



PERMIT GVA1104

Pursuant to:

Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008
and the BC Environmental Management Act, S.B.C 2003, c.53

Issued to:

FortisBC Energy Inc.
(the "Permittee")

To Authorize:

the discharge of air contaminants to the air from
a liquefied natural gas production, storage, and truck loading facility

Located at:

7555 Hopcott Road, Delta, BC V4G 1B7

Effective Period:

The terms and conditions set out in the Permit apply to the existing or planned works as of
September 28, 2018 and this permit will expire on June 30, 2022.

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

SECTION 1 – AUTHORIZED EMISSION SOURCES

Authorization to discharge air contaminants from the authorized Emission Sources and Works listed below is subject to the specified terms and conditions.

Approximate locations of the emission sources are shown on the Site Plan in section 4.

EMISSION SOURCE 01: Amine and incinerator stack.

MAXIMUM EMISSION FLOW RATE: **49.2** m³/min
MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y
MAXIMUM PRIMARY BURNER INPUT FIRING RATE: **8.96** GJ/h

MAXIMUM EMISSION QUALITY:

1. 46.4 mg/m³ Combustion Particulate Matter
2. 687 mg/m³ Nitrogen Oxides
3. 131.5 mg/m³ Sulphur Oxides
4. 45.1 mg/m³ Total Volatile Organic Compounds
5. 10% Opacity.

WORKS AND PROCEDURES:

A John Zink incinerator, Model No. 9157354, equipped with secure pilot gas supply and reliable pilot gas ignition system. The incinerator will be designed and operated with a 99.99% hydrocarbon removal efficiency, dry basis as methane at 7% oxygen.

The incinerator will be operated at a minimum temperature of 982 degrees Celsius. The incinerator will be equipped with a device that records incoming flow and monitors temperature with a continuous recorder and a minimum accuracy of +/- 1 percent of the temperature being measured in degrees Celsius. The flow and temperature records must be kept for at least three years after the date of preparation or receipt thereof.

- Stack height above ground level = 17 metres
- Internal stack diameter at stack top = 1.04 metres
- Minimum stack exit temperature = 982 °C
- Stack is not capped.

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

EMISSION SOURCE 02: Vented and fugitive emissions from the facility emission fittings.

MAXIMUM EMISSION FLOW RATE:

MAXIMUM ANNUAL OPERATING HOURS: **8760** h/y

MAXIMUM EMISSION QUANTITY:

1. 56 t/y Methane

MAXIMUM EMISSION QUALITY:

1. The methane restriction above is for an annual basis.

WORKS AND PROCEDURES:

A one-time release of methane during tank purging at start-up is restricted to 244 tonnes. After the initial tank purging, the restriction specified above applies. Good operating procedures must be employed.

Leaks must be repaired within 90 days of date of identification, unless a plant shutdown is required. All leak repairs that require more than 15 days to complete must be reported in writing to the District Director within 21 days of leak detection.

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS

A. AUTHORIZED WORKS, PROCEDURES AND SOURCES

Works and procedures, which this permit authorizes in order to control the discharge of air contaminants, shall be employed during all operating periods of the related sources. The Permittee shall regularly inspect and maintain all such works, procedures and sources.

The District Director must be provided with reasonable notice of any changes to or replacement of authorized works, procedures or sources. Any changes to or replacement of authorized works, procedures or sources must be approved by the District Director in advance of operation. For certainty, this does not include routine maintenance or repair.

The discharge criteria described in Section 1 of this permit are applicable on the issued or last amended date of this permit unless specified otherwise. If a date different to the issued or last amended date is specified, the existing works, procedures and sources must be maintained in good operating condition and operated in a manner to minimize emissions.

B. NOTIFICATION OF MONITORING NON-COMPLIANCE

The District Director must be notified immediately of any emission monitoring results, whether from a continuous emissions monitor or periodic testing, which exceed the quantity or quality authorized in Section 1 of this permit. Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777, or to regulationenforcement@metrovancover.org.

C. POLLUTION NOT PERMITTED

Notwithstanding any conditions in this permit, no person shall discharge or allow or cause the discharge of any air contaminant so as to cause pollution as defined in the Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008 and the Environmental Management Act.

D. BYPASSES

The discharge of air contaminants that have bypassed authorized control works is prohibited unless advance approval has been obtained and confirmed in writing from the District Director.

