



**REGIONAL DISTRICT
of Fraser-Fort George**

**LEGRAND DEMOLITION AND CONSTRUCTION WASTE LANDFILL
2022 ANNUAL REPORT
MCBRIDE, BRITISH COLUMBIA**

Prepared by:

THE REGIONAL DISTRICT OF FRASER-FORT GEORGE
155 George Street
Prince George, British Columbia
V2L 1P8



Laura Zapotichny
General Manager of Environmental Services



December 4, 2023

Attention: British Columbia Ministry of Environment and Climate Change Strategy

Subject: Qualified Professional Annual Report Review
Legrand Demolition and Construction Waste Landfill 2022 Annual Report

The Regional District of Fraser-Fort George has retained Tetra Tech Canada Inc. (Tetra Tech) as a Qualified Professional (QP) to review the Legrand Demolition and Construction Waste Landfill (the Site) 2022 Annual Report (Annual Report).

Relevant 3rd party information, which has been relied upon, has been used in and/or appended to this report. Tetra Tech has reviewed the Annual Report and based on the information provided and knowledge of the Site, Tetra Tech is in general agreement with the information provided. Tetra Tech has reviewed the information presented in the Annual Report and is not responsible for any information that has been omitted.

Respectfully submitted,
Tetra Tech Canada Inc.



2023-Dec-04

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EXECUTIVE SUMMARY

This 2022 Annual Operations Report has been prepared for the Legrand Demolition and Construction Waste Landfill located approximately 18 km northwest of the Village of McBride, British Columbia. The landfill encompasses an area of approximately 3.4 hectares, within an overall site permitted area of 78.7 hectares.

The objective of the 2022 Annual Operations Report is to summarize the development of the Site for the period of January 1, 2022 to December 31, 2022. The results of the Environmental Monitoring Program were submitted to the British Columbia Ministry of Environment and Climate Change Strategy (MOECCS) in the report entitled, “2022 Annual Groundwater Monitoring Report Legrand Demolition and Construction Waste Landfill” generated by SNC-Lavalin Inc.

Landfill operations have been on-going at the Site since 1976. The Regional District of Fraser-Fort George (RDFFG) operated the Site under Permit PR-6424, issued February 15, 1982 by the MOECCS under the provisions of the *Environmental Management Act*, in accordance with the RDFFG’s Solid Waste Management Plan. The permit was amended on June 26, 1986, June 16, 1987, and most recently amended to Operational Certificate 6424 on September 28, 2021.

According to RDFFG records, the total volume of demolition and construction waste landfilled at the Site during the reporting period was approximately 4,233 cubic metres. Based on the information currently available, the lifespan of the existing footprint will likely extend beyond 2037.

The remaining operations airspace for the current footprint, as of May 21, 2022, was reported as an estimated value of 142,429 cubic metres (excluding final cover). Based on a comparison of the May 2019 and May 2022 topographical contours, approximately 1,515 cubic metres of airspace was consumed at the Site for the period in which the survey took place. It is estimated that the remaining airspace for the current footprint is approximately 140,914 cubic metres, as of May 11, 2023.

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1. INTRODUCTION

The objective of the Annual Operations Report is to summarize the development and operations of the Site for the period of January 1, 2022 to December 31, 2022 (Reporting Period). The results of the Environmental Monitoring Plan are submitted to the British Columbia Ministry of Environment and Climate Change Strategy (MOECCS) under separate cover.

This report fulfills the annual reporting requirements outlined in Section 5.1 of the Operational Certificate (OC) 6424, issued by the MOECCS on September 15, 2021.

2. SITE AND REGULATORY SETTING

2.1 Site Description

The Site is located approximately 18 kilometres northwest of the Village of McBride, British Columbia, approximately 1 kilometre southwest of Highway 16. The legal description of the Site is Part of South ½ of District Lot 7078 and Part of District Lot 7077, Cariboo District. The location of the Site is shown on Figure 1.

The rural remote landfill encompasses an area of approximately 3.4 hectares, within an overall Site permitted area of 78.7 hectares. In addition to the permitted area, the RDFFG has a lease agreement with the Ministry of Forest, Lands and Natural Resource Operations which encompasses an area of 29.9 hectares. The lease consists of two sections. The larger of the two sections, approximately 21.1 hectares, is rectangular and is located within the permitted area and includes the landfill. The second section, approximately 8.8 hectares, is triangular and is located to the southwest of the landfill. This area contains the borrow pit (XCG Consulting Ltd., 2019).

The Site property (Figure 2) is bounded by forested land in all directions, with the borrow pit located to the southwest of the landfill. The Fraser River is located approximately 3 kilometres northeast of the Site. The Legrand Creek is located approximately 200 metres west of the Site and a second unnamed creek is located approximately 260 metres east of the Site. Both creeks are tributaries to the Fraser River (XCG Consulting Ltd., 2019).

The Site is accessed via Legrand Road off of Highway 16. The Site is located approximately 1 kilometre southwest of Highway 16. A security gate is located along Legrand Road. The gate is locked to prohibit unauthorized access and uncontrolled disposal. The Site accepts demolition, landclearing, and construction waste from the Village of McBride, the Village of Valemount and surrounding area.

2.2 Background

Landfill operations have been on-going at the Site since 1976. The Regional District of Fraser-Fort George (RDFFG) operated the Site under Permit PR-6424, issued February 15, 1982, by the MOECC under the provisions of the *Environmental Management Act*, in accordance with the RDFFG's Solid Waste Management Plan. The permit was amended on June 26, 1986, June 16, 1987, and most recently amended to Operational Certificate (OC) 6424 on September 28, 2021.

Historically, the landfill was unmonitored, receiving domestic and commercial waste from the Village of McBride and surrounding rural residences. Management of waste material included the burning of waste in trenches to reduce volumes. This practice was discontinued in 1996, and waste was subsequently landfilled using the area-fill method. Beginning in 2005, landfill operations were limited to the landfilling of select demolition, land clearing and construction (DLC) waste materials from the Village of McBride, the Village of Valemount, and surrounding area. Access to the rural remote landfill is restricted, available by appointment only. The rural remote landfill receives

approximately 2 percent of the regional solid waste stream. (XCG Consulting Ltd., 2019).

