



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

General
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Air Quality and Source Control Department - Tel (604) 436-6700 Fax (604) 436-6707

PERMIT

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

ENGELHARD CANADA LIMITED  
IS AUTHORIZED TO DISCHARGE AIR CONTAMINANTS  
FROM A BULLION REFINING OPERATION LOCATED AT  
#1-3551 VIKING WAY, RICHMOND, B.C. V6V 1W6

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 July 22, 1994.

  
ASSISTANT AIR QUALITY DIRECTOR

PERMIT NUMBER GVA0371

**INDEX OF SCHEDULES**

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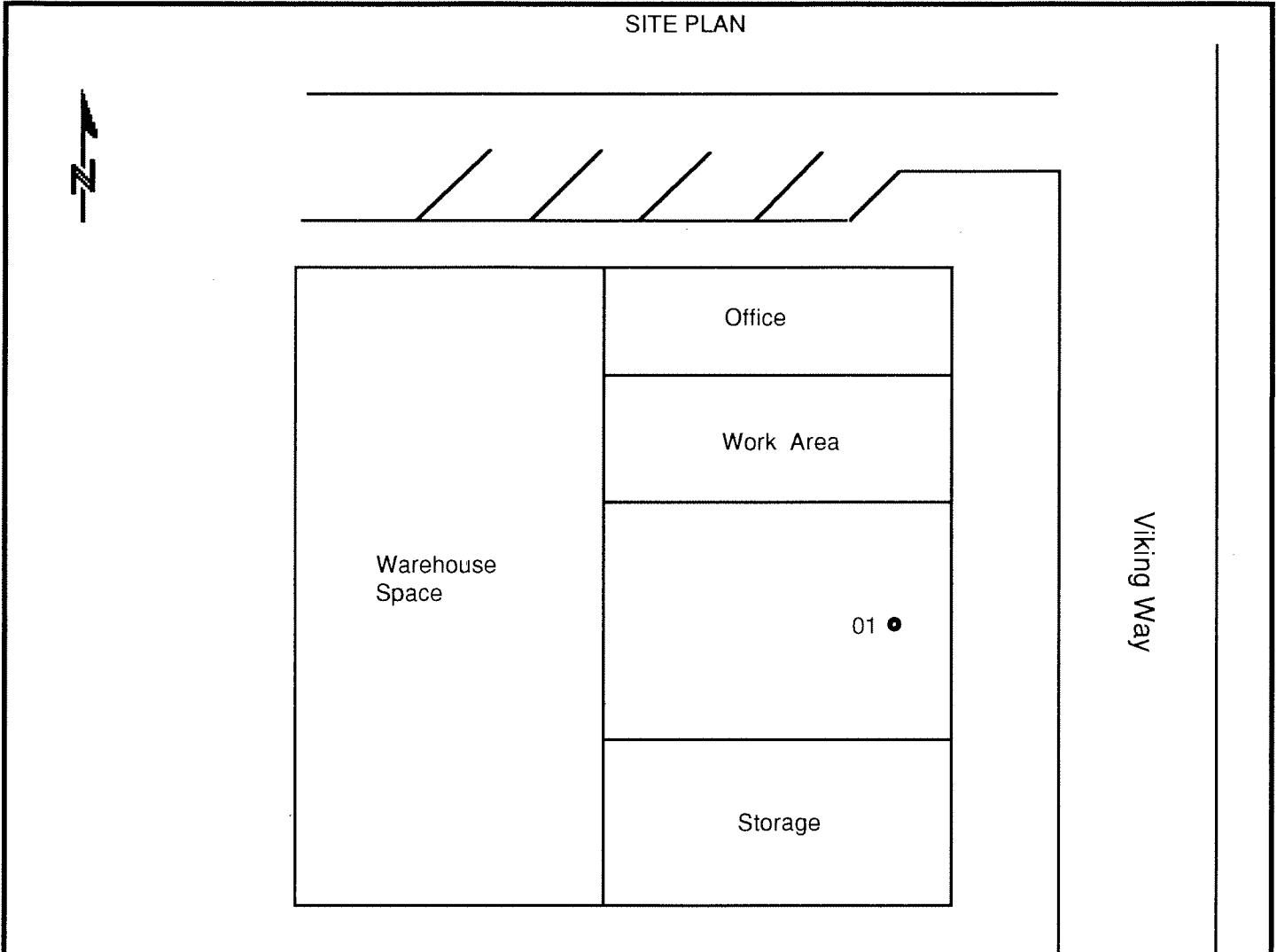


