

DATE: June 13, 2019

FILE: 5360-50

TO: Chair and Directors
Comox Strathcona Waste Management Board

Supported by Russell Dyson
Chief Administrative Officer

FROM: Russell Dyson
Chief Administrative Officer

R. Dyson

**RE: Campbell River Waste Management Centre – Landfill Gas Management Regulation
Warning Letter**

Purpose

The purpose of this report is to inform the Board that a warning letter related to the *Landfill Gas Management Regulation* at the Campbell River Waste Management Centre (CRWMC) was received from the Ministry of Environment and Climate Change Strategy (the Ministry).

Recommendation from the Chief Administrative Officer:

THAT the implications of remaining non-compliant with the *Landfill Gas Management Regulation* at the Campbell River Waste Management Centre be further investigated by staff to address the non-compliant status and provide possible alternatives for the Board's consideration in September 2019.

Executive Summary

The Comox Strathcona Waste Management (CSWM) service has received a letter from the Ministry warning that due to the absence of a landfill gas collection system at the CRWMC, the service is and has been non-compliant with the *Landfill Gas Management Regulation* since February 2017. The future installation of a landfill gas system is not currently scheduled for completion until 2022.

Significant effort has been made by the service to attain compliance with the *Environmental Management Act* including the *Landfill Gas Management regulation* per the following:

- In 2015, the Board directed staff to investigate options to smooth the implementation of future capital projects over the next ten years. A meeting was held with Minister Polak in June 2015 suggested deferral of closure projects at CRWMC, Tahsis and Zeballos as ways to move some spending into the future to smooth capital spending over time.
- The Ministry responded in December 2015 with:
 - Extensions at Tahsis and Zeballos were granted. The associated transfer stations, and closure projects, were deferred until 2024 and 2025.
 - The CRWMC request for deferral of the final closure and landfill gas (LFG) collection project from 2016 to 2021 **was not supported** although an option to provide a LFG substitution was identified by ministry staff for the CRWMC.
- In January 2016 the Board directed staff to update the Design, Operations and Closure Plan (DOCP) and apply for the LFG substitution with the hope that the substitution would meet the requirements of the *Landfill Gas Management Regulation* and bring the landfill back into compliance.

- CSWM staff engaged GHD Limited to prepare the substitution which was submitted for the Ministry review in March 2019. The required public consultation process was completed and a public consultation summary report was submitted to the Minister in May 2019.
- In parallel with the preparation and submission of the substitution, the Ministry Compliance department conducted an inspection at the CRWMC with regards to the Landfill Gas Management Regulation on January 22, 2019. The CSWM service received the warning letter for non-compliance on March 22, 2019
- Over the past few weeks the Ministry has advised that the LFG substitution would not be approved unless it meets or exceeds the original intent of the LFG Regulation

The CSWM service has been diligent in constructing new infrastructure that meets current environmental requirements but has not been successful at gaining compliance with the Landfill Gas Management Regulation at the CRWMC. In the past the CSWM service has assessed the partial closure and installation of a partial gas collection system. The following considerations were used when justifying not to recommend phased approach.

- Efficiency of the gas collection system would not meet the required capture and destruction rates for methane within the LFG regulation (75 per cent);
- Soil conditions may pose an increased risk of fire due to intrusion of oxygen into the landfill; and
- Higher closure costs and reduced airspace.

The current plan is to proceed with design of the LFG collection system and landfill closure in 2020. Anticipating the construction of the geomembrane final cover system and LFG collection system beginning in 2022, concurrent with the closure of the landfill at the site. LFG collection at the site is scheduled to commence in the fourth quarter of 2022.

The CSWM Service has been out of compliance since February 2017 and we will likely remain out of compliance until the landfill gas collection system commences construction in 2022. The Ministry could levy administrative penalties as outlined in the Administrative Penalties Regulation (EMA) (B.C. Reg. 133/2014) (APR).

Over the summer, staff will work with GHD Limited, as well as the Ministry, to ensure that the implications of remaining non-compliant are fully understood and that all possible alternatives to address non-compliance have been considered. A follow-up report on this matter will be provided to the board in September 2019.

Prepared by:

A. McGifford

Andrew McGifford, CPA, CGA
Senior Manager of CSWM Services

Concurrence:

M. Rutten

Marc Rutten, P.Eng.
General Manager of Engineering Services

Background

BC's Landfill Gas Management Regulation established province-wide criteria for landfill gas capture from municipal solid waste landfills in 2008. The main focus of the regulation is the reduction of greenhouse gasses from landfills, as well as identifying opportunities to increase landfill gas recovery. The regulation required that landfills with 100,000 tonnes or more of waste in place, or with an annual waste acceptance rate exceeding 10,000 tonnes per year, must be assessed to determine their LFG generation potential. In accordance with the regulation, the CSWM service retained the services of Conestoga-Rovers and

Associates to complete the LFG assessment for the CRWMC, and it was submitted to the Ministry on January 4, 2011.

The assessment determined that the CRWMC was generating an estimated 1,297 tonnes of methane per year in 2009. This exceeded the trigger of 1,000 tonnes per year of methane and a gas management system was required to be designed and installed at the site.

A Landfill Gas Management Facilities Design Plan (2013 LFGMF Design Plan) for the CRWMC, dated February 2013, was prepared by SCS Engineers, submitted to the Ministry and became an approved document in April 2013. At the time it was prepared, the 2013 LFGMF Design Plan specified that CRWMC had enough capacity to remain operational until 2018, and that LFG collection works would be installed beginning in 2015. The 2013 LFGMF Design Plan was submitted to the Director on February 25, 2013, which according to the regulation, required the Comox Valley Regional District (CVRD) to have installed the landfill gas management facilities no later than February 25, 2017.

In accordance with the Operating Certificate for the site, a plan for the design, operation and closure of the CRWMC must be prepared and approved, and that forms the standards by which the facility is to operate, and the timeline for completing major works. Within the 2013 DOCP for the CRWMC, the initial landfill gas collection system components were scheduled to be installed as part of Phase II Closure in 2015-2016 to meet the requirements of the Landfill Gas Management Regulation.

At its November 10, 2016, CSWM Board meeting, the following resolution was approved:

THAT staff review the 2017 to 2021 proposed financial plan and adjust the major project implementation schedule to more evenly distribute the cost to taxpayers over the 5 year period of the 2017 to 2021 financial plan.

At that time the tax burden was increasing and the Board directed staff to investigate options to smooth implementation of the capital projects. In order to more evenly distribute capital project costs, the Campbell River Phase II and III Closure projects were proposed to be moved to 2021 and 2022. It was reported by staff in January 2017 that the Campbell River closure project schedule was under review and that feedback from the Ministry and recommendations from the consultant would set the final timeline for proceeding with the closure of the CRWMC and the installation of the LFG collection system.

A review of the 2013 DOCP for the CRWMC landfill was made, and it found that if the airspace was maximized, the landfill could be operational through to 2024. To make this change, a new DOCP would be required and approved. In 2017 the CSWM service prepared (through our consultant GHD Limited) the CRWMC 2017 DOCP. It includes:

- An objective to optimize the remaining available airspace to bring the landfill to closure;
- Final closure of the landfill scheduled to be completed at the end of 2023;
- A detail design of the closure work scheduled to commence in 2020; and
- Delaying the cost of closure estimated at \$13,125,000 for CRWMC.

Prior to submitting the 2017 DOCP, the CSWM staff and GHD met with the Ministry on June 15, 2017 and at that time:

- Presented the proposed timeline to implement LFG collection at the site and to reach landfill closure; and
- Reviewed the CSWM's financial investments in other solid waste management infrastructure and development initiatives throughout the entire service area.