2.3 **Regulatory Setting**

The Site currently operates under OC 6424 issued September 28, 2021, by the MOECCS under the provisions of the *Environmental Management Act*. The following section provides an overview of the regulatory environment which governs landfill design, operations, and closure of the Site.

2.3.1 **Provincial Regulations**

There are currently several documents published by the MOECCS, which regulate landfill design, operations, and monitoring:

- Landfill Criteria for Municipal Solid Waste, Second Edition (June 2016);
- Guidelines for Environmental Monitoring at Municipal Solid Waste Landfills (January 1996); and
- Environmental Management Act (October 2003).

Key elements of these documents, addressed in the Plan, are as follows.

2.3.2 **Landfill Operational Permit**

The landfill is currently approved to operate under OC 6424 issued by the MOECCS on September 28, 2021. Key elements of this approval with respect to design, operation, and closure include the following:

- regularly inspect the Authorized Works and maintain them in good working order;
- ensure that the Facility does not cause a nuisance including with regard to birds, rodents, insects, odour, noise, dust, litter, vector and wildlife attraction;
- operate the landfill in accordance with the most recent approved Design, Operations and Closure Plan (DOCP) and design, construct, operate, inspect, maintain, monitor, and close the Facility, in compliance with most recent approved DOCP and this operational certificate;
- use the best practical means available to prevent the scatter of litter at the site;
- no waste as defined by the Hazardous Waste Regulation (B.C. Reg. 243/2016, November 1, 2017) must be treated or disposed of at this site except as authorized by the Director;
- no disposal of wastes which are or contain “Free Liquid” at the site;
- no landfilling of material within 50 metres of the boundary of the property on which the facility is located; and
- conduct a monitoring program in accordance with the most recent approved DOCP and this operational certificate.

A copy of the Operational Certificate is included as Appendix A.

3. LANDFILL OPERATION AND MANAGEMENT

3.1 Site Operations

The Legrand Demolition and Construction Waste Landfill is currently operated under OC 6424 issued by the MOECCS, on September 28, 2021. The Site accepts demolition, land clearing and construction waste, by appointment only, from the Village of McBride, the Village of Valemount and surrounding area.

3.2 Site Facilities

Access to the Site is provided via Legrand Road off of Highway 16. A security gate is located along Legrand Road. The gate is locked to prohibit unauthorized access and uncontrolled disposal. Access to the landfill is restricted, and available by appointment only (see Appendix C – Flowchart and Disposal Application).

Signage is provided at the site entrance and throughout the Site as follows:

- Site owner;
- Traffic control and directions; and
- Tipping area.

3.3 Waste Disposal

The quantity of waste received at the Site is estimated according to load class as defined by Regional District Bylaw 3166. (see Appendix D Legrand Demolition and Construction Waste Landfill Brochure for detailed load class descriptions). The DLC waste received from the McBride and Valemount Regional Transfer Stations is estimated at 38 cubic metres per load. A summary of the volume of waste disposed of at the Site is provided in Table 1. According to RDFFG records, the total volume of waste landfilled at the Site during the reporting period was approximately 4,233 cubic metres.

3.4 Landfill Volume Consumed

As indicated in Section 3.3, the total amount of waste compacted and buried was approximately 4,233 cubic metres during the reporting period (January 1, 2022, to December 31, 2022).

A major re-sloping and compaction project took place in September and October of 2022. This task was undertaken to reshape the eastern and northern sections of the landfill to adhere to the approved operational design plan resulting in an increase in efficiency of air space utilization. This project will also allow for the potential of improved compaction.

Aerial surveys are conducted annually to determine the amount of airspace consumed during the survey period. The aerial survey conducted on May 11, 2023, is for the survey period of May 21, 2022 to May 11, 2023 during this time period approximately 2,740 cubic meters of demolition material was received.

Based on 2740 cubic meters and a comparison of the May 21, 2022, to May 11, 2023 topographical contours, approximately 1,515 cubic metres (Dillon, 2022) of airspace has been filled at the Site for the period in which the survey took place. It is estimated that 1,004 tonnes of waste was received at the site during the above time period, (Debris Estimating Guide FEMA 329, September 2010). Using the total tonnage received and the calculated airspace consumed, the apparent density for the landfill was calculated to be approximately 0.66 tonnes per cubic meter.

3.5 Remaining Capacity and Site Life

The remaining operations airspace for the current footprint of the Site, as of May 21, 2022, was reported as an estimated value of 142,429 cubic metres, (Dillion 2022). The total additional landfill capacity for the potential lateral expansion area is estimated to be approximately 104,300 cubic metres (XCG Ltd., August 2019). This provides a total remaining landfill capacity of 246,729 cubic metres as of May 21, 2022. According to the letter from Dillon Consulting, “2023 Volume and Site Life Assessment-Legrand Regional Landfill,” presented to the RDFFG on July 28, 2023, approximately 1,515 cubic metres of airspace was consumed at the Site from May 21, 2022, to May 11, 2023 based on a comparison of the May 2022 and May 2023 topographical contours. It is estimated that the remaining airspace for the current footprint (not including the potential lateral expansion area) is approximately 140,914 cubic metres, as of May 11, 2023. Based on the information currently available, the lifespan of the current footprint will likely extend beyond 2037.

3.6 Summary of Environmental Monitoring Data

The results of the Environmental Monitoring Program were submitted to the British Columbia Ministry of Environment and Climate Change Strategy (MOECCS) in the report entitled, “2022 Annual Groundwater Monitoring Report Legrand Demolition and Construction Waste Landfill” generated by SNC-Lavalin Inc, (April 2023).

4. SUMMARY AND CLOSURE

The 2022 Annual Report was prepared to summarize the development and operations of the Legrand Demolition and Construction Waste Landfill, for the Reporting Period.

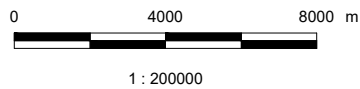
According to RDFFG records, approximately 4,233 cubic metres of waste was received at the Site during the Reporting Period. Based on the information currently available, the lifespan of the current footprint will likely extend beyond 2037. It is estimated that the remaining airspace for the current footprint is approximately 140,914 cubic metres, as of May 11, 2023.

5. REFERENCES

1. Aero Geometrics, 2022. “Air Survey.”
2. Dillion Inc. 2022. “2020-2022 Volume and Site Life Assessment- Legrand Regional Landfill.”
3. British Columbia Ministry of Environment, 2020. “Environmental Management Act.”
4. XCG Consulting Ltd., August 2019. “Design and Operations Plan Legrand Regional Landfill Select Landfill Site”
5. British Columbia Ministry of Environment, Second Edition (June 2016). “Landfill Criteria for Municipal Solid Waste.”

