

Pollution Control Branch, File No. AR-5117DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCHMAR 8 1978
AR-5117

POLLUTION CONTROL BRANCH

APPLICATION FOR A PERMIT UNDER THE
POLLUTION CONTROL ACT, 1967

(Refuse)

This application is to be filed with the Director of Pollution Control, Parliament Buildings, Victoria, B.C. Any person who qualifies as an objector under section 13 (2) of the *Pollution Control Act, 1967* may, within 30 days of the date of application, or within 30 days of the date of publication in *The British Columbia Gazette* or in a newspaper, or, where service is required, within 30 days of the serving of a copy of the application, file with the Director an objection in writing to the granting of a permit, stating the manner in which he is affected. Those who do not so qualify may file with the Pollution Control Board an objection in writing under section 13 (6), in the same manner and time period as described above.

1. I, Cowichan Valley Regional District

(Full name—if a company, British Columbia registered name)

of 137 Evans Street, Duncan, B.C.

(Address—if a company, British Columbia registered address)

hereby apply to the Director for a permit to discharge refuse from A. thermal reduction
plant (Domestic garbage incinerator)

(Source of refuse)

located at Koksilah Road, 1½ miles south of Duncan, B.C.

(General location)

and give notice of my application to all persons affected.

2. The refuse-disposal site shall be located at

LOT 117-2, Section 10, Range 7, Plan 2382 OS, Quamichan District

(Give legal description)

Cowichan Indian Reserve #1which is approximately 1½ miles south of City of Duncan,Koksilah Road

(Describe location relative to some surveyed or commonly known point)

3. The type of refuse to be discharged shall be Inert Residue from incineration and typical
non combustible municipal type refuse

(Municipal, industrial, inert, etc.)

4. The quantity of refuse to be discharged shall be as follows:

Average daily discharge (based on operating period) 22 yards per day total(12 yds³ of incinerator residue + 10 yds³ of non combustible refuse)

(Cubic yards as delivered to refuse disposal site)

The operating period during which the refuse will be discharged shall be

Continuous - 7 days per week

(Continuous, days per week, date to date, etc.)

5. The nature or characteristics (in per cent by weight) of the refuse to be discharged is estimated to be as follows:

Incinerator ash -Non Combustible refuseMetals - 22%Glass - 42%Concrete - 50%Unburned combustibles - 1%Demolition waste - 50%Fines - 35%

6. The type of treatment to be applied to the refuse is as follows:

Landfill as directed7. I, R.D. Keir, Administrator

(Name and title of official of regional district)

hereby certify that a copy of this application has been received by the Regional District of Cowichan
Valley

(Signature of official)

8. This application, dated on the 2nd day of March, 1978, was posted
on the ground in accordance with the Pollution Control Regulations.

(Signature of applicant or agent)

Administrator

PC86-0

File: 0262100-AA-5116

Date: June 26, 1978

From: Municipal Division
Coastal Section (JWAD)

TECHNICAL ASSESSMENT FOR PERMIT APPLICATION

Application on behalf of Cowichan Valley

Regional District dated March 2, 1978 (Koksilah Road)

1. SOURCE

The refuse will be from the City of Duncan, the District of North Cowichan and Electoral Areas A,B,C,D, & E of the Cowichan Valley Regional District.

2. TREATMENT

The refuse will be burned in two controlled air multi-chamber type incinerators designed for that purpose.

3. RECEIVING ENVIRONMENT

The site is in a relatively protected area where winds are frequent but usually light. Inversions seldom occur except during winter, however, this is also the period of frequent precipitation which would assist in removing air borne pollutants.

4. MONITORING

Particulate testing twice annually per R/M recommendation.

5. ASSESSMENT

Properly operated incinerators at the proposed location should not cause pollution of the atmosphere.


J.W.A. Donald

JWAD/cad

File: 0262100-AA-5116

Date: June 26, 1978

From: Municipal Division
Coastal Section (JWAD)

WORKSHEET FOR PERMIT APPLICATION

Application on behalf of the Cowichan Valley

Regional District dated March 2, 1978 (Xoksilah Road)

PER APPLICANT

Estimated population to be served - 34,000

FROM TESTS DONE FOR ENVIRONMENT CANADA

Refuse produced per capita - approximately 2 lbs. (Does not include demolition & non-combustible type waste.)

$$\text{At 2 lbs/cap.} = \frac{34,000 \times 2}{2,000} = \underline{34 \text{ tons/day}}$$

Units proposed are capable of 50 tons per day total. Model C-1200.

Emissions - From tests on existing unit by P.C.B. (Model C-760) were -
approximately 3,000 - 3,500 s.c.f.m.

Pro Rating New Units (C-1200 vs. C-760)

$$2 \times \frac{1,200}{760} \times 3,500 = 11,000 \text{ s.c.f.m. Maximum}$$

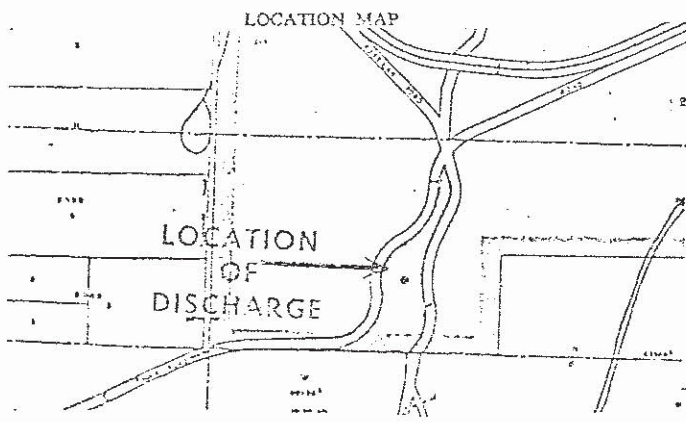
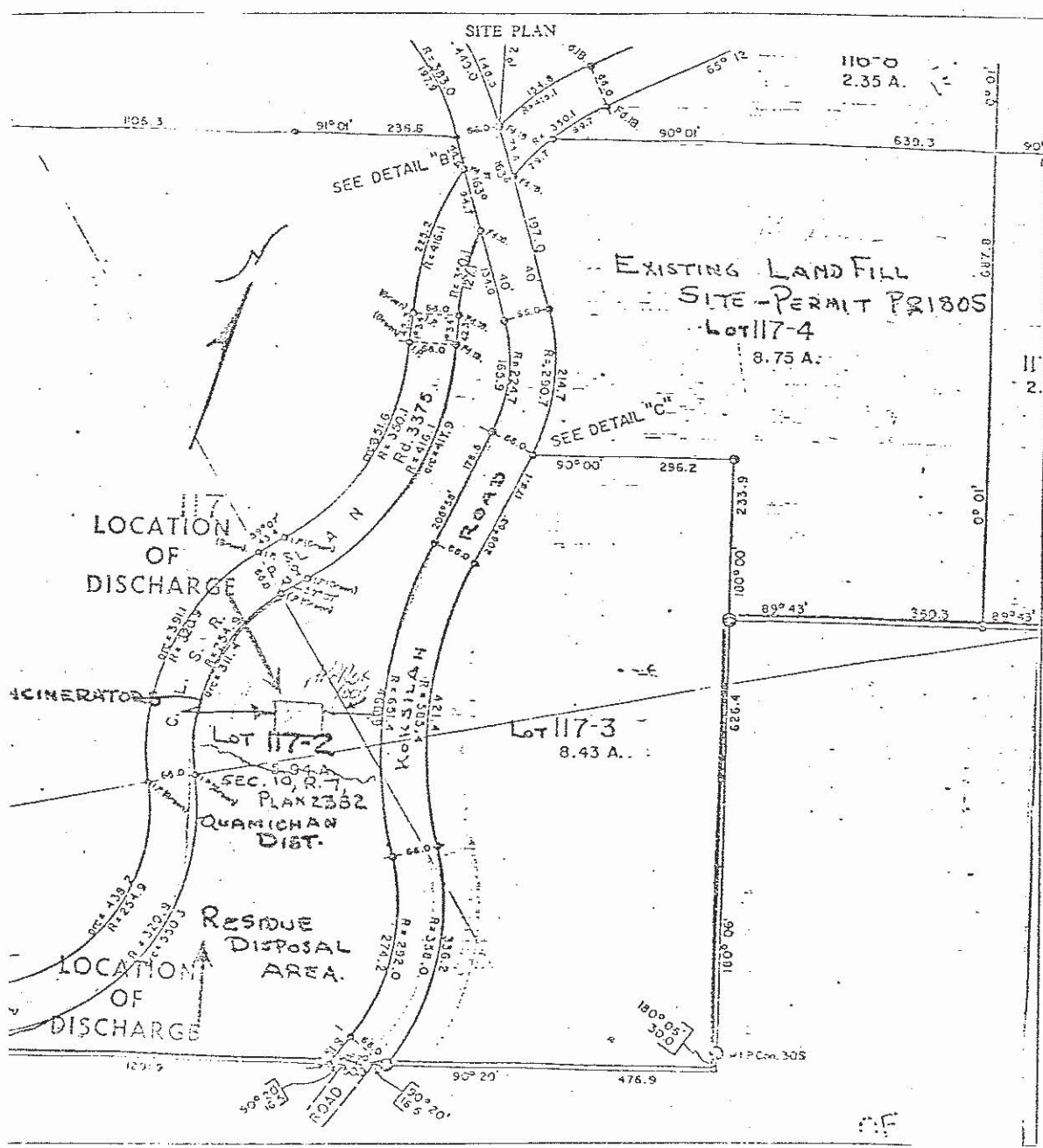
Permit quantity should be revised from 10,000 s.c.f.m. to 2 units at 7,500 each. (Applicant has requested this be done.)


J.W.A. Donald

JWAD/cad



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH



CUCHING VALLEY ROAD DISTRICT
(Name of applicant(s))
FEB 14 1975
(Date)
(Signature of applicant(s) or agent)
(FOR OFFICE USE ONLY)
(Date issued) (Director of Pollution Control)
Appendix A to Permit No. 117-4

MAJOR

File: 0262100-AA-5116

Date: June 26, 1978

From: Municipal Division
Coastal Section (JWAD, PNB)

RESUME FOR PERMIT APPLICATION

Application on behalf of the Cowichan Valley

Regional District dated March 2, 1978 (Koksilah Road)

1. APPLICATION

The application requests authority to discharge a maximum of 10,000 s.c.f.m. of gases into the air from a thermal reduction plant located approximately 1 1/2 miles south of the City of Duncan on the Cowichan Indian Reserve #1 known as the Koksilah Road site.

Operation to be 7 days per week, 8 hours per day to dispose of typical municipal refuse by means of multi-chambered, controlled air incineration. Characteristics of the discharge would be - Particulates 0.1 GR/s.c.f.m. @ 12% CO₂ max. with Opacity of Ringlemann 1 for 95% of the operating period & Ringlemann 2 for 5%.

2. AMENDMENTS

The applicant has advised that the quantity of 10,000 s.c.f.m. requested was based on preliminary planning. As North Cowichan has now decided to transport all of their refuse to this site the proposed "works" now require 2 larger incinerator units.

These units could emit a maximum of 7,500 s.c.f.m each and it has been requested that the application be amended to show this.

3. HISTORY

An incinerator and disposal site known as Herd Road site were registered by the District of North Cowichan, December 1970, Reg. No. 17-10-11.

By pre-order letter of June 20, 1975 they were requested to submit an application for permit to cover the discharge.

Two applications were submitted dated October 21, 1975, AA-4358 for the air and AR-4216 to cover the landfill disposal of residue and non-combustible refuse.

Some concerns were expressed by the agencies and a resident adjacent to the site objected strongly, based on past experience, to the proposed operation. This was not a formal objection due to the time deadline being passed.

When the applications were submitted the accompanying letters advised that the applicant planned to request the Regional District of Cowichan Valley to carry out a study of refuse disposal on a regional basis.

In February 1976 we were advised that such a study was to be done and by letter March 23, 1976 the applicant was notified that processing would be held pending completion and consideration of the study.

.../2

A copy of the report, prepared by Underwood McLellan and Associates was received December 1, 1976 and by letter December 3, 1976 the Regional District indicated they intended to follow the general recommendations of the study and were preparing prices for three incinerators at separate sites per the report.

Our letter of February 17, 1977 urged that the Regional District submit their applications as soon as possible to try to avoid delays in their proposed program due to our normal processing period.

Apparently some difficulty was encountered in obtaining the desired sites and by letter December 7, 1977 the Regional District stated they expected to be able to submit applications before the end of the year. They also noted that their planning had changed and two of the sites were to be combined into one adjacent to the existing Koksilah Road site which is the location of the subject application.

As it was considered that neither the existing incinerator nor the landfill site at Herd Road, covered by the District of North Cowichan applications AA-4358 & AR-4216, could meet P.C.B. Objectives and as the Regional District was to take over the refuse disposal function, both of these applications were refused on January 17, 1978. Discharge is to cease when so instructed by the Regional Manager.

Permit PR-1805 was issued July 9, 1973, to the City of Duncan authorizing a landfill operation at a site on the Cowichan Indian Reserve #1 adjacent to Koksilah Road. Although there has been no request for amendment it has been reported that the site is now operated by the Regional District.

The subject proposed site is across Koksilah Road from the Permitted PR-1805 site.

4. ADMINISTRATIVE ASPECTS

The application was said to have been posted. It was circulated to the usual agencies including Environment Canada and it was published.

The publishing notices appeared in the B. C. Gazette on April 27, 1978 and in the Cowichan Leader April 26, 1978. The deadline for notification of publishing was May 1, 1978. Although due to some internal delay the notification was not dated until May 5, 1978, we were notified verbally that publishing had been carried out.

The application may therefore be considered as meeting regulations.

A complementary application has been received, AR-5117, to cover the disposal of the incinerator residue and other non-combustible refuse.

4. POLICY

The proposed discharge will meet the requirements of the "Objectives" section 4 - Refuse and Sludge Incineration.

6. AGENCY COMMENTS

Environment Canada has no objection.

Health Branch has no objection.

Water Rights and Recreation and Conservation are not involved.

7. OBJECTORS

There is one recognized objection from Mr. & Mrs. Bodden who referred to operation of the existing refuse disposal site PR-1805 as there was open burning carried out apparently until the Regional District took over operation. They seem to fear that the proposed incineration will produce the same problems of smoke & odour.

.../3

8. REGIONAL MANAGER'S REPORT

The Regional Manager has no objections and notes that the installation will be similar to the one on Permit PA-2844 at the Village of Lake Cowichan. The report also notes that the closest residence is about ½ mile distant.

9. SECURITY

None required - Regional District Authority.

10. DISCUSSION OF TECHNICAL ASPECTS

The proposed incinerators (2) will be the same as the unit installed under Permit PA-2844, except that they will each have greater capacity and, with automatic ash removal, they could readily be operated on a 12 hour per day basis, if necessary. It is expected that this would give them a potential of disposing of some 50 tons per day total.

The unit noted above on Permit PA-2844 has operated quite satisfactorily. Several well organized and controlled tests have been carried out by P.C.B. and independantly for Environment Canada. Although some operational and mechanical difficulties were encountered the unit has in general met the Permit requirements. The opacity of the emission has been found to be well below Permit requirements whenever observations have been made.

refer →
Section
Amend
The testing found that the quantity of emissions to the air was much lower than authorized by the Permit, however, the present request for a quantity of 10,000 s.c.f.m. may be slightly low for the two proposed units operating together and should probably be increased to 15,000 s.c.f.m. These tests also found that the quantity of refuse produced per capita was much less than is usually estimated and used for sizing of equipment for disposal. (See worksheet.)


The site is adjacent to the existing landfill disposal site operated under Permit PR-1805 and is partially screened from view from the roadway. Is is about ½ mile to the closest residence.

It would appear that the only objector does not understand that the proposed incinerator will not produce the smoke and odours which caused so such nuisance when open burning was practiced at the landfill PR-1805.



11. RECOMMENDATIONS

If it is decided not to hold a hearing it is recommended that:

- (a) A Permit be issued in accordance with the amended application.
- (b) The emission be monitored twice annually for particulate content.
- (c) The objector be notified of the decision.


J.W.A. Donald

JWAD/cad

APPROVED		
PROCESS	INITIAL	DATE
ENGINEER		June 23
SEC. HEAD		July 4
DIV. CHIEF		



Province of
British Columbia

Ministry of
The Environment

1106 Cook Street
Victoria
British Columbia
V8V 1X4
Phone: 387-5321

POLLUTION CONTROL BRANCH

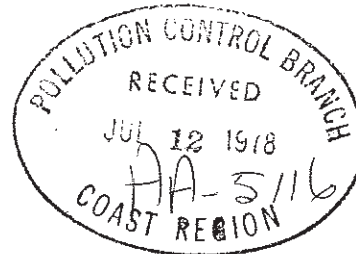
Handwritten signatures and initials
8 file

YOUR FILE

OUR FILE 0262100-AA-5116

July 12, 1978

s.22



Dear Sir and Madam:

Application pursuant to Pollution Control Act
on behalf of Cowichan Valley Regional District
dated March 2, 1978

Following your letters of May 8, 1978, acknowledged on May 18th, processing of the subject application is complete and we propose recommending issuance of a permit.

This letter is being written to you as your objection leads us to believe the proposal may not have been adequately explained to you. Burning at garbage dumps may be 'open burning' which you mention used to be practiced and which we do not permit or by various standards of incinerators. The application in question is to allow the existing incinerator at Herd Road, North Cowichan, which does not satisfactorily control smoke emissions, to be replaced by a high grade incinerator from which smoke will not normally be visible. Such an incinerator has been in existence to serve the Village of Lake Cowichan area, and its location is shown on the attached sketch should you wish to visit it.

In order not to delay matters unreasonably, we intend to put forward our recommendation on Friday, July 21st. Please write or telephone by then (387-5321) if you believe there is some basis for your concern which we are not understanding.

Yours very truly,

Handwritten signature: J.W.A. Donald
J.W.A. Donald, P.Eng.
Coastal Section
Municipal Division

JEDJ:ce

Attachment

c.c. Regional Manager - Coast ←
Cowichan Valley Regional District
Attn: Mr. D.C. Leeman, Supt. of Public Works



To: Director

Date: August 3, 1978

File: 0262100-AA-5116
-AR-5117

Re: 78M - 055 - Cowichan Valley Regional District - Koksilah Road
Site (JWAD, PNB)

This is considered a major scheme in that ^{there is} one objector, s.22
s.22 . The basis of their objection was past
operating experience at PR-1805 which serves the City of Duncan, wherein
open burning was formerly practiced. They are afraid of a return to
similar conditions.

The proposed twin units will serve the entire area and we expect PR-1805
may be retained for future ash disposal, white goods and derelict vehicles
for SAM. See Appendix "A" for drawing.

The Branch's position was explained by letter of July 12, 1978 and no
response has been received. A hearing decision is required but documents
have been prepared on the assumption a hearing will not be held.

P. N. Bardal, P. Eng
Head, Coastal Section
Municipal Division
Pollution Control Branch

PNB/cad

*Agreed no hearing warranted.
True per PNB + L.T. as per
memo. JPB
9/8/78*



YOUR FILE

OUR FILE 0262100-PA-5116

AUG 14 1978

s.22

Application for Permit Pursuant to Pollution
Control Act on behalf of Cowichan Valley
Regional District

The subject application, to which you objected, has now been adjudicated, and this letter is to inform you of the decisions that have been made.

Firstly, that the information available to us in this instance, including your correspondence, was sufficient to provide a reasonable assessment of the circumstances surrounding this discharge, and that a hearing based on your objection would not materially add to this information. Therefore, a hearing will not be held.

Secondly, that in view of the measures to be provided to control pollution, a Pollution Control Permit would be issued on this date.

You may examine a copy of the Permit at our Regional Office located at 1106 Cook Street, Victoria, British Columbia, V8V 1X4 or a copy will be sent to you upon request.

Yours very truly,

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



YOUR FILE

OUR FILE 0262100-PA-5116

AUG 14 1978



DOUBLE REGISTERED

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

Gentlemen:

LETTER OF TRANSMITTAL

Enclosed is a copy of Pollution Control Permit No. PA-5116 in the name of the Cowichan Valley Regional District. Your attention is respectfully directed to the terms and conditions outlined in the Permit.

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

A. OPERATION OF THE INCINERATORS

At all times during the operation of the incinerators covered by this Permit, the temperature of the stack gas as measured at a point approved by the Regional Manager shall be a minimum of 1800°F.

B. SAMPLING AND MONITORING

The attached Sampling and Monitoring Program dated August 2, 1978 shall be undertaken by the Permittee and the results thereof submitted to the Director. The need for increased or decreased monitoring will be based on the results submitted as well as any other data obtained by the Pollution Control Branch in connection with these discharges.

C. ODOUR CONTROL

In the event that the proposed incinerator facilities do not adequately control odours, additional treatment works will be required to meet with the approval of the Director of the Pollution Control Branch.

D. SITE PREPARATION

Provision of fencing, site access, surface water diversionary works and site rehabilitation, if required, shall be carried out to the satisfaction of our Regional Manager.

.../2

E. ASH DISPOSAL

Conduct a landfill operation such that all exposed incinerator ash is covered at least once for each 14 days of incinerator operation.

Other aspects relating to the disposal of solid wastes shall be in accordance with the "Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia", dated September, 1975 or as otherwise may be ordered by the Director from time to time.

F. MAINTENANCE OF WORKS

Inspect regularly the pollution control works and maintain them in good working order. Notify the Director of any malfunction of these works.

G. PLANS

Plans and specifications of the proposed works authorized in Appendices 01, 02, and 03 shall be submitted to the Director in duplicate and approval obtained before construction of such works commences. It should be noted that Section (g) of these Appendices requires construction to be in accordance with approved plans.

You will note that values have been expressed in the International System of Units (SI). You are encouraged to use these units 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 1106 Cook Street, Victoria, British Columbia, V8V 1X4 (telephone 387-5321). 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.

.../3

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 Section 3 of the "Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia" relative to solid waste landfills.

Yours very truly,



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

Encl.

File: 0262100-PA-5116

Date: August 2, 1978

Page 1 of 2

SAMPLING AND MONITORING PROGRAM

Cowichan Valley Regional District
Refuse Incinerators
Koksilah Road
Duncan

The following sampling and monitoring program shall be undertaken by the Permittee:

1. Discharge (Incinerator Stacks)

- (a) The stack gas temperatures shall be continuously monitored and recorded on a suitable permanent chart.
- (b) Once per month submit to the Director:
 - (i) the daily recorded stack gas temperature charts
 - (ii) hours of incinerator operation for the previous month.
- (c) Twice each year sample each stack discharge authorized by Appendices 01 and 02 and determine the particulate matter concentration in grains/SCF corrected to 12% CO₂ (mg/mol). The tests should be performed under normal operating conditions and for such duration as to be representative of the normal operation

The Regional Manager is authorized to vary the frequency of the testing after the first full year's operation of the incinerator unit.

- (d) On the day of sampling, measure the average daily rate of discharge in SCFM (mol/s) from each stack.
- (e) Submit to the Director on completion the monitoring results from (c) and (d) above.

The source testing procedures for the determination of particulate concentration and the rate of discharge (flow rate) are to be carried out in accordance with those procedures described in the fourth edition (August, 1976) of "Source Testing Manual for the Determination of Discharges to the Atmosphere". Alternative test methods may be used provided that the alternative methods are approved by the Director prior to performing the actual source testing.

Copies of the above mentioned manual are available from the Pollution Control Branch, 1106 Cook Street, Victoria, British Columbia, V8V 1X4, at a cost of \$7.50. The manual is also available for inspection at all Pollution Control Branch offices.

2. Sampling Facilities

Electrical and pneumatic outlets, and where required, approved access ladders and platforms are to be adequately sized, appropriately located and near the sampling ports for the emissions covered by Appendices 01 and 02 such that Pollution Control Branch personnel may monitor the discharge.

Specifications of the sampling ports are to conform to those described in the fourth edition (August, 1976) of "Source Testing Manual for the Determination of Discharges to the Atmosphere". Alternative specifications may be used when approved by the Director.

3. Discharges (Stacks)

Visual monitoring of the stack discharges authorized by Appendices 01 and 02 may be carried out by the Pollution Control Branch as part of an ambient monitoring program. Based on these monitoring results, the Regional Manager may, at his discretion require that source monitoring be undertaken by the Permittee.