E. EMERGENCY PROCEDURES

In the event of an emergency or condition beyond the control of the Permittee that prevents effective operation of the authorized works or procedures or leads to unauthorized discharge, the Permittee shall:

1. Comply with all applicable statutory requirements;
2. Immediately notify the District Director of the emergency or condition and of contingency actions invoked or planned to mitigate adverse impacts and restore compliance; Notification shall be made to Metro Vancouver's 24-hour number: 604-436-6777; and

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

3. Take appropriate remedial action for the prevention or mitigation of pollution.

The District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works are being restored and/or corrective actions are being taken to prevent unauthorized discharges.

If an emergency situation results in a "spill" as defined in the Environmental Management Act Spill Reporting Regulation, the spill shall also be reported immediately to the Provincial Emergency Program by telephoning 1-800-663-3456.

F. AMENDMENTS

The terms and conditions of this permit may be amended, as authorized by applicable legislation. New works, procedures or sources or alterations to existing works, procedures or sources must receive authorization in advance of operation.

G. STANDARD CONDITIONS AND DEFINITIONS

Unless otherwise specified, the following applies to this permit:

1. Gaseous volumes are corrected to standard conditions of 20 degrees Celsius ($^{\circ}\text{C}$) and 101.325 kilo Pascals (kPa) with zero percent moisture.
2. Contaminant concentrations from the combustion of specific fuel types are corrected to the following Oxygen content, unless specified otherwise:
 - 3% O_2 for natural gas and fuel oil; or
 - 8% O_2 for wood fuel
3. Where compliance testing is required, each contaminant concentration limit in this permit will be assessed for compliance based on a valid test using test methods approved by the District Director.
4. Visual opacity measurements are made at the point of maximum density, nearest the discharge point and exclude the effect of condensed, uncombined water droplets. Compliance determinations are based on a six-minute average in accordance with the United States Environmental Protection Agency (US EPA) Method 9: Visual Determination of the Opacity of Emissions from Stationary Sources. Continuous Emission Monitor System (CEMS) opacity compliance determinations are based on a one-hour average (taken from the top of each hour).
5. If authorized in Section 1 of this permit, standby fuel use is restricted to a maximum of 350 hours per year and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 milligrams per kilogram (mg/kg) and emissions during fuel oil firing shall not exceed 10% opacity.
6. Definitions in the Environmental Management Act and Air Quality Management Bylaw apply to terminology used in this permit.
7. Threshold Limit Values (TLV) refer to the Time Weighted Average (TWA) exposure limits for substances specified in the American Conference of Governmental Industrial Hygienists Threshold Limit Values handbook, current on the latest date that this permit issuance or amendment came into effect.
8. Sulphur Oxides (SO_x) are expressed as Sulphur Dioxide.

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

9. Nitrogen Oxides (NO_x) are expressed as Nitrogen Dioxide.
10. The Canadian Council of Ministers of the Environment (CCME) "Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks (PN1180)" shall be adhered to for all applicable tanks unless otherwise stated in this permit.
11. Authorized 'Maximum Annual Operating Hours' of 8760 hours per year for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.

H. RECORDS RETENTION

All records and supporting documentation relating to this permit must be kept for at least three years after the date of preparation or receipt thereof, and be made available for inspection within 48 hours of a request by an Officer.

I. HEATING, VENTILATION, AIR CONDITIONING AND INTERNAL COMBUSTION ENGINES

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning system for buildings and any internal combustion engine located at the discharge site shall be maintained and operated in a manner prescribed by the manufacturer to ensure good combustion of the fuel with minimum discharge of air contaminants.

Issued: September 28, 2018


R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Unless otherwise approved in writing by the District Director prior to any sampling or analysis, all measurements shall be performed by an independent agency in accordance with Metro Vancouver Air Emissions Sampling Program Manual of Methods and Standard Operating Procedures and the BC Ministry of Environment Field Sampling Manual, as they may be amended from time to time. Any variance from these procedures must receive prior written approval from the District Director.

A minimum of 5 working days advance notice must be given prior to taking measurements required by this Monitoring and Sampling Program. Notification must be given to the Metro Vancouver Environmental Regulation & Enforcement Division (phone 604-436-6777, Fax 604-436-6707, email regulationenforcement@metrovancover.org).

Unless otherwise specified, sampling shall be performed under operating conditions representative of the previous 90 calendar days of operation. All field data and calculations must be submitted with monitoring results and they shall be reported in the metric units which are used in this permit. These submissions shall include process data relevant to the operation of the source of the emissions and the performance of the emission control works.

