or bridges are adequately sized to meet or exceed the Q100 flow requirements. This prevents the future removal and upgrade of those crossing structures when a high-grade permanent access road is constructed. Rationale must be provided if increased width is required (i.e. due to terrain, safety, or other reasons).

6. Pipeline Rights-of-Way

6.1 Typical disturbance parameters

Note: The following parameters do not apply for applications on private land but if the application is within the ALR it must meet ALC requirements.

Standard pipeline right-of-way width is 15 meters outside of the ALR and a maximum of 18 meters within the ALR.

The Commission encourages multi-use corridors. A standard cleared corridor width is up to 30 meters, using a minimum of five meters of overlap. The standard corridor width can be increased up to 35 meters, with a minimum of five meters overlap, for PDRs, FSRs, and public highways. Operators must provide rationale if additional width is required (i.e.: due to terrain, safety, or other reasons).

6.2 Construction Techniques

6.2.1 Clearings and setbacks

Use existing disturbances such as open seismic lines, access roads, cleared rights-of-way, existing abandoned trails, and/or other open corridors where possible. Existing hand cut and avoidance-type seismic lines are considered low impact disturbance, therefore these are considered secondary routing preferences for a right-of-way if adjacent seismic or other linear corridors are within functional distance of operations.

Locate pipeline rights-of-way adjacent to well access and incorporate pre-existing cleared areas, such as log decks and camps where possible.

Paralleling existing disturbances is encouraged. If the existing disturbance already includes a pipeline and access road, then a second pipeline should not be located on the opposite side of the road. If parallel installation is not possible, or not the best option, then a detailed rationale is required and the application will be treated as non-routine.

When additional temporary workspace is required due to excessive debris or snow load, and/or terrain limitations, details must be included with the application (or amendment) for consideration.

6.2.2 Water Courses

For stream crossing procedures including directional drill or boring techniques, refer to the [Stream Crossing Planning Guide](#) and the [Fish Stream Crossing Guidebook](#) on the Commission web site. Additional direction on pipeline crossings is outlined in informational letter #OGC 04-08 [Bored and Directionally Drilled Pipeline Crossings - Operational Setbacks](#).

6.3 Application submission

6.3.1 Water Use (for hydrostatic testing purposes, directional drilling purposes, etc.)

In accordance with the *Water Act*, if diversion or use of water is required for a term not exceeding 12 months, the company must make an application to the Commission for a Section 8 Approval. (Link: [Application for Short-term Use of Water](#))

6.3.2 Photography and assessment reports

Reports, photographs of the project area, assessments and/or studies must be provided upon request.

7. Ancillary Disturbances

7.1 Typical disturbance parameters

Note: The following parameters do not pertain to applications on private land but if the application is within the ALR it must meet ALC requirements.

7.1.1 Locate ancillary disturbances

Unless absolutely necessary, all campsites, remote sumps, borrow pits, temporary workspaces, decking sites and any other temporary disturbances are to be located using the selection criteria below to reduce the impact on the forested land base.

The selection criteria are prioritized from least to greatest impact to the forested land base. Therefore, disturbances are to be located in natural openings or brush types to mitigate impacts where possible.

1. Natural openings or existing development;
2. Brush types;
3. Non-commercial types or non-marketable vegetation/timber (i.e. black spruce, tamarack/larch);
4. Mature Conifer or Deciduous types; and
5. Immature Conifer or Deciduous types, including plantations.

7.1.2 Temporary drilling, construction, or centralized camps

Temporary drilling, construction, or centralized camps must not be located in gravel pits without sewage containment (i.e.: liners or tanks).

7.1.3 Areas of temporary campsites, decking sites, remote sumps and borrow pits

The following are typical areas for the identified temporary disturbances:

1. Campsite(s)			
Standard	.24Ha	Common	.50Ha
2. Decking site			
Standard	.12Ha	Multipad wellsite	.25Ha
3. Remote sump site			
Single well	.36Ha	Common	1 Ha
4. Borrow pit			
Single	.48Ha	Common borrow pit	1 Ha

7.2 Construction Techniques

Prior to the entire clearing and construction of approved borrow pits and remote sumps these locations are to be pre-tested to ensure suitability of the site.

7.2.1 Borrow pit/remote sump excavation setback

Within the clearing of a remote sump or borrow pit, excavations are to be set back a minimum of 15 meters from the road edge for safety reasons and possible future pipeline placement.

7.2.2 Stocked or occupied borrow pits

A permit is not required for water diversion from borrow pits; however, water diversion will **NOT** be permitted from stocked borrow pits, or those occupied by nesting waterfowl or beavers.

Note: Stocked borrow pits are typically identified or have signage cautioning water users to the presence of fish.

7.2.3 Airstrips

Airstrips are considered “no development zones” whether the airstrips are active or abandoned.

For activity setbacks from airstrips, refer to the [Aerodrome Standards and Recommended Practices](#) available from the Commission or from Transport Canada's Aerodrome Safety Branch. For further information refer to the [Aeronautics Act](#).

7.3 Camps

For more information on campsites, refer to the following updated section of the Oil and Gas Handbook:

[Campsites - Oil and Gas Handbook, Section 1.](#)

10. Contact Information

If you have any questions or comments regarding this guide, please contact a Natural Resource Officer or Operations Manager at the Commission at (250) 261-5700.