

British Columbia Energy Regulator

6534 100<sup>th</sup> Avenue, Fort St. John, B.C  
V1J 8C5

**PERMIT**  
**PE-110163**

*Under Section 14 of the Environmental Management Act*

**FortisBC Energy Inc.**  
**16705 Fraser Highway**  
**Surrey, B.C**  
**V4N 0E8**

is authorized to discharge effluent to the environment from the **Eagle Mountain Pipeline Tunnel** construction project subject to the conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may result in prosecution.

**1. DEFINITIONS**

For the purpose of this permit, the following definitions apply:

- 1.1. **Act** means the Environmental Management Act;
- 1.2. **BCER** means the British Columbia Energy Regulator;
- 1.3. **Discharge** means the total mass of a solid, liquid or gaseous material introduced into the environment;
- 1.4. **Manager** means a BCER employee authorized to exercise the powers of the BCER under Section 14 of the *Environmental Management Act*;
- 1.5. **Permittee** means FortisBC Energy Inc.
- 1.6. **Qualified Professional** a person who has training, experience and expertise in a discipline relevant to the area of practice set out in the condition, and who is registered with the appropriate professional organization in British Columbia, is acting under that organization's code of ethics and is subject to disciplinary action by that organization.



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- 1.7. ***Operational Phase Change*** – refers to the transitions between distinct stages of tunnel construction that could result in quantifiable changes to the effluent quality (i.e. site and portal preparation, tunneling process, pipeline hydrostatic testing, and tunnel backfilling).

## 2. **AUTHORIZED DISCHARGES**

- 2.1 This subsection applies to the discharge of effluent from the **BC RAIL SITE**. The site reference number for this discharge is E331334.
- 2.1.1. The location of the source of the discharge is described as the BC Rail Site, PID 013-336-282, District Lot 4262. The source of the discharge includes contact water from precipitation, groundwater and water generated during the construction process including drilling, grouting and tunnel boring.
- 2.1.2. The authorized point of discharge into the existing BC Rail Properties Ltd. storm sewer is described as 49.7236 N, -123.1597W, referenced in this permit as the point of compliance.
- 2.1.3. The authorized point of discharge into the receiving environment is described as from the existing BC Rail Properties Ltd. storm sewer outfall located at 49.7261 N, -123.1646 W.
- 2.1.4. During heavy rainfall or melt events, the discharge input shall not cause the storm system to be overwhelmed, discharge rates shall be adjusted accordingly.
- 2.1.5. The maximum authorized rate of discharge is 515 m<sup>3</sup>/day.
- 2.1.6. The authorized discharge period is continuous.
- 2.1.7. The Permittee shall measure and record the daily volumetric rate of discharge.
- 2.1.8. The authorized works include a wastewater treatment system, tanks, pumps, hoses, energy dissipating equipment, sediment controls and ancillary equipment.
- 2.1.9. The effluent discharged from the wastewater treatment system at the point of compliance, shall not exceed the applicable British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change



Strategy. Additionally, the effluent shall be free of other contaminants in concentrations that may have an adverse effect on the receiving environment.

2.1.10. The effluent shall not be discharged in a manner or quantity that impairs the proper ecological function or otherwise causes excessive erosion of the receiving environment into which the discharge of water is conveyed.

**2.2** This subsection applies to the discharge of effluent from pipeline hydrostatic testing at the **BC RAIL SITE**. The site reference number for this discharge is E331351.

2.2.1. The source of the discharge is non treated water obtained for the purposes of conducting the hydrostatic pipeline test.

2.2.2. The authorized point of discharge into the existing BC Rail Properties Ltd. storm sewer is described as 49.7236 N, -123.1597 W, referenced in this permit as the point of compliance.

2.2.3. The authorized point of discharge into the receiving environment is described as from the existing BC Rail Properties Ltd. storm sewer outfall located at 49.7261 N, -123.1646 W.

2.2.4. During heavy rainfall or melt events, the discharge input shall not cause the storm system to be overwhelmed, discharge rates shall be adjusted accordingly.

2.2.5. The maximum authorized volume of discharge is 2700 m<sup>3</sup>.

2.2.6. The authorized discharge period is continuous.

2.2.7. The Permittee shall measure and record the daily volumetric rate of discharge.

2.2.8. The authorized works include hydrostatic test equipment, wastewater treatment system, tanks, pumps, hoses, energy dissipating equipment, sediment controls and ancillary equipment.