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

PERMIT

Under the Provisions of the Pollution Control Act, ~~1967~~ ~~1977~~

..... Cowichan Valley Regional District

..... 137 Evans Street, Duncan, British Columbia, V9L 1P5

is hereby authorized to discharge contaminants to the air

from and the ancillary refuse to the ground

..... two municipal refuse incinerators

located one and one half miles south of the City of Duncan

to

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

..... 01, 02, 03 and A

.....
Assistant Director of Pollution Control

Date issued..... AUG 14 1978 19.....

Amendments dated....., 19.....

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

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

Permit No. PA-5116.....



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

APPENDIX No. 01

to Pollution Control Permit No. PA-5116

(a) The discharge or emission of contaminants into the air applicable to this appendix is from a municipal
(Source or operation)
refuse incinerator identified as A

as shown on attached Appendix A.

(b) The rate of discharge or emission (dry basis) authorized is:

Maximum 7,500 SCFM Duration one hour/day Frequency once per day

(147 mol/s)
Average daily (based on the operating period) 6,000 SCFM (118 mol/s) - the normal operation
period is 8 hours per day, 7 days per week.

(c) The characteristics of the contaminants shall be equivalent to or better than

Contaminant	Average daily concentration based on the daily operating period	Maximum Concentration	Duration	Frequency
Particulates	0.10 gr/scf (5.5 mg/mol)	0.10 gr/scf	8 hours/day	7 days/week
	<u>12% CO₂</u>	5.5 mg/mol	<u>(230 mg/m³)</u>	
Opacity	Maximum equivalent opacity	20%	95% of the operating time	
	Maximum equivalent opacity	40%	5% of the operating time	

(d) The works authorized are a proposed municipal type refuse incinerator and
related appurtenances

approximately located as shown on the attached Appendix A.

(e) The land from which the discharge originates and to which this appendix is appurtenant is Lot 117-2,
Section 10, Range 7, Plan 2382 OS Quamichan District - Cowichan Indian Reserve #1

(f) Those works authorized and proposed must be completed and in operation when discharge commences.

(g) The authority to discharge or emit air contaminants under this Permit is contingent upon the authorized works having been constructed as per final construction plans approved in accordance with the Pollution Control Act, 1987.

Date issued AUG 14 1978, 19

Date amended, 19

, 19

Assistant Director of Pollution Control



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

APPENDIX No. 02

to Pollution Control Permit No. PA-5116

(a) The discharge or emission of contaminants into the air applicable to this appendix is from a municipal refuse incinerator identified as B
(Source or operation)

as shown on attached Appendix A

(b) The rate of discharge or emission (dry basis) authorized is:

Maximum 7,500 SCFM Duration one hour/day Frequency once per day
(147 mol/s)
Average daily (based on the operating period) 6,000 SCFM (118 mol/s) - the normal
operating period is 8 hours per day, 7 days per week.

(c) The characteristics of the contaminants shall be equivalent to or better than

Contaminant	Average daily concentration based on the daily operating period	Maximum Concentration	Duration	Frequency
Particulates	0.10 gr/scf (5.5 mg/mol)	0.10 gr/scf	8 hours/day	7 days/week
	<u>12% CO</u>	5.5 mg/mol		
Opacity	maximum equivalent opacity	20%	95% of the operating time	
	maximum equivalent opacity	40%	5% of the operating time	

(d) The works authorized are a proposed municipal type refuse incinerator and related appurtenances

approximately located as shown on the attached Appendix A

(e) The land from which the discharge originates and to which this appendix is appurtenant is Lot 117-2, Section 10, Range 7, Plan 2382 OS, Quamichan District, Cowichan Indian Reserve #1.

(f) These works authorized and proposed must be completed and in operation when discharge commences.

(g) The authority to discharge or emit air contaminants under this Permit is contingent upon the authorized works having been constructed as per ~~FOR YOUR INFORMATION~~ plans approved in accordance with the Pollution Control Act, 1967.

Date issued AUG 14 1978, 19

Date amended, 19
19

Assistant Director of Pollution Control



DEPARTMENT OF ENVIRONMENT
WATER RESOURCES SERVICE
POLLUTION CONTROL BRANCH

APPENDIX No. 03
to Pollution Control Permit No. PA-5116

- (a) The discharge of refuse applicable to this appendix is to Lot 117-2, Section 10, Range 7, Plan 2382 OS, Quamichan District, Cowichan Indian Reserve #1
as shown on the attached Appendix A
- (b) The quantity of refuse which may be discharged is 12 cubic yards (9.2 m^3) of incinerator residue and 10 cubic yards (7.6 m^3) of non-combustible refuse per day.
- (c) The type of refuse which may be discharged is domestic refuse incinerator residue and non-combustible refuse from municipal sources.
(Municipal, industrial, etc.)
- (d) The nature or characteristics of the refuse which may be discharged are residue resulting from the incineration of typical municipal solid waste and other non-combustible municipal refuse.
- (e) The works authorized are landfill operation as directed
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 the City of Duncan, the District of North Cowichan and Electoral Areas A, B, C, D and E of the Cowichan Valley Regional District.
- (g) Those works authorized and proposed must be completed and in operation when discharge commences.

Date AUG 14 1978, 19
Amended, 19

Assistant Director of Pollution Control

Sept 18
Costs + full

PERMIT INSPECTION ☒

SAMPLING INSPECTION ☐

Permit No: PA-S116
Name: COW VALLEY R.D.
Location: DUNCAN
Contacted: M. MILLER, D. LEBMAN
Works: _____

Inspected by: RAB
Date: SEPT 18
Weather: SENNY

Items: Flow _____

General	Effluent	Air	Refuse
Housekeeping _____	Colour _____	Ring. _____	Cover _____
Flow Measur. _____	Turbid. _____	Temp. _____	Odour _____
Sampling Fac. _____	pH _____	Colour _____	Leach. _____
Records _____	Resid. Cl ₂ _____	Particulate _____	L. Colour _____
Monitoring _____	Floatables _____	_____	L. Odour _____
_____	Odour _____	_____	_____
_____	D.O. _____	_____	_____

Comments: Roofings + walls have been poured + building will be
installed in 1-2 weeks and incinerators will be on site by
end of Sept. The facility will have 3 units. One unit
will have a large capacity churning hopper (120 T³) to be used
for large objects such as dead animals. An amendment will
be required to the permit (to add another Appendix) since only
2 units are presently authorized. The facility is designed
to accept another unit should the need arise. Expect operation by Nov.
This facility will operate 7 days/week (8 hrs/day) with 3 men

Plans submitted: not yet

Monitoring submitted: not due

Instructions left with Permittee: ① submit plans ② install temp
recorder ③ evaluate sampling consultants

Status of Permit: 1/c

Action recommended: None at this time. See well sampling
proposal discussed on inspection report for PA-S116

Signed

R. Bellas

June

① For 1st year he should do the testing as outlined on the permit (note: only 2 increments are covered by the permit) Therefore only those units should be tested

② When you are talking to him can you advise that when he chooses a consultant that we would like to talk to the consultant before the test to talk about problems that we have experienced in the past

- MAR 27 - phoned me & related this to him

Permit No: PA 5116
Name: COWICHAN VALLEY REG. DIST.
Location: DUNCAN

Insp. by: D. MCLAREN
Date: MARCH 6/80
Weather: Sunny

Contacted: MEL MILLAR
Works: 3 municipal refuse incinerators (consummat)

Items: Flow

General	Effluent	Air	Refuse
Housekeeping <u>excellent</u>	Colour	<u>opacity</u> <u>< 20%</u>	Cover
Flow Measur.	Turbid.	Temp. <u>1600-1700°F</u>	Odour
Sampling Fac.	pH	Colour <u>white</u>	Leach.
Records <u>-NO</u>	Resid. Cl_2	Particulate	L. Colour
Monitoring <u>-NO</u>	Floatables	<u>some flyash</u>	L. Odour
	Odour		
	D.O.		

Comments: - all 3 incinerators have been used since mid-February & due to the heavy demand they are operating ~ 9 hours per day, 7 days per week.
A Rustrak temperature recorder is on one unit only & recorders for the others are on their way.
Emissions from the 3 units appeared to be in compliance - max. opacity observed was ~ 20%
The incinerators were operating at temperatures between 1600°F - 1700°F. They have been experiencing over

Plans submitted:

Monitoring submitted:

Instructions left with Permittee: - send plans of incinerator
- Mel will see if he has a spare operators manual he can send us.

Status of Permit: o/c - temperatures below 1800°F
on all 3 incinerators
- plans have not been received prior to construction of works.

Action recommended: none

- amendment required to add 3RD unit however lets not do this until we have observed the other 2 units for one year in case we want to change the LOT based on our experience

RAB

Signed D. McLaren

Central Registry

problems with fuel pressure to the burners & will be changing the fuel feed setup to provide recommended pressures.

These units are similar to the Lake Cowichan one except they have modulated air to the lower chamber and a forced air supply to the upper chamber with a manual control.

~~The units are handling a 12-13 tons per day of refuse each.~~

The refuse site was checked - The gully into which the residue is being deposited was dry. The residue is not being covered every 14 days as required in the permit.

The necessity for this is questionable as 99.9% of the residue is inert and the continual traffic on the surface compacts it into a very hard concrete like condition.

Platforms for stack testing have not yet been constructed. Mel wanted to know if all 3 incinerators must be tested twice per year. (?)

PA-5116 ✓
PA-5118

July 8, 1980

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

Attention: Mr. D. Leeman

Gentlemen:

Re: Pollution Control Permit PA-5116 on behalf of
Cowichan Valley Regional District dated August 14, 1978

The subject permit allows the discharge of contaminants from two municipal refuse incinerators identified as A & B at your Koksilah Road location. We would request that you make application to amend the existing permit to incorporate the third incinerator into the permit. I have attached the forms you will need for this.

Also, this permit and your permit PA-5118 which covers your Peerless Road incinerator both require testing of the incinerator stack discharges twice per year.

We would expect this semi-annual testing requirement to come into effect upon start up of each unit. Therefore the first tests were due in May 1980 for the Peerless Road incinerator and mid-August for the Koksilah Road incinerator.

We would request the results from these tests be submitted as soon as they are available.

Yours very truly,



D. A. McLaren
Vancouver Island Region

DANCL/bg

Encl.

cc. R. A. Bollans

5116

July 14, 1980

Environmental Protection Service
Kapilano 100
West Vancouver, British Columbia
V7T 1A2

Attention: Mr. D. Poon, P.Eng.

Gentlemen:

The following information is relative to your recent request concerning the North Cowichan and Powell River municipal incinerators:

a) North Cowichan

- 1978 throughput of 5600 tons (est.)
- incinerator has been permanently shut down

b) Powell River

- 1978 throughput of 9700 tons (est.)
- unit still in operation under permit PR-509
- test results from March 1973 sampling by Pollution Control Branch were .39 gr/SCF (at 12% CO₂)

If you need any additional information please do not hesitate to contact me.

Yours very truly,

R. A. Bollans, P.Eng.
Vancouver Island Region

RAB/bg

File: PA-5116
Date: November 24, 1980
From: Coastal Unit, (JWAD)
Pollution Control Section
Waste Management Branch

RESUME FOR PERMIT AMENDMENT APPLICATION

Application on behalf of the Cowichan Valley Regional
District, dated July 29, 1980 (Duncan Site)

1. PERMIT

The Permit was issued August 14, 1978 and authorized discharge of 7 500 SCFM (maximum) of combustion gases to the atmosphere from each of two refuse incinerators. Normal operation was to be 8 hours per day, 7 days per week.

The characteristics of the discharge were to be Particulates: 5.5 mg/mol average and maximum. Opacity: maximum 20% - 95% of the operating time
" 40% - 5% " " " " " .

Appendix 03 to the Permit authorized discharge of 9.2 m³ of incinerator residue and 7.6 m³ of non-combustible refuse per day to a landfill operation on the site adjacent to the incinerator installations.

2. APPLICATION

The application requests only the authority to increase the number of incinerator units from 2 to 3.

3. AMENDMENTS

None.

4. HISTORY

The applicant has been disposing of municipal refuse by incineration since shortly after April 3, 1974 when Permit PA-2844 authorized the discharge from the first installation near the Village of Lake Cowichan.

In addition to PA-2844 and the subject Permit, the applicant also holds Permit PA-5118 dated August 25, 1978 authorizing discharge from a unit at a site near Saltair.

With the exception of capacity and some minor variations all units are the same.

5. ADMINISTRATIVE ASPECTS

The application was said to have been posted. It was circulated to Health, Fish and Wildlife, Environment Canada and the Regional Manager but it was not published.

The application is considered to comply with regulations.

6. POLICY

The proposed additional discharge will meet the recommendations of "Objectives" Section 4 - Refuse and Sludge Incineration.

7. AGENCY COMMENTS

Fish and Wildlife and Environment Canada replied that they had no objections. Health Branch advised verbally that they had no objections. (See memo to file).

8. OBJECTIONS

None.

9. REGIONAL MANAGERS' REPORT

The Regional Manager has no objection to the application and suggests only that the monitoring program be revised to include the third unit. (See further under Section 11).

10. SECURITY REQUIREMENTS

None.

11. DISCUSSION OF TECHNICAL ASPECTS

As noted in Section 4 - History, the applicant has had several years experience operating the units.

Although there were objections recognized on both the Duncan and Saltair applications there have been no adverse comments received on either since operations began.

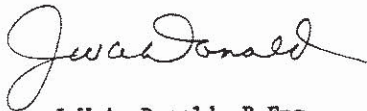
Apparently, according to the Regional Manager's report, the subject unit was installed at the same time as the two authorized by this Permit when issued and all 3 have operated almost continuously (9 hours per day every day) since that time.

No sampling and testing of the discharge has been carried out as required by the monitoring program nor have the facilities for sampling been installed.

As noted by the Regional Manager's report the quantities authorized on Appendix 03 should also be amended to reflect the probable increase (by $\frac{1}{2}$) in ash produced and non combustibles received.

12. RECOMMENDATIONS

It is recommended that the Permit be amended in accordance with the application - increase the number of units from 2 to 3, by addition of Appendix 04 and Appendix 03 be revised to increase the quantities by one half.



J.W.A. Donald, P.Eng.

JWAD:dkb

RM rep. Bolkus requested that particulate testing requirement be retained as no information exists on these discharges. P. de Bauld 15-12-80



Province of
British Columbia

Ministry of
Environment

Waste Management Branch
1106 Cook Street
Victoria
British Columbia
V8V 1X4
Phone: 387-5321



YOUR FILE
OUR FILE PA-5116

FEB 6 1981

CERTIFIED

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

MINISTRY OF ENVIRONMENT

RECEIVED

FEB 16 1981

Gentlemen:

NANAIMO, B.C.

LETTER OF TRANSMITTAL

This is to notify you that Permit No. PA-5116 and Appendices 01, 02 and 03 and A thereto, issued in your name have been amended as of this date and Appendix 04 has been added. Copies of the new and amended documents are enclosed.

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

A. OPERATION OF THE INCINERATORS

At all times during the operation of the incinerators covered by this Permit, the temperature of the stack gas as measured at a point approved by the Regional Manager shall be a minimum of 980°C.

B. SAMPLING AND MONITORING

The attached Sampling and Monitoring Program dated December 31, 1980 shall be undertaken by the Permittee and the results thereof submitted to the Director. After completing the monitoring and reporting requirements of this program for one year the conditions therein may be revised by written instruction of the Regional Manager.

C. ODOUR CONTROL

In the event that the proposed incinerator facilities do not adequately control odours, additional treatment works will be required to meet with the approval of the Director of Pollution Control.

D. SITE PREPARATION

Provision of fencing, site access, surface water diversionary works and site rehabilitation, if required, shall be carried out to the satisfaction of our Regional Manager.

FEB 9 1981

E. ASH DISPOSAL

Conduct a landfill operation such that all exposed incinerator ash is covered at least once for each 14 days of incinerator operation.

Other aspects relating to the disposal of solid wastes shall be in accordance with the "Pollution Control Objectives for Municipal Type Waste Discharges in British Columbia", dated September, 1975 or as otherwise may be ordered by the Director from time to time.

F. MAINTENANCE OF WORKS

Inspect regularly the pollution control works and maintain them in good working order. Notify the Director of any malfunction of these works.

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 1106 Cook Street, Victoria, British Columbia, V8V 1X4 (telephone 387-5321). 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.

Yours very truly,



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

Encl.

MINISTRY OF ENVIRONMENT
RECEIVED
MAR 13 1981
Page 30
NANAIMO, B.C.
MOE-2011-00108

SAMPLING AND MONITORING PROGRAM

Cowichan Valley Regional District Refuse Incinerators,
Koksilah Road, Duncan, British Columbia

The following sampling and monitoring program shall be undertaken by the Permittee:

1. Discharge (Incinerator Stacks)

- (a) The stack gas temperatures shall be continuously monitored and recorded on a suitable permanent chart.
- (b) Once per month submit to the Director:
 - (i) the daily recorded stack gas temperature charts;
 - (ii) hours of incinerator operation for the previous month.
- (c) Twice each year sample each stack discharge authorized by Appendices 01, 02, and 04 and determine the particulate matter concentration in mg/mol corrected to 12% CO₂. The tests should be performed under normal operating conditions and for such duration as to be representative of the normal operation.

The Regional Manager is authorized to vary the frequency of the testing after the first full year's operation of the incinerator unit.

- (d) On the day of sampling, measure the average daily rate of discharge in mol/s from each stack.
- (e) Submit to the Director on completion the monitoring results from (c) and (d) above.

The source testing procedures for the determination of particulate concentration and the rate of discharge (flow rate) are to be carried out in accordance with those procedures described in the fourth edition (August, 1976) of "Source Testing Manual for the Determination of Discharges to the Atmosphere". Alternative test methods may be used provided that the alternative methods are approved by the Director prior to performing the actual source testing.

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 \$10.00. The manual is also available for inspection at all Waste Management Branch Regional Offices.

Cowichan Valley Regional District

PA-5116

December 31, 1980

2. Sampling Facilities

Sampling and access facilities are to be provided and maintained by the Permittee. Electrical and pneumatic outlets, and where required, approved access ladders and platforms are to be adequately sized, appropriately located and near the sampling ports for the emissions covered by Appendices 01, 02 and 04.

Specifications of the sampling ports are to conform to those described in the fourth edition (August, 1976) of "Source Testing Manual for the Determination of Discharges to the Atmosphere". Alternative specifications may be used when approved by the Director.

HPX



MINISTRY OF ENVIRONMENT

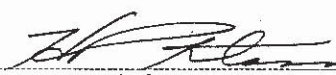
PERMIT

Under the Provisions of the Pollution Control Act, ~~1973~~

Cowichan Valley Regional District
137 Evans Street, Duncan, British Columbia, V9L 1P5
contaminants to the air and
is hereby authorized to discharge the ancillary refuse to the ground
from three municipal refuse incinerators
located two and one half kilometres south of the City of Duncan
XX

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

01, 02, 03, 04 and A


Assistant Director of Pollution Control

Date issued August 14 19 78
FEB 6 1981
Amendments dated 19
19
19

Permit No. PA-5116



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

APPENDIX No. 01

to Pollution Control Permit No. PA-5116

- (a) The discharge or emission of contaminants into the air to which this appendix is applicable is from a municipal refuse incinerator identified as C
(Source or operation)

as shown on attached Appendix A

- (b) The rate of discharge or emission (dry basis) authorized is:

Maximum 147 mol/s Duration one hour/day Frequency once per day

Average daily (based on the operating period) 118 mol/s - the normal operation period is 8 hours per day, 7 days per week.

- (c) The characteristics of the contaminants shall be equivalent to or better than

Contaminant	Average daily concentration based on the daily operating period	Maximum Concentration	Duration	Frequency
Particulates	<u>5.5 mg/mol</u>	<u>5.5 mg/mol</u>	<u>8 hours/</u>	<u>7 days/week</u>
	<u>at 12% CO₂</u>		<u>day</u>	
Opacity	<u>Maximum equivalent opacity</u>	<u>20%</u>	<u>95% of the</u>	<u>operating time</u>
	<u>Maximum equivalent opacity</u>	<u>40%</u>	<u>5% of the</u>	<u>operating time</u>

- (d) The works authorized are a proposed municipal type refuse incinerator and related appurtenances

approximately located as shown on the attached Appendix A

- (e) The land from which the discharge originates and to which this appendix is appurtenant is Lot 117-2, Section 10, Range 7, Plan 2382 OS Quamichan District - Cowichan Indian Reserve #1.

- (f) Those works authorized and proposed must be completed and in operation when discharge commences.

Date issued August 14, 1978

Date amended FEB 6 1981, 19

, 19

Assistant Director of Pollution Control



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

APPENDIX No. 02
to Pollution Control Permit No. PA-5116

(a) The discharge or emission of contaminants into the air to which this appendix is applicable is from a municipal refuse incinerator identified as B (Source or operation)

as shown on attached Appendix A

(b) The rate of discharge or emission (dry basis) authorized is:

Maximum 147 mol/s Duration one hour/day Frequency once per day

Average daily (based on the operating period) 118 mol/s - the normal operation period is 8 hours per day, 7 days per week.

(c) The characteristics of the contaminants shall be equivalent to or better than

Contaminant	Average daily concentration based on the daily operating period	Maximum Concentration	Duration	Frequency
Particulates	5.5 mg/mol	5.5 mg/mol	8 hours/	7 days/week
	at 12% CO ₂		day	
Opacity	Maximum equivalent opacity	20%	95% of the operating time	
	Maximum equivalent opacity	40%	5% of the operating time	

(d) The works authorized are a proposed municipal type refuse incinerator and related appurtenances

approximately located as shown on the attached Appendix A

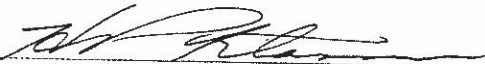
(e) The land from which the discharge originates and to which this appendix is appurtenant is Lot 117-2, Section 10, Range 7, Plan 2382 OS Quamichan District - Cowichan Indian Reserve #1.

(f) Those works authorized and proposed must be completed and in operation when discharge commences.

Date issued August 14, 19 78

Date amended FEB 6, 1981, 19

, 19


Assistant Director of Pollution Control

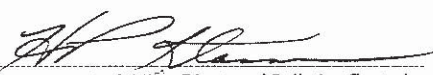


MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

APPENDIX No. 03
to Pollution Control Permit No. PA-5116

- (a) The discharge of refuse to which this appendix is applicable is to Lot 117-2, Section 10, Range 7,
Plan 2382 OS, Quamichan District, Cowichan Indian Reserve #1
.....
..... as shown on the attached Appendix A
- (b) The quantity of refuse which may be discharged is 14 m³ of incinerator residue and 11 m³
of non-combustible refuse per day.
.....
- (c) The type of refuse which may be discharged is domestic refuse incinerator residue and
non-combustible refuse from municipal sources.
.....
(Municipal, industrial, etc.)
- (d) The nature or characteristics of the refuse which may be discharged are residue resulting from
the incineration of typical municipal solid waste and other non-combustible
municipal refuse.
.....
.....
- (e) The works authorized are landfill operation as directed
.....
.....
..... 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 the City of
Duncan, the District of North Cowichan and Electoral Areas A, B, C, D and E
of the Cowichan Valley Regional District.
- (g) Those works authorized and proposed must be completed and in operation when discharge commences.
.....

Date August 14, 19 78
Amended FEB 6 1981, 19.....


Assistant Director of Pollution Control



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

APPENDIX No. 04

to Pollution Control Permit No. PA-5116

- (a) The discharge or emission of contaminants into the air to which this appendix is applicable is from a municipal refuse incinerator identified as A
(Source or operation)

as shown on attached Appendix A

- (b) The rate of discharge or emission (dry basis) authorized is:

Maximum 147 mol/s Duration one hour/day Frequency once per day

Average daily (based on the operating period) 118 mol/s - the normal operation period is 8 hours per day, 7 days per week.

- (c) The characteristics of the contaminants shall be equivalent to or better than

Contaminant	Average daily concentration based on the daily operating period	Maximum Concentration	Duration	Frequency
Particulates	5.5 mg/mol	5.5 mg/mol	8 hours/	7 days/week
	at 12% CO ₂		day	
Opacity	Maximum equivalent opacity	20%	95% of the	operating time
	Maximum equivalent opacity	40%	5% of the	operating time

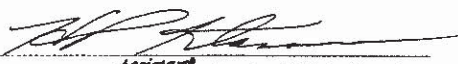
- (d) The works authorized are a proposed municipal type refuse incinerator and related appurtenances

approximately located as shown on the attached Appendix A

- (e) The land from which the discharge originates and to which this appendix is appurtenant is Lot 117-2, Section 10, Range 7, Plan 2382 OS Quamichan District - Cowichan Indian Reserve #1.

