



PERMIT GVA1054

Pursuant to
Greater Vancouver Regional District Air Quality Management Bylaw No. 1082, 2008
and BC Environmental Management Act

Fraser Richmond Soil & Fibre Ltd.

located at
7028 York Road, Richmond, BC, V6W 0B1

is authorized to discharge air contaminants to the air from
a Composting, Anaerobic Digester and Combined Heat and Power Facility

subject to the requirements in this Permit for the emission sources and works existing or planned on
May 11, 2013.

Contravention of any of these requirements is a violation of the bylaw
and may result in enforcement action.

This permit remains in force until June 30, 2015.

Issued: May 11, 2013

R.H. Robb, 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: Combined Heat and Power Unit discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: **74** m³/min

MAXIMUM ANNUAL OPERATING HOURS: **8760** hrs/yr

MAXIMUM EMISSION QUALITY:

1. 500 mg/m³ Nitrogen Oxides @ 5% O₂ and 0°C
2. 40 mg/m³ Sulphur Oxides @ 5% O₂ and 0°C
3. 120 mg/m³ Total Volatile Organic Compounds @ 5% O₂ and 0°C
4. 5% Opacity.
5. Odour: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

GE Jenbacher JMS 320 GS-B.L internal combustion engine set firing biogas and associated heat recovery system (CHP) together with good combustion and operating practices.

Biogas supplied to the CHP shall be desulphurized to less than 100 ppm Total Reduced Sulphur (as H₂S) prior to combustion. Desulphurization shall consist of an alkaline scrubber maintained at pH greater than 9 and associated bioreactor and related appurtenances.

The permittee shall keep written records pertaining to the inspection frequency, engine condition and maintenance carried on the GE Jenbacher engine, biogas desulphurization processes and related appurtenances. The records shall be kept on site and be made available for inspection by Greater Vancouver Regional District Officers ("Officers").

Scheduled maintenance (other than minor routine maintenance) on the CHP is not to occur between the months of May through September inclusive. In the event of an emergency that requires unscheduled maintenance between the months of May through September the District Director shall be notified as per Section 2G of this permit.

In addition to the maintenance requirements above, pH of the desulphurization scrubber is to be continuously monitored and maintained in a manner acceptable to the District Director.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.



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EMISSION SOURCE 02: Emergency Flare discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: 5 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM PRIMARY BURNER INPUT FIRING RATE: 0.1 GJ/hr

MAXIMUM EMISSION QUALITY:

1. 5% Opacity.
2. Odour: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

Smokeless flare equipped with a continuous natural gas fired pilot flame (with automatic re-ignition system) together with a flow metering system using good combustion practices and good operating procedures.

Maximum number of hours the flare system is authorized for use in flaring biogas is 300 hours per year.

Scheduled maintenance (other than routine maintenance) is not to occur between the months of May through September inclusive.

Upon any flaring event FRSF staff shall notify the District Director at the first available opportunity. If applicable, the cause(s) and remedial actions to prevent the recurrence are to be reported as soon as practicable.

Upon any Flaring event gas production shall be curtailed until the cause of such event has been rectified.

Volume of gas flared and the times of flaring shall be recorded in a manner acceptable to the District Director. Records of flaring events shall be kept on site and be made available for inspection by Greater Vancouver Regional District Officers.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

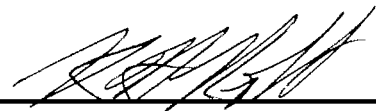
EMISSION SOURCE 03: Energy Garden Building discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: 1150 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. 0.53 mg/m³ Total Volatile Organic Compounds to be achieved by March 31, 2014.
2. Odour: None past the plant boundary such that the District Director determines that pollution occurs.



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WORKS AND PROCEDURES:

The Energy Garden building shall be kept under negative pressure with all air to be collected and directed to the associated biofilter at all times and includes any time that any doors are open but not limited to the following:

Doors to the facility may be opened to:

- (a) receive raw materials for processing for the associated AD percolation tunnels;
- (b) remove materials from the tunnels or processing area to be placed in the on site CASP system or transferred offsite;
- (c) receive or remove equipment;
- (d) perform periodic maintenance of the tunnels, process area or any other associated areas located in this building.

Doors are to be closed at all other times.

The permittee must maintain good housekeeping practices in the facility together with good operating practices at all times for all processing and emission control equipment.

The permittee shall maintain the biofilter in such a manner that the biofilter media temperature is between 10 - 45 degrees Celcius, the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

The pressure drop across the biofilter shall be measured and recorded on a continual basis in a manner acceptable to the District Director.

The minimum biofilter dimensions authorized are 24.4 metres by 11.6 metres with a minimum media depth of 3 metres.

The permittee shall conduct daily visual inspections of the biofilter to determine if the biofilter is settling, channelling or cracking. The permittee shall maintain records of each daily inspection. The permittee shall measure and record the velocity, pH, pressure and temperature of the biofilter system on a weekly basis.