2.2.9. The effluent discharged from the wastewater treatment system at the point of compliance, shall not exceed the applicable British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change Strategy. Additionally, the effluent shall be free of other contaminants in



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concentrations that may have an adverse effect on the receiving environment.

2.2.10. The effluent shall not be discharged in a manner or quantity that impairs the proper ecological function or otherwise causes excessive erosion of the receiving environment into which the discharge of water is conveyed.

**2.3** This section applies to the discharge of effluent from the **WOODFIBRE SITE**. The site reference number for this discharge is E331335.

2.3.1. The location of the source of the discharge is described as the Woodfibre Site, PID 015-791-611, District Lot 6237, DL1337 & DL6232. The source of the discharge includes contact water from precipitation, runoff, groundwater inflow within the bedrock tunnel and tunnel boring machine industrial water including water for drilling, probing and cleaning equipment, and precipitation and runoff from the potential acid generating rock temporary storage.

2.3.2. The authorized point of discharge is described as into East Creek, discharge outfall located at 49.6694 N, -123.2484 W.

2.3.3. The maximum authorized rate of discharge is 1500 m<sup>3</sup>/day.

2.3.4. The authorized discharge period is continuous.

2.3.5. The Permittee shall measure and record the daily volumetric rate of discharge.

2.3.6. The authorized works include, wastewater treatment system, tanks, pumps, hoses, energy dissipating equipment, sediment controls and ancillary equipment.

2.3.7. The effluent discharged from the wastewater treatment system shall not exceed the applicable British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change Strategy. Additionally, the effluent shall be free of other contaminants in concentrations that may have an adverse effect on the receiving environment.

2.3.8. The effluent shall not be discharged in a manner or quantity that impairs the proper ecological function or otherwise causes excessive erosion of the receiving environment into which the discharge of water is conveyed.



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### 3.0 **GENERAL REQUIREMENTS**

#### 3.1 **Maintenance of Works and Emergency Procedures**

The Permittee shall inspect the authorized works regularly and maintain them in good working order. Records of inspection shall be maintained and made available to BCER upon request.

In the event of an emergency or condition beyond the control of the Permittee, which prevents continuing operation of the authorized works, the Permittee shall immediately notify the Manager and take appropriate remedial action.

Instances of permit non-compliance shall be self-disclosed upon discovery, as outlined within Chapter 3 of the BCER Compliance & Enforcement Manual; [Waste.Management@bc-er.ca](mailto:Waste.Management@bc-er.ca) shall also be informed of the self-disclosure.

For spills which meet the Spill Reporting Regulation reporting criteria, a report shall be made immediately to the Provincial Emergency Program telephone 1-800-663-3456.

#### 3.2 **Bypasses**

The discharge of contaminants, which have bypassed the authorized works, is prohibited unless the consent of the Manager is obtained and confirmed in writing.

#### 3.3 **Process Modifications**

The Permittee shall notify the Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

#### 3.4 **Sampling Procedures**

The Permittee shall carry out sampling in accordance with the procedures described in the most recent edition of the “British Columbia Field Sampling Manual”. Alternative procedures shall be authorized by the Manager.

#### 3.5 **Analytical Procedures**

The Permittee shall carry out analyses in accordance with the procedures described in the latest edition of the “British Columbia Laboratory Manual”. Alternative procedures shall be authorized by the Manager.



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### 3.6 Post Discharge

The Permittee shall ensure that all temporary equipment associated with the discharge is removed from the work area in a manner as to minimize environmental impact.

### 3.7 Methods and Mitigations

The Permittee shall undertake all authorized works based on the methods and mitigations set out in the permit application, unless superseded by conditions in this permit.

## 4 SAMPLING, MONITORING AND REPORTING REQUIREMENTS

The Manager may alter the monitoring and reporting program as needed. The need for changes to the program shall be based upon the results submitted as well as any other information obtained by the BCER and Environmental Protection staff in connection with the discharges.

### 4.1 Discharge and Compliance Monitoring

4.1.1. The Permittee shall maintain information, analytical data and flow measurements as described in Section 2 for records and inspection by BCER.