FIGURES

FIGURE 1
SITE LOCATION MAP









SITE LOCATION MAP		
DESIGN AND OPERATIONS PLAN LEGRAND REGIONAL LANDFILL REGIONAL DISTRICT OF FRASER-FORT GEORGE		
 XCG XCG CONSULTING LTD.		
DATE	JOB NO.	FIGURE NO.
APR 2017	4-2428-05-01	1.1

FIGURE 2
SITE PLAN

LEGRAND REGIONAL LANDFILL SITE TOPOGRAPHY






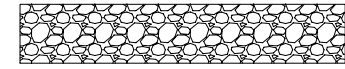
LEGEND	
	LEASE BOUNDARY
	APPROXIMATE LIMIT OF WASTE
	CONTOUR LINES
	GROUNDWATER MONITORING WELL
	GRAVEL ROAD



NOTE: EXISTING CONDITIONS AS OF MAY 21, 2022

FIGURE 3
AERIAL SURVEY

LEGRAND REGIONAL LANDFILL SITE PLAN WITH INFRASTRUCTURE

LEGEND			
	LEASE BOUNDARY		WASTE FILL AREA
	APPROXIMATE LIMIT OF WASTE		CONTOUR LINES
	GROUNDWATER MONITORING WELL		GRAVEL ROAD



NOTE: EXISTING CONDITIONS AS OF MAY 21, 2022

TABLES

**Table 1 Solid Waste Disposal Summary****2022 - Legrand Demolition, Landclearing Construction Waste Disposal Summary**

Date	DLC - McBride TS (cubic metres)	DLC - Valemount TS (cubic metres)	DLC - private hauler (cubic metres)	Total Landfilled (cubic metres)	Cover applied
Jan-22	38	38	0	76	
Feb-22	76	38	0	114	
Mar-22	38	76	0	114	
Apr-22	190	304	130	624	April 19
May-22	152	228	223	603	
Jun-22	76	152	320	548	
Jul-22	152	190	180	522	
Aug-22	76	228	0	304	
Sep-22	152	228	80	460	Sept 30
Oct-22	114	190	450	754	
Nov-22	38	38	0	76	Nov 10
Dec-22	0	38	0	38	
Total	1,102	1748	1383	4233	

APPENDIX A
OPERATIONAL CERTIFICATE 6424



September 28, 2021

Tracking Number: 401904
Authorization Number: 6424

REGISTERED MAIL

REGIONAL DISTRICT OF FRASER-FORT GEORGE
155 GEORGE STREET
PRINCE GEORGE BC V2L 1P8

Dear Operational Certificate Holder:

Enclosed is Operational Certificate 6424 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the operational certificate. An annual fee will be determined according to the Permit and Approval Fees and Charges Regulation.

This Operational Certificate 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 rests with the operational certificate holder. It is also the responsibility of the operational certificate holder to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

Requirements may also be specified by the *Environmental Management Act* and regulations including, but not limited to, the Contaminated Sites Regulation, Environmental Data Quality Assurance Regulation, Hazardous Waste Regulation, Landfill Gas Management Regulation, Organic Matter Recycling Regulation, Ozone Depleting Substances and Other Halocarbons Regulation, Recycling Regulation, Spill Reporting Regulation, Storage of Recyclable Material Regulation, Waste Discharge Regulation and Codes of Practice.

When a spill occurs, or there is an imminent risk of one occurring, the responsible person must ensure that it is reported in accordance with the Spill Reporting Regulation. Additional information on spill reporting requirements is available at gov.bc.ca/reportaspill

The Director may require the Operational Certificate holder to repair, remove, or add to existing works, or to construct new works, and to submit plans and specifications for works specified in this authorization.

The Director may require the Operational Certificate holder to conduct additional monitoring, and may specify procedures for monitoring, analysis, and procedures or

Ministry of Environment and
Climate Change Strategy

Environmental Protection
Division

Suite 325 - 1011 4th Avenue
Prince George BC V2L 3H9

Authorizations - North
Region
Telephone: (250) 565-6135
Facsimile: (250) 565-6629

requirements respecting the handling, treatment, transportation, discharge or storage of waste.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this Operational Certificate will be carried out by staff from the Environmental Protection Division's Regional Operations Branch. Plans, data and reports pertinent to the Operational Certificate are to be submitted by email or electronic transfer to the Director, designated Officer, or as further instructed. To meet the reporting requirements in a form and manner acceptable to the Director, reports and notifications related to the administration of this Operational Certificate must be submitted electronically to the following ministry email addresses:

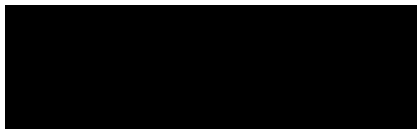
- EnvAuthorizationsReporting@gov.bc.ca for monitoring and annual reports
- EnvironmentalCompliance@gov.bc.ca for non-compliance reports.

For further information about how to submit data and reports, please refer to <http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions>.

For more information about how the Ministry will assess compliance with your operational certificate please refer to gov.bc.ca/environmentalcompliance.

For more information about how to make changes to your operational certificate and to access waste discharge amendment forms and guidance, please refer to gov.bc.ca/wastedischarge-authorizations.

Yours truly,



Karen Moores, P.Ag.
for Director, *Environmental Management Act*
Authorizations - North Region



MINISTRY OF ENVIRONMENT
AND CLIMATE CHANGE
STRATEGY

OPERATIONAL CERTIFICATE

6424

Under the Provisions of the Environmental Management Act

In Accordance with the

Regional District of Fraser-Fort George Solid Waste Management Plan

REGIONAL DISTRICT OF FRASER-FORT GEORGE

PRINCE GEORGE BC V2L 1P8

Is Authorized to discharge refuse to land at a landfill located approximately 18 km northwest of the Village of McBride, British Columbia, subject to the requirements listed below. Contravention of any of these requirements is a violation of the *Environmental Management Act* and may lead to prosecution.

Capitalized terms referred to in this authorization are defined in the Glossary. Other terms used in this authorization have the same meaning as those defined in the *Environmental Management Act* and applicable regulations.

