



Greater Vancouver Regional District
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Located at: 4720 Kingsway, Burnaby, B.C.

PERMIT

(Under the provisions of the GVRD Air Quality Management Bylaw No. 725)

ROBAR INDUSTRIES LTD.

IS AUTHORIZED TO DISCHARGE AIR CONTAMINANTS

FROM AN IRON FOUNDRY

LOCATED AT 12945 - 78TH AVENUE, SURREY, B.C. V3W 2X8

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 May 28, 1999.


ASSISTANT AIR QUALITY DIRECTOR

PERMIT NUMBER GVA0107

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Schedule D Emission Sources and Discharge Points

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Schedule F.....Authorized Discharge Criteria

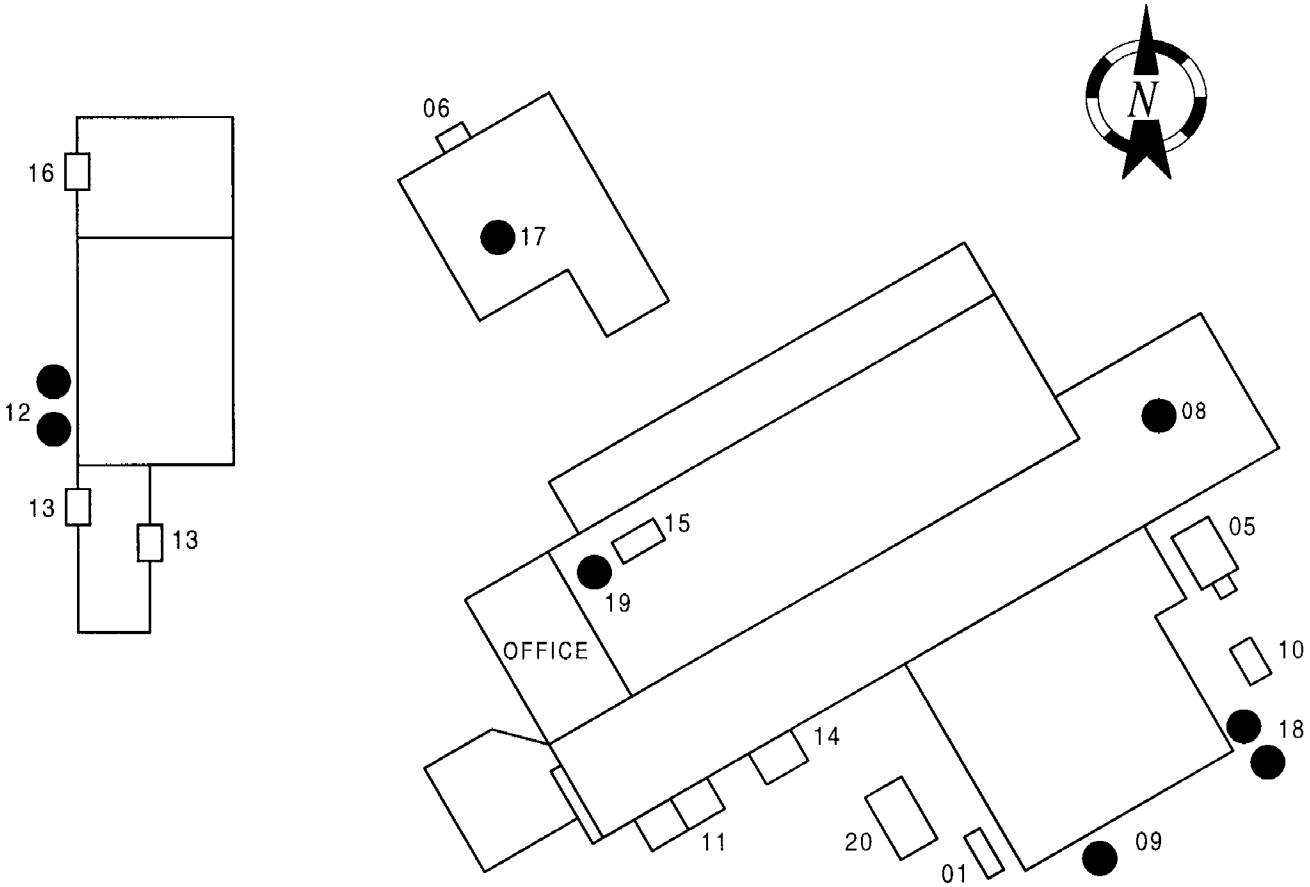
Schedule G Authorized Works and Procedures