- (f) Those works authorized and proposed must be completed and in operation when discharge commences.

Date issued FEB 6 1981, 19____
Date amended _____, 19____
_____, 19____


Assistant Director of Pollution Control

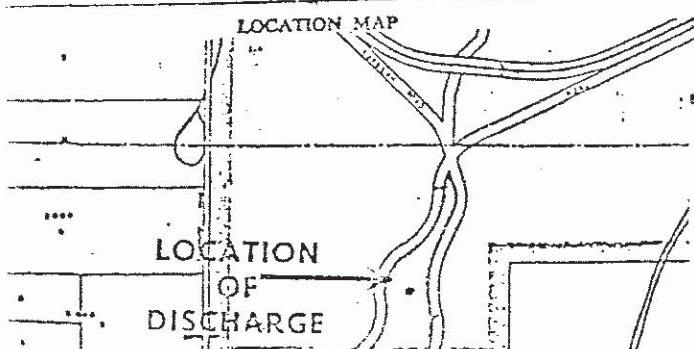
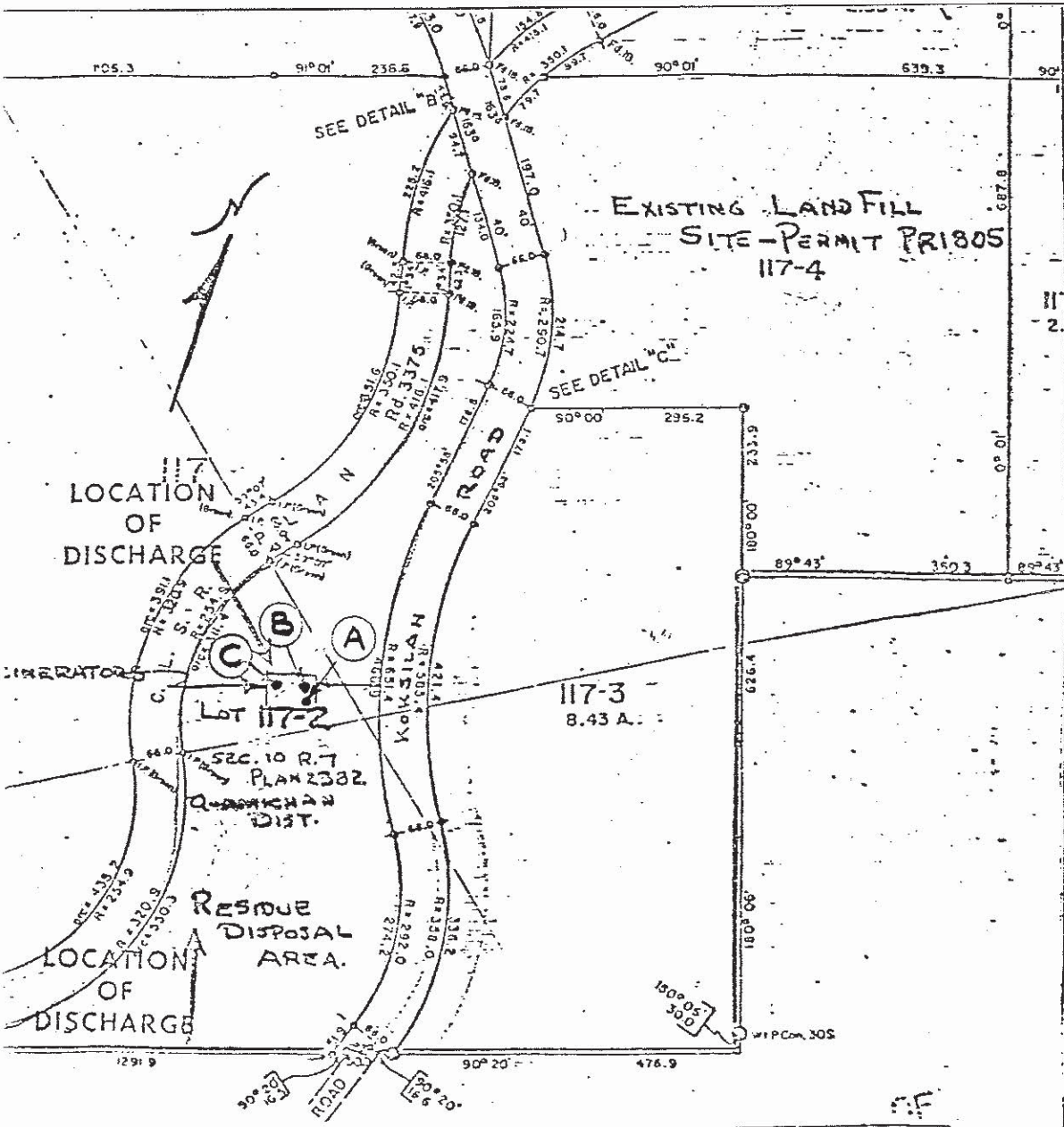


Province of
British Columbia

Ministry of
Environment

WASTE MANAGEMENT BRANCH

Appendix A
PA-5116



COWICHAN VALLEY REGIONAL DISTRICT

(Name of applicant(s))

FEB 14 1978
(Date)

(Signature of applicant(s) or agent)

(FOR OFFICE USE ONLY)

FEB 6 1981
Date amended

AUG 14 1978
(Date issued)

Assistant (Director of Pollution Control)

Appendix A

PA-5116

Permit No: PA 511
 Name: CVRD - DUNCAN
 Location: DUNCAN
 Inspected by: B. COOK
 Date: MAY 19/81
 Weather: SUNNY
 Contacted: OPERATOR
 Works: MUNICIPAL REFUSE INCINERATORS (3)

Items: Flow

General	Effluent	Air	Refuse
Housekeeping	Colour	Ring	Cover
Flow Measur.	Turbid.	Temp.	Odour
Sampling Fac.	pH	Colour	Leach.
Records	Resid. Cl ₂	Particulate	L. Colour
Monitoring	Floatables		L. Odour
	Odour		
	D.O.		

- Comments:
- All 3 incinerators were operating
 - Mainly heat waves visible with occasional discharges of up to 10% opacity.
 - Temp. on all graphs above 950°C
 - no sampling platform on stacks
 - no cover on refuse site.

Plans submitted: _____
 Monitoring submitted: no monthly temp. data since Dec 80
no stack sampling results since startup of operation
 Instructions left with Permittee: operator informed of requirements of permit

Status of Permit: o/c - monitoring
- sampling facilities
- ground cover on ash at least every 14 days

Action recommended: meeting with Mel Miller on May 26
to discuss requirements

1/06/82 B

Permit	Name	Date	Flow	Comp	Comments
PA 511b	CVRD DUNCAN	82/05/19	DD	o/c	GOOD OPERATIONS

Permit No: PA 5114 S110 Issued by: Bob Cook
 Name: COWICHAN VALLEY REG. DIST. Date: AUG 18/81
 Location: DUNCAN Weather: Clear Warm
 Contacted: OPERATOR
 Works: 3 MUNICIPAL REFUSE INCINERATORS

Items: Flow

General	Effluent	Air	Refuse
Housekeeping <u>O.K.</u>	Colour <u>max opacity 10%</u>	Temp. <u>10%</u>	Cover <u>NO</u>
Flow Measur. <u></u>	Turbid. <u></u>	Temp. <u></u>	Odour <u>NONE</u>
Sampling Fac. <u></u>	pH <u></u>	Colour <u></u>	Leach. <u>NO</u>
Records <u></u>	Resid. Cl ₂ <u></u>	Particulate <u></u>	L. Colour <u></u>
Monitoring <u></u>	Floatables <u></u>		L. Odour <u></u>
	Odour <u></u>		
	D.O. <u></u>		

Comments: - all 3 incinerators operate continuously 10 hrs per day
7 days per week
- incinerators "A" and "B" were operating at 980°C
with a max of 5% opacity
- incinerator "C" was operating at 960°C at the
max of 10% opacity
- incinerator ash had not been covered for
at least 14 days
- no sampling platforms on stacks

Plans submitted: not req'd

Monitoring submitted: - no monthly temp data since Dec 80
- no stack sampling results since start up of operation

Instructions left with Permittee: Have Mel Miller phone
re: overdue monitoring and sampling facilities

Status of Permit: O/C - monitoring (temp & stack sample)
- sampling facilities
- ground cover on ash, at least 14 days

Action recommended: inform permittee of permit requirements
and follow-up in one month to determine
what further action should be taken

SIGNED Bob Cook

PE	PERMIT #	DATE	MON.	COMP.	COMMENTS
A	PA 5116	81/8/19	0/0	0/0	GOOD OPERATION max opacity, temp & ash cover req'd

to: CVRD DUNCAN RAB Date: NOV 18/82
Location: DUNCAN COOK Weather: CLOUDY
Contacted: OPERATOR FILE
Works: MUNICIPAL INCINERATOR

Flow

General	Effluent	Air	Refuse
Housekeeping	Colour	Ring.	Cover
Flow Measur.	Turbid.	Temp.	Odour
Sampling Fac.	pH	Colour	Leach.
Records	Resid. Cl ₂	Particulate	L. Colour
Monitoring	Floatables		L. Odour
	Odour		
	D.O.		

Comments: - OPERATING 7 DAYS PER WEEK.
- OPERATING TEMPERATURES 820, 850, 800 °C
WITH ALL FLUCTUATING WITHIN PAST 2 HOURS WITH A LOW
OF 400 °C.
- RESIDUE NOT COMPLETELY BURNT (ie. newspaper &
cotton gloves were only charred on edges)
- RESIDUE HAS NOT BEEN COVERED.
- RESIDUE VISIBLE FROM ROAD
- OPACITY DURING 20 MIN ON SITE ~~HAD A MAXIMUM 30% A MAXIMUM 30%~~

Plans submitted: N/A

Monitoring submitted: 01 MONTHLY TEMP CHECKS ~~MINIMUM~~ HOURS OF OPERATION

Instructions left with Permittee: MONITORING REPORTS REQUIRED,
TEMPERATURE BELOW 980 °C, & COVER REQUIRED ON RESIDUE.
MESSAGE TO BE PASSED ON TO MEL MILLER.

Status of Permit: O/C

Action recommended: TELEPHONE MEL MILLER RE: ABOVE PROBLEMS
AND FOLLOW UP LETTER.

- SOUNDS PRETTY BAD; I WOULD DEFINITELY GIVE THIS PERMIT
A FAIR AMOUNT OF ATTENTION DURING THE NEXT 2 MONTHS IN ORDER
TO BRING IT INTO COMPLIANCE.

HOW DO THE OTHER INCINERATORS LOOK?

OK JAN/83 Letter sent

PA 5116

CVRD DUNCAN

n: DUNCAN

sted: MEL MILLER

s: MUNICIPAL INCINERATOR

Inspected by: B. COOK/V. WATSON

Date: JAN 18/83

Weather: OVERCAST

ems: Flow

General	Effluent	Air	Refuse
usekeeping	Colour	Ring.	Cover
ow Measur.	Turbid.	Temp.	Odour
mping Fac.	pH	Colour	Leach.
cords	Resid. Cl ₂	Particulate	L. Colour
onitoring	Floatables		L. Odour
	Odour		
	D.O.		

- ments:
- UP TO 300 TONS / WEEK
 - SEVEN DAY OPERATION
 - WITH WET GARBAGE DURING THE WINTER AND NEW OPERATORS, INCOMPLETE COMBUSTION CAN OCCUR OCCASIONALLY IF NOTICEABLE DURING REMOVAL OF RESIDUE THEN MATERIAL IS RETURNED TO THE INCINERATOR.
 - TEMPERATURE > 1700°F FOR DURATION OF BURN DROPPING OVERNIGHT TO 500°F FOR ASH REMOVAL.

Plans submitted:

Monitoring submitted: O/D - SOURCE MONITORING REQU'D. (2x PER YEAR)
- TEMP CHARTS HAVE BEEN REC'D.

Instructions left with Permittee: - RESIDUE WILL REQUIRE COVERING WITH SOIL

- IF INCOMPLETE COMBUSTION OCCURS

- STACK SAMPLING REQU'D.

Status of Permit: O/C - DUE TO SOURCE MONITORING REQUIREMENTS

- OPERATION IS OTHERWISE O.K.

Action recommended: EITHER REMOVE MONITORING REQUIREMENTS

FROM THE PERMIT OR DEMAND COMPLIANCE.

Bob - They have never had a letter from us. I suggest this should be the first approach. Also last inspection was Aug '81. More frequent inspections & communication (with management) should be undertaken.

- You should also be reviewing the temp. chart data on a regular basis & reducing/fabricating for the full letter sent JAN 83

DATE: JAN 18/83

Waste Management Branch

Files: PA-2844
PA-5116
PA-5118

January 27, 1983

Regional District of Cowichan Valley
137 Evans Street
Duncan, B. C.
V9L 1P5

Attn: Mr. D. Leeman

Gentlemen:

In reviewing your Pollution Control Permits for the Regional District of Cowichan Valley incinerators at Lake Cowichan (PA-2844), Duncan (PA-5116) and Saltair (PA-5118) comments are as follows:

1. Service monitoring is required twice per year for PA-5116 and PA-5118. The monitoring would require the installation of suitable sampling platforms and facilities. No source emission results have been received for PA-5116 and PA-5118.
2. Temperature recordings should be submitted monthly. In the past, submissions have been very sporadic.
3. The after burner at PA-2844 was not operating during my most recent inspection.
4. The permits require weekly covering of the incinerator residue. This requirement has been overlooked as the residue was fairly inert with proper incinerator operation. If the residue is not fully incinerated then covering or reprocessing the material is necessary.

Your attention to the above comments would be greatly appreciated. If any questions, please contact the undersigned at 758-3951 Nanaimo.

Yours truly,

R. G. Cook,
Technician

RJC/mrb

(5) Corrup S.



January 11, 1984

Chairman & Directors
Cowichan Valley Regional
District
137 Evans Street
Duncan, B. C.
V9L 1P5

RECEIVED

JAN 12 1984

COWICHAN VALLEY
REGIONAL DISTRICT

Ladies and Gentlemen:

I am taking this opportunity to bring to your attention my concerns, and the concerns of our Members employed at the Regional District Incinerators, with respect to potential or possible dangerous dioxin emissions occurring at these sites.

Because of the ramifications of this problem (possible pollution of the surrounding community), it can no longer solely be just a matter of concern to those employed at the Incinerator sites. I feel that to expedite a solution to the problem, it is in everyone's best interest that some direction be given by the Board.

To shed a bit more light; apparently 3 to 4 years ago, some testing for dioxin emissions was carried out at the Lake Cowichan Incinerator. To the best of our knowledge, no results were ever posted at the worksite or given to the workers or their representative, the International Woodworkers of America. To follow this matter a step further, I contacted the Provincial Waste Management Branch (758-3951) and asked if they had been involved with those tests. They stated that they had been involved to some degree, but that the actual testing had been done by the Federal Environmental Protection Service. They also stated that they could not recollect ever being given any of the results or findings of those tests.

Recent statements from the U. S. highlight the potential problem we may be facing. It was stated that while Municipal incinerators may help get rid of trash overloads, they may also be filling the air with deadly dioxins. In Texas, Dr. Gross from the Environmental Protection Agency, found at one incinerator that dioxin levels in the flyash was 45 times greater than established E.P.A. safe levels.

COPIES TO	
BOARD	
COMMITTEE	Public Care

..... Page 2

Cowichan Valley
Regional District
January 11, 1984
Page 2

These conditions may or may not exist in our area, but it is my opinion that workers and citizens alike have a right to ask that these questions be answered. If we continue to go around with our heads buried in the sand, then we all become part of the problem.

I would greatly appreciate any action your body can take to put pressure on the designated Federal and Provincial Agencies to come up with the necessary answers and, if problems do exist, to find the correct solutions.

Sincerely yours,

I.W.A. LOCAL 1-80



Ross Davies
Vice-President &
Safety Director

RD:hm
oteu 15

RC RAB

PA-5118
PA-5116 -cc
PA-2044 -cc

CVRD

COWICHAN VALLEY REGIONAL DISTRICT

March 9, 1984

Ministry of Environment
Waste Management Branch
2569 Kenworth Road
Nanaimo, B.C.
V9T 4P7



Dear Sir:

The Cowichan Valley Regional District has recently been approached by the Union of "International Woodworkers of America", Local 1-80, expressing concerns that Regional District garbage disposal incinerators may possibly be emitting dangerous dioxins. A copy of the correspondence received from the I.W.A. is enclosed for your information.

As indicated, the Environmental Protection Service was involved in testing emission at the Cowichan Lake incinerator and we would appreciate any data relative to any dioxin or other dangerous emission that may have been discovered during testing, and/or whether the issue of dioxin is a matter of concern to our area and workers.

We would appreciate a response to this request at your earliest convenience.

Yours truly,

D. C. Leeman
Superintendent of Public Works

DCL/jm

cc: Mr. F. Raimondo, Administrator

ELECTORAL AREAS:

- A MILL BAY; MALAHAT;
- B SHAWNIGAN LAKE;
- C COBBLE HILL;
- D COWICHAN BAY;
- E COWICHAN STATION; SAHTLAM; GLENORA;
- F COWICHAN LAKE SOUTH;
- G SALTAIR; GULF ISLANDS;
- H NORTH OYSTER;
- I YOUSOU; MEADE CREEK

MUNICIPALITIES:

- CITY OF DUNCAN
- DISTRICT OF NORTH COWICHAN
- TOWN OF LADYSMITH
- VILLAGE OF LAKE COWICHAN

Dr. R. G. Wilson
Assistant Director
Waste Management Branch
Victoria, British Columbia

March 14, 1984

Files: PA-5118

PA-5116

PA-2844

Re: Toxic Emissions from Cowichan Valley Regional District
Municipal Incinerators

The attachments to this memo indicate a concern by the Cowichan Valley Regional District with regard to the potential release of dioxins or other toxic emissions from their municipal refuse incinerators.

I would appreciate it if you could advise us on the items raised in the correspondence from the Cowichan Valley Regional District so that we could respond accordingly.

G. E. Oldham
Regional Manager
Waste Management Branch

RAB/GEO/mvp

Enclosures



Environnement
Canada

Environnement
Canada

Environmental
Protection

Protection de
l'environnement

3rd Floor - Kapilano 100 - Park Royal,
West Vancouver, B. C. V7T 1A2.

5 April 1984

Mr. D. C. Leeman,
Superintendent of Public Works,
Cowichan Valley Regional District,
131 Evans Street,
Duncan, B. C.
V9L 1P5

Dear Mr. Leeman:

I wish to respond with reference to your letter of March 15,
1984.

Several years ago Environment Canada carried out emission testing at various combustion facilities across Canada including a coal-fired thermal plant, a large refuse incinerator, a heating plant and a small modular incinerator which was the Lake Cowichan Unit. The intent of this work was to develop the necessary sampling and analytical techniques that are involved in this very complex field of measuring trace qualities of contaminants.

At this point in time, our Department has circulated a draft copy of the data report to the respective provincial jurisdictions who participated in the earlier field work at the four facilities. Copies of this draft report were transmitted to the B. C. Waste Management Branch in early February and their staff are in the process of reviewing the report and the test methodology. After we receive the technical critiques from B. C. and the other provincial agencies the report will be finalized. However, as I understand from Mr. Wituschek of our staff, you are now aware that the Waste Management Branch has the draft report, and after their review, will be forwarding copy to you. The letter dated January 11, 1984 addressed to you from Mr. Ross Davies of the IWA, makes reference to the Lake Cowichan study, but at that time the draft report had not been circulated for review.

As I mentioned earlier, the studies by our Department were primarily to develop the emission testing technology. Consequently the results obtained should take into account the preliminary nature of the technical work. If you should be interested in pursuing the potential health impacts at the site resulting from the dioxin emissions, we would suggest referring any questions to the appropriate health authorities.

Yours truly,

ORIGINAL SIGNED BY:

B. A. HESKIN

A SIGNÉ L'ORIGINAL

B. A. Heskin, P. Eng.,
Regional Director - Pacific & Yukon.

c.c. R. H. Ferguson, WMB, MOE

G. E. Oldham, Reg. Mgr., V.I. Region, MOE

Canada

In order to conserve energy
and resources, this paper
contains post-consumer
fibre.

A des fins de conservation
de l'énergie et des ressources,
ce papier contient des
fibres recyclées.



PA-5118

PA-5116

PA-2841

Your file Votre référence

Our file Notre référence

4172-C1054



Province of
British Columbia

Ministry of
Environment

WASTE MANAGEMENT
BRANCH

MEMORANDUM

To: G.E. Oldham
Regional Manger
Vancouver Island Region

DSB
Date: April 16, 1984

File: 3.4028
File: PA-5118 *z*
PA-5116 *←*
PA-2844 *←*



This will refer to your memo dated March 14, 1984, with regard to the potential release of dioxins or other toxic emissions from the Cowichan Valley Regional District Municipal Incinerators. Two copies of the emission test report from EPS were sent to your office on March 6, 1984. I would suggest that you forward a copy to CVRD for their information. A meeting may be arranged to address any concern pertaining to the test results as long as the confidentiality of these reports are taken into cognizance.

R.G. Wilson
Assistant Director of
Waste Management

FILE: PA-5116
PA-5118
PA-2844

April 25, 1984

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

Att: Mr. F. Raimondo

Dear Mr. Raimondo:

On March 9, 1984, Mr. Leeman wrote to us with regard to the possibility of toxic emissions resulting from the burning of refuse in the municipal incinerators. Our initial response was made by letter of March 14, 1984, and we are now pleased to forward a copy of the draft report "Source Testing Studies of Poly-Chlorinated Dibenzo-p-Dioxins (PCDD) and Dibenzofurans (PCDF)" prepared by Environment Canada. Please be advised that Environment Canada has determined this report to be of a confidential nature and we would appreciate that the distribution be restricted.

If you have any questions relating to the material contained in the report we would be pleased to provide additional information or to meet with you at your convenience.

Yours truly,

R. A. Bollans
Head, Air & Industrial Section
Waste Management Branch

RAB/mvp

Enclosure



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA 5116
Date of Inspection JAN. 22 1985

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

Appendix 01 - (unit C) temperature recorder is operating. Temp.
Set point at 1800 °F. Stack temp @ 1600 °F. Aux. fuel still on.
Sampling ports installed, but no platform yet.
Appendix 02 - (unit B) - no temp. recorder. Set point @ 1800 °F. Stack
temp. @ 1800 °F. Sampling platform & ports are installed
Appendix 03 (refuse site) - metal waste being segregated, oil collection
facilities, major source of leachate caused by spraying hot incinerator ash
Appendix 04 (unit A) - temperature recorder operating. Temp set pt. @ 1800 °F
Stack temp. @ 1700 °F. Sampling ports are in - no platform yet.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS:

- ① no sampling platforms on Units A & C
- ② no stack tests yet
- ③ no submission of temp. charts & operating records overdue
- ④ all units are operating within permit opacity limits
at the time of inspection

D. ACTION REQUIRED BY PERMITTEE:

- ① construct sampling platforms on units A & C
- ② carry out stack sampling
- ③ submit temp. records & hours of operation records
- ④ minimize hot ash spray duration to keep leachate
production to a minimum

Permittee or Representative's Signature

Duncan
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA5116
Date of Inspection JUNE 4 1985

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location DUNCAN

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- all 3 units were operating at the time
- the units were fired up at 7:00 a.m. & were at 1800°F by 9:30 a.m.
- stack sampling platform on Unit 'B' has been installed
- all units are being charged in excess of design capacity by ~ 30%.
- The ~~temp~~ temperature recorders were all in good operating condition.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS:

- temp charts for Feb, Mar, Apr. have been received
- capacity levels for all 3 units were ok at the time of inspection
- covering of landfill is required once every 14 days.

D. ACTION REQUIRED BY PERMITTEE:

- stack tests to be carried out
- cover material to be applied to the landfill.

