



Siting an Upstream Oil and Gas Site in an Environmentally Sensitive Area on Private Land

Guidance for Private Land

September 2003
R&R/03-2

As a result of revisions to Alberta Energy and Utilities Board's Guide 56 - Energy Development Application Guide, notification requirements to Alberta Environment have changed

Alberta Environment requires operators of upstream oil and gas facilities in environmentally sensitive areas to conserve and reclaim land and mitigate effects of their activities.

The Alberta Energy and Utilities Board's Guide 56 - *Energy Development Application Guide* no longer requires operators to notify Alberta Environment when they propose to locate an upstream oil and gas facility (including a wellsite, battery, pipeline) and access road on private land in environmentally sensitive areas, however, Alberta Environment conservation and reclamation requirements must be met.

Environmental issues for upstream oil and gas facility sites and access roads on public land (including Special Areas land) are addressed through the Mineral Surface Lease (MSL), Pipeline Agreement (PLA) and Licence of Occupation (LOC) processes. These processes remain in effect.

Throughout this document, the word "site" refers to a wellsite, battery, pipeline and access road.

REQUIREMENT TO CONSERVE AND RECLAIM

Section 137 of the *Environmental Protection and Enhancement Act* (EPEA) requires operators to conserve and reclaim upstream oil and gas facility sites and access roads.

The objective of conservation and reclamation is to return disturbed land to an equivalent land capability. This objective recognizes that landscape, soil, biological resources and water need to be conserved and protected. Inappropriate site selection and construction in environmentally sensitive areas may hamper an operator's ability to properly conserve and reclaim the site.

The location of upstream oil and gas facility sites and access roads should be planned to avoid sensitive areas and to minimize impacts to water, soil, vegetation, sensitive species, wildlife habitat and land management.

Operators must identify environmental sensitivity at every proposed site and consider relocating the site when a sensitive category is identified.

When sensitive areas cannot be avoided, operators must prevent, reduce or mitigate all potential adverse effects caused by site construction and operation. Operators should expect to be more diligent in planning, construction and final reclamation of such sites.

Mitigation plans may include temporary construction and conservation practices employed until the well status (drilled & abandoned vs. producer) is determined. For example, a high-grade road may not be required if the site is drilled and abandoned (D&A).

Operators must discuss the upstream oil and gas facility and site access road location with the landowner/occupant. Contact with the appropriate reclamation inspector is also encouraged prior to construction.

If operators choose to construct in an environmentally sensitive area, they must ensure that they have environmental protection plans, contingency plans, long term monitoring plans, maintenance plans and quality assurance/control programs to address any potential adverse environmental impacts.

Plans must address potential seasonal and weather related effects on soil and site conditions. These plans must be shared with personnel involved in site construction. An experienced inspector with capability and explicit responsibility for environmental protection must be present during construction and reclamation.

This Fact Sheet, effective immediately, replaces three Information Letters:

- *Notification of Proposed Wellsite and Access Road in an Environmentally Sensitive Area on Private Land, C&R/IL/00-6*
- *Notification for Class II Pipelines on Private Land, C&R/IL/00-7*
- *Guidance on Notification of Proposed Wellsite and Access Road in an Environmentally Sensitive Area, C&R/IL/01-2*

Alberta Environment requires operators to conserve, reclaim and mitigate effects of their activities in identified environmentally sensitive areas

CHECKLIST OF SENSITIVE AREAS

An operator must determine the sensitivity of a site prior to construction. The following is a checklist of areas to investigate when working in sensitive areas. Each of these areas is discussed in more detail in the following section.

- Are there significant slopes/cuts on the proposed site that are >10 m across the lease?
- Are there significant elevation changes along or across the access road that are >2 m for more than 50 m in length?
- Will the site be located on sandy soils?
- Will the site be located on an alkaline flat or dry slough?
- Will the site be located in native prairie?
- Is the site in a flood-irrigated area?
- Will the site be located within 30 m of a valley/coulee break?
- Is the site within a 1-in-100-year floodplain?
- Is notification required under any of the Codes of Practice associated with the *Water Act*?
- Is there intermittent drainage across the site?
- Does the site have a known spring?
- Are there sensitive wildlife species on or near the site?
- Are rare plant species or plant communities on or near the site? Contact the Alberta Natural Heritage Information Centre to determine if the proposed site is located in an area where landscapes and/or species are at risk or in a designated Environmentally Sensitive Area (ESA).
- Is the site in a historical resource area? Review the list of *Significant Historical Sites and Areas* updated annually by Alberta Community Development.

ENVIRONMENTALLY SENSITIVE AREAS

This section identifies concerns and asks questions about each of the environmentally sensitive categories. Operators should use the questions as a guide in developing mitigation plans for the site.

The questions assume that the site will be returned to its original condition. This may not be the case if the landowner requests improvements be left in place.

Operators should be clear about the proposed end land use of a site and have plans that address the site's specific conservation and reclamation needs. The plans should be flexible in case the landowner's preferences change.

