FRASER VALLEY REGIONAL DISTRICT

COMMERCIAL GRAVEL OPERATION PERMIT

Permit No.:	**2026-03**
Folio:	775.02198.000 & 775.02198.100
Permit Holder:	Braelynn Enterprises Ltd. and Fraser Valley Aggregates Ltd.
Address:	3077 188th Street Surrey BC V3Z 9V5
Applicant:	Ronnie Franklin
Permit Area:	10200 Sylvester Road, Electoral Area F

The lands affected by this permit are shown on Schedule A – Permit Area, attached hereto and which forms an integral part of this permit. The lands are legally described as:

LOT A SECTION 1 TOWNSHIP 18 LMP18344 PID: 018-895-336

LOT 1 SECTION 1 TOWNSHIP 18 NWP 55998 PID: 005-429-552

LIST OF ATTACHMENTS

The following schedules are attached hereto and form part of this permit:

Schedule "A"	Permit Area
Schedule "B"	Mine Plan
Schedule "C"	Communication Plan
Schedule "D"	Noise and Dust Control Plan

AUTHORITY

This Commercial Gravel Operation Permit is issued under *FVRD Commercial Gravel Operations Bylaw No. 1181, 2014* ("Bylaw No. 1181") which was approved by the Minister of Energy & Mines on September 16, 2016, and adopted by the Fraser Valley Regional District Board on September 21, 2016.

TERMS AND CONDITIONS

1. No person shall cause or permit the removal or processing of aggregate except in accordance with this permit and with *FVRD Commercial Gravel Operations Bylaw No. 1181*.

2. All gravel removal or processing activities shall be in accordance with the descriptions, plans, reports and specifications submitted by the applicant in support of the permit application.

3. All gravel removal and processing activities shall occur within the areas shown on the Permit Area attached to this permit as Schedule "A".

4. Communications with area residents and others shall, at a minimum, accord with the Communications Plan attached to this permit as Schedule "C".

5. The permit holder must comply with *Bylaw No. 1181* and all other bylaws of the Regional District, the Mines Act, Local Government Act, and the Community Charter related to aggregate removal and processing.

6. The permit holder must obtain and keep in force all other permits, approvals, consents and permissions required under any statute, regulation, order, enactment or contract related to the aggregate removal or processing.

7. Aggregate operations should follow the best practices outlined in the Environmental Objectives and Best Management Practices for Aggregate Extraction and Aggregate Operations Best Management Practices Handbook for British Columbia (or as updated).

Term of Permit

8. The term of this permit will be five (5) years from the date of issuance. This permit will expire on April 23, 2031.

Days of Operations

9. Hours of work for the mine shall be restricted to 7:00 a.m. to 6:00 p.m. Monday through Friday. Saturday operations loading from product stockpile. No work shall take place on Sundays or Statutory Holidays. RE: NOW February 22, 2007.

    a. Nothing in the condition limits the operator from carrying out such work as may be necessary to save life, relieve human suffering, or to mitigate and environmental emergency, outside of the restricted hours of work.

    b. Should an authority having jurisdiction declare an emergency, such that product from this quarry is required, any hours of work restrictions will not apply for the duration of the emergency. RE: Mines Act Permit (Q-7-14) January 30, 2014.

Hazards

10. No person shall cause or permit aggregate removal activities to create a danger to the land or other lands from flooding, mud flow, debris flow, debris torrent, erosion, land slip, rock falls, subsidence or avalanche.

11. No person shall cause or permit aggregate removal activities to occur within 30 meters of the natural boundary of any stream or wetland.

Noise

12. In the Community Areas, between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday, no person shall cause or permit noise related to aggregate removal or processing to exceed sixty

(60) dBA L_{eq} (1 hour) exclusive of ambient sound when measured at any point along the property line of a receiving parcel or at any point within a receiving parcel.

13. In the Community Areas, between the hours of 7:00 p.m. and 7:00 a.m. Monday through Saturday, and on Sundays and Statutory holidays, no person shall cause or permit noise related to aggregate removal or processing to exceed fifty (50) dBA L_{eq} (1 hour) exclusive of ambient sound when measured at any point along the property line of a receiving parcel or at any point within a receiving parcel.

14. Aggregate removal or processing activities shall be undertaken in accordance with the Noise Control Plan included and forming an integral part of this permit as Schedule "D".

Dust

15. No person may cause or permit dust associated with aggregate removal or processing to escape from the permit area so as to constitute a nuisance on any other lands.

16. No person may cause or permit dust associated with aggregate removal or processing to result in:

    a. Dustfall over an average period of two (2) weeks in excess of 1.7 mg/(dm2-d), or

    b. Total Suspended Particulate Matter over an average period of twenty-four (24) hours more than 120 µg/m3,

    on any other lands

17. Aggregate removal or processing activities shall be undertaken in accordance with the Dust Control Plan included and forming an integral part of this permit as Schedule "D".

Drinking Water

18. No person shall cause or permit soil, rubble, debris, or any other matter or thing originating from a permit area or from aggregate removal or processing, to obstruct, or impede the flow of any drinking water source.

19. No person shall cause or permit soil, rubble, debris, or any other matter or thing originating from a permit area or from aggregate removal or processing to contaminate a drinking water source.

Screening

20. Aggregate removal or processing activities must be screened by providing landscaping, vegetated berms, fences, or other structures or measures so as to avoid an unreasonable detrimental visual impact on adjacent lands where residential, recreational, resort or commercial uses exist or are permitted, and to minimize visual impacts to the surrounding area.