Permittee or Representative's Signature

Dmclaren
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee

OPACITY OBSERVATIONS JUNE 4/85 PASII 'B' unit

TIME	TEMP	OPACITY	COMMENTS
19:51	1780	30	
2		5	
3		45	
4		40	charging new load
5		25	
6		20	
7		20	
8		15	
9		15	
10		10	
11		10	
12		5	
13		10	
14		15	
15		20	charging new load
16		10	
17		25	
18		35	
19		50	
20		50	
21		50	
22	1780		

OPACITY OBSERVATIONS JUNE 4/85 PA '116' 'A' unit

TIME	TEMP	OPACITY	COMMENTS
10:03	1800°F	35%	
04		15	end of burn
04:30		5	
05		50	charge new load
06		20	
07	"	0	
07:30		0	
08		30	
09		30	
09:30		15	
10		0	
10:30		0	charge new load
11	"	80+	blower on again

TIME	TEMP	OPACITY	COMMENTS
10:04	1800	65	
05		60	
06		25	
07		65	
08			
09			
10			
11		60	
12		60	
13		55	
14		55	
15		60	
16		55	
17		55	
18		50	
19		50	
20		50	
21		20	
22		15	
23		65	
24			
25			
26			

charging new load



COWICHAN VALLEY REGIONAL DISTRICT
137 EVANS STREET, DUNCAN, B.C., V9L 1P5 - 746-4485

September 15, 1986

Ministry of Environment
Waste Management Branch
2569 Kenworth Street
Nanaimo, B.C.
V9T 4P7

Attention: Ron Bollans, P.Eng.

Dear Mr. Bollans;

Re: Improvements to Waste Disposal - Incineration

I am pleased to advise you that, at their meeting held on Wednesday, September 10, 1986, the Board of Directors of the Cowichan Valley Regional District passed the necessary resolutions so as to implement the recommendations made in my report, dated August 13, 1986.

In particular, and subject to only receiving the necessary letters of approval from the member municipalities, we will make application for amendment to the Supplementary Letters Patent so as to permit the debt limit and the maximum allowable tax rate limitations to be raised as recommended. I shall be forwarding explanatory documents to Mr. McTaggart at Municipal Affairs for his examination so that he may advise the Minister with regard to the details when the formal documentation is ready to proceed. I am sure he will be in touch with you at that time.

Once we have the necessary legislative authority the approved resolutions are to install the further Consumat C760 Unit at the Peerless Road Plant at the earliest opportunity and that "C" Unit at Koksilah Road be completely overhauled in 1987. In addition I am now authorized to make all necessary applications to the Waste Management Branch for permit amendments that may be required to implement the program. This will include amendment to the Duncan & South Landfill permit as well as the emissions permit for Peerless Road. By copy of this letter I am advising John Finney of the details so that we can, following my return from vacation on October 1, 1986, meet so as to further the matter.

Yours truly,


Alan John,
Operations Manager

AJ/ln

cc: John Finney, P.Eng.
ELECTORAL AREAS

Waste Management Branch-Nanaimo		
A MILL BAY/MALAHAT	E COWICHAN STATION	H NORTH OYSTER
B SHAWNIGAN LAKE	SAITLAM/GLENORA	I YIOUBOU/MEADE CREEK
C COBBLE HILL	F COWICHAN LAKE SOUTH	
D COWICHAN BAY	G SALT AIR/GULF ISLANDS	

MUNICIPALITIES:

CITY OF DUNCAN
DISTRICT OF NORTH COWICHAN
TOWN OF LADYSMITH
VILLAGE OF LAKE COWICHAN



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA 5116.
Date of Inspection June 4.87

PERMIT INSPECTION

Permittee CVRD.
Location Duncan.

A. SAMPLES TAKEN

YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Temp records Feb 87 - 61.85°F and March 87
46.14°F of time below 1800°F.
- Temp records only on C Unit.

	Lower Temp	Upper Temp	Capacity
A	1680	1800	10%
B	1580	1700	0%
C	1150	1760	0%

New lower temp controllers installed on A & B Units.
C Unit has been relined except for clean-out door.
B "Chamber" (side only)

C. PERMIT COMPLIANCE IN ☐ OUT ☒

C & B Units - are fed by centre air only - no side air - improved combustion.

Based on Site Observations:
Fill area not being covered - plans to reconstruct filled area within 3-4 months.

Budget steel has sorting bins on site - hauling away metals,
Large piles of scrap metal on site.

① o/c due to temp being below 1800°F.

- D. ACTION REQUIRED BY PERMITTEE: ① Temp records required on A & B Units,
② Maintain upper temp above 1800°F
③ Improve land fill and cover as required.

[Signature]
Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



June 11, 1987

File: PA 2844

PA 5116

PA 5118

Cowichan Valley Regional District
137 Evans Street
Duncan, B.C.
V9L 1P5

Attention: Mr. A. John

Dear Sir:

Re: Waste Management Permits on behalf of the
Cowichan Valley Regional District

Enclosed please find copies of my recent inspection of the subject permits.

Your attention is drawn to the following out of compliance items:

PA 2844 Lake Cowichan

- temperature is not being maintained at 1800°F
- Lower temperature controller requires replacement

PA 5116 - Duncan

- temperature is not being maintained at 1800°F
- Temperature recording devices are required on A & B Units.
- The land filling of ashes is not being maintained as per the Municipal Waste objectives - i.e. cover.

In addition, emission monitoring is required at both the Duncan and Ladysmith locations twice per year. The monitoring reports for these locations are now overdue.

If you have any questions, please do not hesitate to call me. My telephone number is 387-1134.

Yours truly,


W. D. Lockhart
Waste Management

Encl.

WDL/am

DISTRICT OFFICES

☒ 777 Broughton Street
Victoria, B.C.
V8V 1X5

☐ 44515 Elizabeth Street
Port Alberni, B.C.
V9Y 6L5

☐ 570 Island Highway
Campbell River, B.C.
V9C 2C3

☐ Box 1290
Port Hardy, B.C.
V9N 2P0

☐ 238 Government Street
Duncan, B.C.
V9L 1A5



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

17/7/87 RMB

CC D. LOCKHART
See comments

JUN 12 1987

Permit No. PA 5116.
Date of Inspection June 4.87

PERMIT INSPECTION

Permittee CVRD.
Location Durcan.

A. SAMPLES TAKEN

YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Temp records Feb 87 - 61.85% and March 87
+ 6.14 % of time below 1800°F.
- Temp records only on C Unit.

	Lower Temp	Upper Temp	Capacity
A	1680	1800	10%
B	1580	1700	0%
C	1150	1760	0%

New lower temp controllers installed on A & B Units.
C Unit has been relined except for clean-out door.

C. PERMIT COMPLIANCE

IN ☐ OUT ☒

Based on Site Observations.

C & B Units are fed by centre air only - no side air - improved
combustion.
Area not being covered - plans to reconstruct filled area
within 3-4 months.
Budget steel has sorting bins on site - hauling away metals.
Large piles of scrap metal on site.

① 0% due to temp being below 1800°F.

D. ACTION REQUIRED BY PERMITTEE: Temp recorders required on A & B Units.

- ② Maintain upper temp above 1800°F
- ③ Improve land fill and cover as required.

Permittee or Representative's Signature

For Waste Management

Regional Office Follow-up:

- ① Letter required to CVRD pointing out deficiencies
- ② Refer to my comments on your Jan 23/87 wrap - same issues still outstanding - especially sched. of upgrading plan - provide this info/updates ASAP

Original to File
Copy to Permittee

- ③ In future reports comment on amb. air data

NOTE: This is an important permit & needs attention/follow up.
- keep me informed.

- ④ What about stack sampling?

ENV. 2099 M28-913



MINISTRY OF THE
ENVIRONMENT

SEP 21 1987

REG. 1 - DIST. OFFICE
VICTORIA B.C.

MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PR1805
Date of Inspection AUGUST 27/87

PERMIT INSPECTION

Permittee CAWICHAN VALLEY REGIONAL DISTRICT
Location DUNCAN

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- two of three incinerators are now operating.
- there is a large volume of uncovered refuse on the north west side of the landfill
- some good duck waste is still being landfilled here
- previously exposed refuse on the west side of the landfill is now covered.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - inadequate cover is being applied
- good duck waste should not be landfilled at this site.

D. ACTION REQUIRED BY PERMITTEE:

- cover all exposed refuse
- prohibit dumping of good duck waste

Permittee or Representative's Signature

For Waste Management

Regional Office Follow-up:

advised operator to have all exposed refuse covered prior to follow-up inspection planned Sept 2/87.

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA 5116
Date of Inspection 08-01-25

PERMIT INSPECTION

Permittee CVRD
Location Dunc on

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

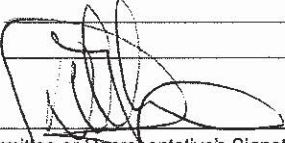
- in process of purchasing 1 datalogger to be installed on Bo unit.
- A unit - 1800°F - upper, 1700°F - lower
- no recorder in place 10% opacity
- B unit - 1800°F - upper 1300°F - lower
- no recorder 10% opacity
- C unit - 1800°F - upper 1400°F - lower
- no recorder 20% opacity
- last change at 1600 hrs - a burner
run for 1 hr during burn down
- 1 on off 11 being reversed - unstable fans reshaped - to be
dismantled in a 119s. No intermediate
level.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: n/c due to no temp recorders.

D. ACTION REQUIRED BY PERMITTEE: - temperature recorders to be installed; upgrading program to continue; stacks to be sampled.


Permittee or Representative's Signature


For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



COWICHAN VALLEY REGIONAL DISTRICT
137 EVANS STREET, DUNCAN, B.C., V9L 1P5 - 746-4485

91P, JOF
D.L. LAR

File 06.343
June 17, 1988

with Brian R.
5118 application?

files: PA-5116
PA-5118
PA-2844

Mr. V. Pomajzl, P.Eng.
Waste Management Officer
Air & Industrial Section
Ministry of Environment and Parks
Vancouver Island Region 1
Regional Headquarters
2569 Kenworth Road
NANAIMO, BC
V9T 4P7

Dear Sir:

RE: APPLICATION FOR AMENDMENT OF PERMIT PA-5118
TO ALLOW THE EXPANSION OF THE MUNICIPAL
INCINERATOR PLANT AT PEERLESS ROAD

Your files: PA-5116, PA-5118, PA-2844

I have been asked by Mr. F. Raimondo, to respond to your letter dated June 10, 1988, regarding the Regional District's proposal for expansion of the incinerator plant at Peerless Road.

At the June 13, 1988 meeting of the Regional Services Committee, I presented a report on the Strategy for Solid Waste Management for the 1990's. This report can be summarized as follows:

- The purchase of an additional incinerator at this time will not provide the future flexibility required to adapt to changing Waste Management standards of emission.
- None of the existing thermal reduction sites are capable of being developed into a central waste disposal facility capable of handling recycling, sanitary landfill and also incineration.
- The existing thermal reduction plants must be repaired to provide another five (5) years of safe operation with every effort made to conform to the existing permit conditions.

...2

ELECTORAL AREAS:

A MILL BAY/MALAHAT
B SHAWNIGAN LAKE
C COBBLE HILL
D COWICHAN BAY
E COWICHAN STATION
SAHTLAM/GLENORA
F COWICHAN LAKE SOUTH
G SALT AIR/GULF ISLANDS

H NORTH OYSTER
I YOUBOU/MEADE CREEK

MUNICIPALITIES:

CITY OF DUNCAN
DISTRICT OF NORTH COWICHAN
TOWN OF LADYSMITH
VILLAGE OF LAKE COWICHAN

Page Two
Mr. V. Pomajzl, P.Eng.
June 17, 1988

- If appropriate, the lease should be extended on the existing sanitary landfill site south of Duncan.

- An "Approved Regional Waste Management Plan" under Section 16 of the Waste Management Act should be implemented to take the place of the existing permits and provide greater flexibility of operation.

I am currently preparing a proposal to take before the Regional Board which will detail the methodology of creating a "Regional Waste Management Plan".

We will, of course, keep you apprised of the progress made in this regard, and if I can be of any further help to you please contact me at the above address.

Yours truly,

A handwritten signature in dark ink, appearing to read "DS York". The letters are stylized and cursive.

Derek S. York,
Operations Manager

DSY:rlj

July 11, 1988

Our File: PA-5116-
PA-5118
PA-2844

Your File: 06.343

Cowichan Valley Regional District
137 Evans Street
Duncan, B.C.
V9L 1P5

ATTENTION: D. S. York
Operations Manager

Dear Sir:

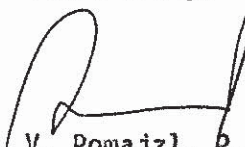
Re: Application for Permit PA-5118 Amendment, dated March 22, 1987

This will confirm receipt of your letter of June 17, 1988, in which you advised of your intentions to re-evaluate your previous plans for refuse disposal in the Cowichan Valley Regional District.

Accordingly, we would appreciate knowing whether you wish to withdraw the subject application to allow the operation of the additional incinerator at Peerless Road.

We look forward to your early reply.

Yours truly,



V. Pomajzl, P. Eng.
Waste Management Officer
Air & Industrial Section

VP/bc



MINISTRY OF ENVIRONMENT & LANDS

RECEIVED

FEB 22 1989

NANAIMO, B.C.

Date: February 17/89

File: PA 2844, PA 5116
PA 5118

To: Vlad Pomajzl
Waste Management
Vancouver Island Region
Nanaimo

Re: CVRD Incinerators

On February 15, 1989, I met with Henk Willems, CVRD to inspect the CVRD incinerators. The following points were discussed or observed on site:

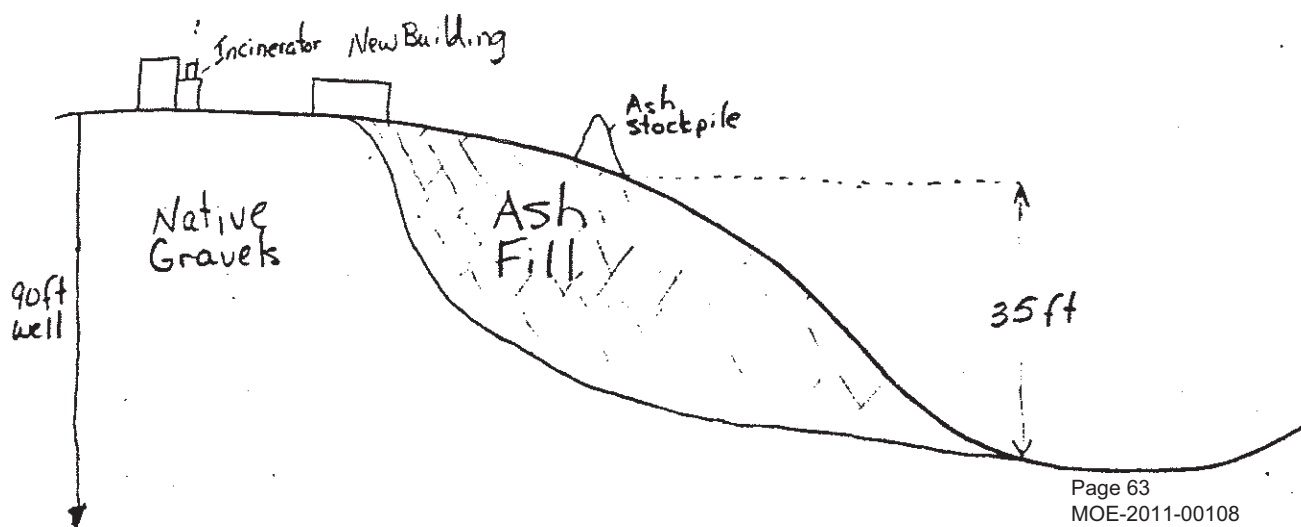
PA 5116 - Duncan

The incinerators are in process of having refractory relined. C Unit was rebuilt in October. A and B units had the upper chambers and doors relined in October. The lower chambers will be done in April. The outer shells are kept in sound condition to ensure refractory stays dry.

The incinerators process 12 - 14 tonnes per unit per day. They operate seven days a week and process approximately 270 tonnes per week.

The last charge of garbage occurs at approximately 1645. The oil is shut off at 1700. The water spray in the lower chamber is then set to come on at 1800°F instead of 1600°F, allowing the lower chamber temperature to increase to 1800°F. The upper chamber temperature reportedly modulates at 1800°F for an additional 2 hours after the last charge. The incinerators each burn 10 gallons of No. 2 diesel per hour during the hours of operation.

Rustrak Ranger dataloggers have been installed on A, B and C units. The output indicates 0 - 100% of 1350°C. The data loggers were installed in October, 1988. Problems with the computer and the software have prevented a report from being processed yet.



utso - The face of the ash pile along Koksilah Road has been graded and will have winter weed planted this Spring. The ash is stockpiled at the top of the face for one week then deposited in lifts from the bottom, then contoured up the face. The permit requires covering every 14 days. There has never been any cover applied to this date. That portion of the permit has never been enforced. CVRD doesn't want to cover due to the additional expense and due to the shortening of its ash disposal life expectancy. They feel they have an additional 9 - 10 years of life left without covering. There is insufficient data on file to indicate if the lack of cover is impacting on the groundwater or on Koksilah River. The soils in the area are very well draining gravels. The site is approximately 1 km from Koksilah River.

check
J-D's
monitoring
of well
water.

Their domestic well is located beside the weigh scale and is approximately 130 feet deep. J. Deniseger is taking well samples on a regular basis. No open burning of waste occurs at this site.

Large metal waste is stockpiled and removed by Budget Steel.

CVRD has budgeted to have the stacks sampled for particulate in 1989. The stacks have not been sampled since July, 1986.

PA 5118 - Ladysmith

The amendment to add another incinerator to this site was withdrawn. This incinerator operates 5 days a week and processes approximately 70 tonnes per week. Ash has been deposited to a depth of approximately 10 feet with no cover material being applied. The disposal area has been increased to allow for additional disposal. Lifts are added from the bottom and contoured up the face. Garden waste and demo material is open burned at this site every two months during the winter months. This was to have been included in the permit amendment but has not been legalized since withdrawal of the application. These ashes and drywall material are incorporated into the landfill. There are approximately 28 tonnes of oily sand from the west coast oil spill on hand. It will be blended in with the garbage at 1 - 2 tonnes per day.

Temperature charts are being submitted on a monthly basis. Funds have been budgeted to purchase a data logger this year.

CVRD has also budgeted for stack sampling at this site as required in the permit.

The well is located beside the road below the plant. Initial samples showed elevated levels of cadmium and lead. There is insufficient data on file to indicate trends.

...3

PA 2844 - Lake Cowichan

This incinerator operates 3 days per week in the winter and 4 days per week in the summer. 12 - 14 tonnes per day are processed. The incinerator is to be shut down for 1 - 2 weeks this month for a refractory reline. There have been funds budgeted for the purchase of a data logger at this plant in 1989. Presently strip charts are submitted monthly. Demo waste and yard clean-up waste is open burned every two months during the winter. Drywall material is being stockpiled and will be incorporated into landfill. Car bodies are stockpiled and removed periodically. Metal waste has been stockpiled for possible removal by a scrap company. Their well is located beside the office and is approximately 90 feet deep. There is insufficient data on file regarding metal trends. There is no requirement to have this stack sampled.

Summary

The requirement to apply cover material on the ashes has never been enforced at any of the sites. If there is no indication through water samples that this is having an impact on the groundwater, then this requirement should be amended from the permit. Otherwise it should be enforced.

CVRD has been stockpiling large metal goods such as fridges, ranges, etc., at all three sites. The metal has then been salvaged by scrap companies. CVRD has recently been advised by these companies that they are unable to haul it away due to regulations covering mercury in the switches and freon in fridges. There are now considerable amounts of scrap metal being stockpiled.

Open burning occurs at Lake Cowichan and Ladysmith. CVRD obtains Forest Service permits for these burns. This should be amended into the permits to legalize this operation.

GVRD's incinerator ash has been determined to be a special waste due to the lead in the bottom ash and cadmium in the top ash. CVRD should be instructed to determine if its ash falls under the special waste category and treated accordingly.

As the oil is only left on for an additional 15 minutes after the last charge, there is still concern over the quality of the emission during the burn down stage.



W. D. Lockhart

Waste Management Technician

WDL/am

Province of
British Columbia

Ministry of
Environment

Vancouver Island Region.1

Ministry of Environment

RECEIVED

February 20, 1989

FEB 22 1989

Files: PA 2844, ~~PA 5116~~
PA 5118

NANAIMO, B.C.

Cowichan Valley Regional District
137 Evans Street
Duncan, BC
V9L 1P5

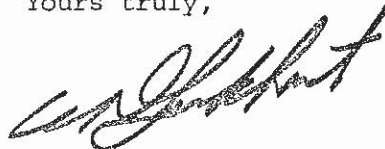
Attention: D. S. York

Dear Sir:

Enclosed, please find copies of my recent permit inspections. As noted on the forms, you are required to sample the emissions at TRP 2 and TRP 3 for particulates and submit the reports in accordance with Waste Management Permits PA 5116 and PA 5118.

In addition, you are also required to have your incinerator ash analyzed in accordance with the Special Waste Regulations to determine whether it is to be considered a special waste. Please submit the results of the analysis as soon as possible. A copy of the regulations has been enclosed for your information.

Yours truly,



W. D. Lockhart
Waste Management Technician

WDL/am

Enclosures

DISTRICT OFFICES

☒ 4, 777 Broughton Street
Victoria, B.C.
V8V 1X5

☐ 238 Government Street
Duncan, B.C.
V9L 1A5

☐ 4, 4515 Elizabeth Street
Port Alberni, B.C.
V9Y 6L5

☐ 670 Island Highway
Campbell River, B.C.
V9C 2C3

☐ Box 1290
Port Hardy, B.C.
V0N 2P0

August 30, 1989

Files: PA-2844

RECEIVED
PA-5116
PA-5118
MINISTRY OF THE
ENVIRONMENT

SEP 5 1989

REG. 1 - DIST. OFFICE
VICTORIA, B.C.

Cowichan Valley Regional
District
137 Evans Street
Duncan, B.C.
V9L 1P5

Gentlemen:

Re: Analysis of Municipal Incinerator Residue
carried out by CANTEST Ltd., dated June 7, 1989

This is to advise you that we have reviewed the results of the subject analysis which was done on an ash sample taken from one of the municipal incinerators located in Duncan. The results of the analyses indicate that, based on the high level of lead detected in the leachate, the ash is considered to be a special waste. These results are consistent with other testing done on municipal incinerator residue in British Columbia and they likely reflect the characteristics of ash generated from the remaining incinerators in the Cowichan Valley Regional District. We, therefore, believe that no further confirmatory testing of this material is necessary at this time.

With respect to the residue already placed in the incinerator landfills, we have no information regarding its leachability and, therefore, we will consider the material to be a special waste as well. However, we would be prepared to reclassify this waste if it is shown that the leachability of all parameters is below the Leachate Quality Criteria of the B.C. Special Waste Regulations. Note that a proper sampling protocol will have to be followed as part of any potential reclassification.

The management of special waste must be in accordance with the Special Waste Regulation. Registration of the waste is the first step, followed by an application(s) for a storage permit (or alternatively handled under a Waste Management Plan). Furthermore, the landfills associated with Permits PA-2844, PA-5116 and PA-5118 may be considered

. . . 2

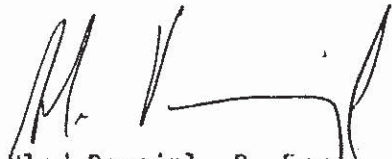
August 30, 1989

to be "historical special waste contaminated sites" provided no more waste is introduced. Classifying this in-situ waste in such a manner may exempt the Cowichan Valley Regional District from certain requirements of the Regulations and would likely allow management under the existing permits. The waste presently being generated, however, will have to be managed at a new short-term storage facility in a surface impoundment or waste pile subject to certain conditions until a decision is made on final disposal. Solidification and landfilling in an approved landfill is an option, if you can provide data to satisfy the requirements of Section 19(2)(b) of the Special Waste Regulations. There are a number of commercial solidification processes available and it would be necessary to find one that is appropriate for incinerator ash. A cement based process would most likely be able to fix the contaminants in a tightly bound matrix. Alternatively, an application for a change in requirements could be made as a last resort, although it is difficult to see how such an application could be successful.

If you require additional clarification of our position, we are prepared to discuss this matter further at your convenience in our office.

Your early reply would be greatly appreciated so that we may commence finalizing the subject matter.

Yours truly,



Vlad Pomajzl, P. Eng.
Waste Management Officer
Air & Industrial Section

VP/ltd

cc: J. O. Finnie, P. Eng., Head, Municipal Section
W. D. Lockhart, Waste Management Technician, Air & Industrial
Section, Victoria



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA5116
Date of Inspection 90-10-16.