4.1.2. The Permittee shall retain a qualified professional to implement and oversee the monitoring and sampling program. The monitoring and sampling program shall demonstrate the discharge quality meets the discharge quality defined in Section 2 and that increased flows to the receiving environment do not impact water quality or the receiving environment.

**Table 1. B.C Rail Site Sampling and Monitoring Program**

Description	Sampling Location*	Sampling Frequency*	Parameters*
Batch Testing Prior to Discharge	At the point of discharge from the water treatment system	Once to confirm compliance with each operational phase change	<ul style="list-style-type: none"> <li>In situ field parameters including turbidity, dissolved oxygen (mg/L), pH, temperature (°C), electrical conductivity (µS/cm), visible sheen (visual), oxidation reduction potential (ORP), salinity (ppt)</li> <li>Routine parameters</li> </ul>



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			<p>including pH, salinity, hardness, alkalinity, electrical conductivity (<math>\mu\text{S}/\text{cm}</math>), solids total dissolved (TDS), solids total suspended (TSS), turbidity, ORP</p> <ul style="list-style-type: none"> <li>• Major Ions including Br, Ca, Cl, F, Mg, K, Na, <math>\text{SO}_4</math>, sulphide (as unionized <math>\text{H}_2\text{S}</math>)</li> <li>• Nutrients including <math>\text{NH}_3</math>, <math>\text{NH}_4</math>, <math>\text{NO}_2</math>, <math>\text{NO}_3</math>, total nitrogen, total phosphorous,</li> <li>• Dissolved and Total Contaminated Sites Regulation (CSR) metals,</li> <li>• Glycols including ethylene glycol, propylene glycol, 1, 2-</li> <li>• Organics including <math>\text{EPH}_{(10-19)}</math>, Polycyclic Aromatic Hydrocarbons acenaphthene, acridine, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene</li> <li>• Organics including Volatile Organic Compounds, VPHs, benzene, ethylbenzene (<math>\text{C}_8\text{H}_{10}</math>), monochlorobenzene, styrene, toluene, xylene (<math>\text{C}_6\text{H}_4(\text{CH}_3)_2</math>)</li> <li>• Organics - Others phenols, total &amp; dissolved organic carbon</li> </ul>
Active Discharge Operations	At the point of the discharge	Real Time	pH, temperature, NTU, electrical conductivity



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	water treatment system	Daily	Visible sheen, DO, ORP, salinity
		Daily for one week following an operational phase change	<ul style="list-style-type: none"> <li>• Routine parameters</li> <li>• Major Ions</li> <li>• Nutrients</li> <li>• Dissolved and Total CSR metals</li> <li>• Glycols including ethylene glycol, propylene glycol, 1, 2-</li> <li>• Organics including EPH<sub>(10-19)</sub>, Polycyclic Aromatic Hydrocarbons acenaphthene, acridine, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene</li> <li>• Organics including Volatile Organic Compounds VPHs, benzene, ethylbenzene (C<sub>8</sub>H<sub>10</sub>), monochlorobenzene, styrene, toluene, xylene (C<sub>6</sub>H<sub>4</sub>(CH<sub>3</sub>)<sub>2</sub>)</li> <li>• Organics – Others Phenols, total &amp; dissolved organic carbon</li> </ul>
		Weekly thereafter	
		Every two weeks	
	Receiving Environment Upstream of Discharge (49.726866N, -123.163912W)	Real Time	pH, temperature, NTU, electrical conductivity
		Daily	Visible sheen, DO, ORP, salinity
		Weekly	• Routine parameters
		As necessary based on the discharge & downstream data	<ul style="list-style-type: none"> <li>• Routine parameters</li> <li>• Major Ions</li> <li>• Nutrients</li> <li>• Dissolved and Total CSR metals</li> </ul>
	Receiving Environment Downstream of	Real Time	pH, temperature, NTU, electrical conductivity



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	Discharge (49.725282N, -123.165175W)	Daily	Visible sheen, DO, ORP, salinity
		Weekly	<ul style="list-style-type: none"> <li>• Routine parameters</li> <li>• Major Ions</li> <li>• Nutrients</li> <li>• Dissolved and Total CSR metals</li> </ul>

\*The sampling frequency, parameters and locations may be revised or reduced upon a history of compliance and stabilization of parameters. Sampling frequency, parameters and locations may be revised or reduced upon written confirmation from the BCER. Upon monitored/measured exceedance the sampling frequency for the exceeding parameter(s) shall revert to the most stringent.

