

YOUR FILE
OUR FILE 0262100-PR-5358

DOUBLE REGISTERED

Gordon Bruce Lawrie

s.22

Sir:

LETTER OF TRANSMITTAL

Enclosed is a copy of Pollution Control Permit No. PR-5358 in the name of Gordon Bruce Lawrie. Your attention is respectfully directed to the conditions outlined in the Permit.

In conjunction with this Permit, you are directed to comply with the following requirements:

A. OPERATION

- (a) Operate the works authorized by Appendix 01 as a level "B" Landfill in accordance with the "Pollution Control Objectives for the Forest Products Industry of British Columbia", dated November 23, 1977. Cover material is to be placed on top of the refuse once after 20 days of operation or when a trench is completed, whichever is sooner. Specific operating instructions will be issued by the Regional Manager.
- (b) No wood-waste material shall be placed within 10 metres of any surface water ditch.
- (c) Construct ~~impermeable~~ ^{* SUPERSEEDS} berms at least 2 metres in width around the perimeter of the landfill site and between the fill areas and any surface water ditches to prevent leachate originating from the refuse disposal operation from contaminating surface waters.
- (d) Construct fire breaks by placing inert material across the width of the site at intervals of approximately 100 metres. This will result in cells of refuse material, approximately 0.5 hectares in area. No more than one (1) completed cell shall be left uncovered at any time.
- (e) The active cell shall be maintained level and compacted.
- (f) Upon completion of the final lift, cover material shall be placed to a minimum depth of 0.61 metres (24 inches).

...2

Gordon Bruce Lawrie

MAR 28 1979

B. SAMPLING AND MONITORING

- (a) The Permittee shall provide groundwater monitoring wells at the discretion of and at locations approved by the Regional Manager.
- (b) Monitoring of surface waters at and near the site for possible leachate contamination may be undertaken by the Pollution Control Branch.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

The administration of this Permit will be carried out by staff from our Regional Office located at 15326 Birch Drive, Surrey, British Columbia, V3R 7A2 (telephone 584-8822). Plans, data and reports pertinent to the Permit are to be submitted to the Director through the Regional Manager at this address.

This Permit does not authorize entry upon, crossing over, or use for any purpose, of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

This Letter of Transmittal is an Order under the Pollution Control Act.

For your reference, enclosed is a copy of the Pollution Control Act, as amended, and the Regulations thereto. Also enclosed is a copy of the Metric Practice Guide and a copy of Section C of the "Pollution Control Objectives for the Forest Products Industry of British Columbia" relative to Discharges to Land.

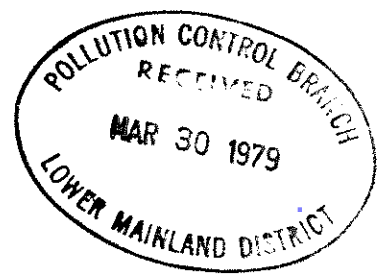
Yours very truly,



H. P. Klassen, P. Eng.
Assistant Director
Pollution Control Branch



Encl.



MINISTRY OF THE ENVIRONMENT
POLLUTION CONTROL BRANCH

PERMIT

Under the Provisions of the Pollution Control Act, ~~1967~~

Gordon Bruce Lawrie

s.22

is hereby authorized to discharge refuse
from various sawmills in the Delta area
located at 9184 River Road, Delta, British Columbia
to the ground

This permit has been issued under the terms and conditions prescribed in the attached appendices

01 and A

SUPERSEDED

Assistant Director of Pollution Control

Date issued MAR 28 1979, 19.....

Permit No. PR-5358.....

Amendments dated, 19.....

....., 19.....

....., 19.....



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

APPENDIX No. 01

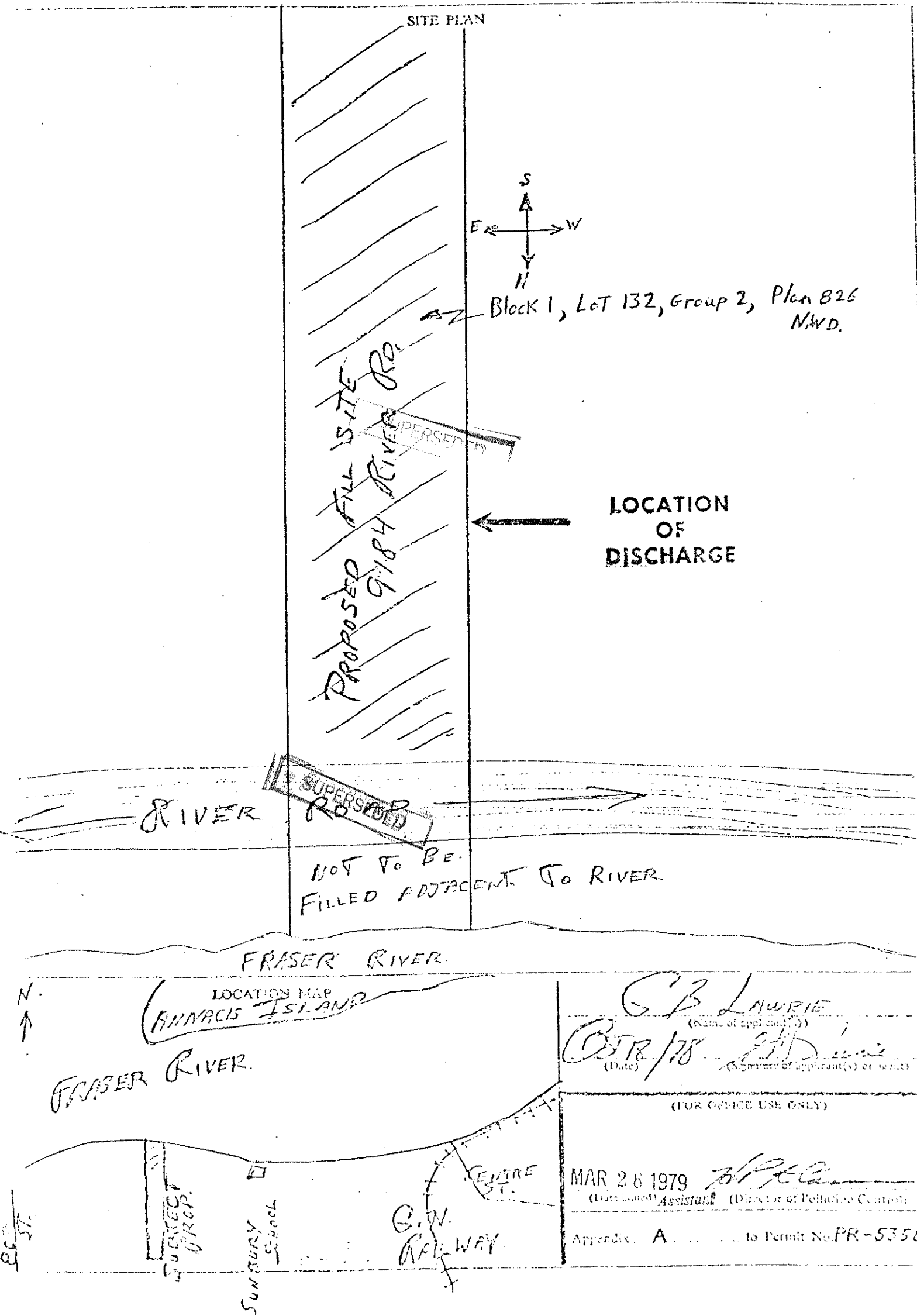
to Pollution Control Permit No. PR-5358

- (a) The discharge of refuse applicable to this appendix is to Block 1, D.L. 132, Group 2, Plan 826, New Westminster District
as shown on the attached Appendix A
- (b) The quantity of refuse which may be discharged is an average of 229 m³/d.
- (c) The type of refuse which may be discharged is industrial refuse.
(Municipal, industrial, etc.)
- (d) The nature or characteristics of the refuse which may be discharged are wood-waste.
- (e) The works authorized are a landfill operation as directed
source approximately located as shown on the attached Appendix A
- (f) The land from which the refuse originates and to which this appendix is appurtenant is various sawmills in the Delta area.
- (g) Those works authorized and proposed must be completed and in operation on and from the date of this Appendix

Date MAR 28 1979, 19
Amended, 19

[Signature]
Assistant Director of Pollution Control

POLLUTION CONTROL BRANCH



G.B. LAURIE
(Name of applicant(s))
CTR/78
(Date)
(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

MAR 28 1979
(Date Issued) **APPC**
Assistant (Director of Pollution Control)

Appendix A to Permit No. PR-5350



Our File: PR-7765

SEP 25 1990

DOUBLE REGISTERED

ROBERT BROWN

s22

Dear Sir:

LETTER OF TRANSMITTAL

Enclosed is a copy of amended Permit No. **PR-7765** issued under the provisions of the Waste Management Act in the name of **ROBERT BROWN**. Your attention is respectfully directed to the terms and conditions outlined in the Permit. An annual fee for Permit No. PR-7765 will be determined on the basis of your industrial code and capacity in accordance with the Waste Management Fees Regulation.