Where this authorization provides that the Director may require an action to be carried out, the Operational Certificate holder must carry out the action in accordance with the requirements of the Director.

This Operational Certificate supersedes and replaces Operational Certificate 6424 issued under Section 14 of the *Environmental Management Act*.

GLOSSARY

"Officer: means: An Officer as defined by Section 1(1) of the *Environmental Management Act*.

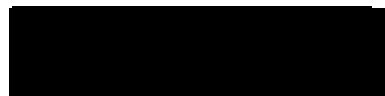
"Province" means: Her Majesty the Queen in right of British Columbia;

"Qualified Professional " means: a person who:

(a) Is an engineer, scientist or technologist specializing in a particular applied science or technology;

(b) Is registered in British Columbia with a professional organization, is

Date issued: February 15, 1982
Date amended: September 28, 2021
(most recent)



Karen Moores, P.Ag.
for Director, *Environmental Management Act*
Authorizations - North Region

acting under that organization's code of ethics and is subject to disciplinary action by that organization;

(c) Through suitable education, experience, accreditation and knowledge respecting solid waste management and related engineering disciplines for the management of leachate, surface water, ground water, storm water, and landfill gas and other specialist disciplines, may reasonably be relied upon to provide advice within his or her area of expertise and to carry out duties or functions in those areas; and

(d) Provides the completed Declaration of Competency and Conflict of Interest Disclosure Statements.

All documents submitted to the Director by a Qualified Professional must be signed by the author(s).

“Free Liquid” means: liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

“Regulatory Document” means: any document that the Operational Certificate holder is required to provide to the Director or the Province pursuant to: (i) this Authorization; (ii) any regulation made under the Environmental Management Act that regulates the Facility described in this Authorization or the discharge of waste from that Facility; or (iii) any order issued under the Environmental Management Act directed against the Operational Certificate holder that is related to the Facility described in this Authorization or the discharge of waste from that Facility.


1. AUTHORIZED DISCHARGES

1.1 Landfill

This section applies to the discharge of construction, demolition and land clearing refuse to ground from the Village of McBride and Valemount. The site reference number for this discharge is E210976.

- 1.1.1 The maximum rate of discharge is 100 cubic metres per day.
- 1.1.2 The characteristics of discharge must be typical of construction, demolition and land clearing refuse.
- 1.1.3 The discharge is authorized from Authorized Works, which are landfill, and related appurtenances approximately located as shown on Site Plan A.
- 1.1.4 The location of the facilities is Latitude 53°23'48" N; Longitude 120°25'50" W and located on the parcel of land described as Part of South ½ of District Lot 7078 and Part of District Lot 7077, Cariboo

Date issued: February 15, 1982
Date amended: September 28, 2021
(most recent)


Karen Moores, P.Ag.
for Director, *Environmental Management Act*
Authorizations - North Region

District. The landfill boundary is described as commencing at a point on the easterly H.W.M. of Legrand Creek said point being 402m East of the NW cor. L 7077 Cariboo Land District; thence 1509m S 50° E; thence 483m N 330 E; thence 1750m N 50° W to the easterly H.W.M. of Legrand Creek; thence in a general southwesterly direction along the easterly H.W.M. of-Legrand Creek to the aforesaid point of commencement.

2. DESIGN, OPERATIONS and CLOSURE PLAN (DOCP)

(a) The landfill must be operated at all times by the operational certificate holder in accordance with the most recent and approved DOCP. “Design and Operations Plan, Legrand Regional Landfill Select Landfill Site, McBride British Columbia” by XCG Consulting Ltd, dated August 8, 2019 is approved.

(b) The Operational Certificate holder must cause a Qualified Professional to certify and submit an updated DOCP to the Director for approval, on or before November 30, 2030, to keep the DOCP up to date; and then at least once every following five years.

(c) The DOCP must comply with the requirements of this operational certificate, include the information specified in all the items listed in the Landfill Criteria Section 10.3 Design, Operations and Closure Plan, conform with the most recent versions of these plans.

(d) The Operational Certificate holder must operate the landfill in accordance with the most recent approved DOCP and design, construct, operate, inspect, maintain, monitor, and close the Facility, in compliance with most recent approved DOCP and this operational certificate.

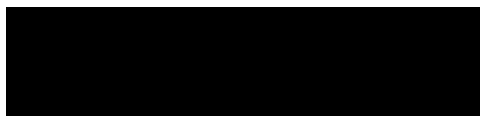
3. GENERAL REQUIREMENTS

3.1 Maintenance of Work and Emergency Procedure

The Operational Certificate holder must regularly inspect the Authorized Works and maintain them in good working order.

The Director may require the operational certificate holder to reduce or suspend operations until the Authorized Works have been restored, and/or corrective steps have been taken to prevent unauthorized discharges.

Date issued: February 15, 1982
Date amended: September 28, 2021
(most recent)



for Director, *Environmental Management Act*
Authorizations - North Region

In the event of an emergency or condition beyond the control of the operational certificate holder including, but not limited to, unauthorized fires arising from spontaneous combustion or other causes, or detection of leachate on the site of the Facility, the operational certificate holder must take remedial action to prevent any unauthorized discharges. The operational certificate holder must immediately report the emergency or condition and the remedial action that has and will be taken to the EnvironmentalCompliance@gov.bc.ca email address or as otherwise instructed by the Director.

3.2 **Bypasses**

The operational certificate holder must not allow any discharge authorized by this authorization to bypass the Authorized Works, except with the prior written approval of the Director

3.3 **Landfill Operation**

The Operational Certificate holder must operate the landfill in accordance with the “Design, Operations, and Closure Plan” (DOCP) approved by the director. Updates to the DOCP must be submitted to the Director for approval at least 30 days prior to implementation. The Director may require modifications to the Operational Plan based upon evaluation of the annual report or any other information, in connection with the discharge.

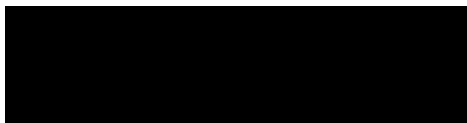
3.4 **Nuisance**

The Operational Certificate holder must ensure that the Facility does not cause a nuisance including with regard to birds, rodents, insects, odour, noise, dust, litter, vector and wildlife attraction.

