



Treaty 8 Planning and Mitigation Measures

VERSION 1.0: January 2024

About the Regulator

The British Columbia Energy Regulator (Regulator) oversees the full life cycle of energy resource activities in B.C., from site planning to restoration. The Regulator ensures activities are undertaken in a manner that protects public safety and the environment, supports reconciliation with Indigenous peoples, conserves energy resources and fosters a sound economy and social well-being. We work collaboratively across government and industry sharing policy and technical expertise in support of B.C.'s transition to low-carbon energy and helping meet future global energy needs.



Vision, Mission and Values

Vision

A resilient energy future where B.C.'s energy resource activities are safe, environmentally leading and socially responsible.

Mission

We regulate the life cycle of energy resource activities in B.C., from site planning to restoration, ensuring activities are undertaken in a manner that:



Protects
public safety and the
environment



Supports reconciliation
with Indigenous peoples
and the transition to
low-carbon energy



Conserves
energy
resources



Fosters a sound
economy and social
well-being



Values

Respect is our commitment to listen, accept and value diverse perspectives.

Integrity is our commitment to the principles of fairness, trust and accountability.

Transparency is our commitment to be open and provide clear information on decisions, operations and actions.

Innovation is our commitment to learn, adapt, act and grow.

Responsiveness is our commitment to listening and timely and meaningful action.

Table of Contents

About the Regulator.....	2
Preface	4
About the Document	4
Additional Guidance.....	5
Document Revisions.....	6
1.0 Baseline Planning and Mitigation Measures	7
1.1 Seismic	7
1.2 Roads.....	9
1.3 Aggregate and Borrow Pits	11
1.4 Pipelines.....	13
1.5 Facilities including: Wellsites, Compressor Sites, Disposal Wells, Water Storage Facilities, and Processing Facilities	16
1.6 Water	18

Preface

Proponents play a vital role in successful engagement with Indigenous communities. The BC Energy Regulator (the Regulator) requires proponents to meet and engage in dialogue with affected Indigenous communities when planning oil and gas activities. This is part of the Regulator's requirement to implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) within Regulator processes.

About the Document

In March 2023, the Province of BC and Treaty 8 Nations signed Letters of Agreement endorsing the Consensus Documents that set out various initiatives to enhance natural resource management in Treaty 8 Territory to achieve sustainability for future generations, meet the Crown's obligations to uphold constitutionally protected Treaty Rights, and support responsible resource development and economic activity.

As a step to honour this commitment and align with the Declaration on the Rights of Indigenous Peoples Act, the Regulator now requires operators to employ the following Treaty 8 Planning and Mitigation Measures (the Measures) for all applications within the Treaty 8 Area.

The Measures are important new natural resource conservation initiatives and a starting point for collaborative co-management. The Measures were drafted with input from Treaty 8 Nations before publication, drawing from extensive discussions on longstanding issues and insights gained during energy development consultations. Furthermore, the Measures are informed by industry feedback and built upon innovative practices utilized by oil and gas operators. They are tangible, practical actions aimed at conserving the environment, safeguarding the practice of Treaty Rights, and enabling sustainable resource development.

The Measures are not intended to be exhaustive or final, and will be adapted collaboratively, as necessary, to meet future needs. Additional measures may be co-developed with specific First Nations.

[As of March 7, 2023](#), the Regulator requires proponents to engage affected First Nations prior to application submission (pre-engagement) when planning energy resource activities. The Regulator encourages applicants to use the [pre-engagement process](#) to ensure their projects align with the Measures before submitting applications.

The Regulator's Oil and Gas Activity Application Manual will be updated to include the new measures that applicants must implement during the planning stage. Applications must align with the Measures before an application moves to the consultation and decision-making phases. Authorizations will include specific conditions and advisory guidance to ensure compliance with the Measures during construction, operation, and upon completion of activities. This document aims to assist users in understanding the procedures and recommended practices involved in the process.