The Permittee shall conduct the following monitoring and sampling and submit electronic reports of the results to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
01	October 31, 2019	On or before October 31 for each subsequent year.	Stack Sampling Report Written report detailing the measured discharge rate and concentration of	Combustion Particulate Matter,	Those approved by the District Director, EPA	Stack



Issued: September 28, 2018

R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>particulate matter (including filterable and condensable fractions), volatile organic compounds, nitrogen oxides, and sulphur oxides in the emissions.</p> <p>The sampling and assessment program must adhere to the methodologies and criteria as outlined in the approved stack sampling plan and must be conducted by qualified personnel.</p>	<p>Nitrogen Oxides, Sulphur Oxides, Total Volatile Organic Compounds</p>	<p>Test Method 25A, EPA Test Method 5 (filterable and condensable fractions), EPA Test Method 6C, EPA Test Method 7E</p>	



R.H. (Ray) Robb, P. Eng.
District Director

Issued: September 28, 2018

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

B. INFORMATION REPORTING REQUIREMENTS

The Permittee shall submit electronic reports containing the required information to the District Director by the dates specified below using a password enabled web based application provided by Metro Vancouver.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
Facility	March 31, 2019	On or before March 31 for each subsequent year.	Materials and Products Report Written report providing details of the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.	Materials and Products
01, 02	March 31, 2019	On or before March 31 for each subsequent year.	Operating Period Report Written report providing details of the total number of hours and days operated in the preceding calendar year. Detailed records are to be maintained in a written bound log or other format approved in writing by the District Director and made available for inspection by Metro Vancouver staff for a minimum period of three years.	Operating Period
01	March 31, 2019	On or before March 31 for each subsequent year.	Fuel Use Report Written report providing details of the types and amounts of fuel burned in the preceding calendar year.	Fuel Use
02, Facility	February 28, 2020	On or before February 28 for each subsequent year.	FEMP Report Written report of the findings of the Fugitive Emission Management Program (FEMP) which summarizes the results of measurements and actions taken in the previous year. The sampling and assessment program must adhere to the methodologies and criteria as outlined in the approved FEMP plan and must	Information - Other

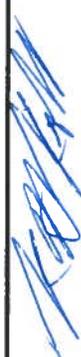

 R.H. (Ray) Robb, P. Eng.
 District Director

Issued: September 28, 2018

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
01	June 30, 2019	N/A	<p>be conducted by qualified personnel.</p> <p>The FEMP report will describe any fugitive emissions monitoring and include details for any leak repair(s) done during the period since the previous report.</p> <p>Stack Sampling Plan Written stack sampling plan prepared by a qualified person, which outlines a program to measure the discharge rate and concentration of particulate matter (including filterable and condensable fractions), volatile organic compounds, nitrogen oxides, and sulphur oxides in the emissions.</p> <p>The stack sampling plan is to be submitted to Metro Vancouver for review, comment, and written approval. Any sampling and analyses associated with this plan must be conducted by qualified personnel.</p>	Information - Other
02, Facility	January 31, 2019	N/A	<p>FEMP Plan Written plan prepared by a qualified person, which outlines a Fugitive Emission Management Program (FEMP). The FEMP will assess leaks from all fittings through testing, except that for flanges, a statistically representative number of the total number of flanges throughout the facility will be tested annually. In this permit, a leak is defined as the detection of a non-photoreactive VOC concentration of 1000 ppmv or more at the emission source.</p> <p>The FEMP will specify the methodology to be used for monitoring leaks,</p>	Information - Other



R.H. (Ray) Robb, P. Eng.
 District Director

Issued: September 28, 2018

Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
			<p>provide information on the total number of fittings to be tested, and quantify the number of inaccessible fittings. The FEMP will provide detail on how flanges are selected for testing.</p> <p>Any sampling and analyses associated with this plan must be conducted by qualified personnel. The FEMP plan is to be submitted to Metro Vancouver for review, comment, and written approval. Once approved, the FEMP may be updated by the permittee. Any updates are to be submitted to Metro Vancouver for review, comment, and written approval. The most recently approved FEMP will be the plan in force.</p>	

C. AMENDED OR ADDITIONAL REQUIREMENTS

Based on the results of the monitoring program, including the stack sampling results or any other information, the District Director may:

1. Amend the monitoring and reporting requirement of any of the information required by this Permit including plans, programs and studies.
2. Require additional investigations, tests, surveys or studies.