3.5 **Litter Control**

The Operational Certificate holder must use the best practical means available to prevent the scatter of litter at the site. The operational certificate holder must clean up any litter scattered into the neighboring property, along access roads, in drainage ditches, along litter control fences, into surrounding trees or elsewhere on the landfill site. The Director may require the Operational Certificate holder to implement a specified frequency of clean-up and other additional requirements for refuse scatter control.

Date issued: February 15, 1982
Date amended: September 28, 2021
(most recent)



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for Director, *Environmental Management Act*
Authorizations - North Region

3.6 **Prohibited Waste**

No wastes as defined by the Hazardous Waste Regulation (B.C. Reg. 243/2016, November 1, 2017) must be treated or disposed of at this site except as authorized by the Director.

3.7 **Free Liquid**

The Operational Certificate holder must not dispose of wastes which are or contain "Free Liquid" at the site. The Operational Certificate holder must determine the composition of all "Free Liquids" pursuant to the US EPA Method 9095A Paint Filter Liquids Test, Test Methods for Evaluating Solid Wastes-Physical/Chemical Methods (EPA Publication No. Sw-846).

3.8 **Buffer Zone**

The Operational Certificate holder must not landfill material within 50 meters of the boundary of the property on which the facility is located.

4. **MONITORING REQUIREMENTS**

4.1 **Monitoring Plan**

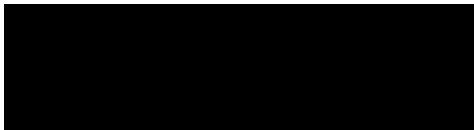
The Operational Certificate holder must conduct a monitoring program in accordance with the most recent approved DOCP and this operational certificate. The Director may require modifications to the Monitoring Plan based upon the annual report or any other information collected by Environmental Protection and any other source, in connection with this discharge. Updates to the Monitoring Plan must be submitted for the approval of the Director at least 30 days prior to implementation.

The Director may amend any requirements under this section, including requiring increased or decreased monitoring for the discharge and/or receiving environment based on data submitted by the Operational Certificate holder and any other information, in connection with this authorization.

4.2 **Groundwater Monitoring**

The minimum groundwater monitoring requirements are shown in Table 1 and must be included in the DOCP monitoring plan referred to in section 4.1.

Date issued: February 15, 1982
Date amended: September 28, 2021
(most recent)



for Director, *Environmental Management Act*
Authorizations - North Region

Table 1: Groundwater Monitoring

Monitoring Well	Parameter	Frequency
MW-1A, MW-2B, MW-3, MW-4, MW-5, MW-6 and MW-7	<p><u>Field Measurements</u></p> <p>pH, conductivity, temperature, water elevation</p> <p><u>Lab Measurements</u></p> <p>pH, Conductivity, Specific Conductance, TSS, TDS, Alkalinity Total (CaCO₃), bromide, chloride, fluoride, sulphate, hardness, BOD, COD, Ammonia, Nitrate + Nitrite, Nitrate, Nitrite, Orthophosphate and Dissolved metals</p>	Bi-annual

4.3 **Sampling Procedure**

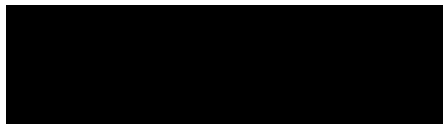
The Operational Certificate holder must carry out sampling in accordance with the procedures described in the "British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition (Permittee)" or most recent edition, or by alternative procedures as authorized by the Director.

A copy of the above manual is available on the Ministry web page at <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-field-sampling-manual>.

4.4 **Analytical Procedures**

The Operational Certificate holder must carry out analyses in accordance with procedures described in the "British Columbia Laboratory Manual (2015

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for Director, *Environmental Management Act*
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Permittee Edition)", or the most recent edition or by alternative procedures as authorized by the Director.

A copy of the above manual is available on the Ministry web page at <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-field-sampling-manual>.

4.5 **Quality Assurance/Quality Control (QA/QC)**

- (a) The Operational Certificate holder must obtain from the analytical laboratory(ies) their precision, accuracy and blank data for each sample set submitted by the Operational Certificate holder and an evaluation of the data acceptability, based on criteria set by such laboratory.
- (b) The Operational Certificate holder must prepare and submit for analysis by the analytical laboratory(ies) a duplicate sample for each parameter sampled at each monitoring site and each monitoring period.
- (c) The Operational Certificate holder must submit samples to analytical laboratory(ies) that meet the definition of a qualified laboratory under the Environmental Data Quality Assurance Regulation.

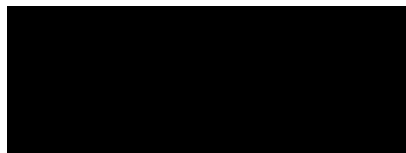
5. **REPORTING REQUIREMENTS**

The Operational Certificate holder must submit all data required to be submitted under this section by email to the Ministry's Routine Environmental Reporting Submission Mailbox (RERSM) at envauthorizationsreporting@gov.bc.ca or as otherwise instructed by the Director. For guidelines on how to properly name the files and email subject lines or for more information visit the Ministry website: <https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>

5.1 **Annual Reporting**

The Operational Certificate holder must, by each July 31 of that year, prepare and submit to the Director by email at EnvAuthorizationsReporting@gov.bc.ca or as otherwise instructed by the

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Director an Annual Report that is satisfactory to the Director and includes, but is not limited to, the following:

- a) Volume (quantity) of construction, demolition and land clearing refuse discharged;
- b) Remaining landfill capacity at the site;
- c) Summary of monitoring data obtained during the reporting period and interpretation of such data;
- d) Any changes in the monitoring program, or landfill operation from the preceding period;

Based on the results of the monitoring program and/or other information obtained in connection with this discharge, the Director may require the Operational Certificate holder to provide additional information in a form and on timelines specified by the Director. Notwithstanding the foregoing, the Operational Certificate Holder must prepare and submit the first such Annual Report to the Director by July 31, 2022.

5.2 Non-Compliance Notification

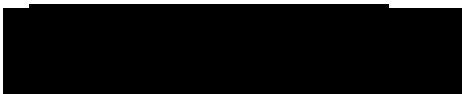
The Operational Certificate holder must immediately notify the Director or designate by email at EnvironmentalCompliance@gov.bc.ca , or as otherwise instructed by the Director of any non-compliance with the requirements of this Authorization and take remedial action to remedy any effects of such non-compliance.