Additional Guidance

As with all Regulator documents, this does not take the place of applicable legislation. Readers are encouraged to become familiar with the acts and regulations and seek direction from Regulator staff for clarification. Some activities may require additional requirements and approvals from other regulators or create obligations under other statutes. It is the applicant and permit holder's responsibility to know and uphold all legal obligations and responsibilities.

Throughout the manual there are references to guides, forms, tables and definitions to assist in creating and submitting all required information. Additional resources include:

- [Glossary and acronym listing](#) on the Regulator website.
- [Documentation and guidelines](#) on the Regulator website.
- [Frequently asked questions](#) on the Regulator website.
- [Advisories, bulletins, reports and directives](#) on the Regulator website.
- [Regulations and Acts](#) listed on the Regulator website.

The Regulator honours Indigenous rights, title and values as foundational in our decision-making and applies this in all facets of our work with First Nations and Indigenous communities, as partners in building B.C.'s energy resource future.

Document Revisions

The Regulator is committed to the continuous improvement of its documentation. Revisions to the documentation are highlighted in this section and are posted to the [Energy Professionals](#) section of the Regulator's website.

Version Number	Posted Date	Effective Date	Chapter Section	Summary of Revision(s)
1.0	January 15, 2024	April 15, 2024	All	<p>This is a new document; users are encouraged to review in full.</p> <p>Updates to the Oil and Gas Activity Application Manual to Support Consultation with First Nations will be published on the Regulator's website soon.</p> <p>For more information, please refer to Information Update IU2024-01.</p>

1.0 Baseline Planning and Mitigation Measures

1.1 Seismic

The following are the minimum required documentation and plans that must be included with the application at time of submission to the Regulator.

STREAM, WETLAND, AND LAKE CROSSINGS

- Documentation identifying all stream, wetlands, and lake crossings must include:
 - a. maps and construction plans identifying each stream, wetland, and lake that will be crossed by seismic activities,
 - b. a table indicating each class of stream, wetland, and lake that will be crossed by seismic activities,
 - c. within the table, the gross area of impacted Riparian Management Area for each stream, wetland, and lake crossing, and
 - d. within the table, the type of crossing that will be used.
- Documentation indicating that motorized vehicle crossing methodology for fish-bearing streams is via clear-span bridge, open-bottomed culvert, or snow-fill.
- For Riparian Management Areas that will be impacted by seismic activities, a restoration plan written and signed by a qualified professional must be submitted. This plan must include, at a minimum:
 - a. how the restoration will follow ecological succession for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance,
 - b. the timing of ecological succession, up to and including the time at which vegetation is expected to reach “moose height” or 2 metres or an alternative threshold suitable to the surrounding area, as determined by a qualified professional,
 - c. whether restoration will include natural revegetation, the planting of woody vegetation, the use of seed mix in accordance with the Ecologically Suitable Species Guideline, or combination,
 - d. if using sod-forming seed mixtures to address erosion concerns, it must be confirmed when the sod-forming species are to be replaced with a suitable non-sod-forming species mix for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance, and
 - e. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

MINERAL LICKS AND WALLOWS

- All mineral licks and wallows and their associated trail networks that may be impacted by the seismic activity must be identified on maps and construction plans.
- For mineral licks and wallows and their associated trail networks that may be impacted by the seismic activity, a mitigation plan written and signed by a qualified professional must be submitted. This plan must include, at a minimum:

- a. how the mineral licks and wallows will be avoided to maintain functionality of the mineral licks and wallows, including:
 - i. setback distances from seismic activity,
 - ii. how associated trail systems that connect with the mineral licks and wallows will be maintained, and
 - iii. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

LINE OF SIGHT

- Where a seismic line intersects a linear corridor, documentation, including maps and construction plans, will indicate where line-of-sight mitigation measures will occur. At a minimum, line-of-sight mitigation measures will be used at:
 - a. the intersection points of seismic lines and roads,
 - b. the intersection points of seismic lines and pipelines,
 - c. the intersection points of seismic lines and transmission lines, and
 - d. at regular intervals along the seismic lines.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