The final version of the 2017 DOCP was completed in late 2017 and then presented to the Board for approval to submit on January 18, 2018, and provided to the Ministry on March 2, 2018. Since submission:

- The Authorization department within the Ministry responded to the DOCP submission on October 29, 2018, and advised that the submitted 2017 DOCP would require that a LFG substitution application be applied for in order for the 2017 DOCP to be approved.
- CSWM staff engaged GHD and prepared to undertake the process to submit the LFG substitution in early 2019, submitted it on March 19, and underwent the required public notification process until May 5, 2019.
- The Public Consultation Summary report was submitted on May 29, 2019 to the Ministry.
- In parallel, the Compliance department of the Ministry conducted an inspection on the CRWMC with regards to the Landfill Gas Management Regulation on January 22, 2019.
- The CSWM service received the attached warning letter for non-compliance on March 22, 2019.

A detailed timeline is provided as Appendix A to outline how the CSWM Service addressed the Landfill Gas Management Regulation at the CRWMC site leading up to the warning letter.

Authorization and Compliance departments within the Ministry are separate and distinct functions. Each has a role in the administration of the *Environmental Management Act* (EMA) as it pertains to the CSWM service and our operations. Communication between departments does not occur and compliance must ensure the CSWM undertakes the work permitted, whereas authorizations will provide permitted activity based on the request to operate within the EMA.

The warning letter specifies that because we have not installed landfill gas management facilities at the CRWMC we are out of compliance with the regulation. The CSWM service has been out of compliance since February 2017, and we will remain out of compliance until the landfill gas collection system commences construction, currently scheduled for 2022.

The CSWM service has been diligent in constructing new infrastructure that meets current environmental requirements, including gas collection and flaring, with a new engineered lined cell and leachate treatment facility at the Comox Valley Waste Management Centre. As we move forward, we continue to address historical landfill closures in a timely manner within the financial constraints that the service faces due to changing environmental regulations.

We have the option of advancing the installation of landfill gas collection infrastructure earlier than planned in the 2017 DOCP. If this were to be undertaken, the efficiency of the gas collection system would likely not meet required capture and destruction rates for methane within the LFG regulation (75 per cent). The soil conditions (very granular) may increase the risk of fire due to intrusion of oxygen into the landfill once a LFG system is operational. The construction of the geomembrane final cover system will prevent oxygen from entering the landfill. Finally, if this is completed in stages, the cost will increase and the available airspace would not be maximized prior to closure in 2023.

The current plan is to proceed with design of the LFG collection system and landfill closure in 2020. Anticipating the construction of the geomembrane final cover system and LFG collection system beginning in 2022, it will be concurrent with the closure of the landfill at the site. LFG collection at the site is scheduled to commence in the fourth quarter of 2022. We will remain out of compliance until the landfill gas collection system commences construction in 2022.

- Attachments: Appendix A – Detailed Timeline of Events
Appendix B – “Warning Letter, Landfill Gas Management Regulation, registration number LG115164”
Appendix C – “Response letter - Campbell River Waste Management Center – Warning Letter, Landfill Gas Management Regulation, Registration Number LG115164 – Reference No. OC 2401 - Comox Valley Regional District”

Appendix A

The following provided timeline addresses how the CSWM Service addressed the *Landfill Gas Management Regulation* (effective January 1, 2009) at the CRWMC site leading up to the warning letter.

- December 2010 – Landfill Gas Generation Assessment prepared by Conestoga-Rovers & Associates is finalized.
- March 2012 – CVRD issues RFP for the closure design, closure plan and updated operations plan for the CRWMC.
- Contract awarded to SCS Engineers to complete the closure design, closure plan and updated operations plan.
- December 2012 – 2012 Solid Waste Management Plan prepared by AECOM is finalized.
- February 2013 – Landfill Gas Management Facilities Design Plan prepared by SCS Engineers is finalized.
- March 2013 – CVRD receives the Ministry’s approval on SCS Engineers’ proposed closure design plan including construction of the MSE wall and subsequent phased closure. The Ministry acknowledges the MSE wall will likely add approximately 5 years of site life.
- April 2013 – Landfill Gas Management Facilities Design Plan prepared by SCS Engineers is considered accepted.
- May 23, 2013 – MoE approves the 2012 Solid Waste Management Plan.
- Summer 2013 – Construction of Phase 1 closure for CRWMC commences, including construction of the MSE wall. SCS Engineers provides construction oversight.
- February 2014 – Updated DOCP prepared by SCS Engineers is finalized.
- Spring 2015 – Phase 1 closure at CRWMC completed.
- June 2015 – Per board direction a meeting is held with the Minister of Environment to discuss regulations and the cost to implement the 2012 CSWM SWMP and related costs to implement the plan associated with implementing provincial regulations.
- October 14, 2015 – Letter sent to the Ministry authorizations staff to provide an update on the CSWM 2012 SWMP implementation, asking for support to undertake the complete closure and final cover of the Campbell River landfill as a single project in 2021 as opposed to current plans for the partial landfill closure in 2016 and the full closure in 2019.
- December 22, 2015 – The Ministry responded to the letter to support the Tahsis and Zeballos landfills delayed closures by approximately 10 years. Also, the CRWMC could impact compliance with the landfill’s operational certificate, the associated SWMP and other obligations under the *Environmental Management Act* if closure and final cover of the CRWMC landfill as a single project in 2021 as opposed to current plans for the partial landfill closure in 2016 and the full closure in 2019.
- November 2016 – The Board provided direction to adjust the major project implementation schedule to more evenly distribute the cost to taxpayers over the five year period of the 2017 to 2021 – [staff report](#).
- Early 2017 – GHD began work on the updating the 2017 DOCP and maximizing the remaining airspace at the CRWMC, based on Board direction.
- November 15, 2017 – GHD finalized CRWMC 2017 DOCP.
- January 18, 2018 – CSWM staff then reviewed and provided the 2017 DOCP to the Board ([CRWMC 2017 DOCP staff report](#) and [GHD presentation](#)) and the Board approved for submission at the January 18, 2018, Board meeting.
- March 2, 2018 – Submission of 2017 DOCP with an application for a minor amendment to Operational Certificate 2401 to adopt the DOCP, update authorized works and update boundaries of the Site. An Updated LFG Management Facilities Design Plan is included in the 2017 DOCP submission.

- May 1, 2018 – Updated LFG Management Facilities Design Plan is considered “accepted” as per Section 18 of the LFG Regulation.
- October 29, 2018 – Conference call pre-application meeting between the Ministry, the CVRD and GHD for the 2017 DOCP.
- November 27, 2018 – Conference call meeting between the Ministry, the CVRD and GHD to review the LFG substitution application process.
- December 2, 2018 – The Ministry conducts inspection at CRWMC with regards to the Hazardous Waste Regulation and the Site’s Operational Certificate.
- January 22, 2019 – The Ministry conducts inspection on the CRWMC with regards to the Landfill Gas Management Regulation.
- March 19, 2019 – Submission of application for LFG substitution including 2017 LFG Generation Assessment Report.
- March 21, 2019 – The Ministry issues warning letter regarding the results of its January 22, 2019 inspection (Appendix B).
- March 22, 27, and 29, 2019 – Newspaper ads ran in the Campbell River Mirror for an open house inform the public of the LFG substitution application and to educate the public on the overall closure strategy for the landfill at the Site.
- March 25 to April 1, 2019 – Radio ads ran 3x per day to advertise the open house on 99.7 2DayFM and 97.3 The Eagle.
- April 2, 2019 – The CVRD hosted the open house to inform the public of the LFG substitution application and to educate the public on the overall closure strategy for the landfill at the Site.
- April 2, 2019 – Bulletin posted at the Site entrance for the LFG substitution application as required by Section 20(2) (a) of the Landfill Gas Management Regulation.
- April 3, 2019 and April 5, 2019 – Newspaper notices ran in the Campbell River Mirror for the LFG substitution application as required by Section 20(2) (c) of the Landfill Gas Management Regulation.
- April 2, 2019 to May 5, 2019 – Public consultation period as required by Section 20(2) of the Landfill Gas Management Regulation.
- April 18, 2019 – CVRD submits response letter to the Ministry’s March 21, 2019, warning letter. The response letter indicates that the CVRD is following the timeline provided in the 2017 DOCP as the corrective action plan (Appendix C).
- May 29, 2019 – Public Consultation Summary report is submitted to the Ministry.
- May 30, 2019 – The Ministry, the CVRD and GHD participate in a pre-application conference call for the LFG substitution application. The Ministry advises they will not make a decision regarding the LFG substitution application.