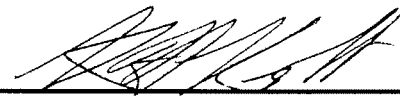
At the first available opportunity following the permittee becoming aware that the biofilter is not in good working order, the permittee shall take all necessary steps to repair or correct any deficiencies. The permittee shall also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

The biofilter total volatile organic compounds (VOC) emissions shall meet the following requirements by March 31, 2014:

1) 60% or greater removal efficiency, by weight (based on inlet and outlet gas testing)

and

2) concentration less than 0.53 mg/m³ VOC (as CH₄) at the exhaust.



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The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 04: Waste Receiving and Handling discharging through Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: **The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects**

MAXIMUM ANNUAL OPERATING HOURS: **8760 hrs/yr**

MAXIMUM EMISSION QUALITY:

1. Odour: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

All material handling, including screening, associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

Green Waste must be moved onto the CASP or into Energy Garden operations within seven days of receipt (for the purposes of this permit, Green Waste shall be defined as uncontaminated yard waste and land clearing debris as well as clean woodwaste).

Food Wastes and all other putrescible, compostable material must be processed within 24 hours of receipt either by placing onto the CASP or into Energy Garden operations.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 05: Covered Aerated Static Pile Composting System Southwest discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **1200 m³/min**

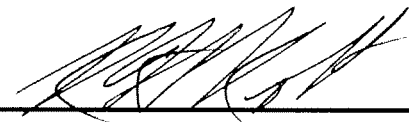
MAXIMUM ANNUAL OPERATING HOURS: **8760 hrs/yr**

MAXIMUM EMISSION QUALITY:

1. 7.6 mg/m³ Total Volatile Organic Compounds to be achieved by March 31, 2014.
2. Odour: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

The covered aerobic static pile (CASP) composting system shall be kept under negative pressure with all air exhausted to a biofilter. The permittee must maintain good housekeeping practices in the facility together with good operating practices at all times for all processing and emission control equipment associated with this source.



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Pile heights on the covered aerated static piles shall not exceed 8.0 metres between April 15 and July 15 and between October 15 and December 15; and shall not exceed 6.0 metres at all other times. Permittee shall keep a record of weekly measurements of pile height and oxygen concentration at the outlet of each individual pipe to the common manifold.

The permittee shall maintain the biofilter in such a manner that the biofilter media temperature is between 25 - 45 degrees Celcius, the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

The pressure drop across the biofilter shall be measured and recorded on a continual basis in a manner acceptable to the District Director.

The minimum biofilter dimensions authorized are 38.1 metres by 28.4 metres with a minimum media depth of 3 metres.

The permittee shall conduct daily visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The permittee shall maintain records of each daily inspection. The permittee shall measure and record the velocity, pH, pressure and temperature of the biofilter system on a weekly basis.

At the first available opportunity following the permittee becoming aware that the biofilter is not in good working order, the permittee shall take all necessary steps to repair or correct any deficiencies. The permittee shall also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

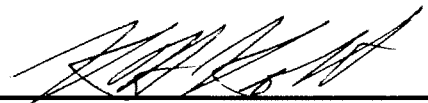
The biofilter total volatile organic compounds (VOC) emissions shall meet the following requirements by March 31, 2014:

- 1) 60% or greater removal efficiency, by weight (based on inlet and outlet gas testing)
- and
- 2) concentration less than 7.6 mg/m³ VOC (as CH₄) at the exhaust.

If the above requirements are not being met the permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The permittee shall install a misting system with deodorizer at the CASP that must be used when moving material out of the CASP at times when there is no precipitation.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.



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EMISSION SOURCE 06: Covered Aerated Static Pile Composting System Northeast discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **1200** m³/min

MAXIMUM ANNUAL OPERATING HOURS: **8760** hrs/yr

MAXIMUM EMISSION QUALITY:

1. 7.6 mg/m³ Total Volatile Organic Compounds to be achieved by March 31, 2014.
2. Odour: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

The covered aerobic static pile (CASP) composting system shall be kept under negative pressure with all air exhausted to a biofilter. The permittee must maintain good housekeeping practices in the facility together with good operating practices at all times for all processing and emission control equipment.

Pile heights on the covered aerated static piles shall not exceed 8.0 metres between April 15 and July 15 and between October 15 and December 15; and shall not exceed 6.0 metres at all other times. Permittee shall keep a record of weekly measurements of pile height and oxygen concentration at the outlet of each individual pipe to the common manifold.

The permittee shall maintain the biofilter in such a manner that the biofilter media temperature is between 25 - 45 degrees Celcius, the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

The pressure drop across the biofilter shall be measured and recorded on a continual basis in a manner acceptable to the District Director.

The minimum biofilter dimensions authorized are 38.1 metres by 28.4 metres with a minimum media depth of 3 metres.

The permittee shall conduct daily visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The permittee shall maintain records of each daily inspection. The permittee shall measure and record the velocity, pH, pressure and temperature of the biofilter system on a weekly basis.

