

SCHEDULE D1

Emission Regulation For Ready Mix Concrete And Concrete Products Industries

ARTICLE 1

1. GENERAL

- 1.1 Any Operator (as defined herein) who complies with this Emission Regulation shall be exempt from the requirements of Section 3.1 of Greater Vancouver Regional District Air Quality Management Bylaw No. 937, 1999 in respect of the activities set out herein, provided that the Operator also complies with any further requirements imposed by the *Waste Management Act* and its regulations, and any other Permit or Order, or approved waste management plan.

ARTICLE 2

2. DEFINITIONS

- 2.1 In this Emission Regulation, terms defined in the *Waste Management Act* and Greater Vancouver Regional District Air Quality Management Bylaw No. 937, 1999, shall have the same meanings for the purpose of this Emission Regulation, unless otherwise defined herein.

In this Emission Regulation:

“Active Operation” or **“Active Operations”** means any activity or activities capable of generating Fugitive Dust, including, but not limited to, bulk materials handling, earth-moving, abrasive blasting, construction, demolition or vehicular movements;

“Approved Dust Abatement Chemicals” means any chemicals approved from time to time by the British Columbia Ministry of Transportation and Highways for use in dust abatement on roadways or for use in roadbed stabilization;

“Boiler” means any combustion equipment fired with gaseous, liquid or solid fuels for the purpose of generating hot water or steam;

“Certified Observer” means an Officer who is certified under the Source Testing Code For The Visual Measurement Of The Opacity Of Emissions From Stationary Sources, adopted October, 1994 by the British Columbia Ministry of Environment, Lands and Parks or under a training program that meets the requirements of the United States Environmental Protection Agency Method 9 for Opacity measurement;

“Cleaning Cycle” means the cleaning of Fabric Filter System bags through bag shaking, reverse air cleaning, pulse-jet cleaning, or other similar methods;

“Concrete Products Facility” means a facility situated within the area of Greater Vancouver Regional District engaged in manufacturing concrete pipe, structural concrete products, and

other concrete products as identified in the North American Industry Classification System (NAISC) codes 32733 and 32739;

“Dry Mix Concrete Batching” means the process where the dry ingredients for concrete are combined with water and chemical admixtures during loading into a transit-mix truck at a Concrete Products Facility or Ready Mix Concrete Facility for mixing during transportation to a job site;

“Effective Date” means the date of final adoption of the amending bylaw for the enactment of this Emission Regulation;

“Existing Facility” means any Concrete Products Facility or Ready Mix Concrete Facility which, on the Effective Date, existed and was operational;

“Fabric Filter System” means an Emission Control Device which removes dust and particulates from a gas stream by passing the stream through a porous fabric, also referred to as a baghouse;

“Fugitive Dust” means any gaseous or solid particulate matter that becomes airborne, the release of which could not reasonably be directed or controlled to pass through a stack, chimney or vent;

“Heater” means any combustion equipment fired with gaseous, liquid or solid fuels for the purpose of transferring heat to material being processed, excluding Boilers and any kiln or oven used for drying, baking, cooking, calcining or vitrifying;

“Heavy Duty Vehicle” means a bus, chassis-cab, multipurpose passenger vehicle or a truck having a gross vehicle weight of more than 2,800 kg, for which a motor-vehicle license is required under the *Motor Vehicle Act* of British Columbia;

“High Vehicle Traffic Area” means any road located within a Concrete Products Facility or a Ready Mix Concrete Facility on which Heavy Duty Vehicles pass more than 20 times per day in either direction;

“NO_x” means the sum of nitric oxide and nitrogen dioxide in flue gas, collectively expressed as nitrogen dioxide (NO₂);

“Opacity” means the degree to which the discharge of an Air Contaminant reduces the passage of light or obscures the view of a background object as determined by a Certified Observer and expressed numerically from 0 per cent (transparent) to 100 per cent (opaque);

“Operator” means a Person who owns, operates, has charge or control of or manages a Concrete Products Facility or a Ready Mix Concrete Facility;

“Ready Mix Concrete Facility” means a facility situated within the area of Greater Vancouver Regional District engaged in manufacturing and delivering mixed concrete as identified in the North American Industry Classification System (NAISC) code 32732;

“Wet Mix Concrete Batching” means the process where the ingredients for concrete are combined in a central mixer at a Concrete Products Facility or Ready Mix Concrete Facility and blended to produce ready-to-use concrete which is transported in a slurry form to a job site.