The administration of this Permit will be carried out by staff from our Regional Office located at 15326 - 103A Avenue, Surrey, British Columbia, V3R 7A2, (telephone: 584-8822). Plans, data and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours very truly,

P. Kharé, P. Eng.
Assistant Regional Waste Manager

Enc.





MINISTRY OF ENVIRONMENT

PERMIT

Under the Provisions of the Waste Management Act

ROBERT BROWN

s.22

is hereby authorized to discharge refuse
from excavation, demolition and selected industrial operations
located at various sites in the Lower Mainland
to the land at 8970, 8990, 9012, 9039, 9069, 9076 and 9108 River Road, Delta
and

is hereby authorized to discharge effluent
from the landfill leachate treatment facilities
to C.N.R. drainage ditch.

This permit has been issued under the terms and
conditions prescribed in the attached appendices:
01, 02, A-1, B-1, B-2, B-3, B-4, C-1, C-2 and C-3.

P. Khafé, P. Eng.
Assistant Regional Waste Manager

Permit No. **PR-7765**

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX 01


to Permit No. PR-7765

- (A) The discharge of refuse to which this appendix is applicable is from excavation, demolition and selected industrial operations in the Lower Mainland to a site as shown on the attached Appendix A-1.
- (B) The rate at which refuse may be discharged is an annual average of 300 cubic metres per day, but shall not exceed 1,500 cubic metres per day in any given day of the year.
- (C) The type of refuse which may be discharged is industrial.
- (D) The components of the refuse which may be discharged are typical demolition refuse, clean and inert excavation material, weathered asphalt and road material, concrete waste and cement dust from cement manufacturing.
- (E) The works authorized are a landfill as directed in Appendices B-1, B-2, B-3 and B-4 approximately located as shown on the attached Appendix A-1.
- (F) The land to which the refuse is to be discharged and to which this appendix is appurtenant is Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, Pl 826, S&E W22.9 m & Pl 22258, W34.7 m, DL 132, Group 2, Pl 826, S&E Pl 22258, NWD, lying south of the Canadian National Railway right-of-way.
- (G) The works authorized must be complete and in operation on and from the date of this appendix.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX 02

to Permit No. PR-7765

- (A) The discharge of effluent to which this appendix is applicable is from the landfill leachate treatment facilities approximately located as shown on the attached Appendix A-1.
- (B) The maximum rate at which effluent may be discharged is 150 cubic metres per day.
- (C) The characteristics of the effluent sampled at site S4 identified in Appendix A-1 and analyzed as prescribed in Appendices C-1 and C-2 shall be equivalent to or better than:


pH,	6.5 - 8.0;
5-day biochemical oxygen demand (BOD ₅),	30 mg/L;
Chemical oxygen demand (COD),	155 mg/L;
Dissolved oxygen (DO),	not less than 5.0 mg/L;
Nitrogen - ammonia,	5.0 mg/L;
Sulphide (dissolved),	0.05 mg/L;
Phenol,	0.2 mg/L;
Pentachlorophenol,	0.0005 mg/L;
Tetrachlorophenol;	0.001 mg/L;
Nonfilterable residue (total suspended solids),	40.0 mg/L;
Aluminum (total),	2.0 mg/L;
Cadmium (dissolved),	0.005 mg/L;
Chromium (total),	0.1 mg/L;
Copper (dissolved),	0.05 mg/L;
Iron (dissolved),	1.0 mg/L;
Lead (total),	0.05 mg/L;
Manganese (dissolved),	0.5 mg/L;
Mercury (total),	0.00006 mg/L;
Zinc (dissolved),	0.2 mg/L;
Toxicity,	96 h LC ₀ * = 100%.

* 96 hour LC₀ static bioassay on salmonid species, expressed as percent by volume of effluent in receiving environment water which is required to give 100% survival over 96 hours.

- (D) The works authorized are impervious perimeter berms for leachate containment, leachate collection and pumping system, secondary treatment system, and related appurtenances approximately located as shown on the attached Appendix A-1.
- (E) The location of the facilities from which the effluent originates and to which this appendix is appurtenant is Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, Pl 826, S&E W22.9 m & Pl 22258, W34.7 m, DL 132, Group 2, Pl 826, S&E Pl 22258, NWD, lying south of the Canadian National Railway right-of-way.
- (F) The location of the point of discharge and to which this appendix is appurtenant is the drainage ditch south of Canadian National Railway, located north of the landfill site with legal description as shown in Section (E) above.
- (G) The works authorized must be complete and in operation on or before December 31, 1990.

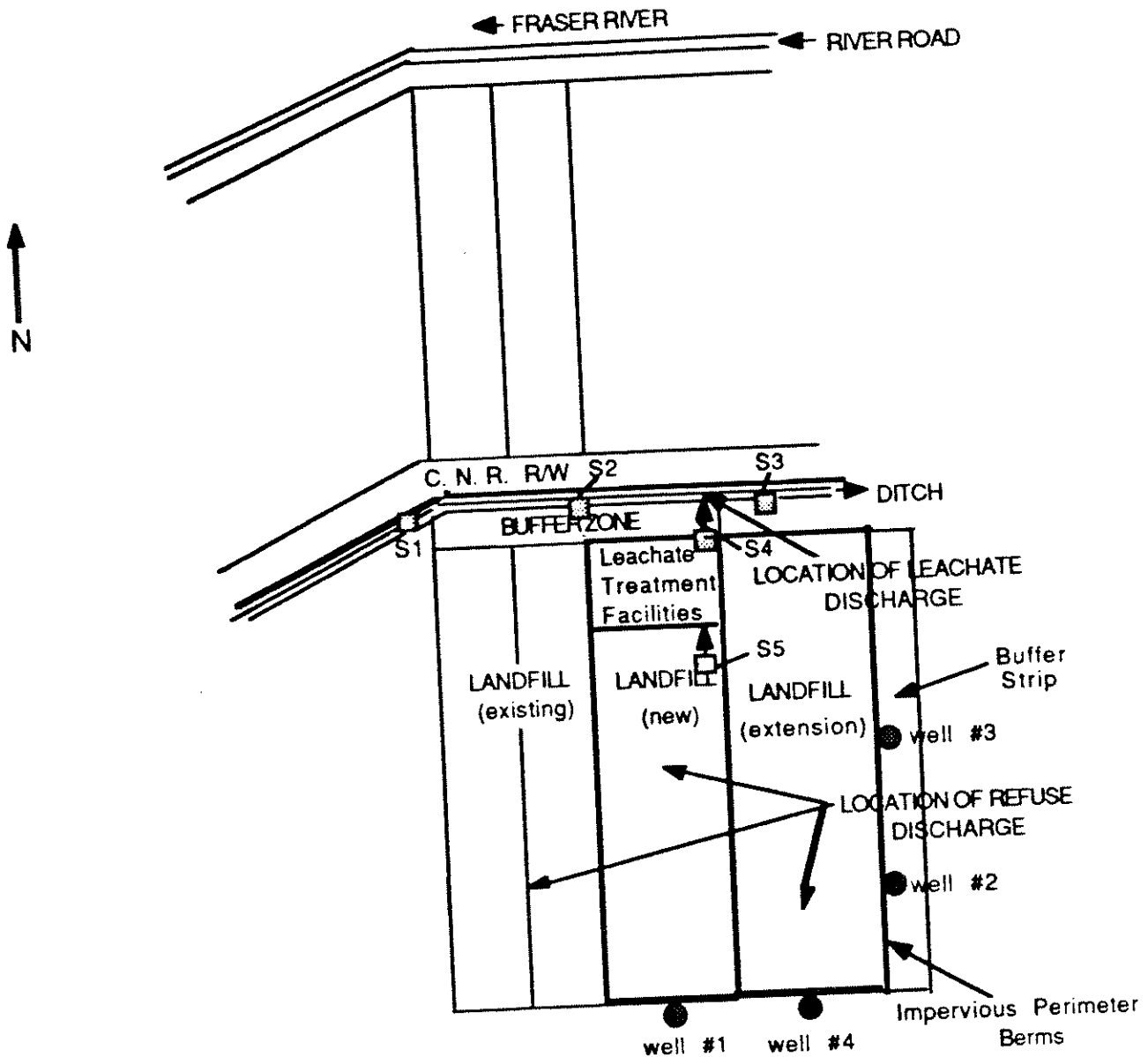
Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager

SITE PLAN

SCALE 1: 2500

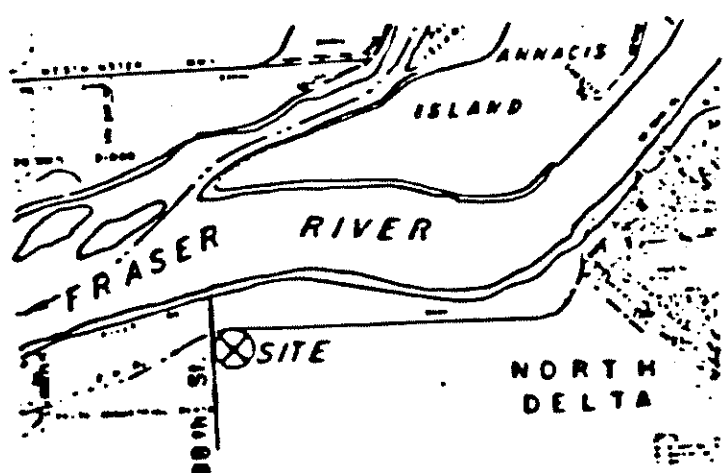


LEGAL DESCRIPTION OF SITE

Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, PI 826, S&E W22.9 m & PI 22258, W34.7 m, DL 132, Group 2, PI 826, S&E PI 22258, NWD.

LOCATION MAP

Scale 0 1 km



ROBERT BROWN

(Name of applicant(s))

(Date)

(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

Nov. 5, 1987

Date Issued
SEP 25 1990

Date Amended

[Signature]
Assistant Regional Waste Manager

Appendix A-1

to Permit No.

PR-7765

Approval No.



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-1
to Permit No. PR-7765

A. SITE PREPARATION AND RESTORATION

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

Provide a locked gate on the access road to the landfill and/or take any other measures necessary to prevent the discharge of unauthorized refuse at the site.


B. LANDFILL OPERATION

- (1) The Permittee shall maintain the landfill authorized in Appendix 01 as a Level "D" operation in accordance with the Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia, dated September, 1975, which, in normal conditions, requires that cover material be applied once per 20 days of operation and at least once per month. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.
- (2) A berm of inert relatively impermeable material shall be placed around the outer edge of the filled area. This berm shall be a minimum of two metres wide on the top with appropriate slope downward and shall extend at least one metre into the peat layer.
- (3) The following wastes shall not be discharged at the site:
 - (a) Food wastes and other putrescible refuse such as that originating from private dwellings, restaurants, farms, commercial operations and institutions;
 - (b) Hog fuel, sawdust, wood chips or shavings, except for road surface;
 - (c) Bulky wastes such as furniture, household appliances, car bodies and car parts;
 - (d) Liquid or semi-solid wastes resulting from residential, commercial or industrial operations;
 - (e) Gypsum board;
 - (f) Metals, except for minor quantities that are intimately associated with demolition debris such as reinforcement steel embedded in concrete;
 - (g) Wood treated with anti-sapstain chemicals or other wood preserving chemicals.
 - (h) Asbestos and waste oil;
 - (i) Excavation material which exceeds Level "C" of the British Columbia Standards for Managing Contamination at the Pacific Place Site, dated May 2, 1990;

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-2
to Permit No. PR-7765

B. LANDFILL OPERATION Cont'd...

- (3) (j) Special wastes as defined by the Special Waste Regulation under the Waste Management Act;
- (k) Any other waste not covered by Section (D) of Appendix 01 of this Permit unless permission has been obtained in writing from the Regional Waste Manager.
- (4) Only inert, inorganic wastes shall be deposited in the existing landfill as identified in Appendix A-1. No demolition refuse shall be allowed into the existing landfill.
- (5) The existing landfill shall be completed with a final cover of 0.5 m thickness of clean soil, to the satisfaction of the Regional Waste Manager.
- (6) An attendant shall be present whenever waste is being discharged in order to monitor the quantity and quality of the waste. Any unauthorized refuse shall be removed from the site and disposed of to a site and in a manner approved by the Regional Waste Manager.
- (7) The Permittee shall record daily the types and volume of refuse discharge in cubic metres per day. These records are to be kept available for inspection at any time and are to be suitably tabulated and submitted to the Regional Waste Manager once each year. The first report shall be submitted on or before December 31, 1990.
- (8) Maintain a buffer zone of at least 10 metres between the landfill and any ditches or other watercourses. Maintain a buffer strip of at least 15 metres between the eastern property boundary and eastern impervious berm.

C. LEACHATE

The Permittee shall install works to collect, pump and treat the leachate to a degree that meets the effluent characteristics prescribed in Section (C) of Appendix 02.

D. GROUNDWATER OBSERVATION AND MONITORING WELLS

The Permittee shall install four (4) groundwater monitoring wells at locations approximately as shown in Appendix A-1. The structural details of these wells are subject to the approval of the Regional Waste Manager.

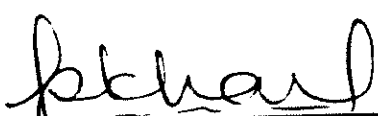
E. SURFACE DRAINAGE

Surface drainage shall be diverted away from the landfill and completed sections of the landfill shall be properly graded to allow drainage from and prevent ponding on the surface of the landfill. The Permittee shall maintain a proper surface drainage ditch within the eastern property boundary so as to provide adequate drainage of run-off or groundwater.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-3
to Permit No. PR-7765

F. PLANS - EXISTING WORKS

Plans and specifications of existing works authorized in Appendix 02 shall be submitted to the Regional Waste Manager within 60 days of the date of this Appendix.

G. PLANS - NEW WORKS

Plans and specifications of the new works authorized in Appendix 02 and required by Section D above shall be submitted on or before December 31, 1990 to the Regional Waste Manager and his approval obtained before construction commences. The works shall be constructed in accordance with such plans.

H. MAINTENANCE OF WORKS

The Permittee shall inspect the pollution control works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

I. EMERGENCY PROCEDURES

In the event of an emergency or condition beyond the control of the Permittee which prevents continuing operation of the approved method of pollution control, the Permittee shall immediately notify the Regional Waste Manager and take appropriate remedial action.

J. BYPASSES

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Director or the Regional Waste Manager is obtained and confirmed in writing.

K. PROCESS MODIFICATIONS

The Permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

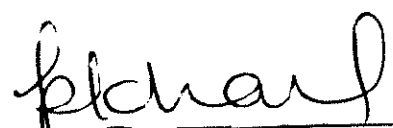
L. POSTING OF SECURITY

The Permittee shall post security with the Minister of Finance in the amount of \$66,900.00 in a form acceptable to the Minister prior to commencing effluent discharge. The security may be applied at the discretion of the Regional Waste Manager under the provisions of the Waste Management Act to correct any inadequacy of the works as it relates to their construction, operation and maintenance.

The Permittee may request the return of security provided that the Regional Waste Manager is satisfied with all aspects of operation under Permit and he considers that leachate treatment is no longer necessary. Granting of the request is at the discretion of the Regional Waste Manager.

Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-4
to Permit No. PR-7765

M. POST-CLOSURE PLAN

The Permittee shall submit a post-closure plan six months in advance of planned completion of the landfill for approval by the Regional Waste Manager. The Permittee shall continue to operate and maintain the leachate collection and treatment works to meet the effluent characteristics specified in Section (C) of Appendix 02 for such a period as required by the Regional Waste Manager after the landfill is complete.

N. NOTIFICATION

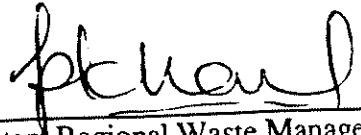
The Permittee shall notify the Regional Waste Manager of a change in ownership of the works authorized by Appendices 01 and 02 within 10 days of an ownership change.