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GREATER VANCOUVER REGIONAL DISTRICT

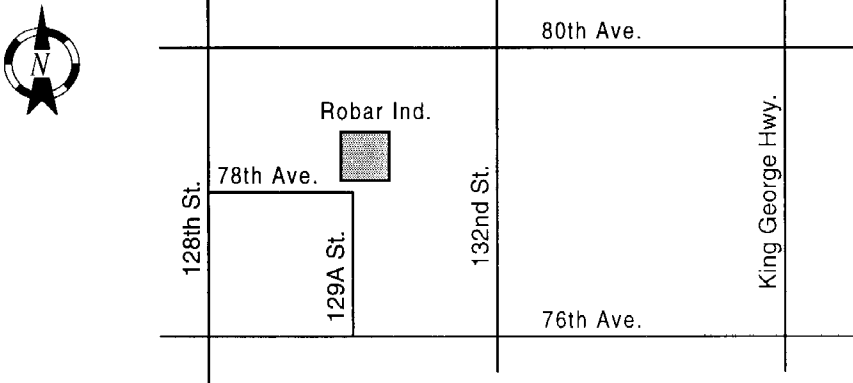
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SITE PLAN



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

LOCATION MAP



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Schedule A to Permit No. GVA0107

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SCHEDULE B - PAGE 1
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A. OBJECTIVES AND AMENDMENTS

Ambient air quality guidelines and objectives are prescribed under provisions of applicable legislation. If the level of air quality as prescribed by these criteria is exceeded, the conditions of this Permit may be revised, in order that the desired air quality can be maintained. This Permit may also be amended for other reasons, 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, Air Quality Department at 436-6777 (24 hours), at the first available opportunity.

No discharge that has bypassed control works is authorized unless the Air Quality 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 Air Quality Director may at his discretion stipulate limits for emission of contaminants from these sources in the Permit at a future date under provisions of the Bylaw.

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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 No. 725 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 1998.
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 Surrey, Parcel Identifier: 009-137-026, Lot 32, Section 20, Township 2, New Westminster District, Plan 29845".

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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 Air Quality Director determines that air 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 Air Quality Director may at his discretion stipulate further limits for emission of contaminants from these sources in the Permit at a future date under provisions of the Bylaw.

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.

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

where

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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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 Air Quality Director. The need for increased or decreased monitoring may be reviewed periodically by the Air Quality Director.

EMISSION NUMBER	DUE DATE(S)	REQUIREMENT(S)
01, 05, 10, 15 & 20	March 31, 2000 and annually thereafter	Written report indicating inspection frequency, bag condition and action taken or proposed to solve any problems detected for the baghouses described in Schedule G of this Permit.
09, 11, 18 & 19	March 31, 2000 and annually thereafter	Written report detailing the types and amounts of fuel burned in the preceding calendar year.
20	December 31, 1999	The measured discharge rate and concentration of air contaminants described in Schedule F of this Permit.
General	March 31, 2000 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, 2000 and annually thereafter	Written report detailing the types, amounts and end use of organic solvents and organic solvent-containing materials used in the preceding calendar year.

Unless otherwise approved by the Air Quality 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 Environment, Lands and Parks, as they may be amended from time to time. Any variance from these procedures must receive prior approval from the Air Quality Director.

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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, Air Quality Department with a minimum of 3 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 Air Quality Director.

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The authorized emission sources and discharge points located approximately as shown on Schedule A are:

EMISSION NUMBER	EMISSION SOURCE	DISCHARGE POINT
01	Shot blast cleaning machine	Baghouse exhaust
05	Three electric induction melting furnaces, the sand recovery system, the castings conveyor system, a cut-off booth, a shot blast machine, and a small cut-off machine	Baghouse exhaust
06	Paint dipping operation	Wall exhaust
08	The Melting area	Roof exhaust
09	Annealing oven	Wall vent
10	Five grinders and one belt sander	Baghouse exhaust
11	Two shell core machines	Wall exhaust
12	Passivation process	Two wall exhausts
13	Two welding areas	Two wall exhausts
14	Shell core work table	Wall vent
15	Powdered spray paint area	Baghouse exhaust
16	Degreasing unit	Stack
17	Rubber press	Roof vent
18	Heat treat oven	Two wall vents
19	Epoxy oven	Stack
20	Four cell and ten cell sand reclaimers	Baghouse exhaust