Monitoring and Reporting

21. The permit holder shall, on or before February 28 of each calendar year, provide a report or reports to the Chief Administrative Officer in the form prescribed in Schedule B-3 of *Bylaw No.*

1181 (as applicable) and signed and sealed by the coordinating professional or, as applicable, the registered professional:

a. Confirming that the aggregate removal and processing is in substantial compliance with the descriptions, plans, and specifications submitted by the permit holder in support of the permit application, all permit conditions and the requirements of *Bylaw No. 1181*, or identifying and describing any areas of non-compliance with recommendations to bring operations into compliance.

b. Including a report summarizing the methods and results of noise and dust emissions monitoring conducted not less than annually in accordance with a plan prepared by a qualified registered professional.

22. The permit holder shall submit to the Chief Administrative Officer, on the prescribed form, an aggregate removal volume report annually for the period January 1 to December 31 by February 28 of the following calendar year. The permit holder must ensure that the volume report accurately states the volume of aggregate removed from the permit area in cubic meters and must be certified as correct by the coordinating professional to the best of his or her knowledge.

Coordinating Professional

23. A Coordinating Professional must be retained by the permit holder throughout the period of the permit. The Coordinating Professional shall keep a record of all field reviews and of any corrective action taken and shall make the record available to FVRD upon request.

Fees

24. At the time of the filing of Annual Aggregate Removal Volume Report, the permit holder shall pay to the Regional District fees for each cubic meter of aggregate removed from the permit area in the amount of $0.20 per cubic meter of aggregate removed within Community Area.

PERMIT ISSUANCE

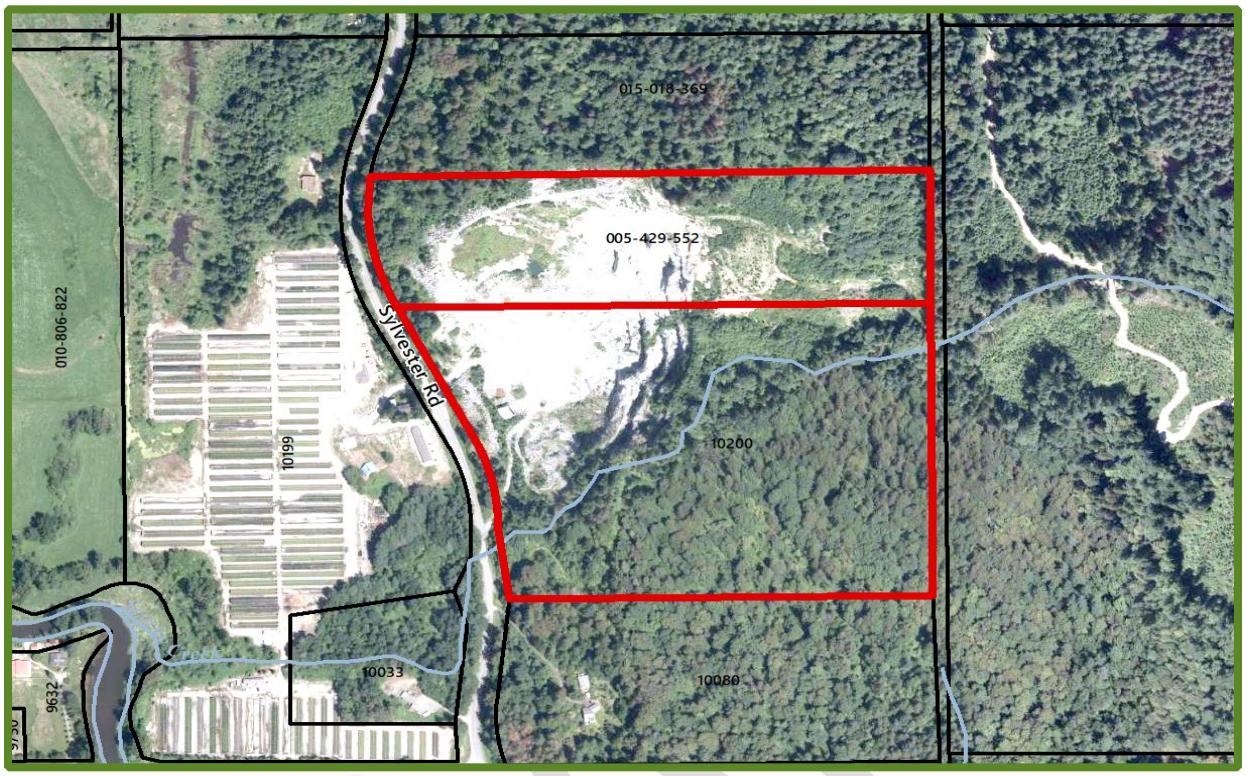
AUTHORIZING RESOLUTION PASSED BY THE FRASER VALLEY REGIONAL DISTRICT BOARD ON THE 23rd DAY OF APRIL2026.

PERMIT 2026-03 IS DEEMED TO BE ISSUED ON THE 23rd DAY OF APRIL 2026.