Report Date: March 21, 2019

File: LG115164

Report Number: 115164

REGISTERED MAIL

COMOX VALLEY REGIONAL DISTRICT

600 Comox Rd
Courtenay BC V9N 3P6

Dear COMOX VALLEY REGIONAL DISTRICT

Re: Warning Letter, Landfill Gas Management Regulation, registration number LG115164

On January 22, 2019, Ministry of Environment, Environmental Protection Division staff conducted an inspection under *Environmental Management Act (EMA)*, LG115164. The inspection determined that COMOX VALLEY REGIONAL DISTRICT is out of compliance with sections identified below for the Landfill Gas Management Regulation. This Warning Letter lists the compliance verification information contained below.

Failure to comply with the requirements set out in your registration under Landfill Gas Management Regulation is an offence under the Environmental Management Act (EMA). Section 120(3) of EMA states as follows:

120(3) A person who contravenes any of the following commits an offence and is liable on conviction to a fine not exceeding \$1 000 000 or imprisonment for not more than 6 months, or both:....(e) section 76.2 [management of greenhouse gases at waste management facilities]

The Ministry may initiate action to impose an administrative penalty against COMOX VALLEY REGIONAL DISTRICT. The Administrative Penalties Regulation (EMA) (B.C. Reg. 133/2014) (APR) was brought into force in 2014. The APR describes the prescribed provisions of the EMA as well as that of specified regulations under which administrative penalties can be assigned. Section 27(1) of the APR states as follows:

27(1) A person who contravenes section 4(1) or (5), 5(3), 7(1) or (2), 8(3) or (4)(b), 9(1), 11(3) or 15(1) of the Landfill Gas Management Regulation is liable to an administrative penalty not exceeding \$40 000.

I request that COMOX VALLEY REGIONAL DISTRICT immediately implement the necessary changes or modifications to correct the non-compliance(s) listed above with the Environmental Management Act. Further, I request that COMOX VALLEY REGIONAL DISTRICT notify this office in writing, by email or letter within 30 days of this letter, advising what corrective measures have been taken, and what else is being done, to prevent similar non-compliances in the future.

Please submit your response to the Ministry's Compliance Mailbox at EnvironmentalCompliance@gov.bc.ca.

As a result of this Warning, this authorization will be prioritized for follow-up inspection. The corrective measures will be reviewed by an Officer as part of the next inspection.

Finally, if you fail to take the necessary actions to restore compliance, you may be subject to escalating enforcement action. This Warning Letter and the alleged violations and circumstances to which it refers, will form part of the compliance history of COMOX VALLEY REGIONAL DISTRICT and will be taken into account in the event of future violations.

Inspection Details:

Requirement Description:	<p>Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA)</p> <p>2: This regulation applies to landfill sites that accept municipal solid waste for disposal into the landfill site on or after January 1, 2009.</p>
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Ministry of Environment and Climate Change Strategy

Compliance
Environmental Protection Division

Mailing Address:
2080-A
Labieux Rd
Nanaimo BC V9E 6J9

Telephone: 250 751 3100
Facsimile: 250 751 3103
Website: www.gov.bc.ca/env

<p>Details/Findings:</p>	<p>On December 4, 2018, Ministry of Environment and Climate Change Strategy (Ministry) Environmental Protection Officer Travis Kurinka (Officer Kurinka) conducted an on-site inspection of Comox Valley Regional District (CVRD) municipal landfill, which is located near Campbell River, British Columbia. The CVRD is authorized under their Environmental Management Act (EMA) operational certificate #2401 (OC). In addition to their OC, the CVRD is required to meet all requirements of the Landfill Gas Management Regulation (LFGMR).</p> <p>Officer Kurinka was accompanied by CVRD staff Andrew McGifford (Senior Manager Comox Strathcona Waste Management Services), Stephanie Valdal (Services Coordinator), and on-site contractor Moe Vale (Operations Manager).</p> <p>The inspection period for this inspection is January 1, 2016, to January 22, 2019.</p> <p>The following reports were reviewed as part of this inspection:</p> <ol style="list-style-type: none"> 1) Draft Campbell River Landfill Gas Management Plan, dated August 2008" (2008 LFG Report); which was prepared by CH2MHILL 2) Landfill Gas Generation Assessment Campbell River Waste Management Centre, dated December 2010 (2010 LFG Report); which was prepared by Conestoga-Rovers and Associates 3) Landfill Gas Management Facilities Design Plan for the Campbell River Waste Management Centre, dated February 2013" (2013 LFGMF Design Plan Report), which was prepared by SCS Engineers 4) 2017 Design, Operations, and Closure Plan report, dated February 7, 2018 (2017 DOCP report), which was prepared by GHD. <p>At the time of the inspection, the CVRD landfill was operational and accepting municipal solid waste. Therefore, the LFGMR applies to the Comox landfill.</p>
<p>Compliance:</p>	<p>In</p>
<p>Requirement Description:</p>	<p>Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA)</p> <p>4 (1): An owner or operator of a regulated landfill site must ensure that a qualified professional conducts an initial landfill gas generation assessment of the landfill site in accordance with subsection (2).</p>
<p>Details/Findings:</p>	<p>Based on the information provided in the 2010 LFG Report, the CVRD ensured that a qualified professional conducted an initial landfill gas generation assessment of the landfill site in accordance with subsection (2).</p>
<p>Compliance:</p>	<p>In</p>

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (2)(a): The assessment referred to in subsection (1) must be conducted in accordance with the guidelines and include the following: (a) the annual tonnage of municipal solid waste received for disposal into the landfill site in the calendar year immediately preceding the year in which the assessment is conducted;
Details/Findings:	In the 2010 LFG Report, the CVRD identified that a total of 26,405 tonnes of refuse was discharged into the landfill in 2009.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (2)(b): The assessment referred to in subsection (1) must be conducted in accordance with the guidelines and include the following: (b) projections for the annual tonnage of municipal solid waste anticipated to be received for disposal into the landfill site in the calendar year of the assessment and in each of the 4 calendar years following the calendar year of the assessment;
Details/Findings:	In the 2010 LFG Report, the CVRD estimated that the total amount of refuse discharged into the landfill for the assessment year was 26,933 tonnes of refuse. The CVRD also estimated that the annual tonnage of municipal solid waste to be discharged into the landfill for the four calendar years following the assessment would be: - 2011 - 27,472 tonnes - 2012 - 0 tonnes - 2013 - 0 tonnes - 2014 - 0 tonnes
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (2)(c): The assessment referred to in subsection (1) must be conducted in accordance with the guidelines and include the following: (c) an estimate of the municipal solid waste in place at the landfill site at the end of the calendar year immediately preceding the calendar year in which the assessment is conducted;

Details/Findings:	The 2010 LFG Report estimated that the municipal solid waste in place at the landfill at the end of 2009 to be 510,392 tonnes.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (2)(d): The assessment referred to in subsection (1) must be conducted in accordance with the guidelines and include the following: (d) an estimate of the quantity of methane generated at the landfill site in the calendar year immediately preceding the calendar year in which the assessment is conducted;
Details/Findings:	In the 2010 LFG Report, an estimate of 1,297 tonnes/year of methane was generated at the landfill site in 2009.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (2)(e): The assessment referred to in subsection (1) must be conducted in accordance with the guidelines and include the following: (e) projections for methane anticipated to be generated annually at the landfill site in the calendar year of the assessment and in each of the 4 calendar years following the calendar year of the assessment;
Details/Findings:	In the 2010 LFG Report, the CVRD made projections for methane anticipated to be generated annually at the landfill site in the calendar year of the assessment and in each of the four calendar years following the calendar year of the assessment. The estimated annual tonnages were: 2010 - 1,332 tonnes/year 2011 - 1,368 tonnes/year 2012 - 1,243 tonnes/year 2013 - 1,131 tonnes/year 2014 - 1,029 tonnes/year
Compliance:	In