At the first available opportunity following the permittee becoming aware that the biofilter is not in good working order, the permittee shall take all necessary steps to repair or correct any deficiencies. The permittee shall also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.



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The biofilter total volatile organic compounds (VOC) emissions shall meet the following requirements by March 31, 2014:

- 1) 60% or greater removal efficiency, by weight (based on inlet and outlet gas testing)
- and
- 2) concentration less than 7.6 mg/m³ VOC (as CH₄) at the exhaust.

If the above requirements are not being met the permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

The permittee shall install a misting system with deodorizer at the CASP that must be used when moving material out of the CASP at times when there is no precipitation.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 07: Aging Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Odour: None past the plant boundary such that the District Director determines that pollution occurs.
2. Particulate: None past the plant boundary such that the District Director determines that pollution occurs.

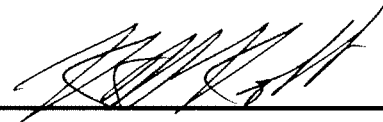
WORKS AND PROCEDURES:

All material handling, which includes but is not limited to transfer from the CASP system, associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The aging piles associated with this source must be covered with a minimum of 15 cm of cedar or screened middlings or any other high carbon or high alkaline, non-odorous cover material as soon as reasonably possible after they have been transferred from the composting area and finished being constructed into piles.

The Permittee shall keep a record of weekly measurements of pile height and oxygen concentration between 1.0 m and 1.5 m from the top of the pile

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.



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EMISSION SOURCE 08: Finished Compost Screening discharging through a biofilter.

MAXIMUM EMISSION FLOW RATE: **552** m³/min

MAXIMUM ANNUAL OPERATING HOURS: **8760** hrs/yr

MAXIMUM EMISSION QUALITY:

1. 28.8 mg/m³ Total Volatile Organic Compounds to be achieved by March 31, 2014.
2. Odour: None past the plant boundary such that the District Director determines that pollution occurs.
3. Particulate: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

The partially enclosed screening operation shall be exhausted to a biofilter at all times the Komptech XXL (or equivalent approved by the District Director) screener is in use. The permittee must maintain good housekeeping practices in the facility together with good operating practices at all times for all processing and emission control equipment.

The permittee shall maintain the biofilter in good working order and in such a manner that the biofilter media temperature is between 10 - 45 degrees Celcius, the moisture content of the biofilter media is between 40% and 70% by weight and the pH of the biofilter is between 5.0 and 8.0.

The pressure drop across the biofilter shall be measured and recorded on a continual basis in a manner acceptable to the District Director.

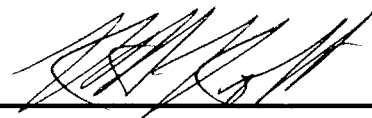
The minimum biofilter dimensions authorized are 7.9 metres by 22.9 metres with a minimum media depth of 3 metres.

The permittee shall conduct daily visual inspections of the biofilter to determine if the biofilter is settling, channeling or cracking. The permittee shall maintain records of each daily inspection. The permittee shall measure and record the velocity, pH, pressure and temperature of the biofilter system on a weekly basis.

At the first available opportunity following the permittee becoming aware that the biofilter is not in good working order, the permittee shall take all necessary steps to repair or correct any deficiencies. The permittee shall also report such deficiencies to the District Director as soon as possible and report any steps taken, or proposed to remedy the deficiencies within 7 days thereafter.

The biofilter total volatile organic compounds (VOC) emissions shall meet the following requirements by March 31, 2014:

- 1) 60% or greater removal efficiency, by weight (based on inlet and outlet gas testing) and
- 2) concentration less than 28.8 mg/m³ VOC (as CH₄) at the exhaust.



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If the above requirements are not being met the permittee must take immediate steps to remedy the issue and inform the District Director as soon as possible.

Scheduled maintenance (other than minor routine maintenance) on the primary screening unit is not to occur between the months of May through September inclusive unless this maintenance can be completed prior to the next screening event.

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 08A: Finished Compost Screening Auxiliary Screener discharging through a Transfer Point(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

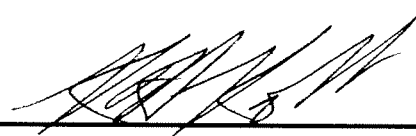
1. Odour: None past the plant boundary such that the District Director determines that pollution occurs.
2. Particulate: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

The permittee will develop a Progressive Odour Management Plan ("POMP"), such plan shall include procedures that could be implemented under various meteorological and operational conditions to reduce odours and include, but not be limited to, options to limit the operations of the auxiliary screener where operationally feasible. The permittee will also investigate and consider additional options in the POMP that may be implemented to reduce odours.

The permittee shall install a misting system with deodorizer at the screener that must be used at all times during operation of the screener except when it is raining.

The permittee will also investigate and consider supplemental fugitive dust mitigation systems to be used as back-up measures. Such option(s) are to be included in the report outlining a Progressive Odour Management Plan to be submitted to the District Director.