ARTICLE 3

3. APPLICATION OF REGULATION

- 3.1 Subject to Section 4.1, every Operator must comply with the requirements of this Emission Regulation in respect of each of the Operator's Concrete Products Facilities and Ready Mix Concrete Facilities.

ARTICLE 4

4. TRANSITION

- 4.1 An Existing Facility which does not comply with the provisions of Article 6 on the Effective Date must comply with the provisions of Article 6 within 36 months after the Effective Date.

ARTICLE 5

5. GENERAL REQUIREMENTS AND STANDARD CONDITIONS

- 5.1 Discharges of Fugitive Dust from Active Operations at a Concrete Products Facility or Ready Mix Concrete Facility must not:
- (a) exceed 20 per cent Opacity, averaged over a 6-minute period measured at the point of discharge into the Air; or
 - (b) remain visible in the atmosphere beyond the boundary of the property on which the Concrete Products Facility or Ready Mix Concrete Facility is located, as determined by an Officer.
- 5.2 Every Operator shall employ good housekeeping practices so as to prevent the discharge of Fugitive Dust contrary to Section 5.1.
- 5.3 No Operator shall use any Approved Dust Abatement Chemicals or other materials in a manner which causes "pollution" within the meaning under the British Columbia *Waste Management Act*.
- 5.4 Every Operator shall report to Greater Vancouver Regional District, Air Quality Department as soon as practicable all emergencies or other conditions which prevent the continuous use of any Works required under Article 6 and shall initiate corrective action immediately upon discovering the emergency or other condition. Every Operator shall take all reasonable steps to minimize the discharge of Air Contaminants during such emergencies and other conditions.

ARTICLE 6

6. MATERIAL, EQUIPMENT AND OPERATING REQUIREMENTS

- 6.1 Every bulk cement and flyash storage silo located at a Concrete Products Facility or Ready Mix Concrete Facility must be equipped with a level sensor and interlocking alarm to prevent overfilling during product delivery.
- 6.2 All discharges of Air Contaminants from bulk cement and flyash unloading at a Concrete Products Facility or Ready Mix Concrete Facility must be filtered through an effective Fabric Filter System.
- 6.3 The Cleaning Cycle for each Fabric Filter System at a Concrete Products Facility or Ready Mix Concrete Facility must be conducted at the end of each day of operation.
- 6.4 All discharges of Air Contaminants from:
- (a) Dry Mix Concrete Batching operations at a Concrete Products Facility or Ready Mix Concrete Facility, including operations carried out at the cement weigh hoppers and gathering hoppers, and truck loading; and
 - (b) Wet Mix Concrete Batching operations, including operations carried out at the cement weigh hoppers and concrete mixers;
- must be controlled by dust containing shrouds and enclosures vented to and filtered through an effective Fabric Filter System.
- 6.5 All discharges of Air Contaminants from the drying, mixing and bagging of bulk aggregate and concrete mix products at a Concrete Products Facility must be filtered through an effective Fabric Filter System.
- 6.6 Discharges of Air Contaminants from Fabric Filter Systems at a Concrete Products Facility or Ready Mix Concrete Facility must not exceed five (5) per cent Opacity, averaged over a 6-minute period measured at the point of discharge into the Air.
- 6.7 All discharges of Air Contaminants from Active Operations at a Concrete Products Facility or Ready Mix Concrete Facility must be controlled so as to minimize the generation of Fugitive Dust and, without limiting the generality of the foregoing:
- (a) all process areas and all High Vehicle Traffic Areas within a Concrete Products Facility or Ready Mix Concrete Facility must be paved and kept clean;
 - (b) all unpaved roads, vehicle parking areas and storage areas located within a Concrete Products Facility or Ready Mix Concrete Facility must either be paved and kept clean or, if they remain unpaved, they must be watered or treated with Approved Dust Abatement Chemicals or materials of low silt content;
 - (c) all materials stockpiled within a Concrete Products Facility or Ready Mix Concrete Facility which might cause Fugitive Dust as a result of wind action must be sheltered from wind or be watered or treated with Approved Dust Abatement Chemicals to minimize the generation of Fugitive Dust from material stockpiles and during the transfer of materials to or from such stockpiles; and
 - (d) all spills of materials must be cleaned up immediately after a spill and in a manner so as

to minimize the generation of Fugitive Dust.