# Greater Vancouver Regional District

4330 KINGSWAY, BURNABY, BRITISH COLUMBIA, V5H 4G8 TELEPHONE 436-6777

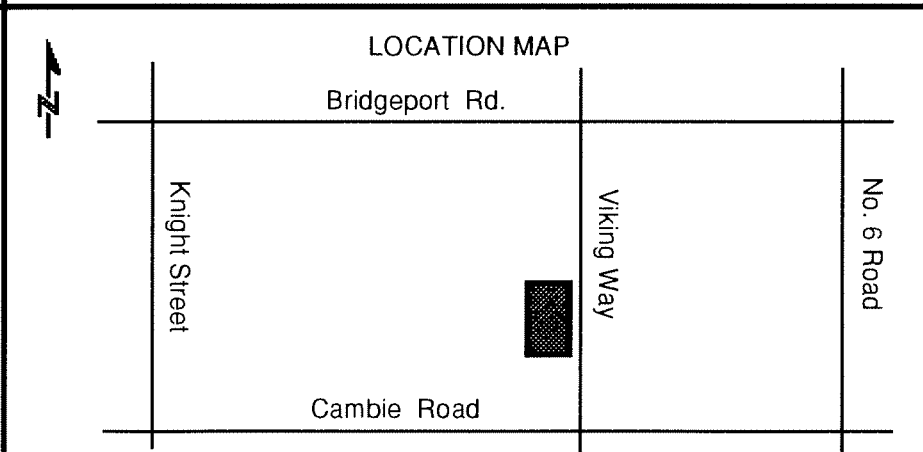
## GVRD Air Quality Management Bylaw No. 725

### SITE PLAN



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

### LOCATION MAP



July 22, 1994

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Schedule A to Permit No. GVA0371

SCHEDULE B - PAGE 1  
to PERMIT GVA0371

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 and Source Control 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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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.

|                              |   |                 |
|------------------------------|---|-----------------|
| mg/m <sup>3</sup> x 0.000437 | = | gr/cf           |
| m <sup>3</sup> /min x 35.3   | = | cf/min          |
| kg/m <sup>3</sup> x 0.0624   | = | lbs/cf          |
| kg/L x 10.0                  | = | lbs/gal         |
| mg/m <sup>3</sup> x 24.0/M   | = | ppm (by volume) |
| GJ/h x 0.9478                | = | MMBTU/h         |

where

|                |   |             |       |   |                              |
|----------------|---|-------------|-------|---|------------------------------|
| m <sup>3</sup> | = | cubic metre | min   | = | minute                       |
| mg             | = | milligram   | cf    | = | cubic feet                   |
| s              | = | second      | lbs   | = | pounds                       |
| kg             | = | kilogram    | gal   | = | gallons                      |
| L              | = | litre       | M     | = | molecular weight             |
| gr             | = | grain       | ppm   | = | parts per million            |
| GJ             | = | GigaJoule   | MMBTU | = | Million British Thermal Unit |
|                |   |             | h     | = | hour                         |

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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 years 1993 - 1994.
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 "City of Richmond, Parcel Identifier: 001-718-363, Lot 14 except: Parcel "D" (Bylaw Plan 65621), Section 29, Block 5 North, Range 5 West, New Westminster District, Plan 44645."

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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.

| <b>EMISSION NUMBER</b> | <b>DUE DATE(S)</b>                     | <b>REQUIREMENT(S)</b>                                                                                                                          |
|------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| General                | March 31, 1995 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, 1995 and annually thereafter | Written report detailing the types and amounts of fuel burned in the preceding calendar year.                                                  |

Emission testing and 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:

| <b>EMISSION NUMBER</b> | <b>EMISSION SOURCE</b>         | <b>DISCHARGE POINT</b> |
|------------------------|--------------------------------|------------------------|
| 01                     | Three bullion melting furnaces | Stack                  |

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

| EMISSION<br>NUMBER | MAXIMUM AUTHORIZED<br>RATE OF DISCHARGE |                       |                        | NOTES & ADDITIONAL<br>REQUIREMENTS |
|--------------------|-----------------------------------------|-----------------------|------------------------|------------------------------------|
|                    | FLOW<br>m <sup>3</sup> /min             | DURATION<br>hours/day | FREQUENCY<br>days/week |                                    |
| 01                 | 237                                     | 8                     | 5                      |                                    |

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

| EMISSION NUMBER | PARAMETER           | RESTRICTION           | NOTES                                                                                                                                              |
|-----------------|---------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 01              | Combustion Products | See notes             | Typical products of natural gas combustion at a maximum firing rate of 0.7807 GJ/h (one burner at 0.24 MMBTU/hr and two burners at 0.25 MMBTU/hr). |
|                 | Lead                | 1.5 mg/m <sup>3</sup> |                                                                                                                                                    |
|                 | Mercury             | 1 mg/m <sup>3</sup>   |                                                                                                                                                    |
|                 | Silver              | 1 mg/m <sup>3</sup>   |                                                                                                                                                    |
|                 | Tin                 | 20 mg/m <sup>3</sup>  |                                                                                                                                                    |
|                 | Opacity             | 10 percent            |                                                                                                                                                    |

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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       | Firing of the furnace with natural gas, using good combustion practices and operating procedures. |

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SCHEDULE H - PAGE 1  
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RECORD OF PERMIT ISSUANCE

| DATE              | ACTION   | SECTIONS AFFECTED                       |
|-------------------|----------|-----------------------------------------|
| November 9, 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 |
| July 22, 1994     | Amended  | Face, Schedules A, B, C, D, E, F, G & H |

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