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Only material that satisfies at least one of the following conditions may be screened using this equipment:

- (a) The material has been composted for a period of 40 consecutive days after removal from the CASP;
- (b) The material respiration rate is no more than 10 milligrams of oxygen consumed per gram of volatile solids per day as measured by direct respirometry using the TMECC Method 05-08-A - SOUR: Specific Oxygen Uptake Rate (April 7, 2002);
- (c) The material emits no more than four (4) mg CO₂-C per gram of organic material per day, as measured using the TMECC Method 05-08-B - Carbon Dioxide Evolution Rate (April 7, 2002); or
- (d) The material has a Solvita® Maturity Index of seven (7) or greater, as measured using the TMECC Method 05-08-E - Solvita® Maturity Test (April 7, 2002).

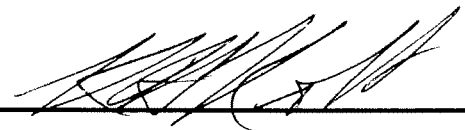
Additionally, effective October 1, 2013, no anaerobic compost shall be screened at this source. Unless otherwise approved by the district director, anaerobic compost means compost with a temperature and oxygen concentration that results in a saturation oxygen concentration in the liquid phase of less than 2 mg/L.

Prior to October 1, 2013, the permittee may propose for approval by the District Director alternative means of demonstrating that material to be screened is not anaerobic.

The above conditions may be waived if the permittee encloses and captures emissions through the use of a properly designed enclosure and biofilter approved by the District Director.

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours together with good operating practices and procedures.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.



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EMISSION SOURCE 09: Overs, Middlings and Fines Storage Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Odour: None past the plant boundary such that the District Director determines that pollution occurs.
2. Particulate: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.

EMISSION SOURCE 10: Finished Products Storage Piles discharging through a Storage Pile(s).

MAXIMUM EMISSION FLOW RATE: The authorized rate of discharge is that resulting from the stacking and reclaiming operations as well as stockpile wind erosion effects

MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. Odour: None past the plant boundary such that the District Director determines that pollution occurs.
2. Particulate: None past the plant boundary such that the District Director determines that pollution occurs.

WORKS AND PROCEDURES:

All material handling associated with this source must be conducted in such a manner as to minimize fugitive dust and odours.

The District Director shall be notified regarding any equipment brought on site that may materially affect emissions from this source.



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SECTION 2 – GENERAL REQUIREMENTS AND CONDITIONS

A. AMENDMENTS

The terms and conditions of this permit may be amended, as authorized by applicable legislation. New and modified sources must receive authorization prior to start-up.

B. POLLUTION

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.

C. STANDARD CONDITIONS AND DEFINITIONS

Unless otherwise specified, the following applies to this permit:

1. Gaseous volumes are corrected to standard conditions of 20° Celcius & 101.325 kPa with zero percent moisture.
2. Contaminant concentrations from the combustion of specific fuel types are corrected to the following Oxygen content:
 - 3% O₂ for natural gas and fuel oil;
 - 8% O₂ for wood fuel.
 - 15% O₂ for turbines
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 6 minute average in accordance with the provincial "Source Testing Code for the Visual Measurement 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 hrs/yr and to those periods during which the primary authorized fuel is not available. Fuel oil sulphur content shall not exceed 15 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.
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 (June 1995, CCME-EPC-87E)" shall be adhered to for all applicable tanks unless otherwise stated in this permit.



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11. Authorized 'Maximum Annual Operating Hours' of 8760 hrs/yr for an emission source is equivalent to authorization for continuous operation of the emission source for an entire calendar year, including leap years.
12. All records shall be kept available for inspection by Officers for a minimum period of three years.

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

Air contaminants discharged from any natural gas-fired heating, ventilation or air conditioning systems for buildings and any internal combustion engines 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.

E. AUTHORIZED WORKS AND PROCEDURES

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

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

F. BYPASSES

The discharge of contaminants which have bypassed authorized control works during non-emergency conditions is prohibited unless approval has been obtained in writing from the District Director.

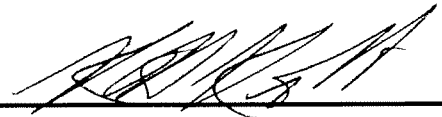
G. EMERGENCY PROCEDURES

In the event of an emergency that prevents compliance with a requirement(s) of this permit, that requirement(s) shall be suspended for such time as the emergency continues or until otherwise directed by the District Director, provided that:

1. Due diligence was exercised in relation to the process, operation or event that caused the emergency and that the emergency occurred notwithstanding this exercise of due diligence; and,
2. The District Director is notified at the first available opportunity of the emergency 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,
3. Due diligence is exercised in shutting down related processes and/or taking action to restore compliance in the shortest possible time frame, unless specified otherwise in this permit or by written notice from the District Director.