- 6.8 Air Contaminants discharged from Boilers and Heaters located at a Concrete Products Facility or a Ready Mix Concrete Facility must not exceed the criteria specified in Appendix D1-1, entitled "Emission Standards and Emission Control Requirements for Industrial Process Boilers and Heaters, which forms an integral part of this Emission Regulation, except during periods of gaseous fuel shortages or curtailment not to exceed an aggregate period of 200 hours per year. During such permitted periods of gaseous fuel shortages or curtailment, such Boilers and Heaters may be fired with a liquid fuel approved by the District, such as No. 2 fuel oil.

ARTICLE 7

7. **PROCESS MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS**

- 7.1 All Works located at a Concrete Products Facility or Ready Mix Concrete Facility, including without limitation all Fabric Filter Systems, and all Boilers and Heaters, must be regularly inspected in accordance with manufacturers' recommendations.
- 7.2 Every Operator must keep accurate records and supporting documentation setting out, in respect of a Concrete Products Facility or Ready Mix Concrete Facility:
- (a) a record of all inspections and maintenance conducted on all Works located at the facility, including without limitation all Fabric Filter Systems, and all Boilers and Heaters, and shall record the date and time of the inspection or maintenance, the condition of the Works, Boilers and Heaters observed during the inspection or maintenance, and the name and signature of a responsible person who is able to verify the information contained in the record;
 - (b) the types and amounts of raw materials used, principal products produced and fuels burned during each calendar year; and
 - (c) the number of hours and days the facility is operated and the number of hours of downtime during each calendar year.
- 7.3 Every Operator required to keep records and supporting documentation in accordance with Section 7.2 shall:
- (a) keep all records and supporting documentation for at least 3 years after the date of preparation or receipt thereof;
 - (b) upon the request of the District Director or an Officer, produce for inspection any records or supporting documentation kept under Section 7.2 within 48 hours; and
 - (c) upon the request of the District Director or an Officer, deliver copies of any records or supporting documentation kept under Section 7.2 to the District Director or Officer within 48 hours of such request.

ARTICLE 8

8. OFFENCES AND PENALTIES

- 8.1 Any Person who contravenes a provision of this Emission Regulation commits an offence under Greater Vancouver Regional District Air Quality Management Bylaw No. 937, 1999.

Appendix D1-1

**Emission Standards and Emission Control Requirements
for Industrial Process Boilers and Heaters**

Affected Boilers and Heaters	Maximum Allowable NOx Emissions (g/GJ)	Maximum Allowable CO Emissions (ppmv)	Thermal Efficiency Requirement	NOx Control Measure Required
New Boilers (10 -105 GJ/h)	16	400	78%	LNB and FGR
Existing Boilers (10 - 105 GJ/h)	43	400	n/a	LEA
New Boilers and New Heaters (2 - 10 GJ/h)	17	400	78%	LNB
Existing Boilers and Existing Heaters (<10 GJ/h)	n/a	n/a	n/a	n/a

In this Appendix D1-1:

- (a) **“CO”** means carbon monoxide. Gaseous volumes are corrected to dry standard conditions at 20° Celsius, and a pressure of 101.325 kilopascals;
- (b) **“Existing Boiler”** means any Boiler which exists and is operating on the Effective Date;
- (c) **“Existing Heater”** means any Heater which exists and is operating on the Effective Date;
- (d) **“FGR”** means flue gas recirculation;
- (e) **“LNB”** means low NOx burners;
- (f) **“LEA”** means low excess air;
- (g) **“New Boiler”** means any Boiler which commences operations after the Effective Date;
- (h) **“New Heater”** means any Heater which commences operations after the Effective Date; and
- (i) To convert NOx units in g/GJ, to ppmv at 3% O₂, multiply by 1.907.