- Follow existing industry best management practices, including low-impact seismic practices.
- End source and receiver lines at the edge of the Riparian Management Area of fish-bearing streams to reduce the number of stream crossings.
- Maintain isolation from access routes. End source and receiver lines prior to intersecting with roads, except where access into the seismic program is necessary.
- Cut seismic lines by hand wherever possible.
- Hand-cut source and receiver lines within the Riparian Management Area of S1 or S2 watercourse.
- Do not cut trees greater than 20 centimetres in diameter.
- Monitor seismic lines after program completion and note areas of potential impact including where vegetation is not regenerating and where predator access may be of concern.
- Mulch should not exceed 4 centimetres in depth.
- When operating in a wetland, activities must be carried out in frozen ground conditions.
- Restoration of impacted Riparian Management Area should begin within one growing season of final activities, as per the approved qualified professional restoration plan.

1.2 Roads

The following are the minimum required documentation and plans that must be included with the application at time of submission to the Regulator.

STREAM, WETLAND, AND LAKE CROSSINGS

- Documentation identifying all stream, wetlands, and lake crossings must include:
 - a. maps and construction plans identifying each stream, wetland, and lake that will be crossed by a road,
 - b. a table indicating each class of stream, wetland, and lake that will be crossed by a road, and within the table, the type of crossing that will be used.
- For fish-bearing streams, documentation must indicate that crossings will be via clear-span, open bottom culvert, or snow-fill.
- When roads cross through a wetland, a wetland hydrological integrity plan written and signed by a qualified professional must be submitted. This plan must include, at a minimum, how the natural flow of the wetland will be maintained.
- Documents, including maps and construction plans, will indicate that roads are a minimum of 100 metres from the top of bank of S1 or S2 watercourse unless to facilitate a crossing.

MINERAL LICKS AND WALLOWS

- All mineral licks and wallows and their associated trail networks that may be impacted by a road must be identified on maps and construction plans.
- For mineral licks and wallows and their associated trail networks that may be impacted by a road, a mitigation plan written and signed by a qualified professional must be submitted. This plan will include, at a minimum:
 - a. how the mineral licks and wallows will be avoided to maintain functionality of the mineral licks and wallows, including:
 - i. setback distances from roads,
 - ii. how associated trail systems that connect with the mineral licks and wallows will be maintained, and
 - iii. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

LINE OF SIGHT

- Where a road intersects a linear corridor, documentation, including maps and construction plans, must indicate where line-of-sight mitigation measures will occur. At a minimum, line-of-sight mitigation measures should be used at:
 - a. the intersection points of roads and seismic lines,

- b. the intersection points of roads and pipelines, except, through consultation with the pipeline owner, to facilitate pipeline maintenance access, and
- c. the intersection points of roads and transmission lines, except, through consultation with the transmission line owner, to facilitate transmission line access.

RESTORATION

- A restoration plan for all workspaces and roads, written and signed by a qualified professional, must be submitted. This plan must include, at a minimum:
 - a. how the restoration will follow ecological succession for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance.
 - b. the timing of ecological succession, up to and including the time at which vegetation is expected to reach “moose height” or 2 metres, or an alternative threshold suitable to the surrounding area, as determined by a qualified professional.
 - c. whether restoration will include natural revegetation, the planting of woody vegetation, the use of seed mix in accordance with the Ecologically Suitable Species Guideline, or combination.
 - d. if using sod-forming seed mixtures to address erosion concerns, it must be confirmed when the sod-forming species are to be replaced with a suitable non-sod-forming species mix for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance, and
 - e. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

- Use existing roads wherever possible to decrease cumulative impacts on the land base.
- Except to facilitate a crossing, a road must be a minimum of 100 metres from the top of bank of an S1 or S2 watercourse.
- The restoration of temporary workspaces must begin within one growing season of final temporary workspace activities, as per the approved qualified professional restoration plan.
- The restoration of the road will begin within one growing season of deactivation, as per the approved qualified professional restoration plan.
- Soil stockpiles must be revegetated and established with an ecologically suitable species. Soil stockpiles should be limited in height (1 metres maximum preferably). Piles must not exceed a 3H:1V slope (horizontal: vertical).