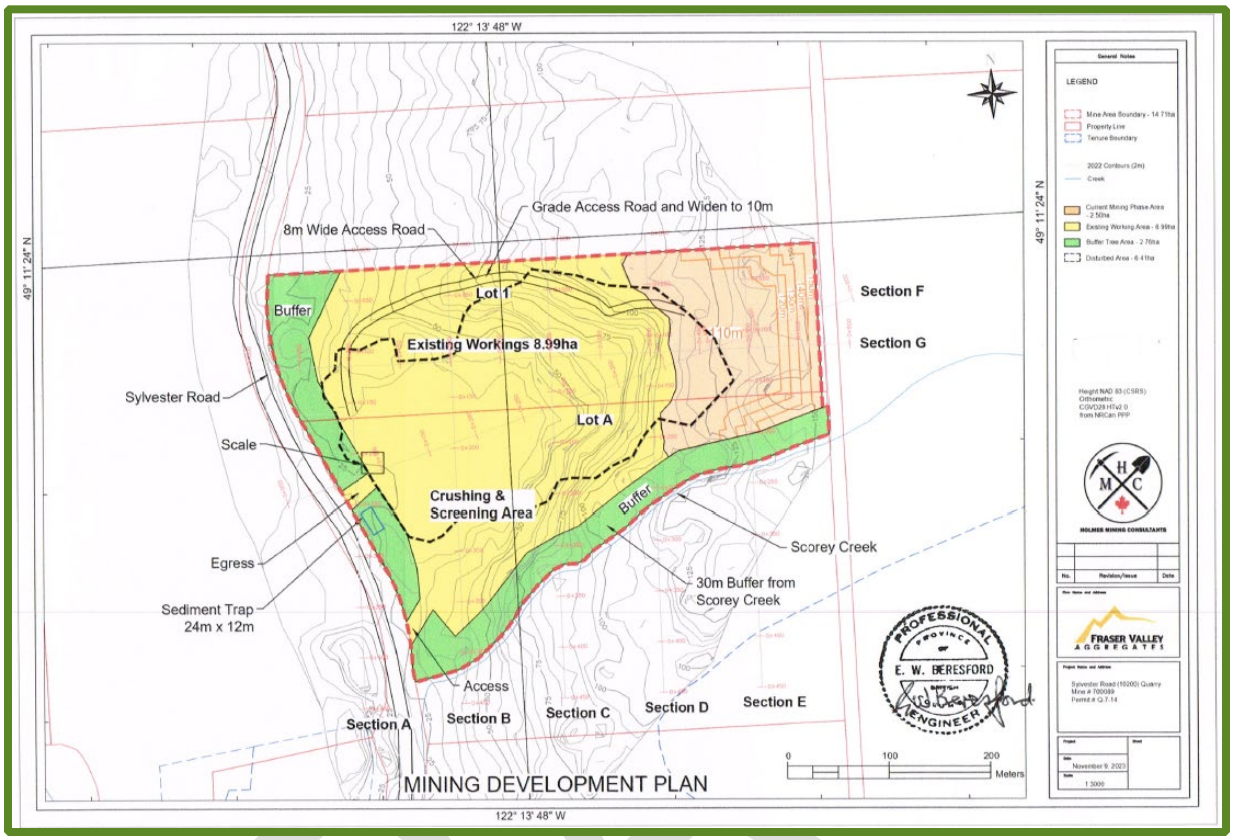
PERMIT 2026-03 EXPIRES ON THE 23rd DAY OF APRIL 2031.

The Board of Fraser Valley Regional District

SCHEDULE "A" – Permit Area



SCHEDULE "B" – Mine Plan



SCHEDULE "C" – Communications Plans

Communications Plan

Sylvester Road Quarry

Permit # Q-7-014
Mine # 0700089

NOVEMBER 26, 2025

Fraser Valley Aggregates Ltd.
3077 188 Street
Surrey, BC
V3G 3C1

HOLMES MINING CONSULTANTS

Table of Contents

1.0 Introduction and Purpose

Property Owner, Braelynn Enterprises Ltd., and Site Operator, Fraser Valley Aggregates Ltd., are committed to maintaining open and constructive communication with nearby residences and the broader community. This Communications Plan, included as part of the FVRD Commercial Gravel Operations Permit (the "FVRD Permit") application, outlines the proactive measures the quarry operation takes to keep the community informed, address questions, and ensure that any concerns are handled promptly and respectfully.

This Communications Plan has been prepared by Holmes Mining Consultants Ltd. (HMC), on behalf of Fraser Valley Aggregates Ltd., and is in alignment with the Fraser Valley Regional District (FVRD) Bylaw No. 1181, 2014 (the "Bylaw"), which sets out expectations for community engagement.

2.0 Overview of Operation

Sylvester Road Quarry is a typical, medium-sized quarry that uses drilling and blasting to produce rock that can be crushed and sized according to market demands. Rip-rap is also produced at the quarry by picking oversized rock and shipping it directly to customers without any processing (crushing and screening). Typical operations in undisturbed areas of the quarry include clearing trees, grubbing then stripping topsoil and overburden to reveal the underlying bedrock. Exposed rock is drilled and blasted, crushed, screened and stockpiled for sale to customers. Aggregate transport trucks enter and exit the site via Sylvester Road.

3.0 Designated Emergency and Community Contact Person

Name: Drew Bailey
Company: Fraser Valley Aggregates Ltd.
Role: Mine Manager
Phone No.: 778-240-7757 (Cell)
Email Address: dbailey@fvagg.com

This individual is authorized to respond to enquiries and concerns from residents and is responsible for ensuring communication-related permit conditions or FVRD requirements are met.

4.0 Communication Methods with the Surrounding Community

4.1 Signage

The Site Operator will maintain and install signage in accordance with the Mines Act Permit and Bylaw, including the following:

Mines Act Permit

- All site access will be secured with locking gates, where practical, and signage provided indicating the mine name, Site Operator's name and emergency contact number as well as all necessary safety advisories.

Bylaw

- Sign posted at least 14 days prior to the FVRD Board's consideration of the FVRD Permit and removed within 48 hours after issuance or refusal of the FVRD Permit.
- Sign is clearly visible from Sylvester Road.
- Ensuring signage includes the name of the applicant, nature of application, plan of the FVRD Permit area and property, name and telephone number of

the Designated Community Contact Person, FVRD Permit application file number, and name and telephone number of the FVRD.

4.2 Notifications to Local Residents

The Site Operator will notify nearby residents in accordance with the requirements of the FVRD Permit and the Mines Act Permit. Notifications may be issued for:

- Blasting activities: Residents will be informed in advance of planned blasting, as required by permits.
- Noise, dust, or other environmental concerns: Residents will be informed in the event of a permit non-compliance or other conditions that trigger notification under the permits. Refer to the Noise and Dust Control Plan, included with the FVRD Permit application, for specific details.
- Unusual operational activities: Such as unusual equipment mobilization, changes in haul routes, or extended work hours (if permitted by FVRD), if the permits require notification.