Notwithstanding 1, 2 and 3 above, the District Director may specify contingency actions to be implemented to protect human health and the environment while authorized works and/or standard operating procedures are being restored.

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.



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GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

SECTION 3 – REPORTING REQUIREMENTS

A. MONITORING REQUIREMENTS AND REPORTING

Unless otherwise approved 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 approval from the District Director.

A minimum of 3 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 permit holder 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.

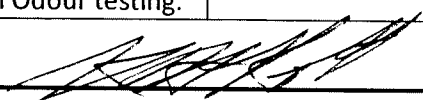
SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
01	September 30, 2013	Yearly	Written report detailing the measured discharge rate and concentration of Particulate Matter, Sulphur Oxides (as SO ₂), Nitrogen Oxides (as NO ₂) and Total Volatile Organic compounds (as CH ₄) in the emissions.	Total Volatile Organic Compounds, Nitrogen Oxides, Sulphur Oxides,	EPA Test Method 25A, EPA Test Method 6C, EPA Test Method 7E, Metro Vancouver	Stack

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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			A sampling plan outlining test methodologies (equivalent methods may be considered), including rationale, to meet the above requirements must be submitted to the District Director at least 60 days prior to the first sampling event being undertaken, for approval.	Particulate Matter	AQ02/02/1.00M	
05, 06, 08, 03	July 31, 2013	Quarterly	<p>Submit a written report including all consultant and laboratory reports detailing the Odour concentration and discharge rate in the emissions. Sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality - Determination of Odour Thresholds by Dynamic Dilution Olfactometry". Equivalent methods may be proposed to the District Director at least 30 days prior to sampling. Hedonic tone shall also be reported.</p> <p>Testing shall be conducted once per calendar quarter. The report shall be submitted no later than the last day of the first month of the following quarter. Testing and reporting is waived for the first calendar quarter (January, February, March inclusive)</p> <p>Emission testing on the biofilters, as required within this permit, shall be concurrent with Odour testing.</p>	Odour Concentration	CEN Test Method EN13725:2003	Monitoring - Other



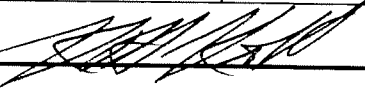
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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
08, 03, 05, 06	July 31, 2013	Quarterly	<p>Submit a written report outlining and summarizing the following: The destruction removal efficiency of Total Volatile Organic Compounds (VOCs).</p> <p>The testing of VOCs on the inlet to the biofilter. This shall include the volumetric flow rate and contaminant concentration and loading to the biofilter. VOCs shall be reported on a total (as methane) basis.</p> <p>The testing of VOCs on outlet of the biofilter. This shall include the volumetric flow rate, concentration and contaminant loading from the biofilter. VOCs shall be reported on a total (as methane) basis.</p> <p>Inlet and outlet testing shall be conducted simultaneously unless otherwise specified.</p> <p>A sampling plan outlining test methodologies (equivalent methods may be considered), including rationale, to meet the above requirements must be submitted to the District Director at least 30 days prior to the first sampling event being undertaken,</p>	Total Volatile Organic Compounds	Those approved by the District Director	Monitoring - Other

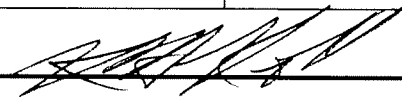
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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>for approval.</p> <p>The information provided by the inlet and outlet emissions concentrations shall be used to determine the % removal efficiency, by weight.</p> <p>Testing shall be conducted once per calendar quarter. The report shall be submitted no later than the last day of the first month of the following quarter. Testing and reporting is waived for the first calendar quarter (January, February, March inclusive).</p> <p>Testing of odour, as required within this permit, shall be concurrent with emission testing.</p>			
03	September 30, 2013	Once	<p>Submit a written report outlining and summarizing the following: The destruction removal efficiency of Total Reduced Sulphur Compounds (TRS).</p> <p>The testing of TRS on the inlet to the biofilter shall include the volumetric flow rate and contaminant concentration and loading to the biofilter. TRS shall be reported on a total (as H₂S) basis.</p>	Total Reduced Sulphur Compounds	Those approved by the District Director	Monitoring - Other



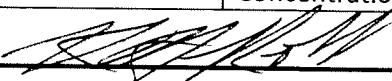
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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>The testing of TRS on outlet of the biofilter shall include the volumetric flow rate, concentration and contaminant loading from the biofilter. TRS shall be reported on a total (as H₂S) basis.</p> <p>Inlet and outlet testing shall be conducted simultaneously unless otherwise specified.</p> <p>A sampling plan outlining test methodologies (equivalent methods may be considered), including rationale, to meet the above requirements must be submitted to the District Director at least 60 days prior to the first sampling event being undertaken, for comment, review and/or revision.</p> <p>Testing shall be conducted during tunnel unloading.</p> <p>The information provided by the inlet and outlet emissions concentrations shall be used to determine the % removal efficiency, by weight.</p> <p>Testing of odour, as required within this permit, shall be concurrent with emission testing.</p>			
04, 09, 10	September 30, 2013	Yearly	Submit a written report including all consultant and laboratory reports detailing the Odour	Odour Concentration	CEN Test Method EN13725:2003	Monitoring - Other