PERMIT INSPECTION

Permittee CVRD
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled processing ~40 Tons/day.

B. OBSERVATIONS AND COMMENTS:

- Letter sent to D. York 90-07-18. no reply yet.
- last stack test report submitted 89-05-10.
- ash residue not being covered. permit requires cover every 14 days.
- C. Unit 950°C upper lower 888°C. - 5% **opacity**
- B. Unit 970°C upper lower 760°C. - 5%
- A. Unit 950°C upper lower 684°C. - 5%
- Budget steel removes scrap metal.
- car batteries segregated.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: stack test reports to be submitted twice per year.

D. ACTION REQUIRED BY PERMITTEE ① Reply to V. Romaj's letter of 90-07-18.

Permittee or Representative's Signature

For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



November 20, 1990

Files: PA 2844
PA 5116
PA 5118

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

ATTENTION: Derek York
Manager, Engineering Services

Re: Waste Management Permits PA 2844, PA 5116 and PA 5118

Further to my inspection of the subject permits, this letter is to confirm that the Cowichan Valley Regional District is in non-compliance with its permits.

PA 2844 requires that the incinerator ash residue is to be covered once every 20 days or 12 times per year. This is not being done.

The stack test reports from December 1989 and April/May 1990 for the Duncan and Ladysmith plants have been reviewed. The reports indicate that the permitted particulate levels are being exceeded. In addition PA 5116 and PA 5118 require that the ash residue be covered every 14 days of incinerator operation. This is not being done at these sites either.

It should be noted that failure to comply with these permits may result in action being taken by the Environmental Enforcement Unit of the Ministry.

. . . 2

DISTRICT OFFICES

☒ 2728 Spencer Road
Victoria, B.C.
V9B 4C6

☐ 238 Government Street
Duncan, B.C.
V9L 1A5

☐ 4, 4515 Elizabeth Street
Port Alberni, B.C.
V9Y 6L5

☐ 101, 370 South Dogwood Street
Campbell River, B.C.
V9W 6Y7

☐ Box 1290
Port Hardy, B.C.
V0N 2P0
Page 70
MOE-2011-00108

Cowichan Valley
Regional District

- 2 -

November 20, 1990

Please advise us by December 14, 1990 how you intend to achieve compliance with these permits.

Yours truly,


W.D. Lockhart
Waste Management Technician
Air & Industrial Section
Victoria

WDL/usc

cc: V. Pomajzl, Waste Management Officer, Nanaimo



COWICHAN VALLEY REGIONAL DISTRICT
137 EVANS STREET, DUNCAN, B.C., V9L 1P5

TEL. - 746-4485

FAX. - 746-5612

File: 06-110.1
January 10, 1991

Mr. W.D. Lockhart
Waste Management Technician
Air & Industrial Section
Ministry of Environment
2728 Spencer Road
VICTORIA, BC
V9B 4C6

RECEIVED
MINISTRY OF THE
ENVIRONMENT
JAN 17 1991

REG. 1 - DIST. OFFICE
VICTORIA, B.C.

Dear Sir:

RE: **ASH DUMPS AT TRPs 1, 2, and 3**
Permits: PA 8244; PA 5116; PA 5118
2814

Please be advised that, in accordance with your directive, the ash disposal dumps at each of the CVRD's three incinerator sites, now have an intermediate cover of gravel. The working faces will be maintained as small as practicable and covered in accordance with the permit requirements.

Yours truly,

Derek S. York
Manager, Engineering Services

DSY:rlj

cc: M. Salisbury

ELECTORAL AREAS:

A MILL BAY/MALAHAT
B SHAWNIGAN LAKE
C COBBLE HILL
D COWICHAN BAY
E COWICHAN STATION
SAHTLAM/GLENORA
F COWICHAN LAKE SOUTH
G SALT AIR/GULF ISLANDS

H NORTH OYSTER
I YIOUBOU/MEADE CREEK

MUNICIPALITIES:

CITY OF DUNCAN
DISTRICT OF NORTH COWICHAN
TOWN OF LADYSMITH
VILLAGE OF LAKE COWICHAN



TOF

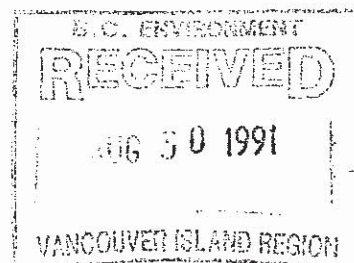
GS

Your file Votre référence

Our file Notre référence

August 22, 1991

Ted Oldham
Regional Manager - Environmental Protection
B.C. Ministry of Environment
2569 Kenworth Rd.
Nanaimo, British Columbia
V9T 4P7



Dear Ted:

Re: Environmental issues - Cowichan Indian Band

① Further to our on-site visit and discussions at the Duncan sewage treatment facility, I would appreciate copies of the waste permits for the landfill site and the incinerator.

② At the same time could you please outline specific areas of non-compliance with regard to provincial standards.

③ If it is true that new provincial air quality guidelines have been released, I would appreciate a copy of them as well.

Sincerely,

Robert W. Gray

Robert W. Gray
Regional Forester and Environmental Protection Officer
Lands, Revenues & Trusts
British Columbia Region
300 - 1550 Alberni Street
Vancouver, British Columbia
V6G 3C5

cc: Linda Vandenburg
Cowichan Indian Band

Daryl Britt
Vancouver Island Field Office

VP, JOF

October 7, 1991

Files: PR-1805
PA-5116

Lands, Revenues & Trusts
British Columbia Region
300 - 1550 Alberni Street
Vancouver, British Columbia
V6G 3C5

ATTENTION: Robert W. Gray
Regional Forester and
Environmental Protection Officer

Dear Mr. Gray:

Re: Waste Management Facilities located in proximity to
Cowichan Indian Band Lands

With reference to your letter dated August 22, 1991, please find enclosed copies of the permits requested (PR-1805, PA-5116) as well as the new "Emission Criteria for Municipal Solid Waste Incinerators" June 1991.

The Cowichan Valley Regional District has initiated a Solid Waste Management Plan which will, in part, address the issues associated with the continued use of sites presently permitted. Should you wish to discuss the incinerator site, please contact Mr. Vlad Pomajzl, P. Eng. of this office.

If you have any questions regarding the landfill or the Solid Waste Management Plan, please do not hesitate to contact me.

Yours truly,



C. J. Jenkins, P. Eng.
Environmental Protection Officer
Municipal Section

CJJ/les
inacgray.cjj

Enclosure



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

initial or
Waste
91.11.11

Permit No. PA 5116
Date of Inspection 91.11.04

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN

YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Stack test Dec. 90: A unit 916.4/1453.0 B-1423.3/1668.4 C-1903.2/
9103.07 A- 1051.2/699.8 B- 1061.4/858.1 C- 926.0/872.0 mg/m³
- Temperatures A- 1600 lower/1800 top B- 1500 lower/1600 top C- 1800 lower
- opacity A- 20% B- 5% C- 5% 1725 upper
- Ash is levelled and covered every 2 weeks
- temperature records indicate 1800°F not consistently met.
- no biomedical waste processed

C. PERMIT COMPLIANCE

IN ☐ OUT ☒

Based on Site Observations.

COMMENTS ① stack test results exceed 230 mg/m³
② 1800°F not being maintained.

D. ACTION REQUIRED BY PERMITTEE: ① Ensure stack test results are in
permit compliance ② Conduct 2nd stack test for 1991
③ Ensure upper temperature of 1800°F is maintained.

Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee

FILE NOTE:

Date: January 29, 1992

Files: PA 2844

PA 5116

PA 5118

On January 14, 1992, Ron Bollans, Vlad Pomajzl and Dave Lockhart met in Nanaimo to discuss ash handling at the CVRD incinerators.

Vlad advised that leachate extraction analysis on ash showed ash is not a special waste; the ash landfill is covered every 2 weeks (except at Lake Cowichan); J. Deniseger routinely samples the CVRD domestic wells.


After some discussion we agreed:
Dave Lockhart to:

- advise CVRD there is to be no run-off of quench water.
- use impermeable cover every 2 weeks.
- contact GVRD to determine handling and disposal of quench water and ash.
- obtain details of domestic wells and storage tanks at all 3 sites.
- obtain samples from wells at 3 sites routinely.
- sample Meade Creek side channel in winter months.
- look at resume for details on neighbour's well at Ladysmith.

Vlad Pomajzl to:

- review data for CVRD wells for trends.
- talk to John Finnie for status on Waste Management Plans.

We will meet again at the end of February to discuss further.


W.D. Lockhart
Environmental Protection
Technician
Industrial Section
Victoria

WDL/usc



February 10, 1992

Files: PA 2844
PA 5116
PA 5118

Covichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5


ATTENTION: Mike Salisbury

Please find enclosed a copy of the analysis of the runoff from your ash quench water. As the runoff of this water could have a negative impact on the environment, we request that you cool the ash in such a way as to eliminate runoff water. In addition, please ensure that the ash is landfilled and covered in accordance with the terms of the permit.

As we would like to conduct routine groundwater sampling in the vicinity of the incinerators, would you please submit details to us on the exact location and depth of your domestic wells at all the sites.

If you have any questions, please do not hesitate to call me.

Yours truly,


W.D. Lockhart
Environmental Protection
Technician
Industrial Section
Victoria

WDL/usc

Enclosure

DISTRICT OFFICES

☒ 2728 Spencer Road
Victoria, B.C.
V9B 4C6

☐ 238 Government Street
Duncan, B.C.
V9L 1A5

☐ 4, 4515 Elizabeth Street
Port Alberni, B.C.
V9Y 6L5

☐ 101, 370 South Dogwood Street
Campbell River, B.C.
V9W 6Y7

☐ Box 1290
Port Hardy, B.C.
V0N 2P0
Page 77
MOE-2011-00108

To: R.A.Bollans
W.L.Lockhart ←
H.J.Deniseger

Date:
File: PA-5116

Re: CVRD incinerator ash landfill located near Duncan

As per the agreement made during the meeting between R. Bollans, W.D. Lockhart and myself on January 14, 1992 I have reviewed the PA-5116 file and have the following comments to make.

The analysis of water samples from the CVRD well located near the incinerator ash landfill and obtained on 88/07/04, 89/01/11, 89/01/26, 89/01/31, 89/04/18 and 91/09/16 show elevated levels of some parameters when compared to more distant wells located in the same general area. The levels for specific conductance, hardness, chloride, sodium, sulphate and zinc, while still within the " Guidelines for Canadian Drinking Water Quality ", were noticeably higher. This may be an indication of an early stage of leachate contamination and therefore further sampling and groundwater investigation are recommended.

I suggest that CVRD be requested to hire a qualified hydrogeologist to propose and, if approved by the Regional Waste Manager, to carry out the following study:

- (a) An assessment of the movement and quality of groundwater at the landfill site by drilling permanent monitoring wells at or near the site,
- (b) evaluation of the groundwater contamination potential by investigating the area geology,
- (c) topographic survey of the site to determine accurately the extend of the landfill operation, to provide site contours and to assess the surface water flow and quality,
- (d) identify, describe and sample existing domestic water wells located within 1.5 km from the site, and
- (e) recommend a followup study.

I would appreciate your comments.


V. Pomajzl

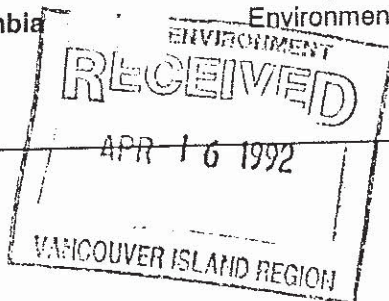
MAR 1 1992



Province of
British Columbia

Ministry of
Environment

Vancouver Island Region 1



PA 3

UP
Nanaimo

April 13, 1992

Files: PA 2844
PA 5116
PA 5118

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

ATTENTION: Mike Salisbury

Please find enclosed copies of my recent permit inspection reports. As noted on the forms the last stack tests failed to meet the required 230 mg/m³. Please advise what steps you intend to take to achieve permit compliance.

In addition, we have not yet received details on your domestic well, as requested on February 10, 1992.

Yours truly,

W.D. Lockhart
Environmental Protection
Technician
Industrial Section
Victoria

WDL/usc

Enclosure(s)

DISTRICT OFFICES

☒ 2728 Spencer Road
Victoria, B.C.
V9B 4C6

☐ 238 Government Street
Duncan, B.C.
V9L 1A5

☐ 4, 4515 Elizabeth Street
Port Alberni, B.C.
V9Y 6L5

☐ 101, 370 South Dogwood Street
Campbell River, B.C.
V9W 6Y7

☐ Box 1290
Port Hardy, B.C.
V0N 2P0

Page 79
MOE-2011-00108



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Intend
or
Waste
92.06.11

Permit No. PA5116
Date of Inspection 92.03.19

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Last stack test 91-12-3-5. A - 275.7, 425.5 mg/m³
B - 486.6, 444.75 mg/m³ C - 279.45, 328.71 mg/m³.
- Temperature records do not indicate 1800°F
being routinely met.
- Fire hose no longer used to deluge ash.
- Ash being covered every 2 weeks.
- Opacities approx. 10-20%.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: ① Stack test exceeds 230 mg/m³.
② Temperature requirement not being met.

D. ACTION REQUIRED BY PERMITTEE: ① Ensure 230 mg/m³ is met when having next stack test. ② Sample stack emissions twice per year. ③ Ensure upper chamber temperature of 1800°F is met. ④ Submit details of domestic well as requested in letter of Feb. 10-92.

Permittee or Representative's Signature _____ For Waste Management [Signature]

Regional Office Follow-up: _____

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

initial
Waste
9/11/04

Permit No. PA 5116
Date of Inspection 9/11/04

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒
Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Stack test Dec. 90. A unit 916.4/1453.0 B-1423.3/1668.4 C-1903.2/
9103.07 A-1051.2/699.8 B-1061.4/858.1 C-926.0/872.0 mg/m³
- Temperatures A- 1600 lower/1800 top B- 1500 lower/1600 top C- 1800 lower/
operation A- 20% B- 5% C- 5% 1725 upper
- Ash is levelled and covered every 2 weeks.
- temperature records indicate 1800°F not consistently met.
- no biomedical waste processed

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS ① stack test results exceed 230 mg/m³
② 1800°F not being maintained.

D. ACTION REQUIRED BY PERMITTEE: ① Ensure stack test results are in
permit compliance ② Conduct 2nd stack test for 1991
③ Ensure upper temperature of 1800°F is maintained.

Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up:

Original to File
Copy to Permittee



CC W.D.C. J. Demick
COWICHAN VALLEY REGIONAL DISTRICT

137 EVANS STREET, DUNCAN, B.C., V9L 1P5 TEL. - 746-2500 FAX. - 746-5612

File: 06-342.1/16.3/17.8
April 21, 1992

PA - 1116
PA - 5118
PA - 2844

APR 23 1992

Mr. D. Trudeau
Waste Management Technician
Ministry of Environment
2569 Kenworth Road
NANAIMO, BC
V9T 4P7

Dear Sir:

RE: MB Research - Water Sample Test Results TRPs 1, 2 and 3

Attached for your information are the water sample test results for the CVRD's three thermal reduction plants:

TRP #1, Meade Creek Incinerator, Lake Cowichan;
TRP #2, Koksilah Road Incinerator, Duncan;
and TRP #3, Peerless Road Incinerator, Ladysmith.

These test results are dated 8/14/91.

Should you have any questions regarding these attached results, please contact this office.

Yours truly,

Rosa Johnston
Engineering Services

rlj
Attachments

ELECTORAL AREAS:

A MILL BAY/MALAHAT
B SHAWNIGAN LAKE
C COBBLE HILL
D COWICHAN BAY
E COWICHAN STATION
SAHTLAM/GLENORA
F COWICHAN LAKE SOUTH
G SALT AIR/GULF ISLANDS

MUNICIPALITIES:

CITY OF DUNCAN
DISTRICT OF NORTH COWICHAN
TOWN OF LADYSMITH
VILLAGE OF MEADE CREEK



Client / Code

COWICHAN VALLEY REGIONAL DISTRICT
137 Evans Street
Duncan, B.C.
V9L 1P5

Date 08/14/91
Source Incinerator sites
Type of Sample Water
No. of Samples 3

No. W9019

Lake Cowichan

Collect courier charge

Comments

Elements	TRP#1 Tap	Units	Maximum Limits Permissible
		(ppm)	In Drinking Water*
1) Aluminium	Al 0.005	mg/L	no limit listed
2) Antimony	Sb <0.04	mg/L	no limit listed
3) Arsenic	As 0.004	mg/L	0.050
4) Barium	Ba <0.05	mg/L	1.000
5) Beryllium	Be <0.001	mg/L	no limit listed
6) Bismuth	Bi <0.05	mg/L	no limit listed
7) Boron	B 0.08	mg/L	5.000
8) Cadmium	Cd 0.004	mg/L	0.005
9) Calcium	Ca 27.110	mg/L	200.000
10) Chromium	Cr <0.003	mg/L	0.050
11) Cobalt	Co <0.002	mg/L	no limit listed
12) Copper	Cu 0.052	mg/L	1.000
13) Gold	Au <0.004	mg/L	no limit listed
14) Iron	Fe 0.152	mg/L	0.300
15) Lanthanum	La <0.002	mg/L	no limit listed
16) Lead	Pb 0.009	mg/L	0.010
17) Magnesium	Mg 2.800	mg/L	50.000
18) Manganese	Mn 0.092	mg/L	0.050
19) Molybdenum	Mo <0.003	mg/L	no limit listed
20) Nickel	Ni <0.005	mg/L	no limit listed
21) Phosphorus	P 0.398	mg/L	no limit listed
22) Potassium	K 0.921	mg/L	no limit listed
23) Silicon	Si 1.459	mg/L	no limit listed
24) Silver	Ag <0.003	mg/L	0.050
25) Sodium	Na 6.05	mg/L	200.000
26) Strontium	Sr 0.088	mg/L	no limit listed
27) Titanium	Ti <0.002	mg/L	no limit listed
28) Tungsten	W <0.03	mg/L	no limit listed
29) Vanadium	V <0.05	mg/L	no limit listed
30) Zinc	Zn 0.051	mg/L	5.000
Hardness (mg/L CaCO ₃)	79.22	mg/L	75-150 mg/L = moderately hard
pH	8.29		

* As per Canadian or B.C. limits

Ministry of Environment - Water Quality Criteria, Report No. 80-9, 1980. Task Force of the Canadian Council of Resource and Environment Ministers - Canadian Water Quality Guidelines, March, 1987.

COMMENTS

Manganese: not considered to be toxic; high amounts of Manganese can cause staining of laundry, porcelain and plumbing fixtures; may produce an undesirable taste.

Anthony Sean
Analytical Chemist



Client/Code

COWICHAN VALLEY REGIONAL STRICT
137 Evans Street
Duncan, B.C.
V9L 1P5

Date 08/14/91
Source Incinerator sites
Type of Sample Water
No. of Samples 3

No. W9019 Pg 2

Kakisilah

Comments

Elements	TRP#2 Tap	Units	Maximum Limits Permissible In Drinking Water*
1) Aluminium	Al 0.051	mg/L	no limit listed
2) Antimony	Sb <0.04	mg/L	no limit listed
3) Arsenic	As 0.003	mg/L	0.050
4) Barium	Ba <0.05	mg/L	1.000
5) Beryllium	Be <0.001	mg/L	no limit listed
6) Bismuth	Bi <0.05	mg/L	no limit listed
7) Boron	B 2.36	mg/L	5.000
8) Cadmium	Cd <0.001	mg/L	0.005
9) Calcium	Ca 62.810	mg/L	200.000
10) Chromium	Cr <0.003	mg/L	0.050
11) Cobalt	Co <0.002	mg/L	no limit listed
12) Copper	Cu 0.052	mg/L	1.000
13) Gold	Au <0.004	mg/L	no limit listed
14) Iron	Fe 0.056	mg/L	0.300
15) Lanthanum	La <0.002	mg/L	no limit listed
16) Lead	Pb 0.005	mg/L	0.010
17) Magnesium	Mg 26.190	mg/L	50.000
18) Manganese	Mn 0.001	mg/L	0.050
19) Molybdenum	Mo <0.003	mg/L	no limit listed
20) Nickel	Ni <0.005	mg/L	no limit listed
21) Phosphorus	P 0.084	mg/L	no limit listed
22) Potassium	K 1.85	mg/L	no limit listed
23) Silicon	Si 2.502	mg/L	no limit listed
24) Silver	Ag <0.003	mg/L	0.050
25) Sodium	Na 90.0	mg/L	200.000
26) Strontium	Sr 0.311	mg/L	no limit listed
27) Titanium	Ti <0.002	mg/L	no limit listed
28) Tungsten	W <0.03	mg/L	no limit listed
29) Vanadium	V <0.05	mg/L	no limit listed
30) Zinc	Zn 0.017	mg/L	5.000
Hardness (mg/L CaCO ₃)	264.69	mg/L	150-300 mg/L = hard
pH	7.03		

* As per Canadian or B.C. limits

Ministry of Environment - Water Quality Criteria, Report No. 80-9, 1980. Task Force
of the Canadian Council of Resource and Environment Ministers - Canadian Water Quality
Guidelines, March, 1987.

COMMENTS

All constituents tested meet Canadian and B.C. drinking water standards.

Anthony J. Lamm
Analytical Chemist



Client / Code

COWICHAN VALLEY REGIONAL DISTRICT
137 Evans Street
Duncan, B.C.
V9L 1P5

Date 08/14/99
Source Incinerator sites
Type of Sample Water
No. of Samples 3

No. W7019 Pg 3

Peerless

Comments

Elements	TRP#3 Tap	Units	Maximum Limits Permissible In Drinking Water*
1) Aluminium	Al 0.028	mg/L	no limit listed
2) Antimony	Sb <0.04	mg/L	no limit listed
3) Arsenic	As 0.004	mg/L	0.050
4) Barium	Ba <0.05	mg/L	1.000
5) Beryllium	Be <0.001	mg/L	no limit listed
6) Bismuth	Bi <0.05	mg/L	no limit listed
7) Boron	B 0.72	mg/L	5.000
8) Cadmium	Cd <0.001	mg/L	0.005
9) Calcium	Ca 38.200	mg/L	200.000
10) Chromium	Cr <0.003	mg/L	0.050
11) Cobalt	Co <0.002	mg/L	no limit listed
12) Copper	Cu 0.014	mg/L	1.000
13) Gold	Au <0.004	mg/L	no limit listed
14) Iron	Fe 0.039	mg/L	0.300
15) Lanthanum	La <0.002	mg/L	no limit listed
16) Lead	Pb 0.006	mg/L	0.010
17) Magnesium	Mg 5.800	mg/L	50.000
18) Manganese	Mn <0.001	mg/L	0.050
19) Molybdenum	Mo <0.003	mg/L	no limit listed
20) Nickel	Ni <0.005	mg/L	no limit listed
21) Phosphorus	P <0.065	mg/L	no limit listed
22) Potassium	K 0.382	mg/L	no limit listed
23) Silicon	Si 1.819	mg/L	no limit listed
24) Silver	Ag <0.003	mg/L	0.050
25) Sodium	Na 7.10	mg/L	200.000
26) Strontium	Sr 0.263	mg/L	no limit listed
27) Titanium	Ti <0.002	mg/L	no limit listed
28) Tungsten	W <0.03	mg/L	no limit listed
29) Vanadium	V <0.05	mg/L	no limit listed
30) Zinc	Zn 0.190	mg/L	5.000
Hardness (mg/L CaCO ₃)	119.27	mg/L	75-150 mg/L = moderately hard
pH	7.88		

* As per Canadian or B.C. limits

Ministry of Environment - Water Quality Criteria, Report No. 80-9, 1980. Task Force of the Canadian Council of Resource and Environment Ministers - Canadian Water Quality Guidelines, March, 1987.

COMMENTS

All constituents tested meet Canadian and B.C. drinking water standards.

Anthony Lam
Analytical Chemist





MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PA 5116
Date of Inspection July 21, 1992

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- 5 tanks tested June 10, 11, 12 - report not yet submitted
- Last stack test submitted exceeded permit spec.
- Ash is covered every 2 weeks.
- opacity of all 5 tanks approx 10%
- meeting held June 22 with Doug York and John Goss to discuss unsatisfactory temperature recording.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS:

out of compliance based on last stack report submitted.