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(a): The qualified professional who conducts the assessment must complete an initial report setting out the following: (a) the findings of the initial assessment, including the information described in subsection (2);
Details/Findings:	The qualified professional, who conducted the 2010 assessment, completed the 2010 LFG Report setting out the findings of the initial assessment, including information described in subsection (2).
Compliance:	Not Determined
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(b)(i): The qualified professional who conducts the assessment must complete an initial report setting out the following: (b) copies of relevant records respecting annual tonnage of municipal solid waste received for disposal into the landfill site (i) in the calendar year immediately preceding the year in which the assessment is conducted, and
Details/Findings:	A review of the 2010 LFG Report determined that relevant records were provided respecting annual tonnage of municipal solid waste received for disposal into the landfill site in 2009.
Compliance:	Not Determined
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(b)(ii): The qualified professional who conducts the assessment must complete an initial report setting out the following: (b) copies of relevant records respecting annual tonnage of municipal solid waste received for disposal into the landfill site (ii) in all years during which the landfill site has been in operation and for which records have been maintained;
Details/Findings:	A review of the 2010 LFG Report determined that relevant records were provided respecting annual tonnage of municipal solid waste received for disposal into the landfill site in all years during which the landfill was in operation.

Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(c): The qualified professional who conducts the assessment must complete an initial report setting out the following: (c) any other information requested in writing by the director;
Details/Findings:	Officer Kurinka conducted a file review as part of the inspection. Based on the review, Officer Kurinka was unable to determine if the Director had requested additional information from the CVRD in addition to the information required to be submitted under the LMGR. Therefore, compliance could not be determined.
Compliance:	Not Determined
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(d): The qualified professional who conducts the assessment must complete an initial report setting out the following: (d) any other information required under the guidelines;
Details/Findings:	The CVRD provided all information required under the British Columbia Landfill Criteria subsections 4.2, 9.3, 10.4, and 10.5 in the 2010 LFG Report.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (3)(e): The qualified professional who conducts the assessment must complete an initial report setting out the following: (e) certification by the qualified professional that the assessment meets the requirements set out in subsection (2).
Details/Findings:	A review of the 2010 LFG Report determined that the qualified professional who conducted the 2010 assessment certified that the assessment meets the requirements set out in subsection (2).

Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (4): If a landfill gas generation assessment has been conducted for a landfill site before January 1, 2009, the requirement for an assessment under this section may be met if a qualified professional reviews the assessment and completes a report as described in subsection (3).
Details/Findings:	The draft 2008 LFG Report prior to January 1, 2009. The qualified professional who conducted the 2010 LFG Report conducted a new assessment; therefore, this requirement is not applicable for the inspection period.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (5)(a): The owner or operator of the landfill site must submit to the director a report required under this section as follows: (a) if the quantity of municipal solid waste in place at the landfill site is 100 000 tonnes or more on or before January 1, 2009, no later than January 1, 2011;
Details/Findings:	The CVRD retained the services of Conestoga-Rovers and Associates to submit the 2010 LFG Report to the Director on January 11, 2011, as the landfill had more than 100,000 tonnes of municipal solid waste in place before January 1, 2009.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (5)(b): The owner or operator of the landfill site must submit to the director a report required under this section as follows: (b) if the quantity of municipal solid waste in place at the landfill site reaches or exceeds 100 000 tonnes after January 1, 2009, on or before the later of (i) March 31 of the year immediately following the year in which the quantity of municipal solid waste reaches or exceeds 100 000 tonnes, or (ii) January 1, 2011;

Details/Findings:	The CVRD landfill exceeded 100,000 tonnes of municipal solid waste prior to January 1, 2009. Therefore, this section of the LMGR is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 4 (5)(c): The owner or operator of the landfill site must submit to the director a report required under this section as follows: (c) if the annual quantity of municipal solid waste received for disposal into the landfill site reaches or exceeds 10 000 tonnes on or after January 1, 2009, on or before the later of (i) March 31 of the year immediately following the year in which the annual quantity of municipal solid waste received for disposal into the landfill site reaches or exceeds 10 000 tonnes, or (ii) January 1, 2011.
Details/Findings:	The CVRD landfill exceeded 10,000 tonnes of municipal solid waste discharged into the landfill each year after January 1, 2009. The CVRD retained the services of Conestoga-Rovers and Associates to submit the 2010 LFG Report to the Director on January 4, 2011.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 5 (1): The director may, within 60 days after receiving a report under section 4, request that the owner or operator of a landfill site conduct additional assessments of the landfill site for generation of landfill gas.
Details/Findings:	Officer Kurinka as part of this inspection, reviewed of all electronic and hard files. Based on the review, a director did not request that the CVRD conduct additional assessments of the landfill site for generation of landfill gas. Therefore, sections 5(1), 5(2), 5(3)(a), and 5(3)(b) of the LMGR are not applicable.
Compliance:	Not Applicable

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 6 (1)(a): The director may, at any time, request that the owner or operator of a landfill site to which this regulation applies have a qualified professional (a) conduct an assessment of the landfill site in accordance with section 4 (2), and
Details/Findings:	Officer Kurinka as part of this inspection, reviewed of all electronic and hard files. Based on the review, a director did not request that the owner or operator of a landfill site retain a qualified professional to conduct an assessment of the landfill in accordance with section 4(2) as an assessment was completed in 2010 by the CVRD. Therefore, sections 6(1)(a), 6(1)(b), and 6(2) are not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (1): The owner or operator of a regulated landfill site that, as the result of an assessment conducted in accordance with this regulation, is estimated to generate 1 000 tonnes or more of methane in the calendar year immediately preceding the calendar year of the assessment must ensure that a landfill gas management facilities design plan is prepared for the landfill site.
Details/Findings:	The CVRD's 2010 LFG Report estimated that the landfill was generating 1 000 tonnes or more of methane in 2009. The CVRD submitted their 2013 LFGMF Design Plan Report to the Ministry on February 25, 2013. The CVRD submitted an updated landfill gas management facilities design plan in their 2017 DOCP Report.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (2)(a): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (a) a description of existing or planned methods, management practices and processes for landfill gas management at the landfill site;

Details/Findings:	<p>The 2013 LFGMF Design Plan Report was prepared by SCS Engineering and was prepared by Bill Hayes (P.Eng.) and John Richards.</p> <p>The 2017 DOCP report was submitted by GHD and was prepared by Michaela Dyck (GIT), Deacon Liddy (P.Eng.) and Gregory Ferraro (P.Eng.). The 2017 DOCP describes the existing or planned methods, management practices and processes for landfill gas management at the CVRD landfill in section 3 of the report.</p>
Compliance:	In
Requirement Description:	<p>Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA)</p> <p>7 (2)(b): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (b) a plan for the installation, operation and maintenance of landfill gas management facilities at the landfill site, including a contingency plan for disruption in landfill gas management for scheduled or emergency maintenance or replacement of landfill gas management facilities;</p>
Details/Findings:	<p>The updated landfill gas management facilities design plan in the 2017 DOCP provided a plan for the installation, operation and maintenance of landfill gas management facilities at the CVRD landfill. However, the 2017 DOCP does not include a contingency plan for disruption in landfill gas management for scheduled or emergency maintenance or replacement of landfill gas management facilities in Appendix G section 4.</p>
Compliance:	Out
Requirement Description:	<p>Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA)</p> <p>7 (2)(c): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (c) recommendations for optimizing landfill gas management at the landfill site;</p>
Details/Findings:	<p>The updated landfill gas management facilities design plan in the 2017 DOCP included recommendations for optimizing landfill gas management at the CVRD landfill in Appendix G section 5</p>
Compliance:	In