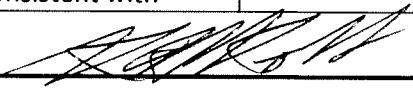
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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>concentration and discharge rate in the emissions. Sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality - Determination of Odour Thresholds by Dynamic Dilution Olfactometry". Equivalent methods may be proposed to the District Director at least 30 days prior to sampling.</p> <p>Hedonic tone shall also be reported.</p> <p>This odour testing shall be conducted concurrently with other odour and emission testing as required within this permit.</p>			
07	September 30, 2013	Yearly	<p>Submit a written report including all consultant and laboratory reports detailing the Odour concentration and discharge rate in the emissions as well as the Solvita Maturity Index of the material moved from the CASP and placed for curing.</p> <p>Hedonic tone shall also be reported.</p> <p>Odour sample collection and analysis must be consistent with procedures specified in EN 13725:2003 "Air Quality - Determination of Odour Thresholds by Dynamic Dilution Olfactometry". Equivalent methods may be proposed to the District Director at least 30 days prior to sampling. Solvita Maturity Index must be consistent with</p>	Odour Concentration Solvita Maturity Index	CEN Test Method EN13725:2003 TMECC Method 05-08-E	Monitoring - Other

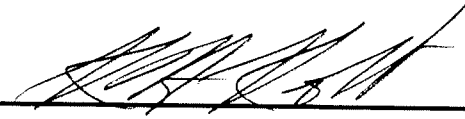


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SOURCE	DUE DATE	FREQUENCY	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			TMECC Method 05-08-E. Solvita Maturity testing shall be conducted at the beginning of the curing stage and prior to being covered. Odour testing shall be conducted within one day of the curing pile being covered.			



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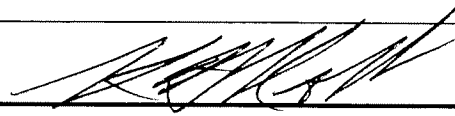
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B. INFORMATION REPORTING REQUIREMENTS

The permit holder 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	DUE DATE	FREQUENCY	REQUIREMENT	REPORT TYPE
Facility	March 31, 2014	Yearly	<p>Written report providing details of the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.</p> <p>The principal raw materials diverted to the CASP shall be broken down into the following categories:</p> <ul style="list-style-type: none">Commingled municipal curbside "greenbin" waste (yard waste/food waste)ICI source separated organics (this shall be further separated into vegetative and non vegetative/mixed subcategories)Green WasteMaterial from the energy gardenany other materials not specifically noted <p>In addition to the above the principal raw materials used in the energy garden or sent offsite to other compost facilities or sites shall be reported and shall be broken down into the following categories:</p> <ul style="list-style-type: none">Commingled municipal curbside "greenbin" waste (yard waste/food waste)	Materials and Products

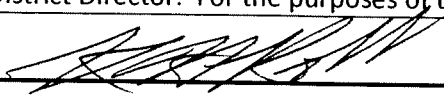


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			<p>ICI source separated organics Green Waste any other materials not specifically noted</p> <p>Principal products shall include tonnes of finished compost, sulphur and cubic metres of biogas produced as well as total MW of electricity produced.</p>	
01, 05, 06, 02, 08, 03, 04, 07, 08A, 09, 10	March 31, 2014	Yearly	Written report providing details of the total number of hours and days operated in the preceding calendar year. For 2013, the reporting period will cover June 1, 2013 to December 31, 2013. Records are to be maintained in a written bound log or other format approved by the District Director.	Operating Period
01, 05, 06, 02, 08, 03	March 31, 2014	Yearly	<p>Written report summarizing the maintenance activities on the control works associated with these sources conducted during the previous calendar year. For 2013, the reporting period will cover June 1, 2013 to December 31, 2013. This report shall include but not be limited to the following:</p> <ul style="list-style-type: none"> - Inspection (including frequency) of the biofilter odour control system for each source, - Inspection of the emergency flare and CHP systems and, - a summary of the findings as determined from the inspections regarding the condition of works and related appurtenances and all remedial action(s) taken or proposed to solve any problems noted. <p>Records are to be maintained in a manner and format acceptable to the District Director.</p>	Information - Other
Facility	July 31, 2013	Yearly	A written report prepared by a Qualified Professional outlining a proposed Progressive Odour Management Plan (POMP) to be submitted for review and comment by the District Director. For the purposes of this permit,	Information - Other