1.3 Aggregate and Borrow Pits

The following are the minimum required documentation and plans must be included with the application at time of submission to the Regulator.

WILDLIFE

- All mineral licks and wallows and their associated trail networks that may be impacted by an aggregate or borrow pit must be identified on maps and construction plans.
- For mineral licks and wallows and their associated trail networks that may be impacted by an aggregate or borrow pit, a mitigation plan written and signed by a qualified professional must be submitted. This plan must include, at a minimum:
 - a. how the mineral licks and wallows will be avoided to maintain functionality of the mineral licks and wallows,
 - b. setback distances from the aggregate or borrow pits,
 - c. how associated trail systems that connect with the mineral licks and wallows will be maintained, and
 - d. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.
- Documentation, including construction plans, must indicate that aggregate and borrow pits will be graded to a resting angle that:
 - a. facilitates reasonable egress by wildlife, and
 - b. does not exceed a grade of 3:1.
- Documentation, including construction plans, will indicate that a visual vegetation buffer of no less than “moose height” or 2 metres is maintained or created between a road and an aggregate or borrow pit.

WATER

- Documentation, including maps and construction plans, must indicate that aggregate and borrow pits are a minimum of 100 metres from the top of bank of Class A watercourses.
- If water is planned to be captured from surface runoff and ground water infiltration into the aggregate or borrow pit, documentation, including construction plans, must indicate the maximum volume of water to be held.
- If an aggregate or borrow pit is expected to capture water and hold surface runoff and ground water, a plan, written and signed by a qualified professional, indicating whether the pit may be hydrologically connected via surface and/or groundwater flow, must be submitted.

RESTORATION

- A restoration plan, written and signed by a qualified professional, must be submitted. This plan must include, at a minimum:
 - a. the area to be restored,

- b. how the restoration will follow ecological succession for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance,
- c. the timing of ecological succession, up to and including the time at which vegetation is expected to reach “moose height” or 2 metres, or an alternative threshold suitable to the surrounding area, as determined by a qualified professional,
- d. whether restoration will include natural revegetation, the planting of woody vegetation, the use of seed mix in accordance with the Ecologically Suitable Species Guideline, or combination,
- e. where sod-forming seed mixtures are being used to address erosion concerns, the plan must confirm when the sod-forming species are to be replaced with a suitable non-sod-forming species mix for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance, and
- f. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

- Aggregate and borrow pits that hold water may be deemed “ecological traps” that draw wildlife to these unnatural water features. The construction of pits that do not hold water is encouraged.
- Aggregate and borrow pits must be recontoured once the pit is no longer required to support operations.
- Refilling of borrow pits after final use is encouraged.
- Pits should be used to their full capacity rather than creating multiple pits in an operating area.
- The applicant must hold the long-term tenure over the aggregate and borrow pit and the aggregate and borrow pit may revert to the Crown once final restoration obligations have been met.
- Restoration activities must begin within one growing season of final oil and gas activities, as per the approved qualified professional restoration plan.
- Soil stockpiles must be revegetated and established with an ecologically suitable species. Soil stockpiles should be limited in height (1 metres maximum preferably). Piles must not exceed a 3H:1V slope (horizontal: vertical).

1.4 Pipelines

The following are the minimum required documentation and plans must be included with the application at time of submission to the Regulator.

