



Greater Vancouver Regional District  
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

Policy and Planning Department  
Telephone (604) 432-6375  
Fax (604) 436-6970

# PERMIT

(Under the provisions of the GVRD Air Quality Management Bylaw No. 937, 1999)

B.C. ROOFING PRODUCTS LTD.

IS AUTHORIZED TO DISCHARGE AIR CONTAMINANTS

FROM AN ASPHALT ROOFING MANUFACTURING PLANT

LOCATED AT 8355 WIGGINS ST, BURNABY, BC, CANADA - V3L 4Y8

This permit has been issued under the terms and conditions prescribed in the attached Schedules A, B, C, D, E, F, G & H for emission sources and works existing or planned on September 17, 2003

A handwritten signature in black ink, appearing to read 'J. G. ...'.

DISTRICT DIRECTOR  
PERMIT NUMBER GVA0572

**INDEX OF SCHEDULES**

Schedule A.....Site Plan

Schedule B.....General Requirements

Schedule C.....Emission Monitoring, Sampling and Reporting Requirements

Schedule D.....Emission Sources and Discharge Points

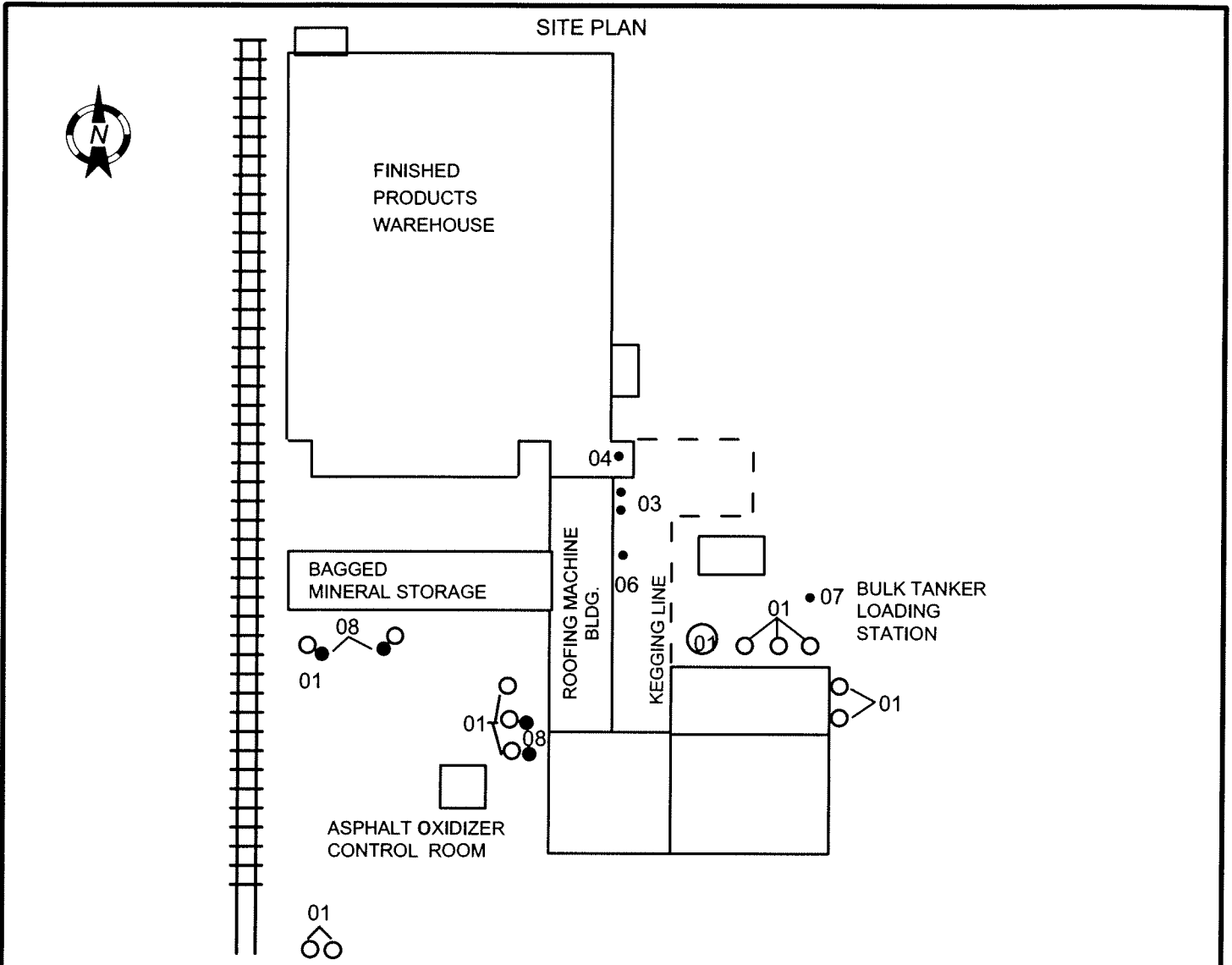
Schedule E.....Authorized Rates of Discharge