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (2)(d): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (d) any other information required under the guidelines;
Details/Findings:	The updated landfill gas management facilities design plan in the 2017 DOCP included all required information required under the guidelines.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (2)(e): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (e) any other information requested in writing by the director;
Details/Findings:	A director did not request the CVRD in writing to include additional information in their updated landfill gas management facilities design plan in the 2017 DOCP. Therefore, this section of the regulation is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (2)(f): The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (f) certification by the qualified professional that the plan was prepared in accordance with the guidelines.
Details/Findings:	The 2017 DOCP report was submitted by GHD and was prepared by Michaela Dyck (GIT), Deacon Liddy (P.Eng.) and Gregory Ferraro (P.Eng.).
Compliance:	In

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (3): The landfill gas management facilities design plan must be submitted to the director no later than one year after the date the report setting out the estimate was required to be submitted to the director.
Details/Findings:	The CVRD first identified in their 2010 LFG Report that the landfill was estimated to be producing more than 1000 tonnes of methane annually. A landfill gas management facilities design plan was, therefore, required to be submitted by January 1, 2012. The CVRD prepared and submitted their LFGMF Design Plan Report which was prepared by SCS Engineering and was prepared by Bill Hayes (P.Eng.) and John Richards in 2013. Therefore, the CVRD has been found to be out of compliance with this section of the LFGMR.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (4): A landfill gas management facilities design plan that has been prepared for a landfill site before January 1, 2009 may be submitted to the director in substitution for the landfill gas management system design plan required under subsection (1) if a qualified professional certifies in writing that the landfill gas management system design plan prepared before January 1, 2009 meets the requirements set out in subsection (2).
Details/Findings:	The CVRD did not have a landfill gas management facilities design plan prepared for the landfill prior to January 1, 2009. Therefore, this section of the LFGMR is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 7 (5): The owner or operator of a regulated landfill site that, as the result of an assessment conducted in accordance with this regulation, is estimated to generate less than 1 000 tonnes of methane gas in the calendar year immediately preceding the calendar year of the assessment may submit a plan to the director at any time.
Details/Findings:	The CVRD identified that the landfill in their 2010 LFG Report produced more than 1000 tonnes of methane in a calendar year. Therefore, this section of the LFGMR is not applicable.

Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (1): In this section, and in section 11, "accepted design plan" means a landfill gas management facilities design plan that has been accepted by the director under section 18.
Details/Findings:	The CVRD submitted their 2013 LFGMF Design Plan Report that was prepared by SCS Engineering and was prepared by Bill Hayes (P.Eng.) and John Richards, which was accepted by the Director. The Ministry requested that the CVRD update their plan. The CVRD submitted their 2017 DOCP report and the plan is currently under review with the Director.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(a): The owner or operator of a landfill site for which there is an accepted design plan must (a) install landfill gas management facilities in accordance with the accepted design plan, and
Details/Findings:	<p>The CVRD submitted their 2013 LFGMF Design Plan Report to the Ministry on February 25, 2013 and became an approved document by a Director and an accepted design plan on April 26, 2013. The 2013 LFGMR Design Plan Report recommended that landfill gas management facilities be installed as the landfill gas production was assessed to be over the 1,000 tonnes/year limit.</p> <p>In their 2017 DOCP, the CVRD conducted an update to their landfill gas management facilities design plan. The 2017 DOCP was currently in review at the time of inspection and has not been accepted by the Ministry.</p> <p>During the inspection, Mr. McGifford informed Officer Kurinka that no landfill gas management facilities had been installed at the time of the inspection. Mr. McGifford informed Officer Kurinka that the CVRD is currently working towards submitting a substitution request to delay the installation of the landfill gas management facilities until after the closure of the landfill which is estimated to be closed in 2023.</p> <p>Therefore, the CVRD has been found to be out of compliance with this section for not installing landfill gas management facilities in accordance with their 2013 accepted design plan.</p>

Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(i): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (i) migration of landfill gas,
Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting migration of landfill gas.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(ii): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (ii) use of landfill covers,
Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting use of landfill covers. The CVRD was applying daily and intermediate cover to the landfill during the inspection to meet requirements specified in their refuse permit PR2401.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(iii): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (iii) operation of landfill gas management facilities,

Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting operation of landfill gas management facilities.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(iv): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (iv) landfill gas collection equipment,
Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas collection equipment.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(v): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (v) landfill gas flaring equipment, and
Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas flaring equipment.
Compliance:	Out

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (2)(b)(vi): The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (vi) landfill gas management facilities maintenance, including the number of days annually that landfill gas management facilities may be shut down.
Details/Findings:	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas management facilities maintenance, including the number of days annually that landfill gas management facilities may be shut down.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (3): The landfill gas management facilities and practices referred to in subsection (2) must be installed and implemented no later than 4 years after the date the landfill gas management facilities design plan is submitted to the director under section 7.
Details/Findings:	Mr. McGifford informed Officer Kurinka during the inspection that no landfill gas management facilities have been installed at the landfill. The currently accepted landfill gas management facilities design plan was submitted to the Director on February 25, 2013, which required the CVRD to install the landfill gas management facilities no later than February 25, 2017.
Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (4)(a): The owner or operator of a landfill site where landfill gas management facilities are installed must ensure that (a) a qualified professional certifies in writing to the director that the facilities were installed in accordance with the accepted design plan for the landfill site, and
Details/Findings:	The CVRD has not installed landfill gas management facilities at the landfill. Therefore, this section is not applicable at the time of inspection

Compliance:	Not Applicable
Actions to be taken:	When landfill gas management facilities are installed at the landfill ensure that a qualified professional certifies in writing to the director that the facilities were installed in accordance with the accepted design plan for the landfill site.
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 8 (4)(b): The owner or operator of a landfill site where landfill gas management facilities are installed must ensure that (b) the facilities are operated and maintained in accordance with the accepted design plan for the landfill site.
Details/Findings:	The CVRD has not installed landfill gas management facilities at the landfill. Therefore, this section is not applicable at the time of inspection
Compliance:	Not Applicable
Actions to be taken:	When landfill gas management facilities are installed at the landfill ensure that the facilities are operated and maintained in accordance with the accepted design plan for the landfill site.
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 9 (1): The owner or operator of a landfill site must ensure that landfill gas collected at the landfill site is flared in accordance with the guidelines unless the landfill gas is used for a purpose and in a manner that reduces emissions of methane to the atmosphere in an amount equivalent to the reduction that would be achieved by flaring the landfill gas.
Details/Findings:	The CVRD does not currently flare gas originating from the landfill as the CVRD did not have a landfill gas management facility which collects landfill gas at the time of the inspection. Therefore, section 9(1) and 9(2) are not applicable.
Compliance:	Not Applicable

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 10 (1): The owner or operator of a landfill site where landfill gas management facilities are shut down temporarily for emergency maintenance or replacement must notify the director within 24 hours of the shutdown by phone, fax or other electronic means.
Details/Findings:	The CVRD does not currently flare gas originating from the landfill. Therefore, the CVRD was not required to notify the director within 24 hours of a shutdown to the landfill gas management facilities for emergency maintenance or replacement during the inspection period (January 1, 2016, to January 22, 2019).
Compliance:	Not Applicable
Actions to be taken:	Please note that once the CVRD installs a landfill gas management facility at the landfill, the CVRD must comply with this section of the Landfill Gas Management Regulation.
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 11 (1): At least 90 days before the date an owner or operator of a landfill site plans to cease operation of landfill gas management facilities, the owner or operator must submit to the director a shutdown report prepared by a qualified professional, setting out the supporting data used to calculate the quantity of methane generated per year at the landfill site.
Details/Findings:	The CVRD currently does not have a landfill gas management facility at the landfill. Therefore, sections 11(1), 11(2), and 11(3) of the LFGMR were not applicable at the time of the inspection.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 12 (1)(a): An owner or operator of a regulated landfill site must monitor and maintain records respecting the following, each in the manner specified by the director: (a) the quantity and sources of municipal solid waste received for disposal into the landfill site;