O. GUIDELINES FOR FILL PLACEMENT

As per Permittee's proposal dated January 31, 1990, the initial fill placement shall be carried out as specified by Consulting Geotechnical Engineer Mr. Douglas M. Wallis, P.Eng. of Cook Pickering & Doyle Ltd., in his report dated January 29, 1990. Steps recommended in his letter dated June 5, 1990 shall be implemented. The operation shall be directed, monitored and the results thereof verified by him.

After the initial phase of fill placement, an investigation and assessment shall be carried out by a geotechnical engineer to develop additional guidelines for further landfilling on the site. Such additional guidelines shall be submitted to the Regional Waste Manager for review prior to commencing further landfill operation.

Date Issued March 30, 1990
Date Amended SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-1

to Permit No. PR-7765

MONITORING

The following monitoring program shall be undertaken by the Permittee. The Regional Waste Manager may modify the program based on results submitted as well as any other data obtained by Waste Management.

1. SAMPLING SITES

Sampling sites shall be located as follows:

Site Nos. (as shown on Appendix A-1)	Location
S1	Ditch on south side of the railway adjacent to the western edge of the existing landfill
S2	Ditch on south side of the railway adjacent to the eastern edge of the existing landfill
S3	Ditch on south side of the railway, east of the eastern edge of the leachate treatment facilities
S4	Outlet from the leachate treatment facilities
S5	Inlet to the leachate treatment facilities
Well #1	Groundwater monitoring well outside the southern impervious berm of the new landfill
Well #2	Groundwater monitoring well outside the eastern impervious berm, located about 1/3 of the length of the extension landfill, measured from the southeast corner
Well #3	Groundwater monitoring well outside the eastern impervious berm, located about 2/3 of the length of the extension landfill, measured from the southeast corner
Well #4	Groundwater monitoring well outside the southern impervious berm of the extension landfill


2. GRAB SAMPLING

The Permittee shall install suitable sampling facilities and obtain grab samples from Site Nos. S1, S2, S3, Well #1, Well #2, Well #3 and Well #4 once every six months and grab samples from Site Nos. S4 and S5 once every three months. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-2
to Permit No. PR-7765

MONITORING Cont'd...

3. ANALYSES

Obtain analyses of the samples for the following:

- (1) pH;
- (2) 5-day biochemical oxygen demand (BOD₅), mg/L;
- (3) Chemical oxygen demand (COD), mg/L;
- (4) Dissolved oxygen (DO), mg/L;
- (5) Nitrogen - ammonia, mg/L;
- (6) Sulphide (dissolved), mg/L;
- (7) Phenol, mg/L;
- (8) Pentachlorophenol, mg/L;
- (9) Tetrachlorophenol, mg/L;
- (10) Nonfilterable residue (total suspended solids), mg/L;
- (11) Aluminum (total), mg/L;
- (12) Cadmium (dissolved), mg/L;
- (13) Chromium (total), mg/L;
- (14) Copper (dissolved), mg/L;
- (15) Iron (dissolved), mg/L;
- (16) Lead (total), mg/L;
- (17) Manganese (dissolved), mg/L;
- (18) Mercury (total), mg/L;
- (19) Zinc (dissolved), mg/L;
- (20) Toxicity, 96 h LC₅₀.

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments, and Biological Materials", or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available for inspection at all Waste Management Offices.


Analyses for determining the toxicity of liquid effluents to fish shall be carried out in accordance with the procedures described in the "Laboratory Procedures for Measuring Acute Lethal Toxicity of Liquid Effluents to Fish" dated November, 1982. The Regional Waste Manager will advise the Permittee which method of measurement for expressing lethal toxicity shall be used.

Copies of the above mentioned manual are available from the Waste Management Branch, 810 Blanshard Street, Victoria, British Columbia, V8V 1X5, at a cost of \$5.00, and are also available for inspection at all Waste Management Offices.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-3
to Permit No. PR-7765

MONITORING Cont'd...

4. FLOW MEASUREMENT

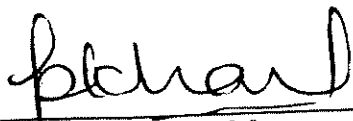
Provide and maintain a suitable flow measuring device and record once per month the effluent volume discharged in cubic metres per day authorized in Appendix 02 over a 24-hour period.

5. REPORTING

Maintain data of analyses and flow measurements for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous year. The first report is to be submitted by December 31, of the year when the effluent discharge commences.

Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager



Our File: PR-7765

SEP 25 1990

DOUBLE REGISTERED

ROBERT BROWN

S.22

Dear Sir:

LETTER OF TRANSMITTAL

Enclosed is a copy of amended Permit No. **PR-7765** issued under the provisions of the Waste Management Act in the name of **ROBERT BROWN**. Your attention is respectfully directed to the terms and conditions outlined in the Permit. An annual fee for Permit No. PR-7765 will be determined on the basis of your industrial code and capacity in accordance with the Waste Management Fees Regulation.

The administration of this Permit will be carried out by staff from our Regional Office located at 15326 - 103A Avenue, Surrey, British Columbia, V3R 7A2, (telephone: 584-8822). Plans, data and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours very truly,

P. Kharé, P. Eng.
Assistant Regional Waste Manager

Enc.





MINISTRY OF ENVIRONMENT

PERMIT

Under the Provisions of the Waste Management Act

ROBERT BROWN

s.22

is hereby authorized to discharge refuse
from excavation, demolition and selected industrial operations
located at various sites in the Lower Mainland
to the land at 8970, 8990, 9012, 9039, 9069, 9076 and 9108 River Road, Delta
and

is hereby authorized to discharge effluent
from the landfill leachate treatment facilities
to C.N.R. drainage ditch.

This permit has been issued under the terms and
conditions prescribed in the attached appendices:
01, 02, A-1, B-1, B-2, B-3, B-4, C-1, C-2 and C-3.

P. Khafé, P. Eng.
Assistant Regional Waste Manager

Permit No. **PR-7765**

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX 01

to Permit No. PR-7765

- (A) The discharge of refuse to which this appendix is applicable is from excavation, demolition and selected industrial operations in the Lower Mainland to a site as shown on the attached Appendix A-1.
- (B) The rate at which refuse may be discharged is an annual average of 300 cubic metres per day, but shall not exceed 1,500 cubic metres per day in any given day of the year.
- (C) The type of refuse which may be discharged is industrial.
- (D) The components of the refuse which may be discharged are typical demolition refuse, clean and inert excavation material, weathered asphalt and road material, concrete waste and cement dust from cement manufacturing.
- (E) The works authorized are a landfill as directed in Appendices B-1, B-2, B-3 and B-4 approximately located as shown on the attached Appendix A-1.
- (F) The land to which the refuse is to be discharged and to which this appendix is appurtenant is Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, Pl 826, S&E W22.9 m & Pl 22258, W34.7 m, DL 132, Group 2, Pl 826, S&E Pl 22258, NWD, lying south of the Canadian National Railway right-of-way.
- (G) The works authorized must be complete and in operation on and from the date of this appendix.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX 02

to Permit No. PR-7765

- (A) The discharge of effluent to which this appendix is applicable is from the landfill leachate treatment facilities approximately located as shown on the attached Appendix A-1.
- (B) The maximum rate at which effluent may be discharged is 150 cubic metres per day.
- (C) The characteristics of the effluent sampled at site S4 identified in Appendix A-1 and analyzed as prescribed in Appendices C-1 and C-2 shall be equivalent to or better than:


pH,	6.5 - 8.0;
5-day biochemical oxygen demand (BOD ₅),	30 mg/L;
Chemical oxygen demand (COD),	155 mg/L;
Dissolved oxygen (DO),	not less than 5.0 mg/L;
Nitrogen - ammonia,	5.0 mg/L;
Sulphide (dissolved),	0.05 mg/L;
Phenol,	0.2 mg/L;
Pentachlorophenol,	0.0005 mg/L;
Tetrachlorophenol;	0.001 mg/L;
Nonfilterable residue (total suspended solids),	40.0 mg/L;
Aluminum (total),	2.0 mg/L;
Cadmium (dissolved),	0.005 mg/L;
Chromium (total),	0.1 mg/L;
Copper (dissolved),	0.05 mg/L;
Iron (dissolved),	1.0 mg/L;
Lead (total),	0.05 mg/L;
Manganese (dissolved),	0.5 mg/L;
Mercury (total),	0.00006 mg/L;
Zinc (dissolved),	0.2 mg/L;
Toxicity,	96 h LC ₀ * = 100%.