Schedule F.....Authorized Discharge Criteria

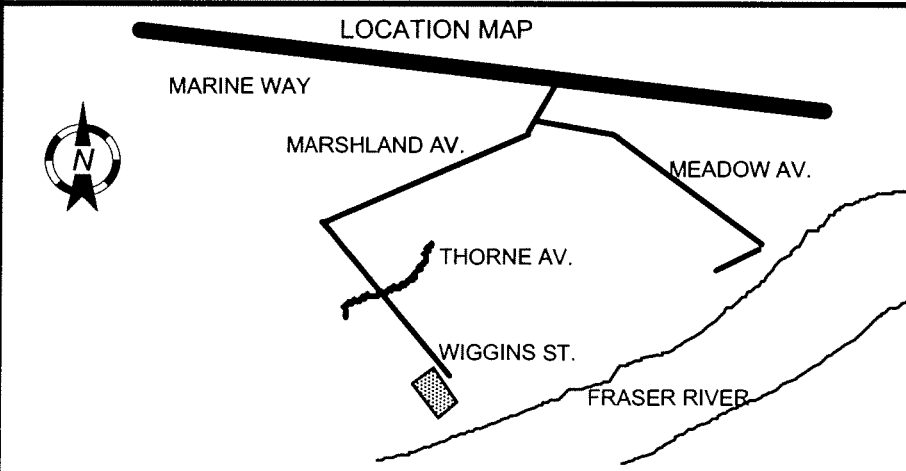
Schedule G.....Authorized Works and Procedures

Schedule H.....Record of Permit Issuance Dates

SCHEDULE A - PAGE 1  
to PERMIT GVA0572



THE NUMBERED LOCATIONS OF THE DISCHARGE POINTS ARE APPROXIMATE N.T.S.



SEPTEMBER 17, 2003

DISTRICT DIRECTOR

SCHEDULE A to PERMIT No. GVA0572

**GREATER VANCOUVER REGIONAL DISTRICT**

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**SCHEDULE B - Page 1  
to PERMIT GVA0572**

**A AMENDMENTS**

The terms and conditions of this Permit may be amended, as authorized by applicable legislation.

**B MAINTENANCE AND OPERATION OF WORKS**

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 Permittee shall regularly inspect and maintain all such works in good repair.

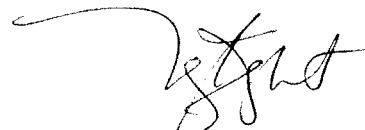
**C EMERGENCY PROCEDURES**

An emergency or other condition may prevent the continuous utilization of the above authorized works and procedures, or may result in a discharge of air contaminants which is not authorized by this Permit. If such a situation occurs, the Permittee shall report the circumstances of this event to the Greater Vancouver Regional District, Policy and Planning Department at 604-436-6777 (24 hours), at the first available opportunity.

No discharge that has bypassed control works is authorized unless the District Director's approval has been obtained. In the event of an emergency, bypassing facilities may be used for such periods as are necessary to effect a shutdown of the related processes.

**D AIR CONDITIONING, HEATING AND VENTILATION SYSTEMS**

Air contaminants discharged from any natural gas-fired air conditioning, heating or ventilation systems for buildings located at the discharge site are not specified in this Permit. These works 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. Notwithstanding the above, the District Director may at her/his discretion stipulate limits for emission of contaminants from these sources in the Permit at a future date under provisions of the Bylaw.



**GREATER VANCOUVER REGIONAL DISTRICT**

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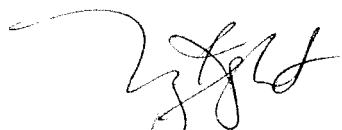
**SCHEDULE B - Page 2  
to PERMIT GVA0572**

**E GENERAL SITE RESTRICTIONS**

No air contaminant(s) from any single source, or combination of sources shall pass the boundary of the property, described in Section I of this Schedule B, such that the District Director determines that pollution has occurred.