The Operational Certificate holder must provide the Director with written confirmation of all such non-compliance events, including available test results within 24 hours of the original notification by email at EnvironmentalCompliance@gov.bc.ca, or as otherwise instructed by the Director.

5.3 Non-Compliance Reporting

If the Operational Certificate holder fails to comply with any of the requirements of this Authorization, the Operational Certificate holder must, within 30 days of such non-compliance, submit to the Director a written report that includes, but is not necessarily limited to, the following:

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- (a) all relevant test results obtained by the Operational Certificate holder related to the non-compliance,
- (b) an explanation of the most probable cause(s) of the non-compliance, and
- (c) a description of remedial action planned and/or taken by the Operational Certificate holder to prevent similar non-compliance(s) in the future.

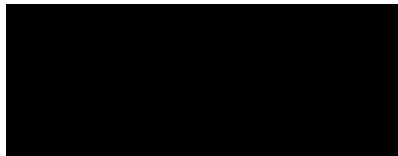
The Operational Certificate holder must submit all non-compliance reporting required to be submitted under this section by email to the Ministry's Compliance Reporting Submission Mailbox (CRSM) at EnvironmentalCompliance@gov.bc.ca or as otherwise instructed by the Director. For guidelines on how to report a non-compliance or for more information visit the Ministry website:

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/compliance-reporting-mailbox>

6. **PUBLICATION OF DOCUMENT**

The Ministry of Environment and Climate Change Strategy publishes Regulatory Documents on its website for the purpose of research, public education and to provide transparency in the administration of environmental laws. The Operational Certificate holder acknowledges that the Province may publish any Regulatory Documents submitted by the operational certificate holder, excluding information that would be exempted from disclosure if the document was disclosed pursuant to a request under section 5 of the Freedom of Information and Protection of Privacy Act, and the Operational Certificate holder consents to such publication by the Province.

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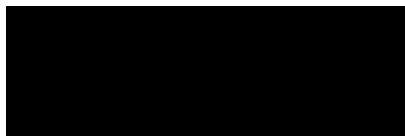


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Site Plan A



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for Director, *Environmental Management Act*
Authorizations - North Region

APPENDIX B
PERMIT AMENDMENT FOR WILLOW CREEK DEBRIS



February 25, 2021

Permit Number: 6424

By Email to Petra Wildauer

Regional District of Fraser For George
155 George Street
Prince George, BC V2L 1P8

Re: **Letter of Amendment to Appendix No. 1 of the Permit 6424**

Dear Ms. Wildauer:

Based on your request of February 24, 2021, the Ministry of Environment and Climate Change Strategy is hereby amending Appendix No. 1 of your Permit 6424 from the Period of March 1, 2021 until April 2, 2021 as follows.

As per Section 16 of the Environmental Management Act, I hereby approve a temporary amendment of Appendix No. 1 as follows:

Appendix 1. B

From: Appendix 1B

The rate at which refuse may be discharged is a maximum of 28 cubic meters per day.

To: Appendix 1B

The rate at which refuse may be discharged is a maximum of 160 cubic meters per day.

From: Appendix 1C

The type of the refuse which may be discharged is municipal.

To: Appendix 1C

The type of the refuse which may be discharged is specifically related to the landslide debris from the structures that were destroyed by the Willox Creek Landslide.



From: Appendix 1D

The components of the refuse which may be discharged are that of typical municipal refuse

To: Appendix 1D

The components of the refuse which may be discharged are specifically related to the landslide debris from the structures that were destroyed by the Willox Creek Landslide.

All waste must be compacted and covered daily with 10cm of soil for the duration of this permit amendment. If asbestos debris is disposed of, it must be covered immediately with not less than 30cm of soil and locations of known asbestos debris must be georeferenced.

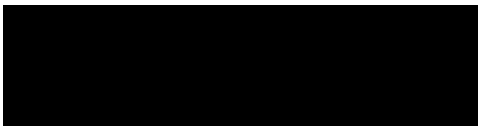
The director may require the permittee to conduct monitoring, and may specify procedures for monitoring and analysis, and procedures or requirements respecting the handling, treatment, transportation, discharge or storage of waste.

The director may amend any requirements under this section, including requiring increased or decreased monitoring for the discharge and/or receiving environment based on data submitted by the permittee and any other information gathered in connection with this authorization.

This amendment does not affect any other requirements of the Permit 6424, which remain in full force and effect. Additionally, this amendment does not constitute approval by any other agency with jurisdiction over this matter.

This decision may also be appealed to the Environmental Appeal Board in accordance with Part 8 of the Environmental Management Act. An appeal must be delivered 30 days from the date that the notice of this decision is given. For further information, please contact the Environmental Appeal Board at 250-387-3464.

Yours truly,



Karen Moores, for Director, *Environmental Management Act*
Section Head, Authorizations - North
Environmental Protection Division
Ministry of Environment & Climate Change Strategy

APPENDIX C
FLOWCHART AND DISPOSAL APPLICATION

Flowchart for Disposal of DLC material at the Legrand Select Landfill

Applicant completes application and forwards it to the Regional District



Regional District reviews application
(Reviewed by supervisor at the Foothills Landfill)



Regional District advises applicant of disposal fees and conditions



Applicant and Regional District arrange payment method and delivery dates
(All payments made at the McBride Transfer Station except account holders may pay at the Village Office)



Applicant makes payment at the McBride Transfer Station, signs application form and receives key from attendant



Applicant returns key to Transfer Station after disposal of load(s)



Attendant forwards completed paperwork to Regional District
(Supervisor at the Foothills Landfill)



Regional District enters information into spreadsheet on G drive
(Supervisor at the Foothills Landfill)

Note: DLC from Robson Valley only (McBride, Valemount)

APPENDIX D
LEGRAND DEMOLITION AND CONSTRUCTION WASTE
LANDFILL BROCHURE

SITE OPERATION

The Legrand Demolition and Construction Waste Landfill is a select waste landfill operated by the Regional District of Fraser-Fort George. Materials accepted for disposal include demolition and construction waste and landclearing debris. Disposal is by appointment only.

DELIVERIES

Waste disposal deliveries are by appointment only. Disposal Permit Application forms are available from the Valemount and McBride Regional Transfer Stations, the Regional District of Fraser-Fort George Service Centre at 1-800-667-1959 and on the Regional District website www.rdffg.bc.ca.