4.3 Responding to Enquiries and Concerns

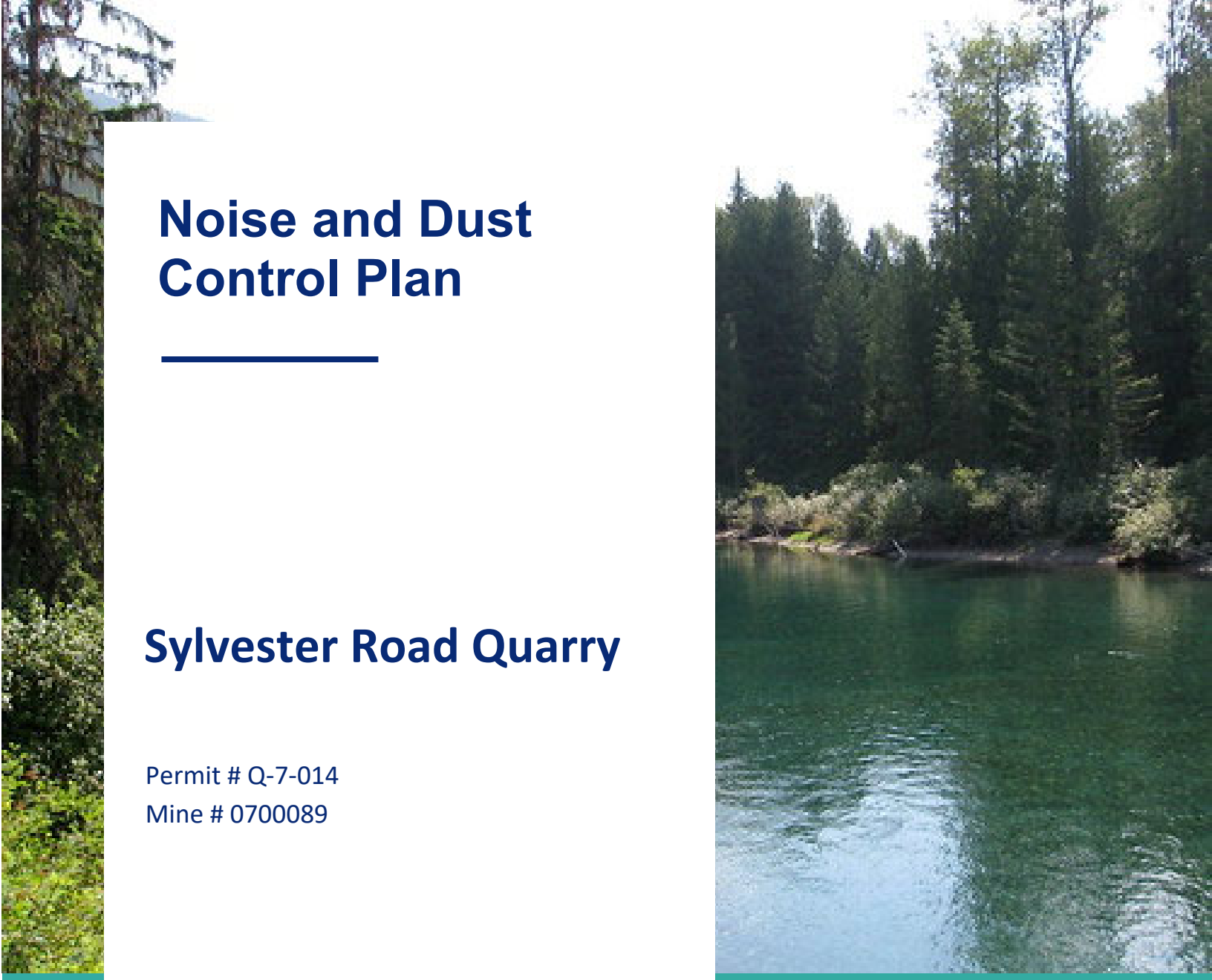
The Site Operator will follow an open and transparent practice for public communication.

For any issues subject to Mines Act Permit conditions, the Site Operator will follow the specific investigation, monitoring, and reporting procedures set out in the permit.

5.0 Compliance with Mines Act Permit

In addition to Bylaw requirements, the Site Operator is fully committed to meeting all communication obligations outlined in its Mines Act permit.

SCHEDULE "D" – Noise and Dust Control Plans



Noise and Dust Control Plan

Sylvester Road Quarry

Permit # Q-7-014
Mine # 0700089

NOVEMBER 21, 2025

Fraser Valley Aggregates Ltd.
3077 188 Street
Surrey, BC
V3G 3C1

HOLMES MINING CONSULTANTS

Table of Contents

HOLMES MINING CONSULTANTS

1.0 Introduction

1.1 Purpose and objectives

The purpose of the Sylvester Road Quarry Noise and Dust Control Plan is to identify, implement and monitor the application of Best Management Practices (BMPs) to help reduce the fugitive and small particle dust related to the industrial activities at Sylvester Road Quarry near Mission, B.C. and the potential impacts on the neighboring residential areas and waterbodies. Monitoring the air quality will be the onus of the proponent; however, the BMPs will be monitored by the appropriate agencies through inspections, such as but not limited to the Ministry of Mining and Critical Minerals (MMCM) - Mines Act Permit, Ministry of Transportation & Infrastructure (MoTI) - Road Use Permit, Ministry of Forest, Lands and Natural Resources & Rural Development (FLNRORD) - Land Tenure.

This Noise and Dust Control Plan includes activity- and site-specific dust control criteria and dust suppression procedures that have been reviewed and agreed to by all parties. BMPs will be implemented throughout the industrial operations on an as-needed basis. This depends on the activity and the agency oversight.