Table 2. Woodfibre Site Sampling and Monitoring Program

Description	Sampling Location*	Sampling Frequency*	Parameters*
Batch Testing Prior to Discharge	At the point of discharge from the water treatment system	Once to confirm compliance with each operational phase change	<ul style="list-style-type: none"> <li>• In situ field parameters including turbidity, dissolved oxygen (mg/L), pH, temperature (°C), electrical conductivity (µS/cm), visible sheen (visual), oxidation reduction potential (ORP), salinity (ppt)</li> <li>• Routine parameters including pH, salinity, hardness, alkalinity, electrical conductivity (µS/cm), solids total dissolved (TDS), solids total suspended (TSS), turbidity, ORP</li> <li>• Major Ions including Br, Ca, Cl, F, Mg, K, Na, SO<sub>4</sub>, sulphide (as unionized H<sub>2</sub>S)</li> <li>• Nutrients including NH<sub>3</sub>, NH<sub>4</sub>, NO<sub>2</sub>, NO<sub>3</sub>, total nitrogen, total phosphorous,</li> <li>• Dissolved and Total Contaminated Sites Regulation (CRD) metals,</li> <li>• Glycols including ethylene glycol, propylene glycol, 1, 2-</li> <li>• Organics including</li> </ul>



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			EPH <sub>(10-19)</sub> , Polycyclic Aromatic Hydrocarbons acenaphthene, acridine, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene • Organics including Volatile Organic Compounds, VPHs, benzene, ethylbenzene (C <sub>8</sub> H <sub>10</sub> ), monochlorobenzene, styrene, toluene, xylene (C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> ) • Organics – Others Phenols, total & dissolved organic carbon	
Active Operations	Discharge	At the point of discharge from the water treatment system	Real Time	pH, temperature, NTU, electrical conductivity
			Daily	Visible sheen, DO, ORP, salinity
			Daily for one week following an operational phase change.  Weekly thereafter	• Routine parameters • Major Ions • Nutrients • Dissolved and Total CSR metals • Glycols including ethylene glycol, propylene glycol, 1, 2- • Organics including EPH <sub>(10-19)</sub> , Polycyclic Aromatic Hydrocarbons acenaphthene, acridine, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene • Organics including Volatile Organic



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			Compounds VPHs, benzene, ethylbenzene (C <sub>8</sub> H <sub>10</sub> ), monochlorobenzene, styrene, toluene, xylene (C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub> ) • Organics – Others phenols, total & dissolved organic carbon
		Every two weeks	Toxicity Testing 96-hr LC50 Rainbow trout
	Receiving Environment Upstream of Discharge (49.669455°N, -123.250870°W)	Real Time	pH, temperature, NTU, electrical conductivity
		Daily	Visible sheen, DO, ORP, salinity
		Weekly	• Routine parameters
		As necessary based on the discharge & downstream data	• Routine parameters • Major Ions • Nutrients • Dissolved and Total CSR metals
	Receiving Environment Downstream of Discharge (49.668300°N, -123.247958°W)	Real Time	pH, temperature, NTU, electrical conductivity
		Daily	Visible sheen, DO, ORP, salinity
		Weekly	• Routine parameters • Major Ions • Nutrients • Dissolved and Total CSR metals

\* The sampling frequency, parameters and locations may be revised or reduced upon a history of compliance and stabilization of parameters. Sampling frequency, parameters and locations may be revised or reduced upon written confirmation from the BCER. Upon monitored/measured exceedance the sampling frequency for the exceeding parameter(s) shall revert to the most stringent.

**Table 3. Hydrostatic Test Discharge Monitoring Program BC Rail Site**

Description	Sampling Location	Frequency	Parameters
Active Discharge Operations	Point of Discharge from the Water Treatment System	Daily	In situ field parameters
	Receiving Environment Downstream of Discharge (49.725282N, -123.165175W)	Daily	In situ field parameters

4.1.3. The Permittee shall provide notification to the BCER, [Waste.Management@bc-er.ca](mailto:Waste.Management@bc-er.ca),



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at the start of the commissioning phase of the water treatment plant. Process flow as-built of the water treatment plant shall be submitted to the BCER at the same email address.