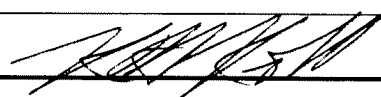


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			<p>Qualified Professional shall include an individual registered in British Columbia with a professional organisation who has the necessary education, experience, accreditation and knowledge as may be reasonably relied on to provide advice within his or her area of expertise, which are of expertise is applicable to the duty or function. This plan shall include but not be limited to the following activities surrounding prevention, accountability and progressive mitigation:</p> <p>Prevention can include the development of standard operating procedures to prevent release of odorants to the environment (i.e preventative maintenance, leak detection and repair, feedstock handling, review of feedstocks etc.,). This shall also include the handling of residuals from the Energy Garden percolation tunnels.</p> <p>Accountability can include the development of responsibility charts, contact info, response procedures to upset conditions, response to odour complaints, communication plans etc.</p> <p>Progressive mitigation can include several levels of response which can include: self detection, correction and reporting, implementation of new or changing of existing operational procedures, restriction of feedstocks and ultimately retrofitting of technologies or controls works if so required.</p> <p>The first submission shall specifically include a discussion of procedures under various meteorological and operational conditions with respect to Source 08A that could be implemented to reduce odour and include, but not be limited to, options to limit the operation of the auxiliary screener where operationally feasible. The permittee will also investigate and consider additional options in the POMP that may be implemented to reduce odours</p>	
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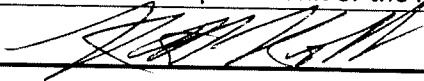


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			<p>Subsequent year submissions shall consider any recommended updates to the plan and a summary of any findings, responses and proposed remedial actions as outlined by the plan.</p> <p>For greater clarity the permittee is not required to implement the remedial actions or other improvements and procedures contained within the report.</p>	
05, 06, 08, 03, 04, 09, 10	June 30, 2013	Once	Written report outlining a proposed odour sample collection plan to meet the requirements for odour sampling as stipulated in this permit including, but not limited to, details of sample collection equipment and methods, pre-dilution of sample bags, chain of custody, maintenance of sample integrity and shipping arrangements.	Information - Other
01, 05, 06, 02, 08, 03, Facility	September 30, 2014	Once	<p>Written report updating the 2013 CALPUFF dispersion model results using the most current version of CALPUFF and most current meteorological data is to be submitted to the District Director. This report shall include updated odour sampling results from the following:</p> <p>2013 summer season (between June 1, 2013 and August 31, 2013) 2013 fall season (between October 1, 2013 and December 31, 2013) 2014 spring season (between April 1, 2014 and June 30, 2014) and include any modifications made (or proposed) to improve dispersal of odours and emissions in the community.</p> <p>A draft final result report is due August 31, 2014 for review and comments by the District Director.</p>	Dispersion Model
01, 02	September 30, 2013	Yearly	Submit a written report including all consultant and laboratory reports detailing the Total Reduced Sulphur (TRS) concentration in the biogas that is directed to the combined heat and power unit or the flare systems from the	Information - Other

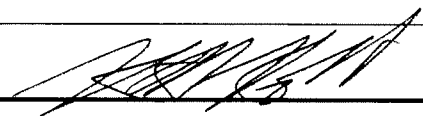


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			<p>previous calendar month.</p> <p>A sampling plan outlining acceptable test methodologies, including rationale, to meet the above requirements must be submitted to the District Director at least 60 days prior to the first sampling event being undertaken, for comment, review, and/or revision.</p> <p>Emission testing, as required within this permit, shall be concurrent with TRS sampling.</p>	
08, 08A	July 31, 2013	Quarterly	<p>Submit a log that includes all dates and times when the finished compost screening was operated from the previous calendar quarter. This log shall include but not be limited to dates of operation, start and stop times, any curtailment actions related to screening and any mechanical failures.</p> <p>Remedial actions regarding mechanical failures shall also be reported as per Section 2 of this permit.</p>	Information - Other
03, 05, 06, 08	October 31, 2013	Once	<p>A written report evaluating and auditing the biofilter control technologies at Fraser Richmond Soil & Fiber. This report is to be conducted by an independent third party professional, with extensive experience in biofilter control technologies.</p> <p>The report will assess but not be limited to the following areas: Sizing Oxygen content and monitoring Moisture control pH control</p>	Information - Other

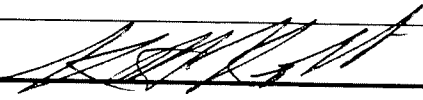


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			<p>Odour destruction and removal efficiency VOC destruction and removal efficiency Media choice Media life Biodiversity and biofilter organism activity Pressure drop across the biofilter Additional front end controls to reduce the loading onto the biofilters</p> <p>In addition, the report shall provide, for the permittee's consideration, a list of improvements to decrease the emissions and impact on the surrounding community and timelines for those improvements to be implemented. These can include but are not limited to full enclosure of the biofilter(s) with elevated stacks, additional pre-biofilter controls, additional post biofilter controls, and reduction of material onsite.</p> <p>For greater clarity, the permittee is not required to implement the improvements contained within the report.</p>	
03, 05, 06, 08, 02	July 31, 2013	Quarterly	A written report outlining measures taken during the preceding calendar quarter or proposed to improve the efficiency of the emission control works.	Information - Other
01, 02, 03, 04, 05, 06, 07, 08, 08A, 09, 10	July 31, 2013	Once	<p>A written report outlining the final results of the CALPUFF dispersion model using information obtained from the most current version of the 2013 Emissions Characterization Report as reviewed and deemed acceptable by the District Director and conducted as required by Approval 1054-2012-01 and permit application (for the CHP and Flare).</p> <p>Interim dispersion model results for the CHP and the Flare are due May 31, 2013.</p>	Dispersion Model