Elevation Change Across The Lease Is >10 m

Primary concerns are soil storage, drainage, erosion, stability and reclamation problems associated with a large cut and fill.

Questions to Consider

- How will surface drainage and erosion be controlled?
- How will siltation from surface drainage and erosion be controlled to prevent impacts on nearby water bodies, wetlands, or drainages?
- How will salvaged soil be protected from erosion?
- How will soil and original contour be replaced on cut and fill areas?
- How will unsuitable deep subsoil materials be identified and be kept below suitable subsoil during replacement and recontouring?
- How will stored or replaced soil material be stabilized, especially where the site is located in upper or mid-slope positions?
- How will potential long-term soil settlement be addressed?

Significant Elevation Changes Along Or Across The Access Road

If there is at least one portion of the access road that varies by >2 m for more than 50 m length, this is defined as a significant elevation change.

Primary concerns are soil storage, drainage, erosion, stability and reclamation problems associated with cut and fill.

Questions to Consider

- How will salvaged soil be protected from erosion?
- How will unsuitable deep subsoil materials be identified and be kept below suitable subsoil during replacement and recontouring?
- How will soil and original contour be replaced on cut and fill areas?
- How will stored or replaced soil be stabilized?
- How will potential drainage be controlled and erosion addressed for the life of the road?
- How will siltation from surface drainage be controlled to prevent impacts on nearby water bodies, wetlands, or drainages?

Site On Sandy Erodible Soils

Primary concerns are erosion and difficulty with revegetation.

Questions to Consider

- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will shallow topsoil be identified and salvaged?
- How will salvaged and replaced topsoil be protected from wind erosion?
- How can the soil surface be modified to enhance revegetation on natural landscapes?
- How will the site be revegetated (methods and species)?

Site In Alkaline Flat Or Dry Slough

These can also include ephemeral wetlands. Primary concern is the difficulty of revegetation due to unfavorable soil chemistry.

Questions to Consider

- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will suitable topsoil and subsoil be identified and conserved?
- How will the salvaged soil be protected if the site becomes wet during life of project?
- How will oilfield product and wastes be handled if the site becomes wet during life of project?
- How will the original hydrological regime be restored?
- How will the site be revegetated (methods and species)?

Site In Native Prairie Area

Primary concerns are protection of existing native vegetation and difficulty to revegetate to native vegetation.

Questions to Consider

- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will soil and vegetation resources be conserved?
- How will the extent and degree of disturbance be minimized?
- How will supplies of appropriate revegetation species be obtained?
- How will the site be reclaimed to native vegetation?
- How will the operator ensure that native seed mixes do not contain weeds and invasive species?
- How will weeds and non-native plants be controlled?
- How will grazing on the revegetated site be controlled?

Site In Flood-Irrigated Area

Primary concerns are disruption of land contour and farm operations.

Questions to Consider

- How will land contour be assessed prior to construction?
- How will disruption to farm operations be minimized?
- How will the site be recontoured to pre-disturbance conditions?
- How will settlement of fill in excavated areas be prevented or reclaimed?

Site Within 30 M Of A Valley/Coulee Break

Primary concerns are geotechnical stability, potential loss of salvaged soil materials and erosion of the valley break. Note: For the purposes of this Fact Sheet, a "break" is considered to be the point where ground instability occurs owing to slope steepness.

Questions to Consider

- Is a geo-technical survey required to ensure stability during and following construction and reclamation activities?
- What setback from watercourses is necessary for stability and wildlife concerns for wellsites and access roads? Note: For ravines and seasonal watercourses, a minimum setback of 15 metres is recommended. For permanent watercourses, a minimum setback of 45 metres from the edge of the breaks to the edge of the site is recommended.
- How will surface drainage be controlled and erosion of the valley break be prevented?
- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will soil and vegetation resources be conserved?
- How will the perimeter of the site be bermed with material that will ensure fluids are contained?

Site Within The 1-In-100-Year Floodplain

This includes the floodplain of a river, stream, or lake. There are very few maps showing 1:100 year floodplains. If there is not one available for the site, use the high-water mark or base of the valley walls instead. Some activities (e.g., filling) or any intended diking may need approval under the *Water Act*.

In addition to any requirement under the *Water Act*, EUB approval is required for any wellsite within 100 m of the high water mark of a waterbody (*Oil and Gas Conservation Regulations 2.120(1)(a)* and Equipment Spacing Diagram, Appendix 7, EUB Guide 56).

Primary concern is the potential for the site to be flooded and consequent loss of topsoil or spread of contaminants and waste materials.

Questions to Consider

- How will suitable topsoil and subsoil be identified and conserved?
- How will the salvaged soil be protected if the site floods during life of project?
- How will oilfield product and wastes be handled if the site becomes wet during life of project?
- How will site impacts on water resources and management be identified and controlled?
- How will potential siltation be controlled?
- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will soil and vegetation resources be conserved?
- How will the site be reclaimed to original conditions?
- How will native vegetation be re-established?

