



PERMIT GVA1067

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

Seabreeze Farm Ltd.

located at
4790 112 Street, Delta, BC V4K 3N3

is authorized to discharge air contaminants to the air from
An On-Farm Anaerobic Digester and Biogas Upgrade Facility

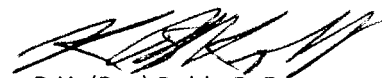
subject to the requirements in this Permit for the emission sources and works existing or planned on
October 28, 2014.

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

This permit remains in force until October 31, 2021.

Issued:

OCT 28 2014


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

GREATER VANCOUVER REGIONAL DISTRICT AIR QUALITY MANAGEMENT PERMIT

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: Liquid and Solids Storage Tanks discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: 7 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUALITY:

1. 5 mg/m³ Total Reduced Sulphur Compounds
2. Odorous Air Contaminant(s): None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:

The liquid and solids/hydrolyser storage tanks and related appurtenances together with good operating procedures for off farm source separated organics. The tanks shall be kept under negative pressure and all odorous air shall be discharged through a KOH (potassium hydroxide) impregnated activated carbon filter for emission and odour control.

The exhaust shall be equipped with a GasMax II breakthrough detector for total reduced sulphur (H₂S) detection .

The impregnated activated carbon shall be replaced as soon as the carbon shows signs of breakthrough and the District Director shall be notified of any such event.

The pasteurizer, if installed, shall also be vented through the carbon filter.

EMISSION SOURCE 02: Anaerobic Digester and Biogas Upgrade Facility discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: 6 m³/min
MAXIMUM ANNUAL OPERATING HOURS: 8760 hrs/yr

MAXIMUM EMISSION QUANTITY:


1. 4.1 kg/h Total Hydrocarbon (as Methane)

MAXIMUM EMISSION QUALITY:

1. 7 mg/m³ Total Reduced Sulphur Compounds

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2. Odorous Air Contaminant(s): None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:

The works and procedures associated with the anaerobic digester and biogas upgrade system and related appurtenances together with good operating practices are as follows:

The anaerobic digester shall be equipped with an oxygen injection system in the upper regions of the digester to reduce the outgoing biogas concentration of hydrogen sulphide to 100 ppm or less.

The biogas from the anaerobic digester shall be processed through a Greenlane upgrader plant. The upgraded biogas shall be directed to the Fortis system. The residual gas stream from this process shall be directed to a Sulfatreat chemical filter for total reduced sulphur compound control. A GasMax II breakthrough detector shall be used on the exhaust to assess the efficacy of the Sulfatreat filter.

The Sulfatreat filter shall be replaced as soon as it shows signs of breakthrough as determined by the breakthrough detector and the District Director shall be notified of any such event.

EMISSION SOURCE 03: Emergency Flare System discharging through a Stack(s).

MAXIMUM EMISSION FLOW RATE: **25** m³/min

MAXIMUM ANNUAL OPERATING HOURS: **268** hrs/yr

MAXIMUM EMISSION QUALITY:

1. 5% Opacity.
2. Odorous Air Contaminant(s): None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:

Two smokeless flares (one primary and one back-up) equipped with a continuous electronic ignition system (with solar powered battery back-up) together with a SCADA operation monitoring system using good combustion practices and good operating procedures.

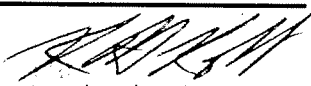
Maximum number of hours the flare system is authorized for use in flaring biogas is 268 hours per year.

Scheduled maintenance of the flares (other than routine maintenance) shall only involve one flare at any given time.

Upon any flaring event resulting from an upset condition or other emergency Seabreeze staff shall notify the District Director at the first available opportunity. The cause(s) and remedial actions to prevent the recurrence are to be reported as soon as practicable.

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Preplanned flaring due to maintenance activities shall be reported to Metro Vancouver at least three (3) business days prior to the event.

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

Dates 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 for a minimum period of three (3) years.

EMISSION SOURCE 04: Pressure Relief Valve.

MAXIMUM EMISSION FLOW RATE: 0 m³/min

MAXIMUM ANNUAL OPERATING HOURS: 0 hrs/yr (See Works & Procedures)

MAXIMUM EMISSION QUALITY:

1. Odorous Air Contaminant(s): None past the plant boundary such that pollution occurs.

WORKS AND PROCEDURES:

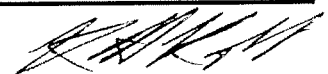
The Pressure Relief Valve (PRV) and related appurtenances are authorized only for use during upset or emergency conditions when all other remedial actions have failed.