STREAM, WETLAND, AND LAKE CROSSINGS

- Documentation identifying all stream, wetlands, and lake crossings must include:
 - a. maps and construction plans identifying each stream, wetland, and lake that will be crossed by pipeline activities,
 - b. a table indicating each class of stream, wetland, and lake that will be crossed by pipeline activities:
 - i. within the table, the gross area of impacted Riparian Management Area for each stream, wetland, and lake crossing, and
 - ii. within the table, the type of crossing that will be used.
- Documentation indicating that motorized vehicle crossing methodology for fish-bearing streams is via clear-span bridge, open-bottomed culvert, or snow-fill.
- Where pipelines are required to cross through a wetland, the preferred crossing method is Horizontal Directional Drill (HDD), where feasible.
- When pipelines cross through a wetland and an HDD crossing method is not feasible, a hydrological integrity plan, written and signed by a qualified professional must be submitted. This plan will include, at a minimum, how the natural flow of the wetland will be maintained.
- Restoration activities within impacted Riparian Management Areas must begin in the next growing season following construction.
- Documents, including maps and construction plans, will indicate that pipelines are a minimum of 100 metres from the top of bank of an S1 or S2 watercourse unless to facilitate a crossing.

MINERAL LICKS AND WALLOWS

- All mineral licks and wallows and their associated trail networks that may be impacted by the pipeline activity must be identified on maps and construction plans.
- For mineral licks and wallows and their associated trail networks that may be impacted by the pipeline activity, a mitigation plan, written and signed by a qualified professional must be submitted. This plan will include, at a minimum:
 - a. how the mineral licks and wallows will be avoided to maintain functionality of the mineral licks and wallows, including:
 - i. setback distances from pipelines,
 - ii. how associated trail systems that connect with the mineral licks and wallows will be maintained, and
 - iii. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

LINE OF SIGHT

- Where a pipeline intersects a linear corridor, documentation, including maps and construction plans, will indicate where line-of-sight mitigation measures will occur. At a minimum, line-of-sight mitigation measures must be used at:
 - a. the intersection points of pipelines and seismic lines,
 - b. the intersection points of pipelines and roads, except where necessary to facilitate pipeline maintenance access, and
 - c. the intersection points of pipelines and transmission lines, except, through consultation with the transmission line owner, to facilitate transmission line access.

WILDLIFE TRAILS

- All wildlife trails that may be impacted by the pipeline activity must be identified on maps and construction plans.
- For wildlife trails that may be impacted by the pipeline activity, a mitigation plan, written and signed by a qualified professional, must be submitted. This plan will include, at a minimum:
 - a. how wildlife trails will be maintained through construction and operational phases of the pipeline, and
 - b. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

ASSOCIATED ABOVE-GROUND APPURTENANCES

- Associated above-ground appurtenances must be identified on documentation, including construction plans. At a minimum, documentation must indicate that appurtenances are:
 - c. at least 100 metres from the top of bank of an S1 or S2 watercourse, and
 - b. not located within Riparian Management Areas.
- Riser sites and pigging facilities must not be in wetlands.

PIPELINE RIGHT-OF-WAY

- Documentation, including construction plans, must indicate the extent of pipeline right-of-way needed for ongoing operational activities according to CSA Z662 standards.
- A rationale must be provided to justify the requested right-of-way width.

TEMPORARY WORKSPACES

- Documentation, including construction plans, must indicate temporary workspaces.
- Restoration of temporary workspaces must begin immediately after activities have been completed.

RESTORATION

- For areas requiring restoration, including Riparian Management Areas and temporary workspaces, a restoration plan, written and signed by a qualified professional, must be submitted. This plan must include, at a minimum:
 - a. how the restoration will follow ecological succession for the Bio geoclimatic Ecosystem Classification system site series present at the site prior to any disturbance,
 - b. the timing of ecological succession, up to and including the time at which vegetation is expected to reach “moose height” or 2 metres, or an alternative threshold suitable to the surrounding area, as determined by a qualified professional,
 - c. whether restoration will include natural revegetation, the planting of woody vegetation, the use of seed mix in accordance with the Ecologically Suitable Species Guideline, or combination,
 - d. if using sod-forming seed mixtures to address erosion concerns, it must be confirmed when the sod-forming species are to be replaced with a suitable non-sod-forming species mix for the Biogeoclimatic Ecosystem Classification system site series present at the site prior to any disturbance, and
 - e. Indigenous Knowledge, values and interests provided during the pre-engagement process, when applicable.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

- Pipelines may follow existing corridors to reduce forest fragmentation. However, consider methodology for reducing overall impact by reducing corridor widths, maximizing Riparian Management Area restoration areas, and installing sight line barriers at regular intervals along the pipeline. Working with adjacent pipeline tenure holders is encouraged.
- The restoration of temporary workspaces must begin within one growing season of final temporary workspace activities, as per the approved qualified professional restoration plan.