2.0 Background

2.1 Site Ownership and Physical Location

The Sylvester Road Quarry is an existing aggregate extraction and processing operation located at 10200 Sylvester Road, about 13km northeast of Mission, BC. The property, which is owned by Braelynn Enterprises Ltd. and operated by Fraser Valley Aggregates Ltd., is approved for a quarry operation under the Mines Act with the Ministry of Mining and Critical Minerals (MMCM) permit Q-7-14, Mine Number: 0700089. The quarry was first permitted in July 1986 and has been in continual operations since then.

The property, which reaches a peak elevation of 157m ASL on the east side, is a steep outcrop, surrounded by similar terrain, that descends toward Sylvester Road at 14m ASL. There are no wetlands, ephemeral or permanent creeks or streams that exist within the Mine Area Boundary. The property does not overlap with lands designated under the Agricultural Land Reserve (ALR). Operational considerations will be developed along with physical structures to prevent fugitive dust and noise from operations adversely affecting the surrounding rural area and environment.

Mine Name: Sylvester Road Quarry
Type of Operation: Aggregate Extraction

Property Location:

From Mission Memorial Hospital located at the intersection of Hurd Street and Scott Ave in Mission, BC, travel south on Hurd Street for 450m and turn left onto Lougheed Hwy / BC-7 E. Follow Lougheed Hwy / BC-7 for 2km and then continue on N Railway Ave for 1.4km before merging onto BC-7 E. After merging, follow BC-7 E for 5.9km and then turn onto Sylvester Road. After 4km, the site entrance will be on the right.

Legal Description:

LOT A, PLAN LMP18344, SECTION 1, TOWNSHIP 18, NEW WESTMINSTER LAND DISTRICT
PID: 018-895-336

LOT 1, PLAN NWP55998, PART NE1/4, SECTION 1, TOWNSHIP 18, NEW WESTMINSTER LAND DISTRICT
PID: 005-429-552

Site Map Location: Lat: 49.188900 Long: -122.229800

Mine Manager: Drew Bailey
Email Address: dbailey@fvagg.com
Contact Phone #: 778-240-7757 (Cell)
# of Employees on site: 4 to 10

2.2 Description of Operations

The Sylvester Road Quarry is an existing aggregate extraction and processing operation located at 10200 Sylvester Road, about 13km northeast of Mission, BC. The property, which is owned by Braelynn Enterprises Ltd. and operated by Fraser Valley Aggregates Ltd., is approved for a quarry operation under the Mines Act with the Ministry of Mining and Critical Minerals (MMCM) permit Q-7-14, Mine Number: 0700089. The quarry was first permitted in July 1986 and has been in continual operations since then.

Activities on site consist of drilling, blasting, excavation, crushing, screening, grading and stockpiling of materials. The quarry will continue to be developed with 10m x 10m benches. Conventional drilling and blasting will be conducted, as per the existing Mines Act Permit. Final reclamation of the quarry will take place as final grades, setbacks and slopes are achieved, followed by planting of native seedlings, as required, to enable future Forestry or Residential land uses.

The quarry is operated year-round, 5-6 days per week, to supply aggregates to the local construction market and rip-rap for river bank protection. At an annual extraction rate of 210,000 tonnes (80,000 m3), the quarry has an operational life of 26 years based on estimated reserves of 5,410,125 tonnes (2,061,000 m3).

2.3 Environmental Considerations

The development is not expected to have any environmental and/or socio-community impacts given its relatively small size and location. The project is not anticipated to have any effluent discharge, and it will be developed in an environmentally sensitive manner by implementing BMPs in order to either

eliminate or minimize any environmental impacts that might occur from the operational areas.

a. Land Considerations

The Project is within the Fraser Valley Regional District in Electoral Area F. The Official Community Plan Bylaw No. 0999, 2010 Hatzic Valley, Electoral Area F (OCP) governs the area and designates the property as 'Limited Use'. In addition to the OCP, the Fraser Valley Regional District Regional Zoning Bylaw No. 1638, 2021 governs the lands and designates the property as Rural 4 (R-4). Resource Extraction is one of the principal uses assigned to the R-4 designation.

Sylvester Road Quarry lies in the Hatzic Valley, in the lower Fraser River drainage area, on the southwestern mainland of BC. These lands were almost completely covered by glacial ice at the height of the Fraser Glacial Period, leaving large amounts of glacial till in the mountain valleys of the southern Coast Mountains. Rock in the area is part of the Middle Jurassic - granodioritic assemblage (MJg), consisting of intrusive rocks described as weakly to well foliated quartz diorite, minor granodiorite; minor orthogneiss. These rocks are primarily medium-grained. There are no concerns with acid rock drainage or metal leaching (ARD/ML) based on historical testing. The Stratigraphic Unit is MLJqd.

According to the BC Soil Information Finder Tool site is home to two different soil types – BUNTZEN (70%) and STEELHEAD (30%). BUNTZEN soil, classified as Duric Ferro-Humic Podzol, is primarily composed of mineral particles, with parent materials designated as Eolian for the uppermost and Till (Morainal) for below that. Water is removed from the soil somewhat slowly in relation to supply. Excess water is removed somewhat slowly due to low perviousness, shallow water table, lack of gradient, or some combination of these. Soils have intermediate to high water storage capacity (5-6 cm) within the control section and are usually medium to fined textured. Precipitation is the dominant water source in medium to fine textured soils; precipitation and significant additions by subsurface flow are necessary in coarse textured soils. STEELHEAD soil, classified

as Duric Ferro-Humic Podzol, is primarily composed of mineral particles, with parent materials designated as Till (Morainal). Water is removed from the soil sufficiently slowly in relation to supply, to keep the soil wet for a significant part of the growing season. Excess water moves slowly downward if precipitation is the major supply. If subsurface water or groundwater, or both, is the main source, the flow rate may vary but the soil remains wet for a significant part of the growing season. Precipitation is the main source if available water storage capacity is high; contribution by subsurface flow or groundwater flow, or both, increases as available water storage capacity decreases. Soils have a wide range in available water supply, texture, and depth, and are gleyed phases of well drained subgroups.