Upon any use of the PRV resulting from an upset condition or other emergency Seabreeze staff shall notify the District Director at the first available opportunity. In addition all remedial actions taken prior to the event and the cause(s) and remedial actions to prevent the recurrence are to be reported as soon as practicable.

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

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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° Celsius & 101.325 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% 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.

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

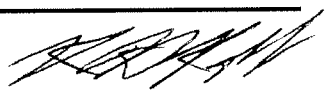
In the event of an emergency that prevents compliance with a requirement(s) of this permit, that requirement(s) shall be suspended for such time as the emergency continues or until otherwise directed by the District Director, provided that:

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.

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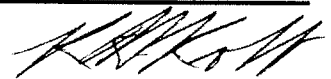
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If an emergency situation results in a "spill" as defined in the Environmental Management Act Spill Reporting Regulation, the spill shall also be reported immediately to the Provincial Emergency Program by telephoning 1-800-663-3456.

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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 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@metrovanancouver.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.

EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
02, 01	August 31, 2015	On or before August 31 for each subsequent year.	Written report detailing the measured discharge rate and concentration of	Total Hydrocarbon (as	EPA Test Method 25A,	Stack

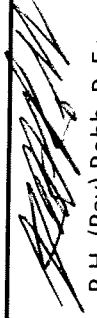

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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>Total Hydrocarbons (as methane) and Total Reduced Sulphur compounds (as hydrogen sulphide) in the emissions.</p> <p>The discharge rate for Total Hydrocarbons shall be reported in g/m³ and Kg/hr.</p> <p>TRS shall be reported as mg/m³.</p> <p>A sampling plan outlining acceptable test methodologies (equivalent methods may be considered), including rationale, to meet the above requirements must be submitted to Metro Vancouver at least 60 days prior to the first sampling event being undertaken, for comment, review, and/or revision.</p> <p>Testing of odour, as required within this permit, shall be concurrent with emission testing.</p>	Methane), Total Reduced Sulphur Compounds	EPA Test Method 16A	
02, 01	August 31, 2015	On or before August 31 for each subsequent year.	Submit a written report including all consultant and laboratory reports	Odour Concentration	CEN Test Method	Monitoring - Other



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EMISSION SOURCE	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	PARAMETER(S)	TEST METHOD	REPORT TYPE
			<p>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".</p> <p>Emission testing, as required within this permit, shall be concurrent with TRS and VOC testing.</p>		EN13725:2003	



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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	INITIAL DUE DATE	SUBSEQUENT DUE DATES	REQUIREMENT	REPORT TYPE
Facility	March 31, 2015	On or before March 31 for each subsequent year.	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
02, 03	March 31, 2015	On or before March 31 for each subsequent year.	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 by the District Director and made available for inspection by Metro Vancouver staff for a minimum period of three years.	Operating Period
Facility	November 30, 2014	On or before November 30 for each subsequent year.	<p>A written report outlining a proposed Progressive Odour Management Plan (POMP) for approval by the District Director. 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.)</p> <p>Accountability can include the development of responsibility charts, contact information, response procedures to upset conditions, response to odour complaints, communication plans etc.</p>	Information - Other

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02, 03, 01	March 31, 2015	On or before March 31 for each subsequent year.	<p>Progressive mitigation can include several levels of response such as, 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>Subsequent year submissions shall include any updates to the plan and a summary of any findings, responses and remedial actions as outlined by the plan.</p>	Information - Other
02, 01	January 31, 2015	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year.	<p>Written report summarizing the maintenance activities on the control works associated with these sources. This report shall include but not be limited to the following:</p> <ul style="list-style-type: none"> - Inspection (including frequency) of the emissions control system, - Inspection (including frequency) of the biogas upgrade systems, - Inspection of the emergency flare and generator systems, and - A summary of the findings of 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 Metro Vancouver and be made available for inspection by Metro Vancouver Staff for a minimum period of three years.</p>	Information - Other
02, 01	January 31, 2015	Quarterly, on or before April 30, July 31, October 31 and January 31 of each year.	<p>A qualitative assessment of the Sulfatreat and activated carbon control works to determine if breakthrough has occurred, for the previous calendar quarter. This can include but is not limited to recorded readings from the breakthrough detectors, Draeger testing, and personnel observations. This report shall include any remedial actions taken (such as carbon or sulfatreat replacement).</p>	Information - Other


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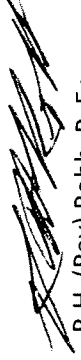
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C. AMENDED OR ADDITIONAL REQUIREMENTS

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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SECTION 4 – SITE PLAN

LEGAL DESCRIPTION OF DISCHARGE SITE: Parcel Identifier: 000-830-607

Lot 2, Plan 8563, Section 1, Township 4, New Westminster Land District, Except Plan 24717, & SEC 36 TWP 3, & EXC PART IN PCL A, REF PL 47175