D. ACTION REQUIRED BY PERMITTEE:

① Submit latest stack test reports
② Advise on progress of replacing temperature recorders

Permittee or Representative's Signature _____

[Signature]
For Waste Management

Regional Office Follow-up: _____

Original to File
Copy to Permittee

(1) AFTER WRITING remove green sheet and forward the balance of set intact.

(2) WHEN REPLYING after writing your reply keep pink sheet for your file, forward white sheet.

CRC 3



Province of
British Columbia

MEMORANDUM

TO: DAVID L / JAMES H

FROM: RAIS

PA5116

SUBJECT: CURD INCINERATORS (ASH)

DATE: FEB 4/93

FILE: /

☐ For Your Information
☐ Please Process

☐ Please O.K. and Return
☐ Return With More Details

☐ Please Discuss With Me
☐ Investigate and Report

☐ Per Your Request
☐ Please Answer

☐ For Your Signature
☐ For Your File

- ① Attached is R. Denman's report regarding ash impacts etc.
- ② There is an indication that leachate from the ash may be affecting the local groundwater regime but as yet no significant deterioration.
- ③ If the incinerators were to continue in operation I think it would be appropriate to require a hydrogeological assessment + monitoring to be able to develop an action plan. However, the SWRP for CURD seems to be heading toward a phase out of incineration and therefore I think our focus should be on the interim period which really means that the ash dumps are operated in the best manner possible (no quench water, good covering etc.).

WRITE YOUR REPLY AND RETURN THIS SHEET

REMOVE THIS SHEET AND FORWARD BALANCE OF SET

(1) AFTER WRITING remove green sheet and forward the balance of set intact.

(2) WHEN REPLYING after writing your reply keep pink sheet for your file; forward white sheet.

CRC 3



Province of
British Columbia

MEMORANDUM

TO:

FROM:

SUBJECT:

DATE:

FILE:

☐ For Your Information

☐ Please O.K. and Return

☐ Please Discuss With Me

☐ Per Your Request

☐ For Your Signature

☐ Please Process

☐ Return With More Details

☐ Investigate and Report

☐ Please Answer

☐ For Your File

④ I think that it may be worthwhile talking to Chris J. about relocating the ash to any new landfill that gets established in the future as part of the SWIP (or alternatively 'immobilizing' the ash in situ).

⑤ There is some more monitoring information that came in after Ron's report and I suggest that you review it and write up an addendum to his report.

REPLY:

⑥ Probably a good idea to inspect 3-4 x/yr and take well water samples

WRITE YOUR REPLY AND RETURN THIS SHEET

REMOVE THIS SHEET AND FORWARD BALANCE OF SET

**File: PA-2844
PA-5116
PA-5118**

Review of Groundwater Monitoring for the Cowichan Valley Regional District Incinerators

Prepared by R. Denman

Date: December 31, 1992

**SUMMARY OF GROUNDWATER MONITORING
FOR THE COWICHAN VALLEY REGIONAL DISTRICT
THERMAL REDUCTION PLANT SITES**

1. BACKGROUND:

This report is to summarize the extent of monitoring associated with possible groundwater contamination caused by the ash residue at the 3 thermal reduction plants (TRPs) operated by the CVRD. Concerns for the quality of the groundwater were first expressed by John Deniseger following his joint study (with Lloyd Erickson) of the water quality of the Koksilah River in 1988-1989, which included sampling of the well at TRP#2. Further sampling which included the domestic well at TRP#2 and 2 other domestic wells in the vicinity of TRP#2 was conducted by John Deniseger on September 16, 1991, as a result of those concerns.

The CVRD currently operates thermal reduction plants (TRPs) at 3 locations, for the disposal of municipal waste near Lake Cowichan (PA-2844 TRP#1), Duncan (PA-5116 TRP#2) and Ladysmith (PA-5118 TRP#3). These TRPs have Permits to discharge contaminants to the air, and non-combustible residues to the ground onsite. Since the inception of the CVRD TRPs there was no routine groundwater monitoring program for the 3 TRP sites, either by the CVRD or the MOE. However, the CVRD has sampled the 3 TRP wells (for metals) once per year for the past 3 years.

2. SUMMARY OF WATER SAMPLING:

Although there is no requirement (under the existing Permits) for groundwater sampling there has been various sampling done at or near the 3 TRP sites, by the CVRD and EP staff. The CVRD has submitted sampling results for the 3 domestic wells located at the 3 respective TRP sites in April of 1990 and August of 1991. Data for samples taken in the summer of 1992 has not yet been received. EP staff have also sampled some locations; a study of the water quality of the Koksilah River (low flow 1988 to low flow 1989) by John Deniseger and Lloyd Erickson included well water samples taken at TRP#2. In 1991, EP staff sampled the domestic well at TRP #2 as well as 2 other domestic wells in the same vicinity. In addition, EP (Dave Lockhart) sampled all 3 TRPs plus Meade Creek (near TRP#1) in 1988, and TRP#2 again in 1989. Dave also sampled the ash quench water run-off at TRP#2 on November 21, 1991, and most recently submitted well water samples for analyses on October 19, 1992.

The Canadian Drinking Water Guidelines refers to maximum acceptable concentrations and aesthetic objectives when evaluating drinking water quality. These terms appear in the data tables that summarize the sampling that has been done to date, at or near the incinerator sites. The following definitions are quoted from the guidelines:

MAC (Maximum Acceptable Concentration):

"MACs have been established for certain substances that are known or suspected to cause adverse affects on health. They have been derived to safeguard health on the basis of lifelong consumption and the use of the water for all usual domestic purposes, including personal hygiene. However, water of higher quality may be required for some special purposes, including renal dialysis.

Drinking water that continually contains substances at concentrations greater than the maximum acceptable concentrations will contribute significantly to consumer's exposure to these substances and may, in some instances, be capable of inducing deleterious effects on health. However, short-term excursions above the MACs do not necessarily mean that the water constitutes an undue risk to health. The amount by which, and the period for which the MAC can be exceeded without posing a health risk must be assessed taking into account the toxicity of the substance involved. When the MAC for a contaminant is exceeded, however, the minimum action required is immediate resampling. If the MAC continues to be exceeded, the authorities responsible for the public health should be consulted for the appropriate corrective action."

AO (Aesthetic Objectives):

"These apply to certain substances or characteristics of drinking water which can affect its acceptance by consumers or interfere with good water supply practices. For certain parameters for which AOs have been derived, health-related guidelines (MACs) have also been derived. Where only AOs are specified, the values are below those considered to constitute a health hazard.

Note: The existence of guidelines as defined above should not be regarded as implying that the quality of the drinking water may be degraded to the specified levels. Indeed, a continuous effort should be made to ensure that the drinking water is of the highest possible quality."

The following subsections summarize the total groundwater monitoring done at or near the CVRD TRPs:

2.1 Water Sample Test Dates (submitted by MB Research for the CVRD):

Apr 19, 1990	- domestic well at PA2844 TRP#1
Apr 19, 1990	- domestic well at PA5116 TRP#2
Apr 19, 1990	- domestic well at PA5118 TRP#3
Aug 14, 1991	- domestic well at PA2844 TRP#1
Aug 14, 1991	- domestic well at PA5116 TRP#2
Aug 14, 1991	- domestic well at PA5118 TRP#3

The data submitted by MB Research for the CVRD was derived from samples taken at the tap of the 3 TRPs. Samples were analyzed for concentration levels of 30 different metals. All values except for [Mn] at TRP#1 were within the Canadian Drinking water Guidelines. The guideline for [Mn] in drinking water is 0.050 mg/L and the data submitted showed values of 0.080 mg/L and 0.092 mg/L. It was noted that manganese is not considered toxic; high amounts of Mn can cause staining of laundry, porcelain and plumbing fixtures; may produce an undesirable taste.

A brief summary of parameters that were close to the Canadian Drinking Water Guidelines limits, are shown in the table below. The values for the other parameters were either well below the guideline limits, or there were no values specified in the guidelines. All values are in mg/L.

TABLE 1, CVRD sampling of TRP#1, TRP#2, TRP#3 wells, 1990-1991

PARAMETER	TRP#1 04/19/90 08/14/91	TRP#2 04/19/90 08/14/91	TRP#3 04/19/90 08/14/91	MAC or AO
Cadmium	<0.003 0.004	<0.003 <0.001	0.003 <0.001	0.005
Calcium	26.900 27.110	64.300 62.81	35.500 38.200	200.00
Iron	0.085 0.152	0.020 0.056	0.023 0.039	0.300
Lead	<0.03 0.009	<0.03 0.005	<0.03 0.006	0.050
Manganese	0.080 0.092	0.002 0.001	0.002 <0.001	0.050 AO
Sodium	6.44 6.05	83.5 90.0	5.65 7.10	270.00
CaCO ₃ Hardness	77.88 79.22	261.86 264.69	109.65 119.27	*

* 75-150 mg/L = moderately hard
150-300 mg/L = hard

2.2 Water Sample Test Dates (submitted by WDL):

April 20, 1988 - domestic well at PA5116 TRP#2
May 12, 1988 - domestic well at PA2844 TRP#1
May 12, 1988 - Meade Creek (near TRP#1)
May 25, 1988 - domestic well at PA5118 TRP#3
April 18, 1989 - domestic well at PA5116 TRP#2
Nov 21, 1991 - ash cooling water at PA5116 TRP#2

TABLE 2, EP sampling of TRP#1, TRP#2, TRP#3 wells, Meade Creek, and ash cooling water, 1988-1989, by Dave Lockhart.

PARAMETER	TRP#1 051288	TRP#2 042088 041889	TRP#3 052588 041889	MEADE 051288	MAC or AO	TRP#2 Ash Cooling Water
pH	-	- 7.3	- 7.8	-	6.5-8.5	11.7
Specific Conductance us/cm ²	-	- 700	- 232	-	-	6910
Alkalinity	-	- 73.6	- 85.9	-	-	575
Total Hardness	75.9	303 184	117 102	13.1	**	1090
Sulphate Dissolved	-	- 140	- 16.4	-	500 MAC 150 AO	655
Sodium Dissolved	-	- 65.0	- 5.3	-	200 AO	680
Chloride Dissolved	-	- 76.0	- 12.5	-	250 AO	1240
Cadmium	*<0.01	*<0.01 <0.005	*0.01 0.0005	*<0.01	0.005	<0.01
Calcium	26.6	74.2 46.4	38.9 33.9	4.52	200.00	426
Iron	0.11	0.17 0.03	0.04 0.07	0.05	0.3 AO	6.53
Lead	*<0.1	*<0.1 <0.001	*0.1 <0.001	*<0.1	0.010	0.4
Manganese	0.08	<0.01 <0.01	0.01 <0.01	<0.01	0.05 AO	0.35
Zinc	0.03	0.04 0.03	0.39 0.25	<0.01	<5.0 AO	1.25

* These tests were not analyzed to the correct order of magnitude and therefore are meaningless, however when the sampling data results of May 25, 1988 for TRP#3 indicated apparent high concentrations of Cd and Pb, the CVRD were advised to consult with the Health Department.

** 75-150 mg/L = moderately hard
150-300 mg/L = hard

2.3 Water Sample Test Dates (submitted by JHD):

July 4, 1988 - domestic well at PA5116 TRP#2
Jan 4, 1989 - domestic well at PA5116 TRP#2
Jan 11, 1989 - domestic well at PA5116 TRP#2
Jan 17, 1989 - domestic well at PA5116 TRP#2

Jan 26, 1989 - domestic well at PA5116 TRP#2
Jan 31, 1989 - domestic well at PA5116 TRP#2
Aug 29, 1989 - domestic well at PA5116 TRP#2

Sept 16, 1991 - domestic well at PA5116 TRP#2
Sept 16, 1991 - domestic well #11 Doupe Rd in vicinity of TRP#2
Sept 16, 1991 - domestic well at Queen Mary Cottage " " "

As a result of a water quality study of the Koksilah River (1988-1989), John Deniseger noted elevated levels of some parameters at the domestic well at TRP#2. Although these levels were still within the guidelines for drinking water, he suggested "additional groundwater sampling be carried out at a number of locations to determine the extent of contamination, the leachate plume and any health risks." He also notified the groundwater section in Victoria.

The groundwater section concurred by letter on October 12, 1989, that certain parameters (conductance, hardness, sulphate, NO_3/NO_2 and chloride) appeared elevated compared to well waters in the region. They recommended that based on the water quality results available, "that further testing of the CVRD well be undertaken for dissolved heavy metals. Information should also be obtained on the depth and completion of the well to assist in interpreting the results of the analyses. The operator of the site should retain a groundwater consultant to investigate and address these water quality concerns and assess potential impacts of the waste disposal on the groundwater regime".

The following table summarizes the available water quality data for the domestic well at TRP#2, Duncan, from the sampling period for the Koksilah River study (1988-1989). All units are in mg/L unless otherwise indicated.

TABLE 3, EP sampling of TRP#2 well (Duncan), 1988-1989, by John Deniseger.

PARAMETER	88/07/04	89/01/04	89/01/11	89/01/17	89/01/26	89/01/31	89/09/29
pH	7.7	7.0	7.1	7.0	7.0	6.9	7.0
Specific Conductance us/cm ²	1250	810	800	795	650	730	1030
Total Hardness	414	193	185	176	168	191	-
Sulphate Dissolved	300	155	159	137	128	144	246
Ammonia Nitrogen	0.006	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
NO ₃ /NO ₂	3.60	-	2.40	2.01	1.96	2.25	3.05
Phosphorus Total	0.014	0.036	0.021	0.017	0.018	0.018	0.013
Chloride Dissolved	152	77	75.5	73.5	73.5	87.0	116
Potassium Dissolved	2.0	-	1.5	1.5	1.4	1.1	-
Calcium	103	47.5	45.6	43.3	41.9	47.9	-
Copper	0.03	0.013	0.012	0.011	0.015	0.009	-
Iron	0.09	0.15	0.017	0.04	0.01	0.04	-
Magnesium	38.0	18.1	17.3	16.6	15.5	17.3	-
Zinc	0.03	0.08	0.13	0.09	0.04	0.09	-

TABLE 5, Guidelines for Canadian Drinking Water Quality (selected parameters).

PARAMETER	AESTHETICS OBJECTIVE	MAXIMUM ACCEPTABLE CONCENTRATION
pH	6.5-8.5	
Sulphate Dissolved	<150	500
NO ₃ /NO ₂		10
Chloride Dissolved	<250	
Copper	<1.0	
Iron	<0.3	
Zinc	<5.0	

From the values shown above, it appears that parameters such as specific conductance, dissolved sulphate, and dissolved chloride are more elevated during the lower flow period, which may be attributable to increased dilution during the higher flow period.

The following table shows a comparison of the CVRD domestic well (at TRP#2, Duncan) to 2 other domestic wells in the same vicinity which were all sampled by John Denisegeer on September 16, 1991. The parameters shown in this table were selected because they are somewhat closer to the Canadian Drinking Water Guideline limits than other parameter test results.

TABLE 6, EP sampling of TRP#2 plus two nearby wells, 1991

PARAMETER	DOUPE RD. WELL 91/09/16	QUEEN MARY COTTAGE WELL 91/09/16	C.V.R.D. WELL 91/09/16	MAC or AO
Specific Conductance us/cm ²	197	164	668	-
Hardness mg/L	86.7	52.1	168	*80-100 >200
Sulphate Dissolved mg/L	5.4	15.0	162	500 MAC >150 AO
NO ₃ /NO ₂ mg/L	0.31	** 29.2	1.56	10
Chloride mg/L	4.1	18.3	51.5	>250 AO
Zinc	0.02	0.02	1.37	<5.0 AO

* 80-100, acceptable, >200, poor but can be tolerated.

** This value is nearly 3 times the MAC of 10 mg/L and was brought to the attention of the Health Ministry. A follow-up by Health showed that this was an isolated or possibly false value.

From the data in the table above, despite the fact that it is only one set of samples, there is no indication that either of the other 2 wells have been affected by the TRP#2 site. There is evidence however, that the domestic well at TRP#2, has relatively higher values for zinc, chloride, dissolved sulphate, total hardness and specific conductance. It is not clear, however, whether these 3 wells share the same aquifer. A map showing the relative locations, and depths of these 3 wells is included.

3. ACTIONS TAKEN:

In addition to some monitoring of the wells at the 3 TRPs, some progress has been made regarding modifying operating practices which could be contributing to possible groundwater contamination.

3.1 Testing of ash residue:

EP tested the ash residue at TRP#2 in 1989 and determined that the residue was a special waste. In order to make a more accurate determination, EP requested the CVRD to do further testing involving an engineering firm and site-specific testing procedures. Further test results (from a more representative sampling technique developed by UMA Engineering for the CVRD in 1991) determined that the residue was not a special waste.

3.2 Intermediate cover of ash residue:

The CVRD is permitted to dispose ash residue to land at the 3 TRPs, provided that intermediate cover is applied every 20 days at TRP#1 and 14 days at TRP#2 and TRP#3. In the past the CVRD has been out of compliance for failing to provide intermediate cover. Just recently, with increased pressure from EP, the CVRD has commenced applying intermediate cover as required in the Permits.

3.3 Testing of ash quenching water at TRP#2:

After observing the surface run-off of ash quench water at TRP#2, Dave Lockhart collected samples for analyses. Results are shown in Table 2, above. A copy of the results was forwarded to the CVRD with a letter requesting that the cooling procedure be modified so that no run-off of quench water would occur. At the inspections of March 19, 1992, and October 19, 1992, it was observed that ash residue was no longer deluged by firehose (which had been the cause of run-off) at all 3 TRPs.

3.4 Field observations:

Routine inspections of the 3 TRPs were conducted October 19, 1992, with an additional goal of a quick assessment of each site. Each site was similar, in that the ash pit was located near the lowest elevation and the drilled well was over 200 paces away, and located in the highest elevation. A map for each well location is included. In addition a topographical aerial photograph, and site survey of the TRP#2 area is included. It would appear that surface run-off would be directed away from the well locations. It is unclear what direction the groundwater would travel.

During the inspections of October 19, 1992, I personally taste-tested the tap water at each TRP site. All 3 samples were odourless, clean and clear, with acceptable taste. The sample from TRP#1 (Lake Cowichan), had a very slight after-taste, which was not objectionable.

4. CVRD SOLID WASTE MANAGEMENT PLAN:

As per section 16 of the Waste Management Act all municipalities

are required to submit a Solid Waste Management Plan (SWMP) by 1995, which will reduce the amount of waste for disposal by 50% by the year 2000. The CVRD is endeavouring to fulfil that requirement, and in 1988 began development of a 3 stage plan which should meet their needs for solid waste management well into the future.

The CVRD submitted Stage 1 of their 3 stage SWMP, in November 1990 and received approval from the Regional Waste Manager, and are now well into Stage 2. A copy of Stage 1 of the CVRD SWMP is on file (50.5405) in the Nanaimo office.

4.1 Recommendations for Stage 2:

The Technical Steering Committee (TSC), which has overall responsibility for the development and implementation of the CVRD's SWMP have recommended the acceptance of the Stage 1 report dated July 1990 prepared by Dayton & Knight Ltd. in association with Brown and Caldwell.

The TSC fully endorses the recommendations contained in the SWMP Stage 1 report and the recommendations of the Public Participation Sub-committee and recommends the following be included in the SWMP Stage 2 Study:

1. The primary objective of the SWMP Stage 2 study must be to clearly identify the means by which the municipal waste stream can be reduced by at least 50% by the year 2000 in accordance with the Provincial Government's mandate.
2. The SWMP Stage 2 study must contain a detailed region-wide recycling and reuse program.
3. The SWMP Stage 2 study must explore available resource recovery options as a viable means of achieving further reduction of the total waste stream and of facilitating a staged approach to the establishment of a central landfill facility
4. A central landfill site, suitable for the disposal of the residual material resulting from the recycling, reuse, and resource recovery programs must be identified and acquired as soon as practicable and that in the Stage 2 study the preliminary costing and subsequent evaluation of the sites to be considered for the landfill be limited to Sites 2, 3, 6, 8, and 9 (as identified in the Stage 1 report)
5. The SWMP Stage 2 study must identify a site or sites suitable for the disposal of inert materials such as tree stumps, concrete, etc..
6. The SWMP Stage 2 study must address the region-wide problem of disposal of household special wastes.

7. The SWMP Stage 2 study must contain a strategy for managing those biomedical wastes that may not be treated under the proposed comprehensive provincial biomedical waste treatment and disposal system.
8. That the SWMP Stage 2 study not explore the 2 incinerator options developed in the Stage 1 study. This conclusion was reached after due consideration of the public input received, together with concern for the very significant capital cost of these options combined with their inability to respond economically to the shrinking waste stream. The technology is still not fully in place for the economic and safe disposal of the bottom ash and of the flyash produced in the incineration process.

Stage 2 of the CVRD's SWMP is currently under way, with monthly meetings of the Solid Waste Advisory Committee (SWAC), guiding the way. The first meeting of the SWAC was Feb/92. In Apr/92, Dayton & Knight Ltd. submitted a proposal for SWMP-Stage 2.

During the SWAC meeting held June 1, 1992, the Landfill Acquisition Subcommittee discussed the DRAFT Closure Plan for the Koksilah Sanitary Landfill. It was decided to forward the DRAFT closure plan to the MOE for review and/or approval of the proposed closure procedures. A copy of this plan is on file (PR 1805). Chris Jenkins reviewed the DRAFT Closure Plan and sent a letter (on July 3, 1992) to the CVRD suggesting some changes. One of CJ's proposed changes was to install 4 monitoring wells to evaluate groundwater quality.

At the SWAC meeting of July, 1992, it was recommended that detailed investigation of the 3 highest rated sites be carried out, which would include a geotechnical and hydrogeological assessment. A proposal for geotechnical/hydrogeological consulting services, by Piteau Associates, was received by the CVRD in April of 1992 (and is included in file 50.5405).

5. DISCUSSION:

From the files and the available data compiled from the water samples taken at or near the CVRD incinerators the following statements can be made:

- 1) There does not appear to be a consistent approach for monitoring possible effects on the groundwater quality adjacent to the CVRD TRPs. Two different groups within EP have taken samples for water quality at some or all of the 3 sites at different times. The well at TRP#2 has been tested more frequently than the wells at TRP#1 and TRP#3. In addition, the CVRD has submitted results for water samples taken from all 3 TRP wells on 3 occasions (without being requested to do so by EP). It should also be noted that the available monitoring data shows different parameters were

- tested for by different parties.
- 2) In general, the available monitoring results indicate that the quality of the water samples taken are within the Guidelines for Canadian Drinking Water Quality.
 - 3) There is an indication that the well at TRP#2 (Duncan) has elevated levels for specific conductance, hardness, dissolved sulphate and dissolved chloride, when compared to other wells in the same vicinity. Although the levels are within the guidelines it is clear that some degree of leachate contamination is occurring to the well water at TRP#2 near Duncan. There is also little knowledge of the relationship of the well at TRP#2 to the assumed leachate plume.
 - 4) There is evidence that the concentration of Manganese in the water samples from the well at TRP#1 near Lake Cowichan have exceeded the aesthetics objectives for all sample dates. This could explain after-taste noted during the October 19, 1992 inspections.
 - 5) There is not enough monitoring data (of the appropriate parameters) to make any determination of possible leachate contamination of the wells at TRP#1 or TRP#3.
 - 6) It would seem appropriate, considering the evidence for the probability of leachate contamination found at TRP#2 well, that further monitoring should be carried out to determine if a trend is developing which could lead to health risks. It would seem appropriate that sampling of all 3 wells at all 3 TRPs could/should be incorporated into the routine inspection schedule. Alternatively, the CVRD could monitor the wells.
 - 6) It was determined (by telephone conversation with Rosa Johnson of the CVRD on November 9, 1992) that annual monitoring of the 3 TRP wells has been conducted for the CVRD since 1990. Data for 1992 has not yet been received. It would seem appropriate for the CVRD to include parameters in their monitoring program that are known to be elevated in the ash or ash quench water that was sampled. This would require a letter requesting additional analyses for specific conductance, dissolved sulphate and dissolved chloride.
 - 7) From the "Koksilah River Quality" report by John Deniseger and Lloyd Erickson it is apparent that only the groundwater in the immediate area of TRP#2 is affected. The extent of the contamination is unknown and would require a hydrogeologist to conduct a study. There is no evidence that the Koksilah River quality is affected by TRP#2.
 - 8) A more detailed study (by a hydrogeologist) of the groundwater near TRP#2 has been suggested by John Deniseger and the groundwater section in Victoria in 1989, and also by Vlad Pomajzl in 1992.
 - 9) Progress has been made recently to minimize the generation of leachate at the 3 TRPs. Ash residue is now covered with intermediate cover as required in the Permit requirements. Ash quench water is no longer applied in such a way as to cause run-off. Also it was determined that the ash residue (at TRP#2) is not a special waste. It would probably be

advisable to conduct further tests on the ash residue to confirm that the ash is not a special waste.