PAYMENT

Payments may be made by cheque, money order, MasterCard, VISA or pre-approved credit account. Customers may apply to the Regional District for credit accounts. Credit account application forms may be obtained from the McBride or Valemount Regional Transfer Stations, the Regional District website at www.rdffg.bc.ca or from Financial Services by calling 1-800-667-1959 between 8:45 am and 5:00 pm, Monday through Friday (excluding holidays).

INFORMATION LINE

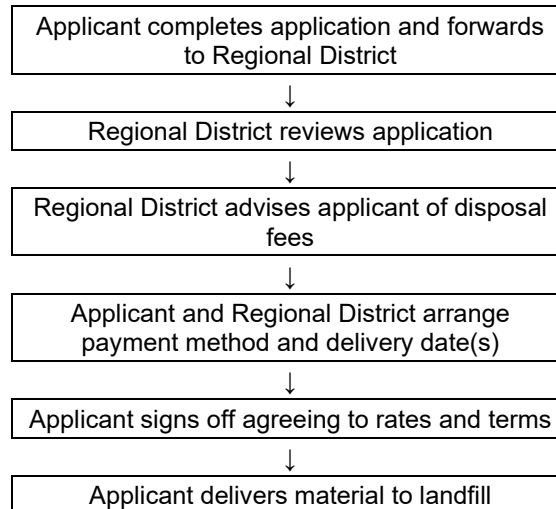
For additional information on:

- waste reduction, reuse and recycling opportunities,
- the McBride Regional Transfer Station,
- the Valemount Regional Transfer Station, or
- other Regional District waste management facilities and programs,

Contact the Regional District at 250-960-4400 or toll-free at 1-800-667-1959 or visit the Regional District website at www.rdffg.bc.ca.

DISPOSAL APPLICATIONS

Disposal application forms must be filled out in advance of any loads being accepted at the landfill site. In order to ensure a timely review of their application, applicants must completely fill out the application form. Applicable information includes source of material, type and amount of material, preferred project period and the name of a contact person. Upon review of an application, a Regional District representative will contact the applicant and provide disposal fee amounts, delivery times, and deposit requirements (if applicable). The application process is as follows:



When delivering waste or recyclables to Regional District facilities, please ensure that loads are covered and contained so that material does not blow out onto the roads.



REGIONAL DISTRICT
of Fraser-Fort George

155 George Street, Prince George, BC V2L 1P8
Tel: 250-960-4400 • Toll Free: 1-800-667-1959
Fax: 250-563-7520 • Email: environment@rdffg.bc.ca

www.rdffg.bc.ca



REGIONAL DISTRICT
of Fraser-Fort George

**Environmental
Services**

**Legrand
Demolition and
Construction
Waste Landfill**



Material	Tipping Fee									Comments
	Load Class 1	Load Class 2	Load Class 3	Load Class 4	Load Class 5	Load Class 6	Load Class 7	Load Class 8	Load Class 9	
Demolition, Landclearing Debris & Construction Waste (per load)	\$22.50	\$28.00	\$72.00	\$90.00	TBD	TBD	TBD	TBD	TBD	Includes asphalt, lumber, stumps, roofing materials and other types of building materials that have low risk environmental contamination concerns. Additional handling charges may apply to larger volumes.
Scrap Metal (per load)	Not Accepted									
	Controlled Wastes									
Gypsum Board (per load)	Not Accepted									Additional handling charges may apply to larger volumes.
Bulky Waste (per load)	TBD - REQUIRES PRE-APPROVAL									Applies to loads where manufactured materials in the load are greater than 2.5 m in length or greater than 1.5 m ³ in volume. Additional handling charges may apply to larger volumes.
Vehicle Hulks (per unit)	Not Accepted									
Off Road Tires (per tonne)	Not Accepted									

TBD* = To be determined

TIPPING FEES AND SITE REGULATIONS

A tipping fee is a charge levied for disposal of waste and is based on volume and type of material. Tipping fees apply to all loads accepted at this site. Tipping Fees and Site Regulations are established as per Regional District of Fraser-Fort George Bylaw No. 3023, Amendment Bylaw No. 3121, 2019.

The fee to dispose of materials at the Legrand site is based on a formula which determines a volume rate in relation to the hauling capacity of the delivery vehicle and the region-wide tipping fee of \$90 per tonne. Per unit rates apply to items such as auto hulks and off-road type tires. To determine the fee amount, match the Load Class of the vehicle delivering the waste and the waste type.

SALVAGING

Salvaging of materials from this landfill is not permitted.

Load Class Descriptions

Class 1	passenger cars and light trucks up to 3 cubic metre capacity	Class 6	tandem axle, end dump trucks or container trucks up to 25 cubic metre capacity
Class 2	passenger cars and light trucks towing utility trailers, up to 3 cubic metre capacity	Class 7	tandem axle, end dump trucks or container trucks up to 35 cubic metre capacity
Class 3	trucks up to 8 cubic metre capacity	Class 8	tandem axle dump trucks or container trucks up to 47 cubic metre capacity
Class 4	trucks up to 10 cubic metre capacity	Class 9	to be determined
Class 5	truck and/or trailer up to 15 cubic metre capacity		

APPENDIX E
2023 LEGRAND VOLUME ASSESSMENT



July 28, 2023

Regional District of Fraser-Fort George
155 George Street
Prince George, British Columbia
V2L 1P8

Attention: Mr. Darwin Paton
Environmental Services Technician

2023 Volume and Site Life Assessment – Legrand Regional Landfill

Dear Mr. Paton:

Dillon Consulting Limited (Dillon) is pleased to provide the 2023 volume and site life assessment for the Legrand Regional Landfill (Site) located in the Regional District of Fraser-Fort George (RDFFG).

Aerial photographic mapping was completed over the Site on May 11, 2023 by Aero Geometrics Ltd. Information obtained from the aerial photographic mapping was used to generate the 2023 elevation contours which were then compared against the May 21, 2022 elevation contours to determine the approximate airspace consumed at the Site between the two time periods. Based on a comparison of the May 2022 and May 2023 elevation contours, approximately 1,515 cubic metres of airspace was consumed. **Figure 1**, attached, presents the May 11, 2023 contours and area which was infilled.