- 4.1.4. Discharge to the receiving environment shall be halted immediately upon observed exceedance of any parameter at the point of discharge from the water treatment system.
- 4.1.5. The Permittee shall track the status of the daily discharge, including discharge rates, monitoring logs, field and lab sample results, field notes, field meter calibration logs, reports & photos. Daily records shall be compiled.
- 4.1.6. If, in the opinion of the qualified professional responsible for the monitoring program, the discharge is or is likely causing adverse effects to the environment, the discharge shall be halted immediately.
- 4.1.7. If, in the opinion of the qualified professional responsible for the monitoring program, the discharge is or is likely causing adverse effect to the environment, the Manager shall be notified immediately at (250) 883-4958.
- 4.1.8. Photographs of the authorized works and authorized discharge shall be taken prior to, throughout and after the discharge. These shall be submitted upon request from the BCER and included as part of the weekly reporting.

## 4.2 Reporting

The Permittee shall summarize the results of the discharge and receiving environment compliance sampling and monitoring program in a report that shall be submitted weekly over the term of this permit. The sampling and monitoring results shall be suitably tabulated and include comparison to the respective British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change Strategy. Any exceedance of regulatory guidelines shall be clearly highlighted, and any missed sampling events/missing data shall be identified with an explanation provided. Reporting frequency may be reduced upon a history of compliance and by written confirmation from the BCER. These reports shall be submitted to [Waste.Management@bc-er.ca](mailto:Waste.Management@bc-er.ca). A copy of the reports shall be provided to each First Nation consulted with regarding the subject permit, and also made publicly available on the [FortisBC Eagle Mountain-Woodfibre Gas Pipeline Project | Talking Energy](#) webpage.



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# Eagle Mountain Woodfibre Gas Pipeline

Figure 2.  
BC Rail Site Authorized Discharge



- Legend**
- Catchbasin
  - Floodbox
  - Manhole
  - Discharge
  - Downstream Receiving
  - Upstream Background
  - Culvert
  - Storm Main
  - Proposed EGP North 610 TP Pipeline
  - Proposed Tunnel Route
  - Easement
  - Skwelwil'em Squamish Estuary WMA

**Sources and Disclaimer**

1. Base map Source: ESRI World Imagery  
2. Base map Data: Client Provided Data  
3. Disclaimer: This map has been prepared to illustrate the results of our work, and is **not intended to be used for navigational purposes**. Information displayed on this map is based, in whole or in part, on geographic information that may have been provided by third parties, including government data. Triton Environmental Consultants Ltd. disclaims (without limiting the generality of the foregoing) all responsibility for the accuracy of any such third party information, regardless of the source.

DATE	August 2, 2023	SCALE	1:5,000	PROJECT #/I-BER	11581
PROJECTION	UTM Zone 10 (NAD 1983)	REVISION	07	PAGE SIZE	11 x 17
CREATED BY	GF	REVIEWED BY	SH		

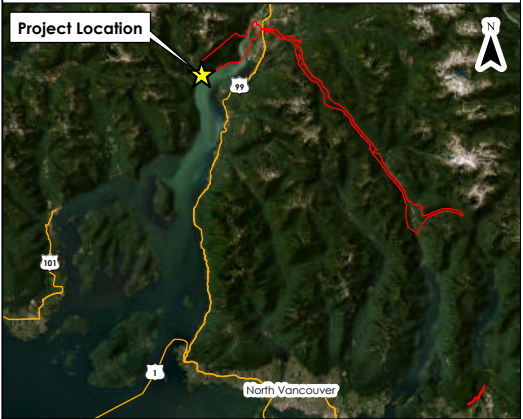






# Eagle Mountain Woodfibre Gas Pipeline

Figure 1.  
Woodfibre Site Authorized Discharge



- Legend
- Discharge
  - Downstream Receiving
  - Upstream Background
  - Proposed Tunnel Route
  - Approved Project Area

Sources and Disclaimer

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DATE	SCALE	PROJECT NUMBER
August 21, 2023	1:2,000	11581
PROJECTION	REVISION	PAGE SIZE
UTM Zone 10 (NAD 1983)	04	11 x 17
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