- 10) The CVRD is currently developing their SWMP and have determined that a central landfill will be the best option for their long range management of solid waste. The closure of the existing landfill and the 3 TRP sites, must meet the requirements of the Environmental Protection Branch.

V. Pamiel
for
E. Denman



MINISTRY OF ENVIRONMENT, LANDS and PARKS
ENVIRONMENTAL PROTECTION

2569 Kenworth Road, Nanaimo, British Columbia V9T 4P7

PERMIT INSPECTION

Permit No: PA-5116

Date of Inspection: June 17, 1993

Cowichan Valley Regional District
137 Evans Street
Duncan, British Columbia
V9L 1P5

ATTENTION: Mike Salisbury

Re: TRP #2, Koksilah Road Incinerator, Duncan

A. SAMPLES TAKEN:

None

B. OBSERVATIONS AND COMMENTS:

- A unit: Upper temp. 1807°F, Lower temp. 1580°F.
- B unit: Upper temp. 1750°F, Lower temp. 1600°F.
- C unit: Upper temp. 1775°F, Lower temp. 1575°F.
- Honeywell circular temperature charts not installed on Units B & C.
- Last stack test May 3-5, 1993 out of compliance.

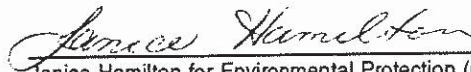
Total Particulate A Unit	0.2240 gr/SCF (512 mg/m ³)
Total Particulate B Unit	0.1555 gr/SCF (356 mg/m ³)
Total Particulate C Unit	0.1677 gr/SCF (384 mg/m ³)
Permit Level	0.1000 gr/SCF (230 mg/m ³)
- Brush and demo material burned in incinerators.
- Ash covered every 2 weeks.

C. PERMIT COMPLIANCE:

Based on Site Observations

Out of compliance with Permit requirements due to stack test results.

D. ACTION REQUIRED BY PERMITTEE:


Janice Hamilton for Environmental Protection (604)751-3189

Regional Office Follow-up:

cc: W.D. Lockhart, Air & Industrial Section Technician, Victoria



Province
British Columbia

B.C. Environment

Environmental Protection

JNAH/GDE
Entered on
Waste
EIA updated

Date of Inspection 23-11-09

Permit No. PA 5116

PERMIT INSPECTION

Permittee Cowichan Valley Reg Dist

Location TRP 2 - Duncan

A. SAMPLES TAKEN YES ☐ NO ☐

Sources Sampled 36 tonnes of garbage burned 7 days/wk

B. OBSERVATIONS AND COMMENTS: Last stack test May 3-5, 1993 - out of compliance due to exceeding particulate levels.

- Next stack test scheduled for this month

- A Unit, upper 1810 - bottom 1600 - opacity ~ 10%

B " " 1725 " 1600 " 10%

C " " 1675 1575 " 10%

C. PERMIT COMPLIANCE Based on Site Observations.

IN ☐

OUT ☒

ash being dampened in units before being removed - ash covered every 2 weeks

COMMENTS:

out of compliance based on last stack test.

D. ACTION REQUIRED BY PERMITTEE:

D. J. Salisbury
Permittee or Representative's Signature

[Signature]
For Environmental Protection

Regional Office Follow-up:

JH / CC [unclear]

April 6, 1994

File: PA-5116

Cowichan Valley Citizen's Alliance
for Responsible Waste Management
c/o 4300 Creighton Rd
Duncan BC V9L 1N9

ATTENTION: Norm Dyson

Dear Norm Dyson:

I am in receipt of your letter dated March 23, 1994, and I am sorry that our earlier letter of March 15, 1994, was not satisfactory for your purposes. I suspect that we were focusing too much on your request to "... provide a chronology of the interaction between your department and the CVRD ..." rather than "... when the incinerators first failed to meet permit standards and for how long ...".

Referring once again to the largest site (Duncan--Koksilah Rd), a review of our active file, which goes back ten years, indicates that the permit failed to meet the "scientific terms" as early as 1985. From 1985 until 1993 the permit was classified as being out of compliance for low temperature (less than 1800°F) on eight occasions and for high particulate emissions (greater than 230 mg/m³) on four occasions. Our environmental protection technician responsible for the CVRD incinerators advises that the smaller sites (Ladysmith and Lake Cowichan) have a better compliance record than the Koksilah Rd site.

If this information is of value to you and you wish a similar overview of the two other sites, please contact the undersigned at 751-3100. As an alternative, if you wish to have copies made of specific correspondence or monitoring

... /2

Norm Dyson

- 2 -

April 6, 1994

reports, this can be arranged (at a cost of \$1 per page); or you may also make an appointment to review the files (subject to our disclosure policy/procedures).

Yours truly,



R. A. Bollans, P.Eng.
Head, Industrial Section
Environmental Protection

RAB/dpc
citizen.rab

cc: Dave Lockhart, Air/Industrial Technician
Chris Jenkins, Environmental Protection Officer
G. E. Oldham, Regional Environmental Protection Manager



Province of
British Columbia

BC
Environment

Ministry of Environment,
Lands and Parks

Vancouver Island Region 1
Victoria District Office
Room 103
3179 Jacklin Road
Victoria, B.C.
V8V 1X4
Telephone: (604) 474-5544

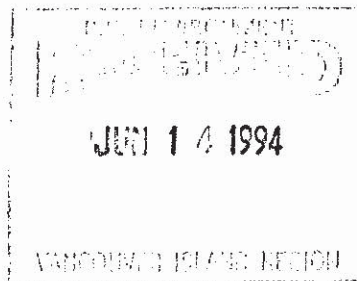
June 13, 1994

Nanaimo

Files: PA 2844
PA 5116
PA 5118

Cowichan Valley Regional District
137 Evans Street
Duncan BC V9L 1P5

ATTENTION: Derek York



Dear Derek York:

Please find, enclosed, copies of my recent permit inspection reports. As noted, the incinerators are still unable to achieve compliance due to excessive levels of particulate material.

In addition, please note the action items in Section "D" of the reports. If you have any questions, please do not hesitate to call. You can contact me at 474-5544.

Yours truly,

W. D. Lockhart
Environmental Protection
Technician
Industrial Section
Victoria

WDL/usc

Enclosures



JUN 14 1994

MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCHPermit No. PA5116
Date of Inspection 94.06.09PERMIT INSPECTION
Permittee Cowichan Valley Regional District
Location DuncanA. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

Last Stack test April 17-21Aunit 453.64 : 464.43 mg/m³Bunit 362.82 : 410.70 mg/m³Cunit 352.15 : 388.03 mg/m³

	Upper	Lower	Opacity
Aunit	1775°F	1600°F	0%
Bunit	2000°F	1575°F	0%
Cunit	1800°F	1600°F	0%

Ash is covered regularly
Runoff from ash coolingC. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: Stack sampling results exceed
permitted level of 230 mg/m³.D. ACTION REQUIRED BY PERMITTEE: Chipped demolition material
should not be given away for agricultural
use.
Minimize water used for ash cooling

Permittee or Representative's Signature

For Waste Management

Regional Office Follow-up:



B.C. ENVIRONMENT,
LANDS AND PARKS
Environmental Protection Division

Permit No. PA 5116
Date of Inspection 94.11.29

PERMIT INSPECTION

Permittee CVRD
Location Ladysmith Duncan

A. SAMPLES TAKEN YES ☐ NO ☒
Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:
Stacks sampled Oct 25, 27, 1994.
Unit A - 498.5 & 492.2 mg/m³
Unit B - 434.4 & 573.6 mg/m³
Unit C - 483.4 & 497.2 mg/m³
A-Unit 1630 downer 1805 uper 15% opacity
B-Unit 1650 " 1675 " 10% "
C-Unit 1650 " 1775 " 10% "
Ash levelled and covered almost daily.

C. PERMIT COMPLIANCE IN ☐ OUT ☒
Based on Site Observations.
COMMENTS: Last stack test exceeds 230 mg/m³

D. ACTION REQUIRED BY PERMITTEE: Advise our office what
long term plans are for incinerators

M. Salim
Permittee or Representative's Signature

[Signature]
For Environmental Protection

Regional Office Follow-up:

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

ENV 0 9 1995

H8

Permit No. PA 5116
Date of Inspection April 27, 1995

PERMIT INSPECTION

Permittee CVRD
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☐

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- B. Unit being sampled at time of inspection
- Last stack test Oct. 25-27, 1994. Results averaged 434 to 573 mg/m³ - out of compliance.
- B. Unit being carefully loaded for purpose of testing - comparing results to normal operation vs. by the book
A. Unit. lower 1484 upper 1770 opacity 10%
B. Unit. lower 1650 upper 1800 opacity 10%
C. Unit. lower 1600 upper 1700 opacity 20%
Ash being covered ever/2 weeks.

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: ok based on last stack test.

D. ACTION REQUIRED BY PERMITTEE: _____

M. Salasch
Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up: _____

Original to File
Copy to Permittee



MINISTRY OF ENVIRONMENT
WASTE MANAGEMENT BRANCH

Permit No. PAS116
Date of Inspection Sept. 22. 95

PERMIT INSPECTION

Permittee Carleton Place Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☐

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

Last stack test April - 1995 out of compliance.
Unit A 9.4 Unit B 12.0 Unit C 15.6 mg/mol. Permit 5.5
Opacities. A. Unit 20% B. Unit 30% C. Unit 0%
Ash is being levelled and covered every 2 weeks.
A unit just fired up 1400°F lower 1350°F upper
B Unit - fired up less than 1 hr. ago 1600°F lower 1550°F upper
C Unit " " " " 1750°F lower 1575°F upper

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: out of compliance due to stack test

D. ACTION REQUIRED BY PERMITTEE: _____

M. Salisbury
Permittee or Representative's Signature

[Signature]
For Waste Management

Regional Office Follow-up:



B.C. ENVIRONMENT,
LANDS AND PARKS
Environmental Protection Division

Permit No. PA5116

Date of Inspection 96.11.29

PERMIT INSPECTION

Permittee Cowichan Valley Regional District
Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☒

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Stacks sampled May 1996
- A unit - 504, B unit - 331, C unit - 525 - out of compliance.
- landfill appears to regularly maintained - levelled and covered.
- A unit 1800 upper / 1700 lower B unit 1800 upper / 1800 lower
- C unit 1700 upper / 1700 lower
- opacities - A - 10% B - 20% C - 5% All units pushing flyash
- hole in shell at upper burner on B unit

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

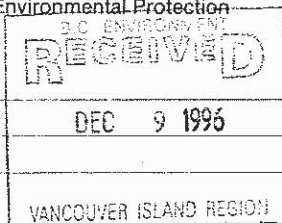
COMMENTS: Last stack test results exceed permit specifications.

D. ACTION REQUIRED BY PERMITTEE ① Ensure compliance with permit for stack test results. ② Ensure upper temperatures are 1800°F. ③ Ensure shells are leak-free and all air settings are at spec.

G. Bligh
Permittee or Representative's Signature

Regional Office Follow-up:

W. Shupert
For Environmental Protection



Original to File
Copy to Permittee



B.C. ENVIRONMENT,
LANDS AND PARKS

Environmental Protection Division

MAY 1 1997

Permit No. PA 5116

Date of Inspection Mar. 7. 97

PERMIT INSPECTION

Permittee CVRD

Location Duncan

A. SAMPLES TAKEN YES ☐ NO ☐

Sources Sampled _____

B. OBSERVATIONS AND COMMENTS:

- Opinions - A Unit 10% - B Unit 10% - C Unit 10%
- Ash land fill being handled - covered regularly
- Stacks sampled Nov. 96 - All 3 Units exceeded
permitted values.
- Temperatures A Unit - 1503/1765 - upper
B Unit - 1500/1800 upper C Unit - 1500/1500 - upper

C. PERMIT COMPLIANCE IN ☐ OUT ☒

Based on Site Observations.

COMMENTS: - Stack test exceeded permit value.
- C Unit upper temp not being met.

D. ACTION REQUIRED BY PERMITTEE

① Stack test exceeded permitted
values. ② C Unit upper temp at 1500 - ensure
temperatures of 1800 are met.

Mr. Delaney
Permittee or Representative's Signature

CA Shubert
For Environmental Protection

Regional Office Follow-up:

Original to File
Copy to Permittee



CVRD

MTG MF MTS RAB
PA-05116

December 18, 1998

Dec 21/98

File: TRP2Ash

Mr. A.C. Leuschen, P.Eng.
Ministry of Environment, Lands and Parks
2080A Labieux Road
NANAIMO BC V9T 6J9

Rob McLenahan was contacted. He advised that the letter must be signed by the owner which in this case is First Nations. Adrian Michelson of Morrow was advised that this letter does not provide an exemption under sec. 42 of CSR. Further, this land (ashfill) is not provincial jurisdiction therefore we have no comments, and we will not issue an SRA. MTG

Dear Mr. Leuschen:

RE: CVRD - Koksilah Road Incinerator - Ashfill

Please find enclosed a completed landfill site form for the ashfill component of the Koksilah Road Incinerator facility. Although the CVRD may utilize the incinerator building and surrounding land for some other aspect of solid waste management, there is no intention at this time to utilize the ashfill for any other purpose. Also, the land in question is not owned by the CVRD, but is leased from the Cowichan Tribes and is, therefore, under federal jurisdiction. The CVRD, therefore, can provide no assurance of future use of the site once the lease has expired and the site is no longer utilized by the CVRD.

Please direct any questions you may have regarding this issue to the undersigned, or Mr. Derek York, Manager, Engineering Services

Yours truly,

Brian Dennison, P.Eng.
Deputy Manager
Engineering Services

BWDD:rlj

pc: Derek S. York, Manager, Engineering Services
Enclosure

rsap:www.mtelosureleuschenKXsell@ilite.deci898

COWICHAN VALLEY REGIONAL DISTRICT - ENGINEERING SERVICES

INTENDED FUTURE USE OF LANDFILL SITE FORM**I (PRINT NAME AND TITLE IN FULL),**Brian Dennison, P.Eng., Deputy Manager, CVRD Engineering Services Dept.

hereby declare that the intended future use of the subject landfill site (Pollution Prevention File Number PA-5116) is **(CHECK ONLY ONE)**:

☐

(i) **agricultural land use**, and the concentration of any substance in the contaminated soil is not greater than or equal to

(A) the concentration for that substance specified in Column II of Schedule 4, or

(B) the lowest concentration for that substance specified in Column II of Schedule 5;

☐

(ii) **urban park land use**, and the concentration of any substance in the contaminated soil is not greater than or equal to

(A) the concentration for that substance specified in Column III of Schedule 4, or

(B) the lowest concentration for that substance specified in Column III of Schedule 5;

☐

(iii) **a commercial land use**, and the concentration of any substance in the contaminated soil is not greater than or equal to

(A) the concentration for that substance specified in Column V of Schedule 4, or

(B) the lowest concentration of that substance specified in Column V of Schedule 5;

☐

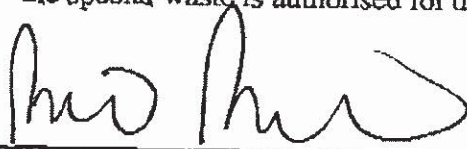
(iv) **an industrial land use**, and the concentration of any substance in the contaminated soil is not greater than or equal to

(A) the concentration for that substance specified in Column VI of Schedule 4, or

(B) the lowest concentration for that substance specified in Column VI of Schedule 5;

☒

(v) **only for waste disposal**, but the contaminated soil must not be a special waste unless the special waste is authorised for disposal under the *Special Waste Regulation*.

December 18, 1998

Signature

Date



MTG AF AFS
18 DEC 1998
PA-05116

December 18, 1998

File: TRP2Ash

Mr. A.C. Leuschen, P.Eng.
Ministry of Environment, Lands and Parks
2080A Labieux Road
NANAIMO BC V9T 6J9



Dear Mr. Leuschen:

RE: CVRD – Koksilah Road Incinerator - Ashfill

Please find enclosed a completed landfill site form for the ashfill component of the Koksilah Road Incinerator facility. Although the CVRD may utilize the incinerator building and surrounding land for some other aspect of solid waste management, there is no intention at this time to utilize the ashfill for any other purpose. Also, the land in question is not owned by the CVRD, but is leased from the Cowichan Tribes and is, therefore, under federal jurisdiction. The CVRD, therefore, can provide no assurance of future use of the site once the lease has expired and the site is no longer utilized by the CVRD.

Please direct any questions you may have regarding this issue to the undersigned, or Mr. Derek York, Manager, Engineering Services

Yours truly,

Brian Dennison, P.Eng.
Deputy Manager
Engineering Services

BWDD:rlj
pc: Derek S. York, Manager, Engineering Services
Enclosure

rosa:\swm\closure\leuschen\KRashfilluse.dec1898

COWICHAN VALLEY REGIONAL DISTRICT ~ ENGINEERING SERVICES

March 8, 1999

Files: PA-02844
~~PA-05116~~
PA-05118

Derek S. York
Manager Engineering Services
Cowichan Valley Regional District
137 Evans St
Duncan BC V9L 1P5

FILE COPY

Dear Derek York:

Re: Lake Cowichan, Duncan & Ladysmith Municipal Solid Waste Incinerators and Ashfills

In accordance with the Cowichan Valley Regional District Solid Waste Management Plan, waste can no longer be incinerated at these incinerators or discharged at these ashfills. Therefore, to reflect this change in status, please submit a request to cancel the incinerator portion of the permits and to abandon the ashfill portion of the permits in accordance with Sections 36 and 16, respectively, of the *Waste Management Act*, to the Regional Waste Manager.

The solid waste management plan also states that closure measures and rehabilitation, as necessary will begin at these facilities in 1999. Therefore, please send us the proposed closure plans for our review.

Thank you for your co-operation in this regard.

If you have any questions, please contact the undersigned at (250) 751-3199.

Yours truly,



A. C. Leuschen, P.Eng.
Pollution Prevention Officer
Municipal Section

ACL/lds
02844 cancel permit.doc

FILE COPY

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September 27, 2000

File: 76780-35/CVRD
PR-01805
PA-02844
PA-05116
PA-05118

Frank Raimondo, Administrator
Cowichan Valley Regional District
137 Evans St
Duncan BC V9L 1P5

Dear Frank Raimondo:

Thank you for meeting with ministry staff on June 7, 2000, to discuss the Cowichan Valley Regional District (CVRD) solid waste management plan (SWMP).

We are pleased to hear that this year CVRD plans to start a major amendment of its SWMP that will consider all options for managing municipal solid waste including landfill, incineration, waste export, etc. As discussed, there is considerable flexibility in the amendment process and content of a SWMP, consistent with the ministry *Guide to the Preparation of Regional Solid Waste Management Plans by Regional Districts*. We look forward to reviewing the proposed scope, schedule and public review and consultation process, for the plan amendment. CVRD is reminded that the current ministry approval for waste export to the Cache Creek landfill expires December 31, 2001.

As discussed, the ministry has concerns regarding the proper management of demolition, land-clearing and construction (DLC) waste in the CVRD. Presently, there is one permitted burn site for land clearing waste but no disposal sites for construction or demolition waste. DLC waste is part of the municipal solid waste stream, and therefore it must be addressed in the SWMP amendment. In addition, Bill 17 – the *Waste Management Amendment Act* allows regional districts to develop bylaws to regulate the management of municipal solid waste, including DLC waste, and recyclable material. To help ensure that DLC waste is being handled in an environmentally responsible manner, CVRD is encouraged to consider developing bylaws to regulate the management of DLC waste. Enclosed is a copy of Bill 17 and related information; I understand a copy of the ministry's draft bylaw evaluation policy was previously sent to CVRD.

.../2

We are pleased that final landfill cover has been installed on the closed Koksilah landfill but as indicated in previous correspondence, the remaining parts of the landfill closure plan must also be submitted. Closure plans for the three incinerator ash landfills are also required. It is important that the landfills be properly closed to minimize any potential for surface and groundwater contamination. As discussed, the ministry is willing to consider alternate approaches for closure of the landfills, provided the rationale for any exemptions from ministry *Landfill Criteria for Municipal Solid Waste* are justified by a qualified professional.

We look forward to working with the regional district during development of the SWMP amendment and landfill closure plans.

If you have any questions, please contact the undersigned at telephone (250) 751-3176.

Yours truly,

D.F. Brown, B.Sc.
Regional Pollution Prevention Manager
Vancouver Island Region

Enclosure

LEUSCHEN/jlk
7678035cvrd.doc

COMPLIANCE REVIEW RECORD

File: PA-05116

Client name: Cowichan Valley Regional District (CVRD)

Address: in MOE databases

Client representative contacted: Brian Dennison

Telephone No.: in MOE databases

Date of Inspection: Sept. 7, 2005 (file review)

AUTHORIZATION REQUIREMENTS: Review Period: from **April 1, 2005** to **Sept. 7, 2005**

Findings:

- a) Does discharge have an authorization number?
- b) Is all discharge monitoring conducted as required?
- c) Is all discharge monitoring reported as required?
- d) Is all discharge monitoring data in compliance with the authorization?
- e) Is all environmental monitoring conducted as required?
- f) Is all environmental monitoring reported as required?
- g) Is all environmental monitoring data in compliance with authorization?
- h) Is environmental monitoring indicating achievement of receiving environment quality criteria?

YES	NO	N/A	?*
X			
		X	
		X	
		X	
		X	
		X	
		X	
		X	

AUTHORIZATION SUBSECTION	DETAILS	COMPLIANCE		
		IN	OUT	?*

MONITORING REQUIREMENTS: Review Period: from **April 1, 2005** to **Sept. 7, 2005**

DISCHARGE MONITORING	DETAILS	REPORTING FREQUENCY	COMPLIANCE		
			IN	OUT	?*
<u>Not applicable</u>					
RECEIVING ENVIRONMENT MONITORING	DETAILS	REPORTING FREQUENCY	IN	OUT	?*
<u>Not applicable</u>					

COMMENTS AND INSPECTION OBSERVATIONS: Consistent with the solid waste management plan, the incinerator and ash landfill ceased operation in the late 1990s. The solid waste management plan indicates that ash landfill closure activities will probably begin in 2002.

RECOMMENDED FOLLOW-UP: Letter sent to permittee requesting an ash landfill closure/post-closure plan and a request to abandon the permit.

ACTIONS THAT AUTHORIZATION HOLDER IS TAKING TO PROTECT AND IMPROVE THE RECEIVING ENVIRONMENT:

COMPLIANCE REVIEW CONDUCTED BY: A. Leuschen

SIGNATURE: 

*? = Not able to determine (e.g. no records)



September 7, 2005

File: PA-02844
PA-05116
PA-05118

Brian Dennison, P.Eng.
Cowichan Valley Regional District
Deputy Manager Engineering Services
175 Ingram St
Duncan BC V9L 1N8

Dear Mr. Dennison:

Re: Incinerator Ash Landfills

I understand the incinerator ash landfills ceased operation in the late 1990s. The Cowichan Valley Regional District solid waste management plan indicates that closure of the ash landfills will be carried out probably beginning in 2002. The ash landfill permits have not yet been canceled.

To proceed towards landfill closure and permit cancellation, please submit requests to abandon Permit PA-02844, PA-05116 and PA-05118 and a closure/post-closure plan for each landfill that:

- addresses, and provides rationale/justification for any exemptions from, ministry "Landfill Criteria for Municipal Solid Waste" sections 8.1 to 8.6 and 6.3 (available at <http://wlapwww.gov.bc.ca/epd/epdpa/mpp/lcmsw.html>),
- provides current status of closure/post-closure plan implementation, and,
- confirms the discharge of waste has ceased and that there is no continuing effect on the environment.

Each closure/post-closure plan must be certified by a "qualified professional" which means a person who:

- is registered in British Columbia with his or her appropriate professional association, acts under that professional association's code of ethics, and is subject to disciplinary action by that professional association, and,
- through suitable education, experience, accreditation and knowledge may be reasonably relied on to provide advice within his or her area of expertise as it relates to the landfill.