Dillon understands that the RDFFG records incoming waste at the Site based on a visual assessment of volume. Based on RDFFG delivery records, approximately 2,740 cubic metres of demolition and land clearing waste was landfilled at the Site between May 21, 2022 and May 11, 2023. Based on discussions with the RDFFG, 90 percent of the waste landfilled was lighter materials such as wood, insulation, and plastic, while 10 percent of the waste was heavier materials such as concrete, metal, soil, and asphalt. Based on the United States Federal Emergency Management Agency – Debris Estimating Field Guide, FEMA 329, September 2010, Dillon estimated that lighter waste material had a unit weight of approximately 1 tonne per 3 cubic metres while the heavier waste material had a unit weight of approximately 1 tonne per 1.5 cubic metres. Based on these unit weights and the waste composition identified above, it is estimated that approximately 1,004 tonnes of waste was landfilled at the Site during the reporting period (2,740 cubic metres x 0.90 / 3 cubic metres + 2,740 cubic metres x 0.10 / 1.5 cubic metres).

Using the total tonnage of waste landfill at the Site and the calculated airspace consumed, the apparent density for the landfill was calculated to be approximately

3820 Cessna Drive
Suite 510
Richmond
British Columbia
Canada
V7B 0A2
Telephone
604.278.7847
Fax
604.278.7894



0.66 tonnes per cubic metre (1,004 tonnes / 1,515 cubic metres). The apparent density is not a true density but is a relationship that represents the mass of waste disposed in each cubic metre of landfill airspace, excluding soils used as cover. It is noted that the waste volumes recorded for the Site are solely based on visual observations, and as such are an approximation based on the material composition of each load.

As per the 2023 Volume Assessment (Dillon, 2022), the remaining airspace at the Site as of May 21, 2022 was 142,429 cubic metres. The remaining airspace as of May 11, 2023 is therefore estimated to be approximately 140,914 cubic metres (142,429 cubic metres minus 1,515 cubic metres) based on the current landfill footprint.

Dillon appreciates the opportunity to support the RDFFG with this volume and site life assessment. Should you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

DILLON CONSULTING LIMITED



Phillip Auclair, P.Eng.
Senior Waste Engineer

PA:tjs

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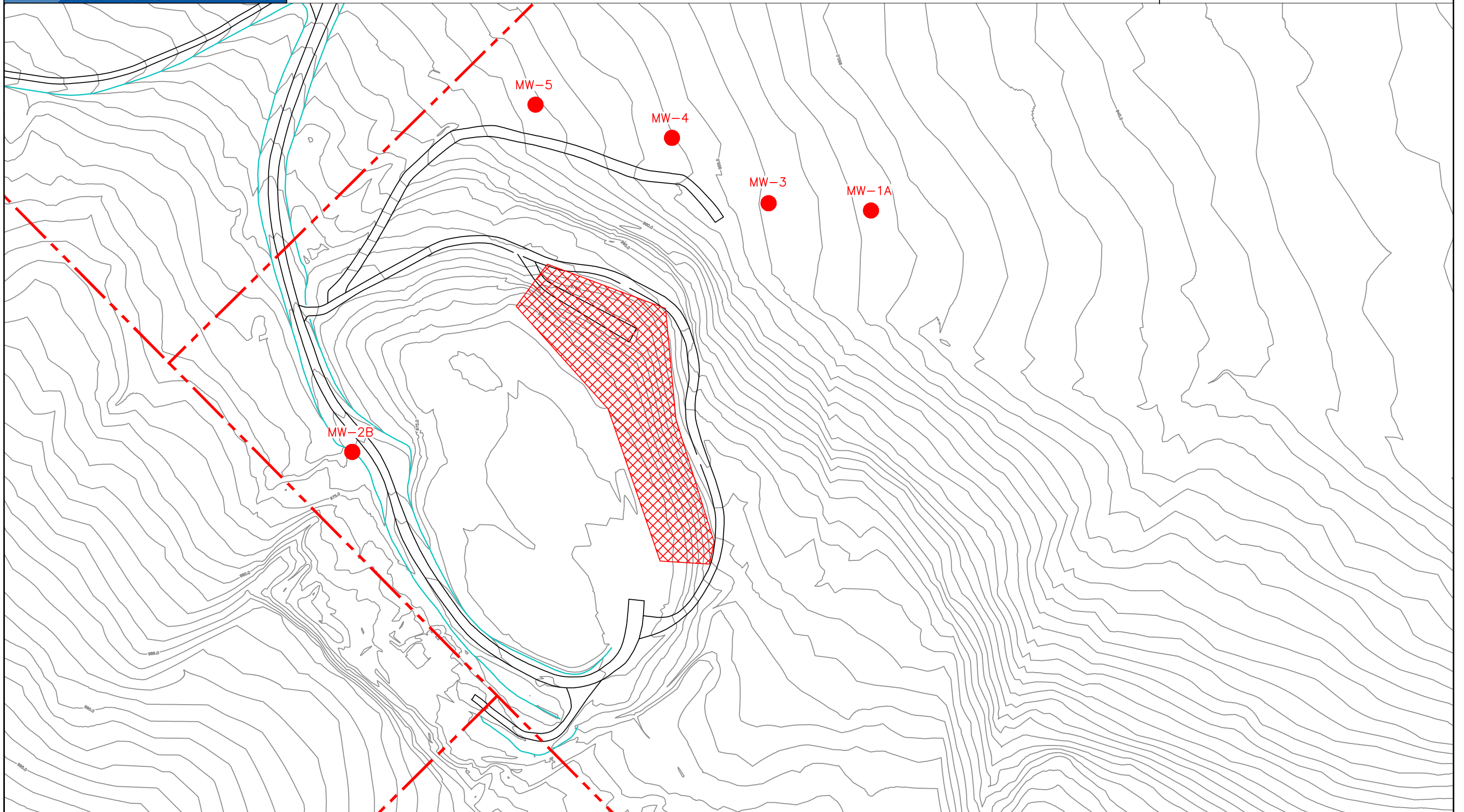


REGIONAL DISTRICT
of Fraser-Fort George

LEGRAND LANDFILL SITE PLAN WITH INFRASTRUCTURE

LEGEND

- CONTOURS
- GRAVEL ROAD
- DITCH
- LEASE BOUNDARY
- WASTE FILL AREA



NOTE: EXISTING CONDITIONS AS OF MAY 2023.

SCALE 1:750 METRES