* 96 hour LC₀ static bioassay on salmonid species, expressed as percent by volume of effluent in receiving environment water which is required to give 100% survival over 96 hours.

- (D) The works authorized are impervious perimeter berms for leachate containment, leachate collection and pumping system, secondary treatment system, and related appurtenances approximately located as shown on the attached Appendix A-1.
- (E) The location of the facilities from which the effluent originates and to which this appendix is appurtenant is Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, Pl 826, S&E W22.9 m & Pl 22258, W34.7 m, DL 132, Group 2, Pl 826, S&E Pl 22258, NWD, lying south of the Canadian National Railway right-of-way.
- (F) The location of the point of discharge and to which this appendix is appurtenant is the drainage ditch south of Canadian National Railway, located north of the landfill site with legal description as shown in Section (E) above.
- (G) The works authorized must be complete and in operation on or before December 31, 1990.

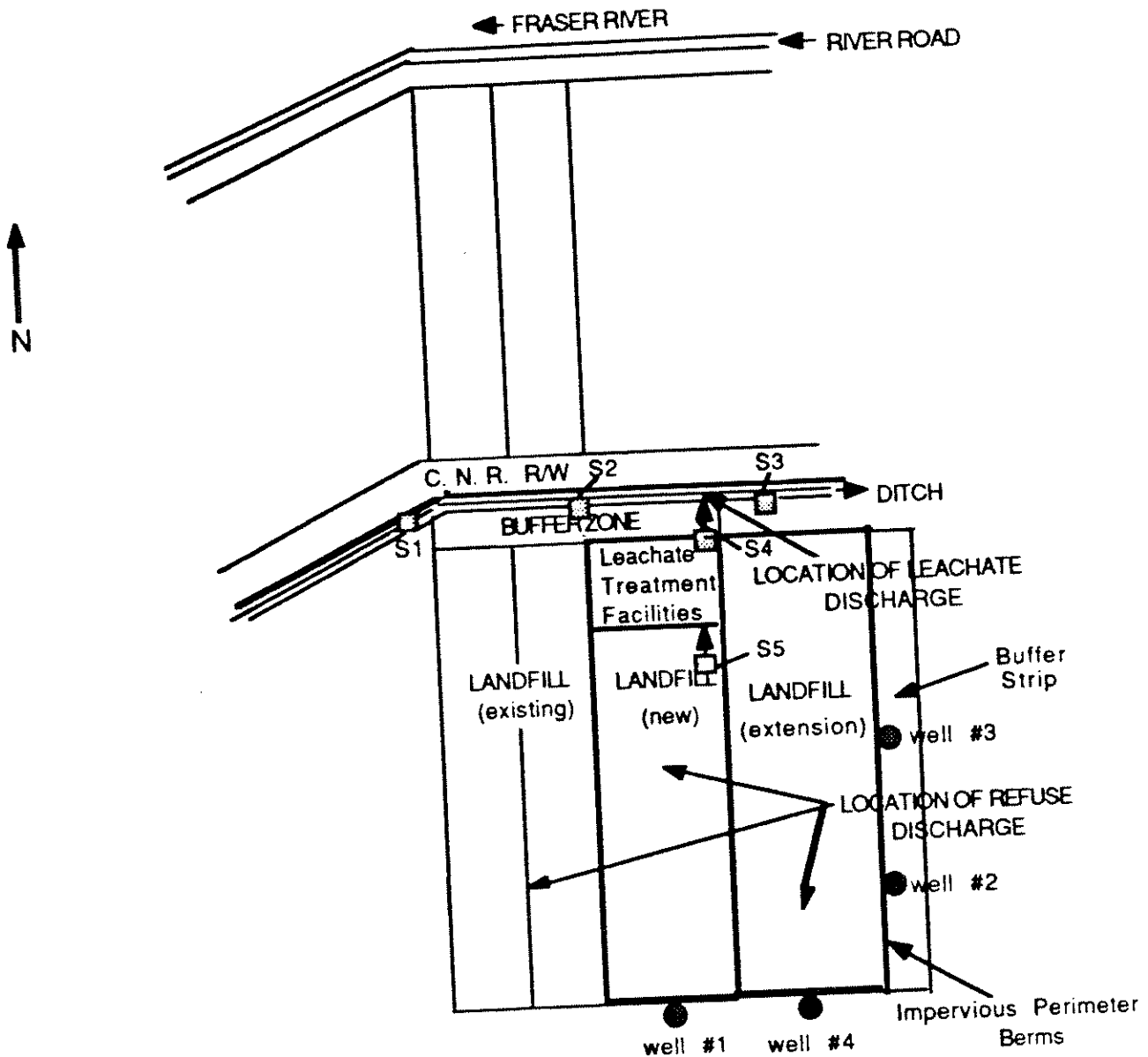
Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager

SITE PLAN

SCALE 1: 2500

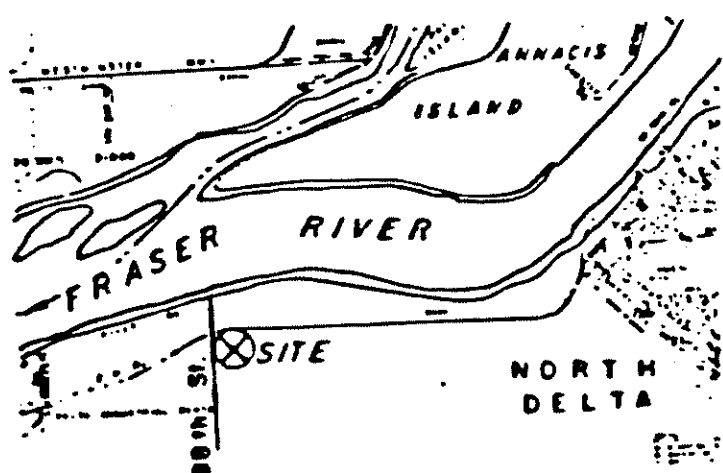


LEGAL DESCRIPTION OF SITE

Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, Lot R1, Plan 5813 & RW75 of 4, all of D.L.132, Group 2, NWD, and Lot 4, DL 132, Group 2, PI 826, S&E W22.9 m & PI 22258, W34.7 m, DL 132, Group 2, PI 826, S&E PI 22258, NWD.

LOCATION MAP

Scale 0 1 km



ROBERT BROWN

(Name of applicant(s))

(Date)

(Signature of applicant(s) or agent(s))

(FOR OFFICE USE ONLY)

Nov. 5, 1987

Date Issued
SEP 25 1990

Date Amended

[Signature]
Assistant Regional Waste Manager

Appendix A-1

to Permit No.

PR-7765

Approval No.



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-1
to Permit No. PR-7765

A. SITE PREPARATION AND RESTORATION

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

Provide a locked gate on the access road to the landfill and/or take any other measures necessary to prevent the discharge of unauthorized refuse at the site.

B. LANDFILL OPERATION

- (1) The Permittee shall maintain the landfill authorized in Appendix 01 as a Level "D" operation in accordance with the Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia, dated September, 1975, which, in normal conditions, requires that cover material be applied once per 20 days of operation and at least once per month. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.
- (2) A berm of inert relatively impermeable material shall be placed around the outer edge of the filled area. This berm shall be a minimum of two metres wide on the top with appropriate slope downward and shall extend at least one metre into the peat layer.
- (3) The following wastes shall not be discharged at the site:
 - (a) Food wastes and other putrescible refuse such as that originating from private dwellings, restaurants, farms, commercial operations and institutions;
 - (b) Hog fuel, sawdust, wood chips or shavings, except for road surface;
 - (c) Bulky wastes such as furniture, household appliances, car bodies and car parts;
 - (d) Liquid or semi-solid wastes resulting from residential, commercial or industrial operations;
 - (e) Gypsum board;
 - (f) Metals, except for minor quantities that are intimately associated with demolition debris such as reinforcement steel embedded in concrete;
 - (g) Wood treated with anti-sapstain chemicals or other wood preserving chemicals.
 - (h) Asbestos and waste oil;
 - (i) Excavation material which exceeds Level "C" of the British Columbia Standards for Managing Contamination at the Pacific Place Site, dated May 2, 1990;

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-2
to Permit No. PR-7765

B. LANDFILL OPERATION Cont'd...

- (3) (j) Special wastes as defined by the Special Waste Regulation under the Waste Management Act;
- (k) Any other waste not covered by Section (D) of Appendix 01 of this Permit unless permission has been obtained in writing from the Regional Waste Manager.
- (4) Only inert, inorganic wastes shall be deposited in the existing landfill as identified in Appendix A-1. No demolition refuse shall be allowed into the existing landfill.
- (5) The existing landfill shall be completed with a final cover of 0.5 m thickness of clean soil, to the satisfaction of the Regional Waste Manager.
- (6) An attendant shall be present whenever waste is being discharged in order to monitor the quantity and quality of the waste. Any unauthorized refuse shall be removed from the site and disposed of to a site and in a manner approved by the Regional Waste Manager.
- (7) The Permittee shall record daily the types and volume of refuse discharge in cubic metres per day. These records are to be kept available for inspection at any time and are to be suitably tabulated and submitted to the Regional Waste Manager once each year. The first report shall be submitted on or before December 31, 1990.
- (8) Maintain a buffer zone of at least 10 metres between the landfill and any ditches or other watercourses. Maintain a buffer strip of at least 15 metres between the eastern property boundary and eastern impervious berm.