1.5 Facilities including: Wellsites, Compressor Sites, Disposal Wells, Water Storage Facilities, and Processing Facilities

The following are the minimum required documentation and plans that must be included with the application at time of submission to the Regulator.

STREAMS, WETLANDS AND LAKES

- Streams, wetlands, and lakes will be indicated on documentation, including maps and construction plans. Documentation must indicate that facilities:
 - a. will avoid streams and lakes and their associated Riparian Management Areas, and
 - b. are a minimum of 100 metres from the top of bank of an S1 or S2 watercourse.
- If a facility is built within a wetland, a hydrological integrity plan, written and signed by a qualified professional, must be submitted. This plan will include, at a minimum, how the natural flow of the wetland will be maintained.

MINERAL LICKS AND WALLOWS

- All mineral licks and wallows and their associated trail networks that may be impacted by the facility must be identified on maps and construction plans.
- For mineral licks and wallows and their associated trail networks that may be impacted by the facility, a mitigation plan, written and signed by a qualified professional, must be submitted. This plan will include, at a minimum:
 - a. how the mineral licks and wallows will be avoided to maintain functionality of the mineral licks and wallows, including:
 - i. setback distances,
 - ii. how associated trail systems that connect with the mineral licks and wallows will be maintained, and
 - iii. Indigenous Knowledge, values, and interests provided during the pre-engagement process, when applicable.

AIR QUALITY

- Documentation must indicate the types and amounts of Criteria Air Contaminants that may be emitted to atmosphere during construction and operational phases. This documentation must indicate:
 - a. how the proponent will use air and deposition monitoring to identify the potential impacts that air emissions may have on people, wildlife and/or vegetation, and
 - b. how frequently the reporting of monitoring results will be provided.

INTERIM RESTORATION

- Construction plans must indicate:
 - a. the area needed for ongoing activities once final construction has been completed, and
 - b. the area available for interim restoration.
- The area available for interim restoration may be used for the propagation of shrub and tree species available for use at the time of final restoration.

WILDLIFE MONITORING

- Documentation must indicate the type and frequency of wildlife monitoring and reporting that will occur at the facility. Documentation must include:
 - a. adaptive management measures to be taken if monitoring indicates negative impacts to wildlife because of oil and gas activities, and
 - b. Indigenous Knowledge, values, and interests provided during the pre-engagement process, when applicable.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

- Facilities, pipelines, roads, and other disturbances may impact the ecological and hydrologic functioning of a wetland. If there is existing disturbance in a wetland, consider evaluating cumulative impacts prior to application of additional disturbance.
- Interim restoration may have the following benefits during the life of the wellsite: less wellsite area to actively maintain, available shrub and tree species for use on-site at time of final restoration, reduction of surface disturbance, and early return to available wildlife habitat.
- The facility should be designed in a manner to reduce the need of air and noise emitting equipment.
- The facility, where applicable, should be designed to centralize the storage of chemicals and produced fluids, in order to reduce the number of temporary storage units.

1.6 Water

- Documentation associated with water withdrawals must indicate whether the water withdrawal location is hydrologically connected to surface water; confirmed by a qualified professional.
- If a water withdrawal is hydrologically connected to surface water, documentation must indicate:
 - a. that flow measurements will be taken at least once per day at or upstream of the point of diversion, if not, a rationale written by a qualified professional must be provided.
 - b. the low-flow rate, and
 - c. a statement that withdrawal will cease when monitoring indicates the low-flow rate has been met or exceeded.

ADDITIONAL PROJECT PLANNING CONSIDERATIONS

Hydrologically connected aggregate and borrow pits used for water withdrawal purposes must demonstrate that environmental flow needs required for the proper functioning of the aquatic ecosystem of the stream are met.