Parcel Identifier: 000-830-615

LOT 3 EXCEPT: FIRSTLY: PART SUBDIVIDED BY PLAN 40313

SECONDLY: PARTS SHOWN ON PLAN 24717

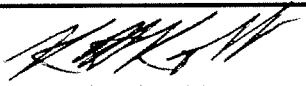
THIRDLY: PART CONTAINED IN PARCEL "A" (REFERENCE PLAN 47175)

FOURTHLY: PART SUBDIVIDED BY PLAN 54731, SECTION 1 TOWNSHIP 4 AND SECTION 36 TOWNSHIP 3 NEW WESTMINSTER DISTRICT PLAN 8563

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

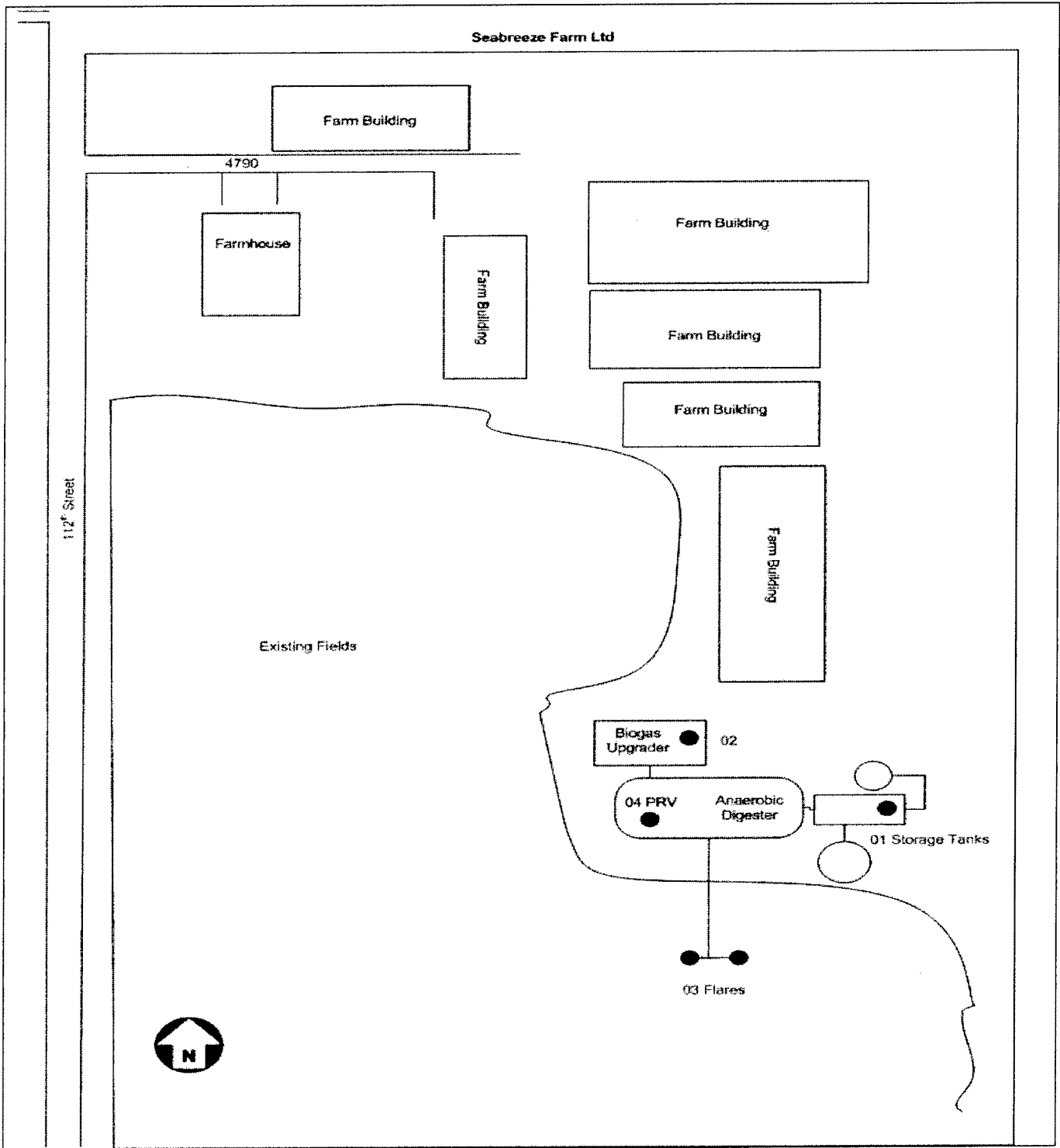
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