R.H. (Ray) Robb, P. Eng.
District Director

Issued: September 28, 2018

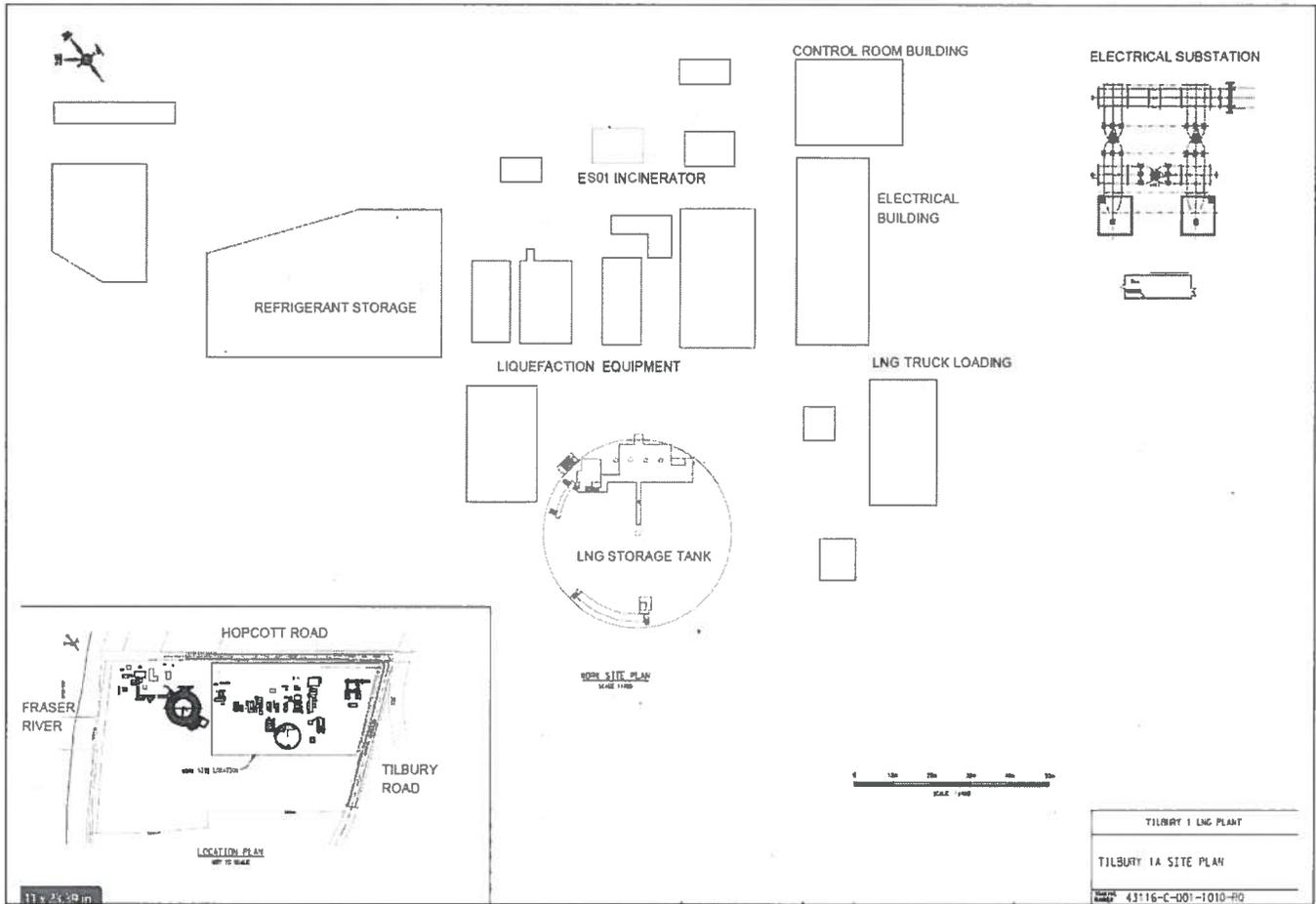
Permit GVA1104

METRO VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE:

The following site plan is not to scale and the locations of the discharge points are approximate.



Issued: September 28, 2018

R.H. Robb
R.H. (Ray) Robb, P. Eng.
District Director

Permit GVA1104