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The authorized rates of discharge for the emission sources described in Schedule D are:

EMISSION NUMBER	MAXIMUM AUTHORIZED RATE OF DISCHARGE			NOTES & ADDITIONAL REQUIREMENTS
	FLOW m ³ /min	DURATION hours/day	FREQUENCY days/week	
01	102	16	5	
05	1134	24	5	
06	86	8	5	
08	654	16	5	
09	15	16	5	
10	126	16	5	
11	86	16	5	
12	90	24	7	
13	130	8	5	
14	86	16	5	
15	160	16	5	
16	25	8	5	
17	90	16	5	
18	16	16	5	
19	10	16	5	
20	272	24	5	One sand reclaimer operating at a time.

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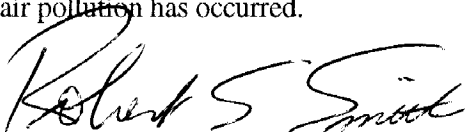
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The authorized maximum discharge criteria for emission sources described in Schedule D are:

EMISSION NUMBER	PARAMETER	RESTRICTION	NOTES
06, 11, 14, 15, 16 & 17	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 source is less than 10.
08	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 1.58 GJ/hr.
09	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 2.64 GJ/hr.
11	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 0.61 GJ/hr and 0.79 GJ/hr for each shell core machine respectively.
18	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 4.27 GJ/hr.
19	Combustion Products	See notes	Typical products of natural gas combustion at a maximum firing rate of 1.80 GJ/hr.
12	Hydrogen fluoride	5 mg/m ³	Includes fumes and mist
12	Nitric acid	50 mg/m ³	Includes fumes and mist.
06, 11, 12, 14, 15, 16 & 17	Odour	See notes	None past the plant boundary such that the Air Quality Director determines that air pollution has occurred.

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EMISSION NUMBER	PARAMETER	RESTRICTION	NOTES
01, 05, 08, 10, 11, 13, 14, 15 & 20	Opacity	10 percent	
01, 05, 08, 10, 11, 13, 14 & 15	Particulate matter	50 mg/m ³	
20	Particulate matter	20 mg/m ³	

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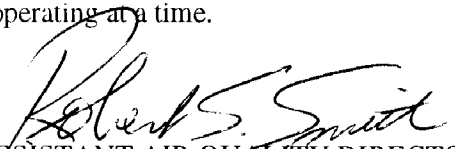
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The authorized works and procedures to control the discharge of air contaminants from the emission sources described in Schedule D are indicated below. The Air Quality Director may require that further works be installed, if the existing works, in 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 Air Quality Director.

Where the Air Quality 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.

EMISSION NUMBER	COMPLETION DATE	DESCRIPTION OF WORKS/PROCEDURES
01	Completed	Pangborn baghouse and related appurtenances, together with good operating practices.
05	Completed	Wheelabrator baghouse Model 126D-36 and related appurtenances, together with good operating practices.
06, 08, 11, 12, 13, 14, 16 & 17	Completed	Good operating practices.
09	Completed	Firing of the annealing oven with natural gas, using good combustion practices and operating procedures.
10	Completed	Pangborn Model 7270 baghouse and related appurtenances, together with good operating practices.
15	Completed	Micro Pulsaire baghouse and related appurtenances, together with good operating practices.
18	Completed	Firing of the heat treat oven with natural gas, using good combustion practices and operating procedures.
19	Completed	Firing of the epoxy oven with natural gas, using good combustion practices and operating procedures
20	Completed	A Wheelabrator baghouse Serial No. 12663 and related appurtenances together with good operating practices and one sand reclaimer operating at a time.

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RECORD OF PERMIT ISSUANCE

DATE	ACTION	SECTIONS AFFECTED
November 30, 1992	Issuance	Face, Schedules A, B, C, D, E, F, G, & H
September 3, 1993	Amended	Face, Schedules A, B, C, D, E, F, G & H
May 28, 1999	Amended	Face, Schedules A, B, C, D, E, F, G & H

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