Details/Findings:	The CVRD in their 2016 and 2017 Operations and Monitoring Report, which were prepared by GHD, identified the quantity and sources of municipal solid waste received for disposal at the landfill.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 12 (1)(b): An owner or operator of a regulated landfill site must monitor and maintain records respecting the following, each in the manner specified by the director: (b) if the owner or operator has monitored and analyzed the composition of the municipal solid waste received for disposal into the landfill site, the composition of the municipal solid waste received;
Details/Findings:	The CVRD in their 2016 and 2017 Operations and Monitoring Report, which were prepared by GHD, monitored and analyzed the composition of the municipal solid waste received for disposal into the landfill.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 12 (2)(a): If installation of landfill gas management facilities is required at the landfill site under section 8, the owner or operator of the landfill site must also maintain records respecting (a) maintenance and shutdown of landfill gas management facilities installed and operated at the landfill site,
Details/Findings:	In 2013, the CVRD retained the services of SCS Engineering which determined that the installation of a landfill gas management facility is required for the CVRD landfill under section 8 of the LFGMR. At the time of the inspection, the CVRD had not installed a landfill gas management facility at the landfill. Therefore, Officer Kurinka as part of this inspection did not assess compliance for sections 12(2)(a), 12(2)(b), 12(2)(c) and 12(3).
Compliance:	Not Determined

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 13 (1): On the written request of the director, an owner or operator of a landfill site must, within the time period specified by the director, produce the records referred to in section 12 to the director for inspection or copying.
Details/Findings:	The Director did not submit a written request to the CVRD to produce the records referred to in section 12 during the inspection period. Therefore, this section was not applicable at the time of the inspection.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (1)(a): An owner or operator of a regulated landfill site must file an annual report with the director, in the manner and form required by the director, setting out the following information for the reporting period: (a) the information described in section 12;
Details/Findings:	The CVRD's 2016 and 2017 Operation and Monitoring Reports included the information described in Section 12 of the LFGMR.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (1)(b): An owner or operator of a regulated landfill site must file an annual report with the director, in the manner and form required by the director, setting out the following information for the reporting period: (b) a description of any organics diversion program used at the landfill site;
Details/Findings:	The CVRD's 2016 and 2017 Operation and Monitoring Reports included a summary of the amount of organics diverted from the landfill.
Compliance:	In

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (1)(c): An owner or operator of a regulated landfill site must file an annual report with the director, in the manner and form required by the director, setting out the following information for the reporting period: (c) any additional information requested in writing by the director.
Details/Findings:	Officer Kurinka inspected all electronic and hard files and was unable to determine if a Director had requested additional information to be included in the annual report in writing. Therefore, compliance could not be determined for this section of the LFGMR.
Compliance:	Not Determined
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (2)(a): If installation of landfill gas management facilities is required at the landfill site under section 8, the annual report must include, in addition to the information required under subsection (1), the following information for the reporting period: (a) the quantity and composition, determined in accordance with the methodology set out in the guidelines, of gases collected at the landfill site;
Details/Findings:	At the time of the inspection, the CVRD had not installed the landfill gas management facilities as required under section 8. Therefore, compliance could not be determined for sections 14(2)(a-i) of the LFGMR.
Compliance:	Not Determined
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (3)(a): An annual report required under this section must be submitted to the director (a) if an operational certificate or permit has been issued for the landfill site, and the operational certificate or permit for the landfill site specifies a date for submission of an annual report, on or before that date.
Details/Findings:	Under their Operational Certificate #2401, the CVRD is required to submit an annual report no later than April 30th of each year. The CVRD submitted their 2016 Annual Operations and Monitoring Report on April 28, 2017. The CVRD submitted their 2017 Annual Operations and Monitoring Report on May 7, 2018.

Compliance:	Out
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 14 (3)(b): An annual report required under this section must be submitted to the director (b) if the operational certificate or permit for the landfill site does not specify a date for submission of an annual report, or an operational certificate or permit has not been issued for the landfill site, on or before March 31 of the year immediately following the year for which the report is prepared.
Details/Findings:	CVRD's Operational Certificate #2401 requires that all annual reports be submitted to the Ministry no later than April 30th of each year. Therefore, this section of the LFGMR is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 15 (1)(a)(i): If the estimate of methane generated annually at a landfill site is less than 1 000 tonnes in the calendar year immediately preceding the calendar year of an assessment under section 4, 5 or 6 or a supplementary assessment or review under this section, the owner or operator of the landfill site must, between January 1 and March 31 of the fifth calendar year following the calendar year of the previous assessment or review, ensure that a qualified professional does one of the following: (a) conducts a supplementary assessment that includes (i) the assessments required under section 4 (2) (a) to (c) and (e), and
Details/Findings:	The CVRD submitted to the Ministry on February 25, 2013, the 2013 LFMR Design Plan report which was submitted under section 7(5) and accepted by the Director under section 18. Therefore, section 15 of the LFGMR is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 16: Section 15 does not apply to the owner or operator of a landfill site for which a landfill gas management facilities design plan has been submitted under section 7 (5) and accepted by the director under section 18.

Details/Findings:	The CVRD submitted to the Ministry on February 25, 2013, the 2013 LFGMR Design Plan report which was submitted under section 7(5) and accepted by the Director under section 18.
Compliance:	In
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 17 (1): In this section, and in section 18, "document" means (a) an initial report, (b) a revised report, (c) a report of an assessment conducted on the request of the director under section 5, (d) a landfill gas management facilities design plan referred to in section 7, (e) a shutdown report referred to in section 11 (2), (f) an annual report referred to in section 14, (g) a supplementary report referred to in section 15, and (h) additional information provided under subsection (3).
Details/Findings:	Officer Kurinka conducted an inspection of all electronic and hard files related to the landfill. Based on this inspection, the Director did not submit to the CVRD a written request that the CVRD provide additional information for any reports submitted to the Ministry under this section of the LFGMR. Therefore, sections 17(1), 17(2), and 17(3) were not applicable during the inspection period.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 18 (a): The director will be considered to have accepted a document submitted to the director under this regulation, (a) in the case of a document for which no additional information is requested, 60 days after the document is submitted, or
Details/Findings:	Officer Kurinka conducted an inspection of all electronic and hard files related to the landfill. Based on this inspection, a Director did not make a request for more information within 60 days after the 2013 LFGMR Design Plan was submitted by the CVRD.
Compliance:	In

Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 18 (b): The director will be considered to have accepted a document submitted to the director under this regulation, (b) in the case of a document for which additional information is requested, 60 days after the additional information is submitted.
Details/Findings:	Officer Kurinka conducted an inspection of all electronic and hard files related to the landfill. Based on this inspection, a Director did not make a request for more information from the CVRD. Therefore this section was not applicable at the time of the inspection.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 19 (1)(a): The minister or a director, on his or her own initiative, may, by order, substitute a different requirement for a requirement contained in this regulation if, in the individual case, the minister or director considers that (a) the substitution is necessary to protect the public or the environment, or
Details/Findings:	Officer Kurinka conducted an inspection of all electronic and hard files related to the landfill. Based on this inspection, a Minister or Director has not issued a substitution under the LFGMR for the CVRD landfill. Therefore this section was not applicable during the inspection period.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 19 (1)(b): The minister or a director, on his or her own initiative, may, by order, substitute a different requirement for a requirement contained in this regulation if, in the individual case, the minister or director considers that (b) the intent of the regulation is met by the substituted requirement.
Details/Findings:	Officer Kurinka conducted an inspection of all electronic and hard files related to the landfill. Based on this inspection, a Minister or Director has not issued a substitution under the LFGMR for the CVRD landfill. Therefore this section was not applicable during the inspection period.

Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 19 (2): If the minister or a director makes a substitution under subsection (1), he or she may order that notification of the substitution be given to the public in the manner the minister or director specifies.
Details/Findings:	The Minister of a Director did not make a substitution under subsection (1) during the inspection period. Therefore, this section is not applicable.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 19 (3): A director, on application under section 20, may, by order, substitute a different requirement for a requirement contained in this regulation if he or she considers that, in the individual case, the intent of the regulation will be met by the substituted requirement.
Details/Findings:	Mr. McGifford informed Officer Kurinka during the inspection the CVRD wishes to submit a request for a substitution under the LFGMR to the Director for consideration. However, at the time of the inspection, the CVRD had not submitted the request to the Director as the CVRD was preparing the application package. Therefore, this section was not applicable during the inspection period.
Compliance:	Not Applicable
Requirement Description:	Environmental Management Act, Landfill Gas Management Regulation (391/2008) (EMA) 20 (1): An owner or operator of a landfill site may apply for a substitution described in section 19 (3) by filing with a director a copy of a completed application in the form specified by the director.
Details/Findings:	At the time of the inspection, the CVRD had not submitted a completed application in the form specified by the Director under section 19(3). Therefore, section 20 of the LFGMR was not applicable at the time of the inspection.

Compliance:	Not Applicable
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Compliance History:

This is the first electronic compliance record on file since January 1, 2012.

The findings of this inspection record will become part of a sector compliance audit of the Landfill Gas Management Regulation.

The Ministry of Environment Compliance and Enforcement Policy and Procedure (C&E Policy) prescribes common requirements and procedures for all Ministry staff to ensure consistent and risk based assessment and response to noncompliance. Using the Non- Compliance Decision Matrix, the compliance determination for this inspection has been assessed as a **Level #2, Category #C**. More information about Environmental Compliance, the Non-Compliance Decision Matrix, and reporting and data submission requirements can be found at the links below:

- General compliance information:
<http://www.gov.bc.ca/environmentalcompliance>
- Non-Compliance Decision Matrix information:
<http://www.gov.bc.ca/environment/how-compliance-is-assessed>
- Reporting and data submission requirements (to be sent to: EnvAuthorizationsReporting@gov.bc.ca):
<http://www.gov.bc.ca/submit-waste-authorization-reports>

Please submit all annual/quarterly/monthly reports and data submissions to the Ministry's Routine Environmental Reporting Submission Mailbox at: EnvAuthorizationsReporting@gov.bc.ca. More information about the reporting requirements may be found at <http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>.

Please be advised that this inspection report may be published on the provincial government website within 7 days.

If you have any questions about this warning, please contact the undersigned.

Yours truly,

Travis Kurinka
Environmental Protection Officer

cc:

Attachments:

Deliver via:			
Email:	<input checked="" type="checkbox"/>	Fax:	<input type="checkbox"/>
Registered Mail:	<input checked="" type="checkbox"/>	Mail:	<input type="checkbox"/>
		Hand Delivery:	<input type="checkbox"/>

**Ministry of Environment
and Climate Change
Strategy**

Compliance
Environmental
Protection Division

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DISCLAIMER:

Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit
<http://www.bclaws.ca>

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

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File: 5380-20/CR

April 18, 2019

Sent via email only: environmentalcompliance@gov.bc.ca
Travis.Kurinka@gov.bc.ca

Travis Kurinka
BC Ministry of Environment &
Climate Change Strategy
525 Superior Street
Victoria BC V8V 1T7

Dear Mr. Kurinka:

Re: Campbell River Waste Management Center – Warning Letter, Landfill Gas Management Regulation, Registration Number LG115164 – Reference No. OC 2401 - Comox Valley Regional District

The Comox Strathcona Waste Management (CSWM), a function of the Comox Valley Regional District (CVRD), has prepared this letter in response to the Ministry of Environment and Climate Change Strategy's (MoE) warning letter dated March 21, 2019, titled Campbell River Waste Management Center, Landfill Gas Management Regulation, registration number LG115164.

As stated in the March 21, 2019 letter, on January 22, 2019, MoE had conducted a site inspection at the Campbell River Waste Management Centre, located at 6700 Argonaut Road, Campbell River BC (Site), and noted a number of actions which are required to address identified non-compliance sections of the Landfill Gas Management Regulation. The CVRD has prepared this letter to inform MoE of the actions taken to date, and the planned future actions to prevent further similar non-compliances.

Response to MoE Inspection

A summary of the items requiring attention from MoE's inspection, and a brief explanation of the CVRD's responses, have been presented in the attached Table 1 (Enclosure). The paragraphs below provide more detailed explanations to supplement the responses provided in Table 1.

The CVRD's consultant, GHD Limited (GHD), prepared the 2017 Design, Operations, and Closure Plan (2017 DOCP) with the overall objective of optimizing the remaining available airspace to bring the landfill to closure. Final closure of the landfill is scheduled to be completed at the end of 2023. A detail design of the closure work is scheduled to commence in 2020.

The 2017 DOCP also included the Draft - Updated Landfill Gas Management Facilities Plan (2017 LFG Plan) (GHD, 2017), which is designed to align with the updated final contours in the 2017 DOCP. Prior to submitting the 2017 DOCP, the CVRD and GHD met with MoE on June 15, 2017 to present the proposed timeline to implement landfill gas (LFG) collection at the Site and to reach landfill closure, as provided in the 2017 DOCP. The June 15, 2017 presentation to MoE also

reviewed the CVRD's financial investments in other solid waste management infrastructure and development initiatives throughout the districts.

The 2017 DOCP was submitted to MoE on March 2, 2018 with an application for a minor amendment to the Site's Operational Certificate. On October 29, 2018, MoE, the CVRD, and GHD participated in a pre-application conference call for the Operational Certificate minor amendment application. MoE notified the CVRD and GHD that a separate application is required for a substituted requirement under the Landfill Gas Management Regulation (LFG Regulation) to approve the proposed timing of LFG collection at the Site. On November 27, 2018, MoE, the CVRD, and GHD participated in a conference call meeting to discuss the substituted requirement application process. The 2017 LFG Plan was submitted to MoE on March 2, 2018 with the 2017 DOCP submission. The application for the substitution under the LFG Regulation was submitted to MoE on March 19, 2019.

The CVRD is seeking a substituted requirement under the LFG Regulation to replace the current accepted 2013 Landfill Gas Management Facilities Design Plan for the Campbell River Waste Management Centre, SCS Engineers, February 2013 (2013 LFG Plan) with the 2017 LFG Plan. The 2017 LFG Plan supersedes the 2013 LFG Plan with a simplified single header design and more efficient collection field. The application for a substituted requirement also requests approval of a substituted schedule to complete detailed design of the LFG collection system and landfill closure in 2020 and to construct the LFG collection system in 2022 to 2023 in concurrence with the final cover construction for the landfill.

Constructing the LFG collection system at the time of placing final geomembrane cover brings efficiencies to the construction and the design and operation of the system and provides for meeting the collection requirements of the LFG Regulation. The landfill at the Site operates as a natural attenuation landfill, with no bottom liner system. As such, the appropriate final cover design includes a geomembrane with a protective cover soil layer. The installation of the geomembrane final cover system is scheduled to occur in 2022 to 2023. The vertical gas wells are best installed at the time of constructing the geomembrane cover system to achieve the highest quality installation. The geomembrane final cover will result in a higher quality gas collected by the LFG collection system, by reducing oxygen and atmospheric inputs. By collecting a higher quality gas, the collection efficiency of the LFG collection system will increase. Based on this rationale, reaching the 75 per cent collection efficiency target, as required by the LFG Regulation, will more likely be met.