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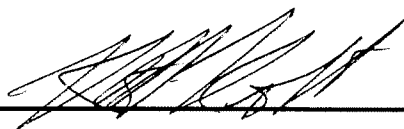
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			A draft final report for the whole facility is due June 30, 2013 for review and comment by the District Director.	
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C. AMENDED OR ADDITIONAL REQUIREMENTS

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.



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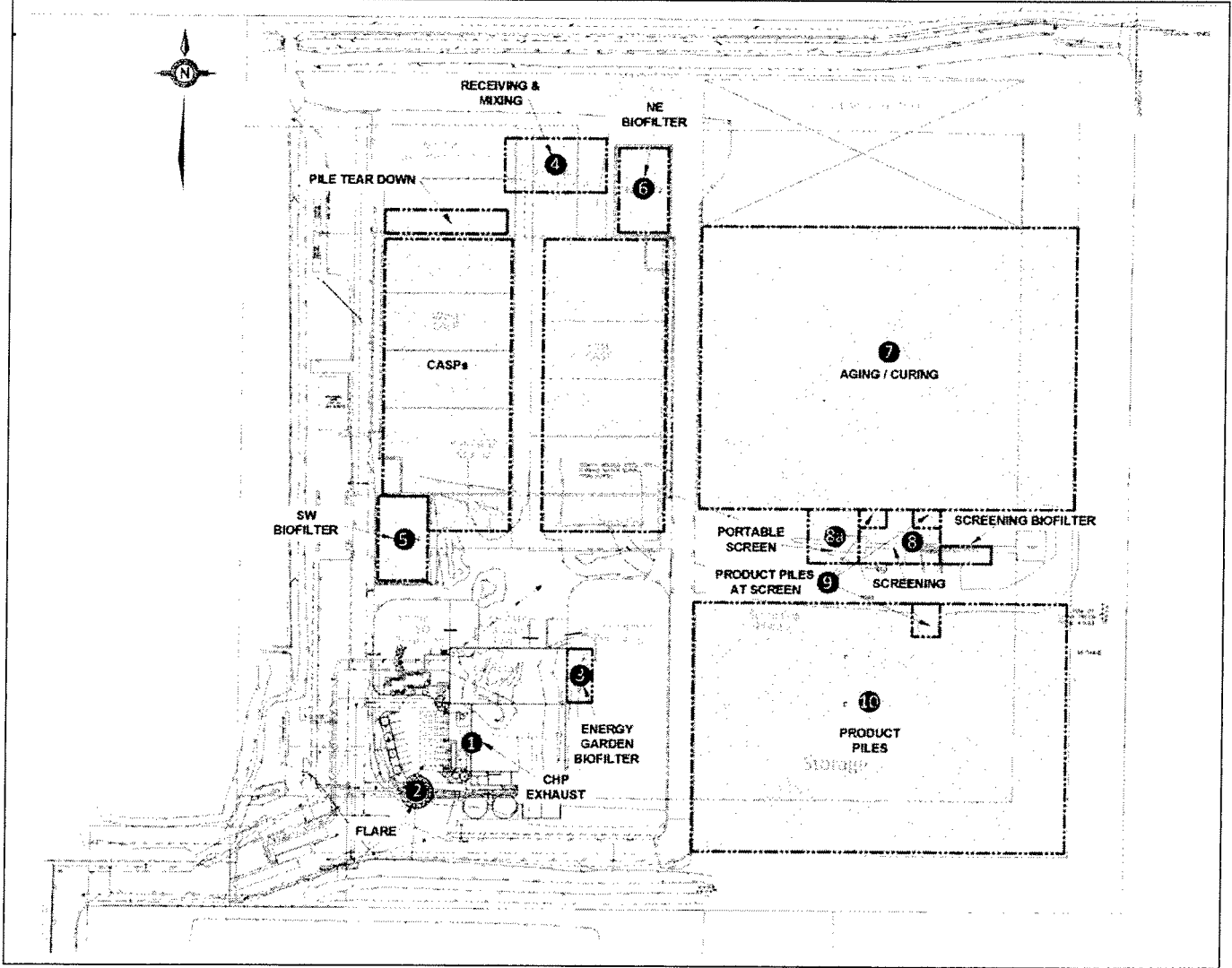
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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: to a portion of the land described as Lot 3 Sections 13 and 14, Block 4 North, Range 5 West, Plan 74529, New Westminster District.

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



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