The property, which reaches a peak elevation of 157m ASL on the east side, is a steep outcrop, surrounded by similar terrain, that descends toward Sylvester Road at 14m ASL. Based on the mining area and surrounding land contours, run-off water will generally disperse within the quarry and/or the established vegetated areas. There are no wetlands, ephemeral or permanent creeks or streams that exist within the Mine Area Boundary. Scorey Creek runs east to west on the property, however, it exists south of the Mine Area Boundary with a 30m vegetated buffer between it and planned mining area. Hatzic Lake is the closest waterbody, and it is over 1km away.

The end land use for this site will be *Residential or Forestry* and that the reclamation plan will be consistent with adjacent land uses in the area. The objectives of the reclamation plan will be to create a physically stable environment and to ensure that there are no impacts to aquatic and/or terrestrial resources from the mining activities. These objectives would be consistent with the requirements of the HSRC. After closure, the site will be left in a safe and secure manner for the long-term with no projected maintenance. The final site reclamation will meet the end land use objective.

b. Vegetation

The area is classified as Coastal Western Hemlock (CWH). The CWH zone occurs at low to mid-elevations along much of the coast of BC, covering 10.8 million ha or 11.4% of the province. Except along major river valleys it is found mostly west of the Coast Mountains. At higher elevations it is bordered by the Mountain Hemlock zone, and in southern coastal BC by the Coastal Douglas-fir zone. In general, the climate in the CWH zone is moderate (cool mesothermal). The summers are cool and the winters mild. Mean annual temperature is 5.5°C, ranging from 2.4°C in the CWH ws2 (a northern, interior, montane subzone) to 9.3°C in the CWHxm1 (a southern, coastal subzone). The CWH is the wettest zone in BC with a mean annual precipitation of 2200 mm.

The site area is specifically considered dry and maritime (dm). This association occurs at low elevations on the mainland and immediately adjacent islands. Highly productive and structural complex coniferous forests are characteristic of the CWHdm. Western hemlock is the most common tree species and together with western redcedar is generally frequent throughout the zone. Douglas-fir are also prevalent. Wind is the common form of natural disturbance and compared to fire, generally only affects single trees or small patches of forest. As a result, most of the forests are old. Major understorey species include salal, red huckleberry, Hylocomium splendens, Kindbergia oregana, Rhytidiadelphus loreus, and Plagiothecium undulatum. Less common species include dull Oregon grape, vine maple, bracken, and swordfern.

All lands within the disturbed area have been cleared of vegetation and are comprised of exposed rock. There is only a small portion of land outside of this previously disturbed area, containing some second and third growth trees, that needs to be cleared for future mining.

Vegetation distribution and density can be seen in the Orthophoto Plan of the site. (Figure 4, Appendix).

c. Atmospheric Considerations

Climate

Mission's climate is characterized being warm and temperate. Precipitation is noteworthy as there is rainfall even during the driest months. This location is classified as Cfb by Köppen-Geiger. The mean yearly temperature recorded in Mission is 8.9 °C. There is an approximately 1884 mm of precipitation that occurs each year. The driest month is August with 62mm of precipitation and the wettest month is November which averages 289mm of rain.

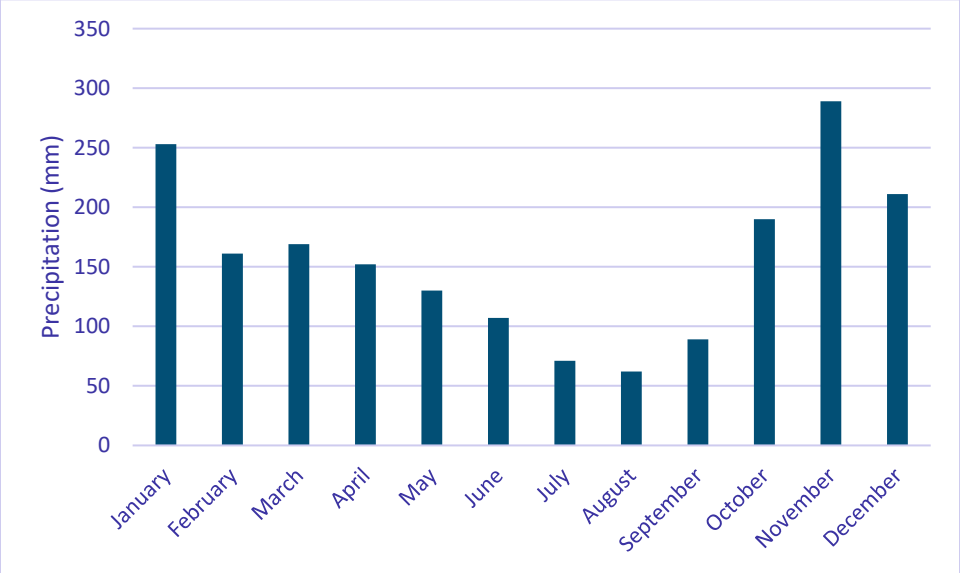


Figure 1: Mission, BC Precipitation by Month

The warm season lasts for around 4 months from about June 21 to September 21, with an average daily high of 22.25 °C. The hottest month of the year in Mission is July, with an average high of 24 °C. and low of 13 °C. The cold season lasts for 4 months, from about November 14 to March 2, with an average daily high temperature of 6 °C. The coldest month of the year in Mission is December, with an average low of 4 °C and high of 0 °C.