The public consultation process required by Section 20 of the LFG Regulation in support of the LFG substitution application is currently underway. As required by Section 20 (2) of the LFG Regulation, a billboard was posted at the Site entrance on April 2, 2019 and notices were published in the Campbell River Mirror on April 3, 2019 and April 5, 2019. The CVRD also held an open house on April 2, 2019 to educate the public on the LFG Regulation substitution application within the context of the overall closure strategy for the landfill at the Site. The open house included information regarding the final cover design and current and future planned environmental monitoring program.

Upon approval of the LFG substitution application, the CVRD will undertake the detailed design of the LFG collection system and landfill closure in 2020. Construction of the geomembrane final cover system and LFG collection system is scheduled for 2022 to 2023, which is concurrent with the

closure of the landfill at the Site. LFG collection at the Site is scheduled to commence in the fourth quarter of 2022.

Closing Remarks

The CVRD appreciates the opportunity to provide this response to MoE. Should you have any questions or require any further clarifications, please do not hesitate to contact the undersigned.

Sincerely,

M. Rutten

Marc Rutten, P.Eng.
General Manager of Engineering Services

Enclosure

cc: Andrew McGifford, Senior Manager of CSWM Services

Table 1

**Responses to ENV Inspection
Campbell River Waste Management Centre
Comox Valley Regional District**

LFG Reg Section	Requirement Description:	ENV Details/Findings:	CVRD/GHD Response:
7 (2)(b):	The plan required under this section must be prepared by a qualified professional in accordance with the guidelines and include the following information: (b) a plan for the installation, operation and maintenance of landfill gas management facilities at the landfill site, including a contingency plan for disruption in landfill gas management for scheduled or emergency maintenance or replacement of landfill gas management facilities;	The updated landfill gas management facilities design plan in the 2017 DOCP provided a plan for the installation, operation and maintenance of landfill gas management facilities at the CVRD landfill. However, the 2017 DOCP does not include a contingency plan for disruption in landfill gas management for scheduled or emergency maintenance or replacement of landfill gas management facilities in Appendix G section 4.	The CVRD's consultant, GHD Limited, will revise the <i>Draft - Updated Landfill Gas Management Facilities Design Plan</i> dated June 13, 2017 (2017 LFG Plan) to include a contingency plan for disruptions in LFG collection due to scheduled or emergency maintenance, or replacement of LFG management facilities. The revised LFG Plan will be submitted to ENV by July 2019.
7 (3):	The landfill gas management facilities design plan must be submitted to the director no later than one year after the date the report setting out the estimate was required to be submitted to the director.	The CVRD first identified in their 2010 LFG Report that the landfill was estimated to be producing more than 1000 tonnes of methane annually. A landfill gas management facilities design plan was, therefore, required to be submitted by January 1, 2012. The CVRD prepared and submitted their LFGMF Design Plan Report which was prepared by SCS Engineering and was prepared by Bill Hayes (P.Eng.) and John Richards in 2013. Therefore, the CVRD has been found to be out of compliance with this section of the LFGMR.	Updates to the landfill gas design plan were completed in June 2017. The CVRD issued the RFP for updating the DOCP and updated landfill gas design plan in August 2016 to plan to allow for utilization of remaining landfill capacity. The 2017 LFG Plan is an improved and more efficient design. The design plan allows for the gas collection system to be installed at the time of placing the final geomembrane cover system to ensure collection efficiencies to meet the Landfill Gas Management Regulation (LFG Regulation) requirements. Refer to the attached detailed response.
8 (2)(a):	The owner or operator of a landfill site for which there is an accepted design plan must (a) install landfill gas management facilities in accordance with the accepted design plan, and	The CVRD submitted their 2013 LFGMF Design Plan Report to the Ministry on February 25, 2013 and became an approved document by a Director and an accepted design plan on April 26, 2013. The 2013 LFGMR Design Plan Report recommended that landfill gas management facilities be installed as the landfill gas production was assessed to be over the 1,000 tonnes/year limit. In their 2017 DOCP, the CVRD conducted an update to their landfill gas management facilities design plan. The 2017 DOCP was currently in review at the time of inspection and has not been accepted by the Ministry. During the inspection, Mr. McGifford informed Officer Kurinka that no landfill gas management facilities had been installed at the time of the inspection. Mr. McGifford informed Officer Kurinka that the CVRD is currently working towards submitting a substitution request to delay the installation of the landfill gas management facilities until after the closure of the landfill which is estimated to be closed in 2023. Therefore, the CVRD has been found to be out of compliance with this section for not installing landfill gas management facilities in accordance with their 2013 accepted design plan.	The detail design of the gas collection and flare system is scheduled to commence in 2020 with installation occurring in 2022 to 2023 as part of the final cover/closure works for the landfill as presented to the ENV in June 2017. A meeting with ENV to review the process for applying for substituted requirements was held on November 27, 2018. An application for substituted requirements of the LFG Regulation was made on March 19, 2019. Public consultation on the substituted requirements application is currently being completed. See the attached detailed response.
8 (2)(b)(i):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (i) migration of landfill gas,	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting migration of landfill gas.	The landfill gas monitoring system will be installed at the time of the placement of low permeable geomembrane cover which eliminates the venting through the intermediate sandy cover soils and creates the potential for subsurface migration.
8 (2)(b)(ii):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (ii) use of landfill covers,	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting use of landfill covers. The CVRD was applying daily and intermediate cover to the landfill during the inspection to meet requirements specified in their refuse permit PR2401.	Outside of the active discharge area, the landfill footprint is secured with a thick intermediate cover of sandy soils. The low permeable geomembrane cover system is planned for installation in 2022 to 2023 once the landfill reaches capacity.
8 (2)(b)(iii):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (iii) operation of landfill gas management facilities,	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting operation of landfill gas management facilities.	As noted above, the LFG collection system is scheduled to be installed in 2022 to 2023.
8 (2)(b)(iv):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (iv) landfill gas collection equipment,	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas collection equipment.	As noted above, the LFG collection system is scheduled to be installed in 2022 to 2023.
8 (2)(b)(v):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (v) landfill gas flaring equipment, and	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas flaring equipment.	As noted above, the LFG collection system is scheduled to be installed in 2022 to 2023.
8 (2)(b)(vi):	The owner or operator of a landfill site for which there is an accepted design plan must (b) implement management practices, processes and methods for landfill gas management in accordance with any guidelines respecting (vi) landfill gas management facilities maintenance, including the number of days annually that landfill gas management facilities may be shut down.	At the time of the inspection, the CVRD did not have a landfill gas management system installed and had not implemented management practices processes and methods for landfill gas management in accordance with any guidelines respecting landfill gas management facilities maintenance, including the number of days annually that landfill gas management facilities may be shut down.	As noted above, the LFG collection system is scheduled to be installed in 2022 to 2023.
8 (3):	The landfill gas management facilities and practices referred to in subsection (2) must be installed and implemented no later than 4 years after the date the landfill gas management facilities design plan is submitted to the director under section 7.	Mr. McGifford informed Officer Kurinka during the inspection that no landfill gas management facilities have been installed at the landfill. The currently accepted landfill gas management facilities design plan was submitted to the Director on February 25, 2013, which required the CVRD to install the landfill gas management facilities no later than February 25, 2017.	As noted above, the CVRD has applied for a substituted requirement under the LFG Regulation which allows for the utilization of the remaining landfill capacity.
14 (3)(a):	An annual report required under this section must be submitted to the director (a) if an operational certificate or permit has been issued for the landfill site, and the operational certificate or permit for the landfill site specifies a date for submission of an annual report, on or before that date.	Under their Operational Certificate #2401, the CVRD is required to submit an annual report no later than April 30th of each year. The CVRD submitted their 2016 Annual Operations and Monitoring Report on April 28, 2017. The CVRD submitted their 2017 Annual Operations and Monitoring Report on May 7, 2018.	ENV granted an extension the CVRD to submit the 2017 Operations and Monitoring Report on May 7, 2018. The extension was granted by ENV via email dated April 30, 2018.