**F INTERNAL COMBUSTION ENGINES**

Air contaminants discharged from any natural gas, propane, gasoline, diesel, or other fossil fuel fired internal combustion engines operated at the discharge site may not be specifically authorized in this Permit. These works shall be maintained and operated in a manner prescribed by the manufacturer to ensure good combustion of the fuel and to minimize emissions such that the requirements of Section E of this Schedule B are not exceeded. The District Director may at her/his discretion stipulate further limits for emission of contaminants from these sources in the Permit at a future date under provisions of the Bylaw.



**GREATER VANCOUVER REGIONAL DISTRICT**

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**SCHEDULE B - Page 3  
to PERMIT GVA0572**

**G ENGINEERING UNITS**

The engineering units specified in this Permit are in accordance with the Metric System of measure. Approximate equivalent values for the British System can be calculated using the following conversion factors.

$\text{mg/m}^3 \times 0.000437 = \text{gr/cf}$   
 $\text{m}^3/\text{min} \times 35.3 = \text{cf/min}$   
 $\text{kg/m}^3 \times 0.0624 = \text{lbs/cf}$   
 $\text{kg/L} \times 10.0 = \text{lbs/gal}$   
 $\text{mg/m}^3 \times 24.0/\text{M} = \text{ppm (by volume)}$   
 $\text{GJ/h} \times 0.9478 = \text{MMBTU/h}$

where

$\text{m}^3$  = cubic metre  
min = minute  
mg = milligram  
cf = cubic feet  
s = second  
lb = pound  
kg = kilogram  
gal = gallon  
L = litre  
M = molecular weight  
gr = grain  
ppm = parts per million  
GJ = GigaJoule  
MMBTU = Million British Thermal Unit  
h = hour

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**SCHEDULE B - Page 4  
to PERMIT GVA0572**

**H STANDARD CONDITIONS AND DEFINITIONS**

Except where otherwise indicated, the following standard conditions and definitions apply to this Permit.

1. The Restrictions in the attached Schedules are maximum limits.
2. Gaseous volumes are corrected to dry conditions of 20° Celsius & 760mm Hg.
3. Particulate matter from combustion sources is corrected to 12% Carbon Dioxide.
4. Opacity is measured at the point of maximum density, nearest the discharge point.
5. Opacity measurements exclude the effect of condensed, uncombined water droplets.
6. Definitions in the Waste Management Act and GVRD Air Quality Management Bylaw current at the time the facility commences operation 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 for the year 2003.
8. Any production, storage, transportation, handling, treatment, processing or ownership of a special waste must comply with the requirements of the Waste Management Act, Special Waste Regulation.

**I DESCRIPTION OF DISCHARGE SITE**

The land from which the air contaminants are discharged is described as "Municipality of Burnaby Parcel Identifier 002-850-834 Lot 43 District Lot 167 Group 1 New Westminster District Plan 25676".

September 17, 2003



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**SCHEDULE C - Page 1  
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This Schedule describes emission monitoring, sampling and reporting requirements.

The Permittee shall conduct the following monitoring and sampling program on the discharges and submit the results to the District Director. The need for increased or decreased monitoring may be reviewed periodically by the District Director.

<b>EMISSION NUMBER</b>	<b>DUE DATES</b>	<b>REQUIREMENTS</b>
06	See requirement	The temperatures referred to in Schedule G of this Permit shall be taken at a location which has received prior approval by the Air Quality Director and shall be continuously monitored and recorded. The Permittee shall calibrate this temperature measurement system at the discretion of, and in a manner acceptable to, the District Director.
06	September 30, 2004 and at two year intervals thereafter.	The measured discharge rate and concentration of air contaminants described in Schedule F of this Permit.
General	March 31, 2004 and annually thereafter	Written report detailing the types and amounts of principal products produced and principal raw materials used in the preceding calendar year.
General	March 31, 2004 and annually thereafter	Written report detailing the types and amounts of fuel burned in the preceding calendar year.

Unless otherwise approved by the District Director prior to any sampling or analysis, all emission measurements shall be performed by an independent agency in accordance with those procedures described in applicable source test codes and laboratory manuals which have been published by the British Columbia Ministry of Water, Land and Air Protection, as they may be amended from time to time. Any variance from these procedures must receive prior approval from the District Director. Monitoring results shall be reported in the metric units which are used in this Permit to specify the authorized discharge criteria. These submissions shall include the production rate at the time of the test, and all field data and calculations. In addition, the Permittee shall provide the Greater Vancouver Regional District, Policy and Planning Department, with a minimum of 3 working days advance notice before any emission measurements required by this Monitoring and Sampling Program are carried out.