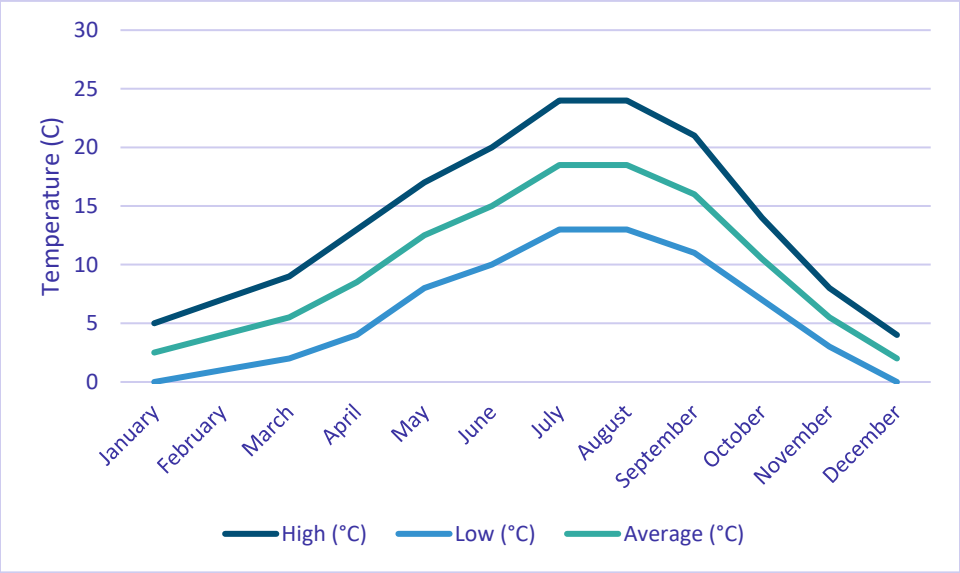


Figure 2: Mission, BC Temperature by Month

Atmospheric Effects

Atmospheric impacts have been minimal from equipment emissions and/or fugitive dust during operations based on data recording devices located on-site. It is expected that during operations and future reclamation activities there will be minimal impacts / insignificant effects (such as deterioration of air quality or reduced visibility due to diesel or fugitive dust emissions) on and from the site. However, to assist with reducing atmospheric effects, Fraser Valley Aggregates Ltd. will undertake the following steps:

- Use modern construction (mining) equipment that meets latest applicable Canadian emission standards;
- Ensure proper inspection and maintenance of equipment;
- Operate equipment within specifications and capacity;
- Limit vehicle and construction equipment idling;
- Use low sulphur fuels for all diesel equipment;
- Revegetate parts of the development that will not be disturbed in the future;
- Clear only the trees needed for mining in that particular area;

- Develop a planned site layout (minimize creation), operational controls (control escape); air quality (dust removal) and cessation, to manage and mitigate any generated fugitive dust; and
- Maximize use of and commitment to Best Management Practices such as following the guidelines set forth by the "Aggregate Operators Best Management Practices Handbook for British Columbia (April, 2002)". https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/permitting/mine-exploration-and-discovery/agg_bmp_hb_2002vol2.pdf

2.3 Location Map and Site Map

Refer to Figures 3 & 4 in Section 6.

3.0 Best Management Practices

Proactive controls will be instituted at Sylvester Road Quarry to reduce the amount of dust generation during any site activities. The following Sylvester Road Quarry processes, operations or equipment have the potential to emit dust (refer to Figure 4 in Section 6 for visual reference):

- Haul roads (vehicle traffic)
- Stockpile areas
- Transfer points (drops)
- Processing (crushing, screening, etc.)
- Extraction (process)
- Disturbed areas with sands or fines

Best Management Practices (BMPs) represent the current 'state of practice' approach to manage dust impacts and effects, and at Sylvester Road Quarry include, but are not limited to:

- Limit surface areas disturbed, limit work in the wind thresholds greater than 20 km/hour, apply suppressant as needed, and clean up spills immediately;
- Grow groundcover, erect windbreaks, apply crust chemicals;
- Reduce speed limits;
- All trucks leaving the site will be covered by a tarp;
- Placement of the crusher will be in the bottom of the pit;
- As required, crushers will be equipped with effective water sprays;
- Area not being mined or used for stockpiling will be seeded with a local forestry range mix;
- A maximum material drop height is not to exceed 1 meter, minimize where possible and should use chutes;
- In cases of a wind event or extreme heat and should the referenced measures be inadequate, operations will stop until the dust is managed effectively. This is described in Section 4.3;
- Treed buffer around perimeter of site;
- All personnel will be notified of the Dust Control Plan.

Refer to Table 1 in Section 3.1 for recommended BMPs specific to Sylvester Road Quarry.

3.1 Site Specific Mitigation and Control Methods

To achieve an effective operational dust control plan at Sylvester Road Quarry, site specific mitigation measures and BMPs have been prescribed to address specific dust generating sources and activities.

Table 1 - Monitoring, Mitigation & Control Methods

Source	Monitoring	Methods for Management & Mitigation (based on BMPs)	Materials & Equipment Needed
Vehicle Traffic (access or haul roads within Sylvester Road Quarry)	Visual inspection for dusty conditions shall occur at a minimum of twice daily.	Water roads or use surfactants (calcium chloride). Wheel washer. Wash down trucks. Pave high use areas, where possible. Speed within mine site to be less than 20 km/hr. Post km/hr signage indicating dust control. Limit work on windy days.	Water truck. Calcium Chloride. Signage.
Stockpile areas (aggregate, topsoil/overburden)	Visual inspections shall be carried out hourly.	Keep storage piles covered either with a dust suppressant spray. Treat stockpiles. Seed overburden stockpiles with local native grass mix to reduce dust and prevent noxious weeds. Progressive reclamation; re-sloping mined out pit walls and re-establishing soil	Dust suppressant spray. Local native grass seed mix.