Note: New watercourse crossings and pipeline crossings are not allowed in water bodies identified as "Class A" under the Codes of Practice pursuant to the *Water Act*.

Note: Notification is required for activities regulated under the *Code of Practice for Pipelines and Telecommunication Lines Crossing a Water Body*; *Code of Practice for Watercourse Crossings*, and *Code of Practice for the Temporary Diversion of Water for Hydrostatic Testing of Pipelines*.

Intermittent Drainage Across The Site

Natural drainage must be maintained. Construction of a crossing over a watercourse with defined bed and banks may be subject to the *Code of Practice for Watercourse Crossings* pursuant to the *Water Act*.

Other activities within a drainage or watercourse with defined bed and banks that are not exempt under the *Water Act Water (Ministerial) Regulation* and are not subject to the *Code of Practice for Watercourse Crossings* will require an approval under the *Water Act*.

Primary concerns are impeding drainage, controlling erosion and potential siltation of water bodies.

Questions to Consider

- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will soil and vegetation resources be conserved?
- How will the salvaged soil be protected if the site becomes wet during life of project?
- How will oilfield wastes be handled if the site becomes wet during life of project?
- How will surface drainage be controlled and erosion and siltation be addressed?
- How will the original drainage course be maintained?

Site Has Known Spring

These sites may need approval under the *Water Act*.

Primary concerns are impact to the spring and potential for erosion and siltation.

Questions to Consider

- Can disturbance of springs be avoided?
- How will springs be controlled if disturbed?
- How will sensitive or rare plants/communities or wildlife be identified and addressed?
- How will soil and vegetation resources be conserved?
- How will the salvaged soil be protected if the site becomes wet during life of project?
- How will oilfield product and wastes be handled if the site becomes wet during life of project?
- How will original hydrological conditions be reclaimed?
- How will erosion and siltation caused by the springs be prevented and/or controlled?
- How will slopes with springs be protected?
- How will the disturbance around springs be revegetated?

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Site With Sensitive Wildlife Species

Applicants must consult with regional wildlife specialists to establish concerns regarding species or habitats. Sensitive features such as denning or nesting sites must be avoided by determining suitable setback distances for each species. During critical periods (e.g. mating, nesting seasons) activities may be limited.

Primary concerns are loss of physical habitat and sensory disturbance through all stages of the activity.

Questions to Consider:

- ❑ How will sensitive or unique habitat and wildlife pathways be avoided or identified, protected and reclaimed?
- ❑ How will sensitive animals (permanent and seasonal) be identified and their needs addressed?
- ❑ How will access management/control be addressed?

Site With Rare Plant Species Or Plant Communities

Rare plant species or rare plant communities include those listed on the Alberta Natural Heritage Information Centre (ANHIC) tracking list.

There are sites where rare plants are more likely to be found. These include unusual landscape features, ephemeral habitats and transition zones. Rare plant surveys are undertaken to determine the presence and location of rare plant species and communities.

The Alberta Native Plant Council has published *Guidelines for Rare Plant Surveys*. It is available on the website: www.anpc.ab.ca.

The main concerns are destruction of rare plants or rare plant communities and the difficulty of mitigation for many species.

Questions to Consider:

- ❑ Has a rare plant survey been done in areas that are known to have (or likely to have) rare plants or plant communities? Can the rare plant or plant community be avoided through relocating the development?
- ❑ Has ANHIC been consulted to determine the best mitigation measures for the species or community of concern?
- ❑ Have post-construction/reclamation monitoring plans been made?

Site In A Historical Resource Area

Applicants must check the current *Listing of Significant Historical Sites and Areas*, updated annually by Alberta Community Development, to determine whether the site is planned for an area described within the Listing (EUB *Guide 56: Energy Development Application Guide*).

Significant historical resources must be avoided by construction of upstream oil and gas facilities and access roads (*Historical Resources Act*). A historical resources impact assessment may be required. Surface access may be restricted from lands that possess historical resources that have been assigned a historical resource value (HRV) of 1, 2 or 3.

Primary concern is the loss of or damage to irreplaceable historical resources.

Questions to Consider:

- ❑ Has the *Listing of Significant Historical Sites and Areas*, updated annually by Alberta Community Development, been consulted to determine whether the site is planned for an area described within the Listing?
- ❑ Can the development be relocated to avoid historical resources?
- ❑ Have mitigation plans been discussed with Alberta Community Development?

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CONTACTS

The following can be reached toll free by calling 310-0000 and then dialing the number shown below.

For public lands:

Alberta Sustainable Resource Development
Public Lands Division,
3rd Floor, 9915 - 108 Street,
EDMONTON, Alberta T5K 2G8.
Phone: (780) 427-3570
Fax: (780) 422-4251
e-mail: reclaim.account@gov.ab.ca

For all other lands:

Alberta Environment,
Science and Standards Branch,
4th Floor, 9820-106 Street,
EDMONTON, Alberta T5K 2J6
Phone: (780) 944-0313
Fax: (780) 422-4192
e-mail: land.management@gov.ab.ca