Ambient air sampling and monitoring shall be undertaken by the Permittee, when required by the District Director.



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**SCHEDULE D - Page 1  
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The authorized emission sources and discharge points located approximately as shown on Schedule A are:

<b>EMISSION NUMBER</b>	<b>EMISSION SOURCE</b>	<b>DISCHARGE POINT</b>
01	Asphalt storage tanks, packaging tank and keggings line	Vent(s)
03	Mixing tank	Stack(s)
04	Laboratory fume hoods	Stack(s)
06	Asphalt saturator and asphalt oxidizer	Stack(s)
07	Bulk tanker filling station	Vent(s)
08	Four process heaters (RAF tank, oxidizer tank, #2 asphalt tank & saturator heater)	Vent(s)

*What is being used for the saturator?*



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**SCHEDULE E - Page 1  
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The authorized rates of discharge for the emission sources described in Schedule D are:

<b>EMISSION NUMBER</b>	<b>MAXIMUM AUTHORIZED RATE OF DISCHARGE</b>			<b>NOTES &amp; ADDITIONAL REQUIREMENTS</b>
	FLOW m3/min	DURATION hours/day	FREQUENCY days/week	
01	See Notes	24	7	The rate of discharge is that resulting from vapour venting during tank filling and breathing.
03	See Notes	24	7	Natural draft
04	3	8	5	
06	120	24	7	
07	See Notes	24	7	The rate of discharge is that resulting from vapour venting during tank filling and breathing.
08	2	24	7	

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**SCHEDULE F - PAGE 1  
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The authorized maximum discharge criteria for emission sources described in Schedule D are:

<b>EMISSION NUMBER</b>	<b>PARAMETER</b>	<b>RESTRICTION</b>	<b>NOTES</b>
06	Particulate Matter	50 mg/m <sup>3</sup>	
06	Total Hydrocarbons	102 mg/m <sup>3</sup>	Expressed as methane (CH <sub>4</sub> )
06	Opacity	10%	
01, 03, 04, 06, 07	Odour	See notes	None past the plant boundary such that the District Director determines that pollution has occurred.
03, 04, 06	Chemical Contaminants	See notes	The maximum allowable emission concentration (EC) for each emitted chemical contaminant with a Threshold Limit Value (TLV) is such that the sum of the individual EC/TLV ratios for all such contaminants in any single emission is less than 10.
08	Combustion Products	See notes	Typical products of natural gas combustion at a maximum combined firing rate of 2.90 GJ/h.
06	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 2.64 GJ/h.



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**SCHEDULE G - Page 1  
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The authorized works and procedures to control the discharge of air contaminants from the emission sources described in Schedule D are indicated below. The District Director may require that further works be installed, if the existing works, in her/his opinion, do not provide an acceptable level of emission control. New works or alterations to existing works must be approved, in principle, by the District Director.

Where the District Director has specified that additional works are required, the maximum discharge criteria described in Schedule F of this Permit are applicable as specified by the Completion Date(s) listed below. Prior to the specified date(s) the existing control works and procedures must be maintained in good operating condition and operated in a manner to minimize emissions.

<b>EMISSION NUMBER</b>	<b>COMPLETION DATE</b>	<b>DESCRIPTION OF WORKS/PROCEDURES</b>
06	Completed	A natural gas fired thermal oxidizer together with the maintenance of the ducting and related appurtenances such that air contaminants from the asphalt saturator and oxidizer are contained and conveyed under negative pressure to the control equipment. The thermal oxidizer must be maintained at a minimum temperature of 1,100 F (594 C) during saturator operation and a minimum temperature of 1,300 F (705 C) during operation of the asphalt oxidizer and those periods of combined operation of the asphalt saturator and asphalt oxidizer.
01, 03, 04, 07	Completed	Good operating practices.
08	Completed	The firing of the process heaters with natural gas, using good combustion practices and operating procedures.



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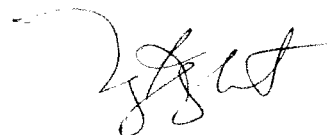
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**SCHEDULE H - Page 1  
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**RECORD OF PERMIT ISSUANCE**

<b>DATE</b>	<b>ACTION</b>	<b>SECTIONS AFFECTED</b>
March 17, 1995	ISSUANCE	Face, Schedules A, B, C, D, E, F, G & H
September 17, 2003	AMENDMENT	Face, Schedules A, B, C, D, E, F, G & H

September 17, 2003



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