C. LEACHATE

The Permittee shall install works to collect, pump and treat the leachate to a degree that meets the effluent characteristics prescribed in Section (C) of Appendix 02.

D. GROUNDWATER OBSERVATION AND MONITORING WELLS

The Permittee shall install four (4) groundwater monitoring wells at locations approximately as shown in Appendix A-1. The structural details of these wells are subject to the approval of the Regional Waste Manager.


E. SURFACE DRAINAGE

Surface drainage shall be diverted away from the landfill and completed sections of the landfill shall be properly graded to allow drainage from and prevent ponding on the surface of the landfill. The Permittee shall maintain a proper surface drainage ditch within the eastern property boundary so as to provide adequate drainage of run-off or groundwater.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-3
to Permit No. PR-7765

F. PLANS - EXISTING WORKS

Plans and specifications of existing works authorized in Appendix 02 shall be submitted to the Regional Waste Manager within 60 days of the date of this Appendix.

G. PLANS - NEW WORKS

Plans and specifications of the new works authorized in Appendix 02 and required by Section D above shall be submitted on or before December 31, 1990 to the Regional Waste Manager and his approval obtained before construction commences. The works shall be constructed in accordance with such plans.

H. MAINTENANCE OF WORKS

The Permittee shall inspect the pollution control works regularly and maintain them in good working order. Notify the Regional Waste Manager of any malfunction of these works.

I. EMERGENCY PROCEDURES

In the event of an emergency or condition beyond the control of the Permittee which prevents continuing operation of the approved method of pollution control, the Permittee shall immediately notify the Regional Waste Manager and take appropriate remedial action.

J. BYPASSES

The discharge of effluent which has bypassed the designated treatment works is prohibited unless the approval of the Director or the Regional Waste Manager is obtained and confirmed in writing.

K. PROCESS MODIFICATIONS

The Permittee shall notify the Regional Waste Manager prior to implementing changes to any process that may affect the quality and/or quantity of the discharge.

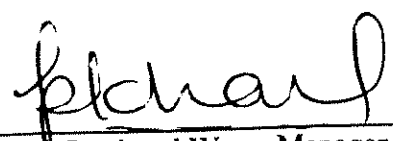
L. POSTING OF SECURITY

The Permittee shall post security with the Minister of Finance in the amount of \$66,900.00 in a form acceptable to the Minister prior to commencing effluent discharge. The security may be applied at the discretion of the Regional Waste Manager under the provisions of the Waste Management Act to correct any inadequacy of the works as it relates to their construction, operation and maintenance.

The Permittee may request the return of security provided that the Regional Waste Manager is satisfied with all aspects of operation under Permit and he considers that leachate treatment is no longer necessary. Granting of the request is at the discretion of the Regional Waste Manager.

Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX B-4
to Permit No. PR-7765

M. POST-CLOSURE PLAN

The Permittee shall submit a post-closure plan six months in advance of planned completion of the landfill for approval by the Regional Waste Manager. The Permittee shall continue to operate and maintain the leachate collection and treatment works to meet the effluent characteristics specified in Section (C) of Appendix 02 for such a period as required by the Regional Waste Manager after the landfill is complete.

N. NOTIFICATION

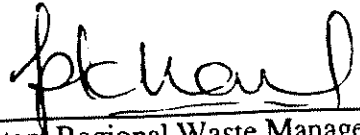
The Permittee shall notify the Regional Waste Manager of a change in ownership of the works authorized by Appendices 01 and 02 within 10 days of an ownership change.

O. GUIDELINES FOR FILL PLACEMENT

As per Permittee's proposal dated January 31, 1990, the initial fill placement shall be carried out as specified by Consulting Geotechnical Engineer Mr. Douglas M. Wallis, P.Eng. of Cook Pickering & Doyle Ltd., in his report dated January 29, 1990. Steps recommended in his letter dated June 5, 1990 shall be implemented. The operation shall be directed, monitored and the results thereof verified by him.

After the initial phase of fill placement, an investigation and assessment shall be carried out by a geotechnical engineer to develop additional guidelines for further landfilling on the site. Such additional guidelines shall be submitted to the Regional Waste Manager for review prior to commencing further landfill operation.

Date Issued March 30, 1990
Date Amended SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-1

to Permit No. PR-7765

MONITORING

The following monitoring program shall be undertaken by the Permittee. The Regional Waste Manager may modify the program based on results submitted as well as any other data obtained by Waste Management.

1. SAMPLING SITES

Sampling sites shall be located as follows:

Site Nos. (as shown on Appendix A-1)	Location
S1	Ditch on south side of the railway adjacent to the western edge of the existing landfill
S2	Ditch on south side of the railway adjacent to the eastern edge of the existing landfill
S3	Ditch on south side of the railway, east of the eastern edge of the leachate treatment facilities
S4	Outlet from the leachate treatment facilities
S5	Inlet to the leachate treatment facilities
Well #1	Groundwater monitoring well outside the southern impervious berm of the new landfill
Well #2	Groundwater monitoring well outside the eastern impervious berm, located about 1/3 of the length of the extension landfill, measured from the southeast corner
Well #3	Groundwater monitoring well outside the eastern impervious berm, located about 2/3 of the length of the extension landfill, measured from the southeast corner
Well #4	Groundwater monitoring well outside the southern impervious berm of the extension landfill

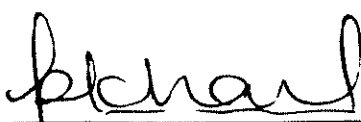
2. GRAB SAMPLING

The Permittee shall install suitable sampling facilities and obtain grab samples from Site Nos. S1, S2, S3, Well #1, Well #2, Well #3 and Well #4 once every six months and grab samples from Site Nos. S4 and S5 once every three months. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-2
to Permit No. PR-7765

MONITORING Cont'd...

3. ANALYSES

Obtain analyses of the samples for the following:

- (1) pH;
- (2) 5-day biochemical oxygen demand (BOD₅), mg/L;
- (3) Chemical oxygen demand (COD), mg/L;
- (4) Dissolved oxygen (DO), mg/L;
- (5) Nitrogen - ammonia, mg/L;
- (6) Sulphide (dissolved), mg/L;
- (7) Phenol, mg/L;
- (8) Pentachlorophenol, mg/L;
- (9) Tetrachlorophenol, mg/L;
- (10) Nonfilterable residue (total suspended solids), mg/L;
- (11) Aluminum (total), mg/L;
- (12) Cadmium (dissolved), mg/L;
- (13) Chromium (total), mg/L;
- (14) Copper (dissolved), mg/L;
- (15) Iron (dissolved), mg/L;
- (16) Lead (total), mg/L;
- (17) Manganese (dissolved), mg/L;
- (18) Mercury (total), mg/L;
- (19) Zinc (dissolved), mg/L;
- (20) Toxicity, 96 h LC₅₀.

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments, and Biological Materials", or by suitable alternative procedures as approved by the Regional Waste Manager.

Copies of the above mentioned manual are available for inspection at all Waste Management Offices.


Analyses for determining the toxicity of liquid effluents to fish shall be carried out in accordance with the procedures described in the "Laboratory Procedures for Measuring Acute Lethal Toxicity of Liquid Effluents to Fish" dated November, 1982. The Regional Waste Manager will advise the Permittee which method of measurement for expressing lethal toxicity shall be used.