.../2

Brian Dennison, P.Eng.
Cowichan Valley Regional District

- 2 -

September 8, 2005

Of course, each closure/post-closure plan should be appropriate for the landfill.

Please send in the requests to abandon Permit PA-02844, PA-05116 and PA-05118 pursuant to section 20 of the *Environmental Management Act*, and the closure/post-closure plans, by December 31, 2005.

Thank you for your co-operation. If you have any questions, please contact me at telephone 250 751-3199.

Yours truly,

ORIGINAL SIGNED BY

A.C. (Al) Leuschen, MEng, PEng
Senior Environmental Protection Officer
Environmental Protection

ACL/jlk
02844 closure plan.doc

Nanaimo ENV Filing ENV:EX

From: Leuschen, Allan ENV:EX
Sent: Wed, July 26, 2006 3:40 PM
To: 'Brent Schmitt (bschmitt@cvrd.bc.ca)'; Nanaimo ENV Filing ENV:EX
Subject: Ashfill closures

Attachments: cvrd ashfill.pdf

Files: PA-02844
PA-05116
PA-05118

Hi Brent: Attached is scanned pdf file of my letter dated September 7, 2005. I believe the letter is mainly self-explanatory.



cvrd ashfill.pdf (71 KB)

The ministry "Landfill Criteria for Municipal Solid Waste" and "Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills" are now available at:

http://www.env.gov.bc.ca/epd/epdpa/mpp/incin_landfill.htm

<http://www.env.gov.bc.ca/epd/epdpa/mpp/lcmsw.html>

<http://www.env.gov.bc.ca/epd/epdpa/mpp/gfemamsw.html>

You may also wish to review the CVRD files regarding the Koksilah Road closed municipal solid waste landfill (ministry file PR-01805).

I trust this is of assistance.

If you have any questions, please contact me at telephone 250 751-3199.

Thank you for your cooperation. I look forward to receiving the requested information.

A.C. (Al) Leuschen, MEng, PEng
Senior Environmental Protection Officer
Ministry of Environment
Vancouver Island Region
2080-A Labieux Rd
Nanaimo BC V9T 6J9
tel (250) 751-3199
fax (250) 751-3103
allan.leuschen@gov.bc.ca



September 7, 2005

File: PA-02844
PA-05116
PA-05118

Brian Dennison, P.Eng.
Cowichan Valley Regional District
Deputy Manager Engineering Services
175 Ingram St
Duncan BC V9L 1N8

Dear Mr. Dennison:

Re: Incinerator Ash Landfills

I understand the incinerator ash landfills ceased operation in the late 1990s. The Cowichan Valley Regional District solid waste management plan indicates that closure of the ash landfills will be carried out probably beginning in 2002. The ash landfill permits have not yet been canceled.

To proceed towards landfill closure and permit cancellation, please submit requests to abandon Permit PA-02844, PA-05116 and PA-05118 and a closure/post-closure plan for each landfill that:

- addresses, and provides rationale/justification for any exemptions from, ministry "Landfill Criteria for Municipal Solid Waste" sections 8.1 to 8.6 and 6.3 (available at <http://wlapwww.gov.bc.ca/epd/epdpa/mpp/lcmsw.html>),
- provides current status of closure/post-closure plan implementation, and,
- confirms the discharge of waste has ceased and that there is no continuing effect on the environment.

Each closure/post-closure plan must be certified by a "qualified professional" which means a person who:

- is registered in British Columbia with his or her appropriate professional association, acts under that professional association's code of ethics, and is subject to disciplinary action by that professional association, and,
- through suitable education, experience, accreditation and knowledge may be reasonably relied on to provide advice within his or her area of expertise as it relates to the landfill.

.../2

Brian Dennison, P.Eng.
Cowichan Valley Regional District

- 2 -

September 8, 2005

Of course, each closure/post-closure plan should be appropriate for the landfill.

Please send in the requests to abandon Permit PA-02844, PA-05116 and PA-05118 pursuant to section 20 of the *Environmental Management Act*, and the closure/post-closure plans, by December 31, 2005.

Thank you for your co-operation. If you have any questions, please contact me at telephone 250 751-3199.

Yours truly,

ORIGINAL SIGNED BY

A.C. (Al) Leuschen, MEng, PEng
Senior Environmental Protection Officer
Environmental Protection

ACL/jlk
02844 closure plan.doc



COMPLIANCE REVIEW RECORD

Environmental Protection

File number: **PA - 05116**
Client name: **Cowichan Valley Regional District (CVRD)**
Address: **Lot 117-2, Section 10, Range 7, Plan 2382 OA Quamichan District - Cowichan Indian Reserve #1 = Koksilah Road**
Client rep: **Bob McDonald**
Telephone No.: **250.746.2530**
Date of Inspection: **June 27, 2007** Review completed by: **Martina Kopat**
AUTHORIZATION REQUIREMENTS: Review Period: from **September 7, 2005** to **June 27, 2007**

Findings: a capital "X" should be placed in the appropriate column		YES	NO	N/A	??
a)	Does discharge have an authorization number?	1			
b)	Is all discharge monitoring conducted as required?			1	
c)	Is all discharge monitoring reported as required?			1	
d)	Is all discharge monitoring data reviewed in compliance with the authorization?			1	
e)	Is all environmental monitoring conducted as required?			1	
f)	Is all environmental monitoring reported as required?			1	
g)	Is all environmental monitoring data reviewed in compliance with authorization?			1	
h)	Is environmental monitoring indicating achievement of receiving environment quality criteria?			1	
Activity:	INS	NCD Matrix Level:	I/C	NCD Matrix category:	
Comments:	The incinerator ceased operation in the late 1990s. Closure Plan for this site listed as a 2007 project under the CVRD's Solid Waste Management Plan.		Compliance tool initiated:		
AUTHORIZATION SUBSECTION	DETAILS			COMPLIANCE	
				IN	OUT ??
Not applicable					
MONITORING REQUIREMENTS: Review Period from September 7, 2005 to June 27, 2007					
DISCHARGE MONITORING	DETAILS		Reporting Frequency	COMPLIANCE	
				IN	OUT ??
Not applicable					
RECEIVING ENVIRONMENT MONITORING	DETAILS		Reporting Frequency	COMPLIANCE	
				IN	OUT ??
Not applicable					

DETAILED COMMENTS AND INSPECTION OBSERVATIONS:

•The site was not accessible due to the accumulation of bundles from the recycling facility operating on the grounds. This is Federal Land (Indian Reserve). The incinerator ceased operation in the late 1990s. The CVRD's Solid Waste Management Plan (amendment no.3 - 2006) has the ash landfill closure plan listed as a project for 2007. // Phase 1 and 2 site assessments have been completed by the band with assistance from Indian and Northern Affairs Canada (INAC).

RECOMMENDED FOLLOW-UP:

Submit request to abandon the permit by October 31, 2007. // Submit a closure/post-closure plan for the site by December 31, 2007.

Follow up and work with First Nations, Indian and Northern Affairs Canada and appropriate federal agencies.

ACTIONS THAT AUTHORIZATION HOLDER IS TAKING TO PROTECT AND IMPROVE THE RECEIVING ENVIRONMENT:

COMPLIANCE REVIEW CONDUCTED BY (SIGNATURE):

For details on Non-Compliance Decision (NCD) levels and categories see www.env.gov.bc.ca/main/prgs/docs/ce_policy_and_procedure.pdf

Ministry of Environment	Vancouver Island Region Environmental Protection Division	Mailing Address: 2080A Labieux Rd Nanaimo BC V9T 6J9	Telephone: 250 751-3100 Facsimile: 250 751-3103 Website: http://wapwww.gov.bc.ca
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Nanaimo ENV Filing ENV:EX

From: Leuschen, Allan ENV:EX
Sent: Tuesday, January 20, 2009 9:27 AM
To: 'hhuffman@cvrld.bc.ca'
Cc: Soufan, Safwan ENV:EX; Nanaimo ENV Filing ENV:EX
Subject: FW: CVRD ashfill closure planning
Attachments: 20090120085502.pdf

Files: PA-02844; PA-05116; PA-05118

Greetings Ms. Huffman: Thanks for your email. Briefly here is my understanding of the status of the ashfills re: permit abandonment and closure.

PA-02844: CVRD Solid Waste Management Plan (SWMP amendment no.3 - 2006) commits to ash landfill closure as a project for 2007-2010. The June 27, 2007 Compliance Review Record requested that CVRD submit a request to abandon the permit by October 31, 2007 and a closure/post-closure plan by December 31, 2008. We haven't received the request to abandon the permit or the closure/post-closure plan.

PA-05116: The CVRD SWMP commits to develop an ash landfill closure plan in 2007. The June 27, 2007 Compliance Review Record requested that CVRD submit a request to abandon the permit by October 31, 2007 and a closure/post-closure plan by December 31, 2007. We haven't received the request to abandon the permit or the closure/post-closure plan.

PA-05118: The CVRD SWMP commits to develop an ash landfill closure plan in 2008. The June 27, 2007 Compliance Review Record requested that CVRD submit a request to abandon the permit by October 31, 2007 and a closure/post-closure plan by December 31, 2008. We haven't received the request to abandon the permit or the closure/post-closure plan.

Safwan is working on the current compliance assessments and will send them to CVRD soon.

I believe your questions are addressed by the above and prior correspondence (see attached letter of September 7, 2005). Please send us closure/post-closure plans and requests to abandon the permits pursuant to section 20 of the Environmental Management Act. The closure/post-closure plans must address the ministry "Landfill Criteria for Municipal Solid Waste" and ministry "Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills" (both available at http://www.env.gov.bc.ca/epd/epdpm/mpp/incin_landfill.htm) particularly sections 6.3 and 8.1 to 8.6 of the Landfill Criteria for Municipal Solid Waste. Please also ensure the closure/post-closure plans include monitoring programs consistent with these documents.

Thank you for your cooperation. We look forward to receiving the closure/post-closure plans and requests to abandon the permits pursuant to section 20 of the Environmental Management Act.

If you have any questions please contact me at telephone 250 751-3199.

A.C. (Al) Leuschen, MEng, PEng
Senior Environmental Protection Officer
Ministry of Environment
Vancouver Island Region
2080-A Labieux Rd
Nanaimo BC V9T 6J9
tel (250) 751-3199
fax (250) 751-3103
allan.leuschen@gov.bc.ca

From: Harmony Huffman [mailto:hhuffman@cprd.bc.ca]
Sent: Monday, January 19, 2009 11:17 AM
To: Soufan, Safwan ENV:EX
Subject: CVRD ashfill closure planning

Hi Safwan,

Happy new year!

Quick question – I may have asked you this earlier – are you able to direct me to any guidelines for abandoning a waste permit? I'm looking for some structure around the closure process for the ashfills. For example, what documents do you need, timelines etc.

Any info is much appreciated.

*Harmony Huffman
Environmental Technologist
Cowichan Valley Regional District
175 Ingram St. Duncan, B.C. V9L 1N8
Tel (250) 746- 2530
Fax (250) 746-2543*



Save a tree, please don't print this e-mail unless necessary

If you are not the intended recipient of this email and any attachments, please notify the sender by a return email and delete the email and any attachments immediately thereafter. This email and any attachments may be confidential and privileged. Confidentiality and privilege are not lost by this email and any attachments having been sent to the wrong person. Any use of this email and any attachments by an unintended recipient is prohibited.

Soufan, Safwan ENV:EX

From: Harmony Huffman [hhuffman@cvrd.bc.ca]
Sent: Tuesday, January 27, 2009 3:25 PM
Subject: Read: Permits PR-1805, PA-2844, PA-5116, and PA-5118

Your message

To: hhuffman@cvrd.bc.ca
Subject:

was read on 2009-01-27 3:25 PM.

Page 1 of 1

Soufan, Safwan ENV:EX

From: Soufan, Safwan ENV:EX
Sent: Tuesday, January 27, 2009 3:00 PM
To: 'bmcdonald@cvrd.bc.ca'; 'Harmony Huffman'
Cc: Leuschen, Allan ENV:EX
Subject: Permits PR-1805, PA-2844, PA-5116, and PA-5118
Attachments: Compliance PR-1805.pdf; Compliance PA-2844.pdf; Compliance PA-5116.pdf; Compliance PA-5118.pdf

Tracking:

Recipient	Delivery
'bmcdonald@cvrd.bc.ca'	
'Harmony Huffman'	
Leuschen, Allan ENV:EX Delivered: 2009-01-27 3:00 PM	

Dear Mr McDonald and Ms Hoffmann:

Attached please find the latest Compliance Review Records for Permits
PR-1805
PA-2844
PA-5116
PA-5118

If you have any questions please contact me as per given contacts.

Regards,

Safwan Soufan

Environmental Protection Officer
Environmental Protection, Vancouver Island Region
B.C. Ministry of Environment
2080A Labieux Road, Nanaimo, BC V9T 6J9
p. 250-751-3197 f. 250-751-3103
e. safwan.soufan@gov.bc.ca



COMPLIANCE REVIEW RECORD

Environmental Protection

File number: PA - 05116
Client name: Cowichan Valley Regional District (CVRD)
Address: 175 Ingram Street, Duncan BC V9L 1N8

COMPLIANCE:	
IN or OUT:	OUT

Client rep: Bob McDonald, Manager Solid Waste; Harmony Huffman, Environmental Technologist
Telephone No.: 250.746.2530

Date of inspection: November 21, 2008 Review completed by: Safwan Soufan, Environmental Protection Officer/
Allan Leuschen, P.Eng. Senior Environmental Protection Officer

AUTHORIZATION REQUIREMENTS: Review Period: from June 27, 2007 to January 27, 2009

Findings:	YES	NO	N/A	?
a) Does discharge have an authorization number?	X			
b) Is all discharge monitoring conducted as required?			X	
c) Is all discharge monitoring reported as required?			X	
d) Is all discharge monitoring data reviewed in compliance with the authorization?			X	
e) Is all environmental monitoring conducted as required?			X	
f) Is all environmental monitoring reported as required?			X	
g) Is all environmental monitoring data reviewed in compliance with authorization?			X	
h) Is environmental monitoring indicating achievement of receiving environment quality criteria?			X	

Activity:	INS	NCD Matrix Level:	2	NCD Matrix category:	B
Comments:	The incinerator ceased operation in the late 1990s. The CVRD SWMP commits to develop an ash landfill closure plan in 2007. CVRD did not submit a request to abandon the permit or a closure/post-closure plan.		Compliance tool initiated:	warning	

AUTHORIZATION SUBSECTION	DETAILS	COMPLIANCE		
		IN	OUT	?
CVRD Solid Waste Management Plan (amendment no.3 - 2006) commits to develop an ash landfill closure plan in 2007.	The June 27, 2007 Compliance Review Record requested that CVRD submit a request to abandon the permit by October 31, 2007 and a closure/post-closure plan by December 31, 2007. CVRD has not completed these requests.		X	

MONITORING REQUIREMENTS: Review Period from June 27, 2007 to January 8, 2009

DISCHARGE MONITORING	DETAILS	Reporting Frequency	COMPLIANCE		
			IN	OUT	?
Not applicable					
RECEIVING ENVIRONMENT MONITORING	DETAILS	Reporting Frequency	IN	OUT	?
Not applicable					

DETAILED COMMENTS AND INSPECTION OBSERVATIONS:

The ash landfill is located on a federal Land (Indian Reserve). A significant area of the site was not accessible due to the accumulation of bundles of imported domestic and commercial waste in addition to the recycling residue from the recycling facility operating on the grounds. A number of stacked unlabeled barrels were observed on the site. CVRD representatives indicated that the ash landfill was not covered with a top layer, that two monitoring wells were installed by the tribes two or three years ago, that monitoring program results are not officially communicated with CVRD, and that the nearest CVRD monitoring wells are three across the street leading to the site. To the date of the inspection no record of monitoring results is available on ministry files.

RECOMMENDED FOLLOW-UP:

Submit request to abandon the permit pursuant to section 20 of the *Environmental Management Act*. Submit a closure/post-closure plan for the site. Follow up and work with First Nations, Indian and Northern Affairs Canada and appropriate federal agencies. Contravention of the *Environmental Management Act*, regulations, solid waste management plan, and/or the permit may result in compliance and enforcement actions including advisories, warnings, directives including orders, administrative sanctions, tickets and/or formal charges (prosecution).

ACTIONS THAT AUTHORIZATION HOLDER IS TAKING TO PROTECT AND IMPROVE THE RECEIVING ENVIRONMENT:

COMPLIANCE REVIEW CONDUCTED BY (SIGNATURE):

For details on Non-Compliance Decision (NCD) levels and categories see www.env.gov.bc.ca/main/prgs/docs/ce_policy_and_procedure.pdf

Ministry of Environment	Vancouver Island Region Environmental Protection Division	Mailing Address: 2080A Labieux Rd Nanaimo BC V9T 6J9	Telephone: 250 751-3100 Facsimile: 250 751-3103 Website: http://www.gov.bc.ca/env/
-------------------------	--	--	--



MAN



November 24, 2009

File No.

5280-15-01

Files: PA-2844
PA-5116
PA-5118

Allan Leuschen
Senior Environmental Protection Officer
Ministry of Environment
2080 Labieux Road
NANAIMO BC V9T 6J9

Dear Mr. Leuschen:

RE: CVRD Request to Abandon Permits PA-02844, PA-05116, and PA-05118

Please accept this letter as a formal request by the Cowichan Valley Regional District (CVRD) to abandon the following waste discharge permits:

- PA-02844 Koksilah Road
- PA-05116 Meade Creek
- PA-05118 Peerless Road

As you are aware, these permits allowed the on-site disposal of incinerator ash at three of the CVRD's former incinerator sites. Since all incinerators ceased operation in the late 1990s, and have since been dismantled, there is no longer any need for these permits to remain active.

As per the discussions held during your site visit of November 13, 2009, the CVRD is currently initiating closure planning for each of the permit locations, and has set aside funds for this purpose (although some projects may be eligible for additional funding). While each property is in various stages of remediation planning, it can be noted that SLR Consulting Ltd. has been retained to perform a Preliminary Site Investigation on the Meade Creek property (PA-05116), beginning this month. The CVRD has received funding under the BC Brownfield Renewal Strategy to pursue Preliminary and Detailed Site Investigations for the Meade Creek Property. It is hoped that Detailed Site Investigations will be completed by spring 2010. → PA-2844

Discussions continue with Cowichan Tribes and Indian and Northern Affairs Canada (INAC) regarding the Koksilah Road site (PA-02844), although we understand that Detailed Site Investigations (also carried out by SLR Consulting Ltd., under contract with Cowichan Tribes) have been initiated on this property. The CVRD understands that funding may be available through INAC for the completion of site investigations and remediation works on this property. Remediation planning for the Peerless Road property (PA-05118) is temporarily on hold while we await a provincial decision regarding the availability of funding for Crown Brownfield sites (the Peerless property is currently leased from the Crown by the CVRD). Nonetheless, it is expected that site investigations will commence on the Peerless Road sites in 2010, in conjunction with upgrades to the onsite recycling depot. → 5116

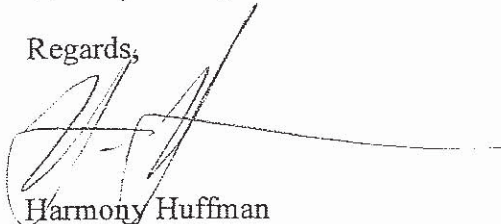
.../2

Allan Leuschen
November 24, 2009

Page 2

We look forward to receiving your further direction with regard to closure planning activities.
Thank-you for your attention to this matter.

Regards,

A handwritten signature in black ink, appearing to read 'H. Huffman', with a long horizontal line extending to the right.

Harmony Huffman
Environmental Technologist
Engineering & Environment

HH:ll

pc: Bob McDonald, Manager, Recycling & Waste Management

Z:\SWM\FACILITIES\MOE\AbandonPermitNov2309.docx



FILE COPY

January 25, 2010

File: PA-2884, PA-05116, PA-5118

Cowichan Valley Regional District
175 Ingram St
Duncan BC V9L 1N8

ATTENTION: Harmony Huffman, Environmental Technologist

Dear Ms. Huffman:

Re: Cowichan Valley Regional District Compliance Review Record
PA-2884, PA-5116, and PA-5118

Thank you for meeting Allan Leuschen and I on November 13th, 2009, for site inspections of the three Cowichan Valley Regional District (CVRD) ash landfills and for submitting a request to abandon the associated discharge permits. Please find enclosed the results of the compliance review and inspection of those sites.

As a result of the review, all three permits were designated **out of compliance**. I would like to draw your attention to the **recommended follow-up** section of the compliance review in which I ask that you submit a closure/post-closure plan for these sites. Please contact Al Leuschen, Senior Environmental Protection Officer, to discuss the plans prior to preparation to ensure that they will satisfy the ministry's requirements.

I am awaiting the 2008 annual monitoring report for the CVRD Koksilah Rd landfill (PR-1805) to complete a compliance review of the site. Please send the report as soon as available.

If you have any further questions you are welcome to contact me.

Yours truly,

Melanie Mamoser
Environmental Protection Intern

Enclosures

MM/jlk \\Tarpon\S40133\EnvProtection_Share\General\SAVE\2010\January\PA-2844 -5116 -
5118 Nov 2009 CRR cover Letter.doc

COMPLIANCE REVIEW RECORD

V**= Not able to determine (e.g. no records)

File number: PA-5116
 Client name: CVRD
 Address: 175 Ingram St., Duncan, BC, V9L 1N8
 Client rep: Bob McDonald, Mgr, Recycling & Waste Management & Harmony Huffman, Environmental Technologist.
 Telephone No.: 250-745-2530
 Date of Inspection: November 13th, 2009 review completed by: Melanie Mamoser, Environmental Protection Intern

COMPLIANCE:	
IN, OUT, UNDETERMINED:	OUT

AUTHORIZATION REQUIREMENTS: Review Period: November 21st, 2008 to November 24th, 2009

Findings:

- a) Does discharge have an authorization number?
- b) Is all discharge monitoring conducted as required?
- c) Is all discharge monitoring reported as required?
- d) Is all discharge monitoring data reviewed in compliance with the authorization?
- e) Is all environmental monitoring conducted as required?
- f) Is all environmental monitoring reported as required?
- g) Is all environmental monitoring data reviewed in compliance with authorization?
- h) Is environmental monitoring indicating achievement of receiving environment quality criteria?

YES	NO	N/A	??
X			
		X	
		X	
		X	
		X	
		X	
		X	

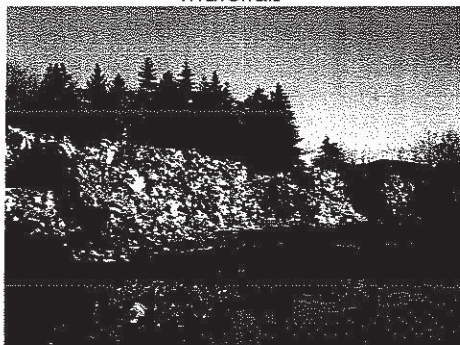
Activity:	INS	NCD Matrix Level:	<u>2</u>	NCD Matrix category:	<u>A</u>		
Comments:	The CVRD has not submitted a closure/post-closure plan.			Compliance tool initiated:	<u>Advisory</u>		
AUTHORIZATION SUBSECTION		DETAILS			COMPLIANCE		
					IN	OUT	??
CVRD SWMP (amendment no. 3-2006) commits to develop an ash landfill closure plan in 2007.		The CVRD has not submitted a closure/post-closure plan.				X	

DETAILED COMMENTS AND INSPECTION OBSERVATIONS:

A site inspection was performed on November 13th, 2009, with Allan Leuschen, Senior Environmental Protection Officer, and Harmony Huffman, Environmental Technologist for the Cowichan Valley Regional District. The landfill is located on federal Indian Reserve land. A significant portion of the site is not accessible due to the accumulation of bundles of imported domestic and commercial recycling from the recycling operation on the grounds. No landfill final cover was installed.

The CVRD requested in writing to abandon the permit on November 24th, 2009. They indicated that funding may be available through Indian and Northern Affairs Canada for the completion of site investigations and remediation works on this property.

Figure 1: Northern portion of closed ashfill with accumulated recycling/waste materials



2011-00108

RECOMMENDED FOLLOW-UP:

Submit a closure / post-closure plan for the site. Before preparing the closure/post-closure plan, please contact ministry staff to discuss the plan, including its scope and contents, to help ensure the closure/post-closure plan will satisfy ministry requirements.

COMPLIANCE REVIEW CONDUCTED BY (SIGNATURE): _____