Copies of the above mentioned manual are available from the Waste Management Branch, 810 Blanshard Street, Victoria, British Columbia, V8V 1X5, at a cost of \$5.00, and are also available for inspection at all Waste Management Offices.

Date Issued November 5, 1987

Date Amended March 30, 1990

SEP 25 1990


Assistant Regional Waste Manager



MINISTRY OF ENVIRONMENT
Waste Management Branch

APPENDIX C-3
to Permit No. PR-7765

MONITORING Cont'd...

4. FLOW MEASUREMENT

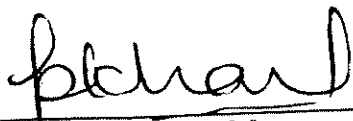
Provide and maintain a suitable flow measuring device and record once per month the effluent volume discharged in cubic metres per day authorized in Appendix 02 over a 24-hour period.

5. REPORTING

Maintain data of analyses and flow measurements for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous year. The first report is to be submitted by December 31, of the year when the effluent discharge commences.

Date Issued March 30, 1990

Date Amended SEP 25 1990


Assistant Regional Waste Manager



YOUR FILE
OUR FILE PR-7765

NOV 05 1987

REGISTERED MAIL

ROBERT BROWN

s.22

Dear Sir:

LETTER OF TRANSMITTAL

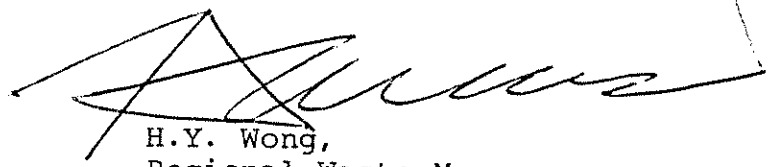
Enclosed is a copy of Permit No. PR-7765 issued under the provisions of the Waste Management Act in the name of ROBERT BROWN. Your attention is respectfully directed to the terms and conditions outlined in the Permit. An annual fee for Permit No. PR-7765 will be determined on the basis of your rated capacity of 76 m³/d and SIC No. 4999 in accordance with the enclosed Waste Management Permit Fees Regulation.

The administration of this Permit will be carried out by staff from our Regional Office located at 15326-103A Avenue, Surrey, British Columbia, V3R 7A2 (telephone: 584-8822). Plans, data, and reports pertinent to the Permit are to be submitted to the Regional Waste Manager at this address.

You will note that values have been expressed in the International System of Units (SI). These units are to be used in submitting monitoring results and any other information in connection with this Permit.

This Permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the Permittee.

Yours very truly,



H.Y. Wong,
Regional Waste Manager

Enc.



MINISTRY OF ENVIRONMENT AND PARKS

PERMIT

Under the Provisions of the Waste Management Act

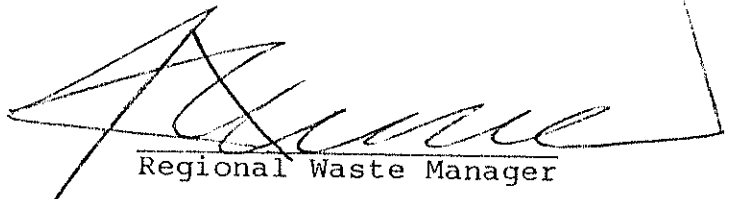
ROBERT BROWN

s.22

is hereby authorized to discharge refuse
from excavation, demolition and selected industrial operations
located at various sites in the Lower Mainland
to the land at 8970 and 8990 River Road, Delta.

This permit has been issued under the terms and
conditions prescribed in the attached appendices:

01, A-1, B-1, B-2, C-1 and C-2.


Regional Waste Manager

Permit No. PR-7765

Date Issued NOV 05 1987

Date Amended _____



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH


APPENDIX 01

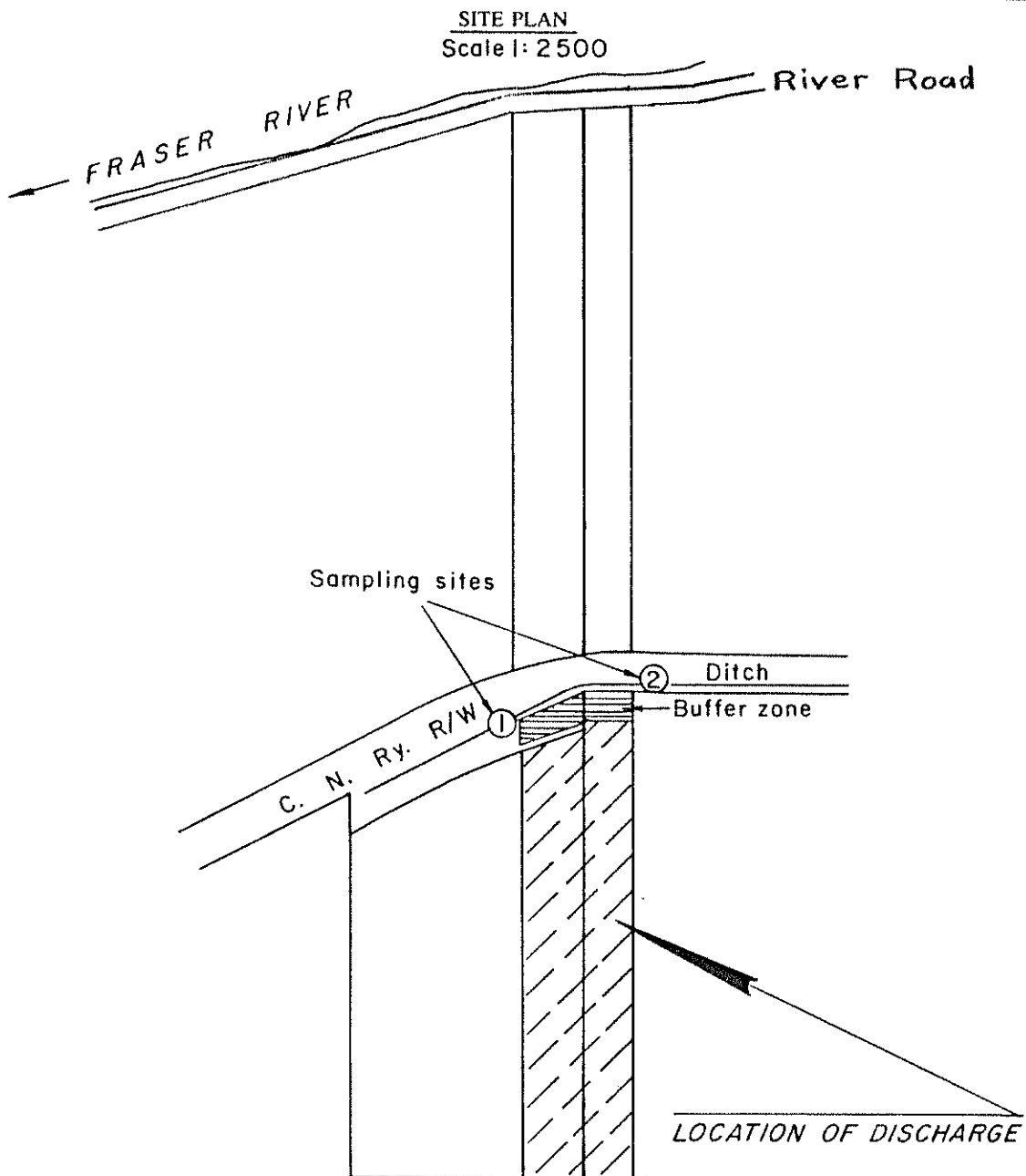
to Permit No. PR-7765

- (a) The discharge of refuse to which this appendix is applicable is from excavation, demolition and selected industrial operations in the Lower Mainland to a site as shown on the attached Appendix A-1.
- (b) The rate at which refuse may be discharged is an annual average of 76 cubic metres per day.
- (c) The type of refuse which may be discharged is inert industrial.
- (d) The components of the refuse which may be discharged are inorganic demolition material, inert mineral soil and industrial waste from cement manufacturing.
- (e) The works authorized are a landfill as directed in Appendices B-1 and B-2 and approximately located as shown on the attached Appendix A-1.
- (f) The land to which the refuse is to be discharged and to which this appendix is appurtenant is the portions of Lot 19, Plan 62681 and E. 1/2 and W. 1/2 of Lot 2, Plan 5813, except Plan 22258, all of D.L. 132 Group 2, NWD., lying south of the Canadian National Railway right-of-way.
- (g) The works authorized must be complete and in operation on and from the date of this appendix.

Date Issued NOV 05 1987

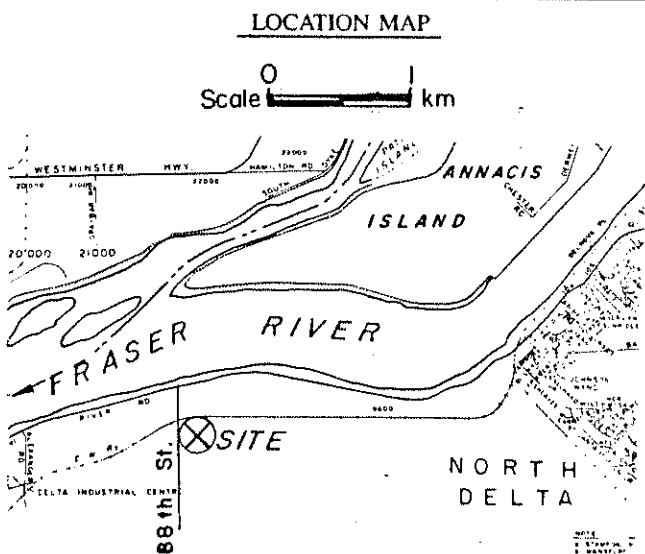
Date Amended _____


Regional Waste Manager



LEGAL DESCRIPTION OF SITE

Lot 19, Plan 62681 and E.1/2 and W.1/2 of Lot 2, Plan 5813, except Plan 22258, all of D.L.132 Group 2, NWD.



ROBERT BROWN	
(Name of applicant(s))	
(Date)	(Signature of applicant(s) or agent)
(FOR OFFICE USE ONLY)	
NOV 05 1987	
Date Issued	
Date Amended	Regional Waste Manager
Appendix A-1 to Permit No. PR-7765	
Approval No.	



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

APPENDIX B-1

to Permit No. PR-7765

A. SITE PREPARATION AND RESTORATION

Provision of fencing, site access, vehicle safety barriers, surface water diversionary works, firebreaks and site restoration as required, shall be carried out to the satisfaction of the Regional Waste Manager.

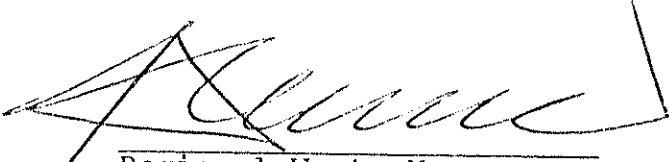
Provide a locked gate on the access road to the landfill and/or take any other measures necessary to prevent the discharge of unauthorized refuse at the site.

B. LANDFILL OPERATION

- (1) The Permittee shall maintain the landfill authorized in Appendix 01 as a Level "D" operation in accordance with the Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia, dated September, 1975, which, in normal conditions, requires that cover material be applied once per 20 days of operation and at least once per month. The Regional Waste Manager may vary the frequency of covering when freezing conditions adversely affect normal operation.
- (2) A berm of inert relatively impermeable material shall be placed around the outer edge of the filled area. This berm shall be a minimum of 2 metres wide.
- (3) The following wastes shall not be discharged at the site:
 - (a) Food wastes and other putrescible refuse such as that originating from private dwellings, restaurants; farms, commercial operations and institutions;
 - (b) Hog fuel, sawdust, wood chips or shavings;
 - (c) Bulky wastes such as furniture, household appliances, car bodies and car parts;
 - (d) Liquid or semi-solid wastes resulting from residential, commercial or industrial operations;
 - (e) Gypsum board;
 - (f) Metals, except for minor quantities that are intimately associated with demolition debris such as reinforcement steel embedded in concrete;

Date Issued NOV 05 1987

Date Amended _____


Regional Waste Manager



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

APPENDIX B-2

to Permit No. PR-7765

B. LANDFILL OPERATION Cont'd...

(3) Cont'd...

- (g) Wood treated with anti-sapstain chemicals or other wood preserving chemicals;
 - (h) Asbestos;
 - (i) Special Wastes as defined by the proposed regulations under the Waste Management Act;
 - (j) Any other waste not covered by Section (d) of Appendix 01 of this Permit unless permission has been obtained in writing from the Regional Waste Manager.
- (4) An attendant shall be present whenever waste is being discharged in order to monitor the quality of the waste. Any unauthorized refuse shall be removed from the site and disposed of to a site and in a manner approved by the Regional Waste Manager.
- (5) Maintain a buffer zone of at least 10 metres between the landfill and any ditches or other watercourses.

C. LEACHATE

Should monitoring data or other information obtained by Waste Management indicate that toxic leachate is escaping from the landfill, the Permittee shall install works to collect and treat the leachate to a degree that it is no longer toxic prior to its release into the receiving environment.

D. GROUNDWATER OBSERVATION AND MONITORING WELLS

If required by the Regional Waste Manager, the Permittee shall install not more than 8 groundwater observation wells. The number, locations and structural details of these facilities are subject to the approval of the Regional Waste Manager.

E. SURFACE DRAINAGE

Surface drainage shall be diverted away from the landfill and completed sections of the landfill shall be properly graded to allow drainage from and prevent ponding on the surface of the landfill.

Date Issued NOV 05 1987

Date Amended _____


Regional Waste Manager



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

APPENDIX C-1

to Permit No. PR-7765

MONITORING

The following monitoring program shall be undertaken by the Permittee. The Regional Waste Manager may modify the program based on results submitted as well as any other data obtained by Waste Management.

1. SAMPLING SITES

Sampling sites shall be located as follows:


<u>Site Nos.</u> <u>(as shown on Appendix A-1)</u>	<u>Location</u>
1	Ditch on south side of the railway adjacent to the western edge of the landfill
2	Ditch on south side of the railway adjacent to the eastern edge of the landfill

2. GRAB SAMPLING

The Permittee shall obtain grab samples from Site Nos. 1 and 2 once every three months. After one year of operation, the sampling frequency shall be reduced to once per year. Proper care should be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc.

Date Issued NOV 05 1987

Date Amended _____


Regional Waste Manager



MINISTRY OF ENVIRONMENT AND PARKS
WASTE MANAGEMENT BRANCH

APPENDIX C-2

to Permit No. PR-7765

MONITORING Cont'd...

3. ANALYSES

Obtain analyses of the samples for the following:

- (1) pH;
- (2) Total and dissolved cadmium, mg/L;
- (3) Total and dissolved copper, mg/L;
- (4) Total and dissolved calcium, mg/L;
- (5) Total and dissolved chromium, mg/L;
- (6) Total and dissolved iron, mg/L;
- (7) Total and dissolved lead, mg/L;
- (8) Total and dissolved magnesium, mg/L;
- (9) Total and dissolved manganese, mg/L;
- (10) Total and dissolved zinc, mg/L;
- (11) Chemical oxygen demand, mg/L;
- (12) Phenols, mg/L;
- (13) Dissolved sulphate, mg/L;
- (14) Total sulphide, mg/L.

Analyses are to be carried out in accordance with procedures described in the second edition (February, 1976) of "A Laboratory Manual for the Chemical Analysis of Waters, Wastewaters, Sediments, and Biological Materials", or by suitable alternative procedures as approved by the Regional Waste Manager.

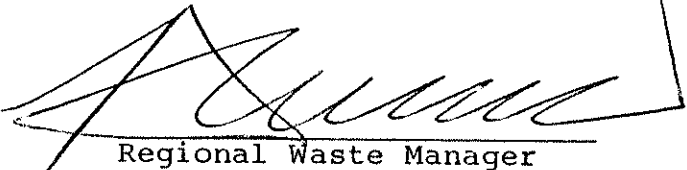
Copies of the above mentioned manual are available from the Environmental Laboratory, 3650 Wesbrook Crescent, Vancouver, British Columbia, V6S 2L2, at a cost of \$25.00 and are also available for inspection at all Waste Management Offices.

4. REPORTING

Maintain data of analyses for inspection and submit the data, suitably tabulated, to the Regional Waste Manager for the previous year. The first report is to be submitted by December 31, 1988.

Date Issued NOV 05 1987

Date Amended _____


Regional Waste Manager