		cover and immediate re-vegetation or cover. Minimized stockpiling.	
Drops (at transfer stations)	Should be monitored hourly when the weather is dry and winds are anticipated to be blowing towards residential areas (west).	Limit work on windy days. Install chutes at drop points. Maximum dump heights not to exceed 1 m, minimize where possible and should use chutes. Enclosing transfer points along conveying circuits where dust may be created and apply sprays.	Chutes
Processing (feeds and discharges for conveyors, crushers, screens, etc.)	Should be monitored hourly when the weather is dry and winds are anticipated to be blowing towards residential areas (west).	Spray bars on crushers and conveyors; watering rate set as needed. Screenings and other high-fine materials: stackers to be kept as close to the tops of stockpiles (drop height of 1 m or less).	Spray bars
Excavation (working pit face, berm construction, rehabilitation)	Should be monitored hourly when the weather is dry and winds are anticipated to be	Avoid overburden removal and berm construction during dry months.	Weather forecast. Visual monitoring.

	blowing towards residential areas (west).	Passive dust suppression - no operations on hot, windy days.	
Weather and dust events	The site is located in a heavily forested area, so the surrounding trees will act as a natural buffer.		

Water sprays:

1. Adjust nozzles so that the spray is directed to dust generating areas to provide complete coverage.
2. Locate nozzles upstream of dust generation points and close enough so that the spray is not carried away by wind.
3. Ensure the volume and size of droplets are adequate to sufficiently wet the material (optimal droplet size is 10-150 µm).
4. Time water spray application to ensure the materials are still damp when they are disturbed
5. If conditions require increased dust suppression, emulsifiers or surfactants may be added to improve the 'wettability' of water sprays.

*****Application of dust suppressants must not enter or contaminate waterbodies, including surface and groundwater

Weather and dust events create significant hazards to the control of dust management, and it may be that these events superseded the normal dust control methods in Table 1. At certain thresholds (including those climatic conditions listed in Section 4.3), pit activities that are producing visible dust and impacting neighbourhoods should be halted or ceased (with a plan to ensure stockpiles are protected), especially when mitigation techniques are no longer

appropriate or effective. Dust events and the required actions are to be recorded (as per Table 2 in Section 4.4).

The Mine Manager must ensure that wherever practicable, water sprays or other dust suppression means and devices are used at every dusty place where work is carried out and where it is impracticable to do so, personal protective equipment shall be supplied and worn by all persons working in that location, as per the Health, Safety and Reclamation Code for Mining, Section 6.24.2.

3.3 Prevention

Prevention or reduction of the amount of dust generation during site activities can be achieved through proactive controls including, but not limited to:

- Limiting surface disturbance;
- Enforcement of low-speed limits for vehicle traffic;
- Decontamination of trucks leaving work areas;
- Covering of truck loads leaving the facility;
- Height limits for gravel stockpiles;
- Wetting active areas;
- Spraying conveyors and stockpiles;
- Minimizing drop heights;
- Minimizing or ceasing dust generating activity during periods of high wind;
- Wetting unpaved areas;
- Application of dust suppressants or crusting agents;
- Establishing/maintaining vegetative or other groundcover.

3.4 Site Specific Mitigation and Control Methods for Noise

Site operator, Fraser Valley Aggregates Ltd., will utilize similar technology and operational activities that are currently used elsewhere in BC to successfully mitigate noise control issues.

Fraser Valley Aggregates Ltd. and the Mine Manager are committed to ensuring that all noise management and mitigation measures will follow the guidelines set forth by the "*Aggregate Operators Best Management Practices Handbook for British Columbia (April, 2002)".*

http://www.empr.gov.bc.ca/Mining/Aggregate/BMP/Pages/default.aspx

General noises that are associated with a number of common activities at aggregate operations include:

- Loading
- Crushing
- Screening
- Hauling
- Excavation
- Blasting
- Drilling

Noises from specific sources that will need to be mitigated during operations include the following: mobile equipment (truck, dozers and excavators) which generate noise from sources such as diesel engines, back-up alarms and the scraping & crushing noises during excavation and transport.

Fraser Valley Aggregates Ltd. will complete noise level monitoring to collect background and/or operational noise data. This information will be used to evaluate the potential and cumulative effects of sensitive receptors to noise emissions associated with activities of the project.

It will be through a planned site layout (containment & dampening), operational controls (prevention) and interception (ambient reduction), where the company is confident it can manage and mitigate the generated noises. Fraser Valley Aggregates Ltd. will ensure the following management and mitigations are implemented as required to minimize noise impacts:

- Develop a mine plan which has designed sound buffers such as operation sunk in to a pit area lower than the surrounding area, processing equipment surrounded or shielded by stockpiles and development of pit walls that will dampen noises;
- Ensure noise reducing vegetation (tree barrier) and topographical features are maintained;
- Examine noise mitigation strategies at other aggregate operations, which have similar requirements for noise reduction;
- Maintain a maximum 20 km speed limit along access roads and within the pit areas;
- Maintain smooth running roads surfaces on all access roads and pit floors to reduce tire noise;
- Operate equipment within specifications and capacity (e.g. don't overload machines) and use noise abatement accessories such as sound hoods and mufflers; and
- All efforts during operations will be to have the placement of the short-term crusher operation in the bottom of the pit, in order to decrease potential noise escapement.

The following is a list of permit conditions that Fraser Valley Aggregates Ltd. will comply with at the Sylvester Road Quarry:

- A sound reducing berm of approximate height of 6 to 8 metres will be provided on the west side of the plant to reduce noise levels.
- The existing screen buffer along Sylvester Road will be maintained to provide a visual and sound barrier.
- The peak particle velocity shall not exceed 50 mm/sec at the intersection of Sylvester Road and the Quarry access.
- Air blast (concussion) shall not exceed 120 Dbl at the intersection of Sylvester Road and the Quarry access.
- All blasts will be electronically monitored.

- All blast records, including the printout of the electronic monitoring, shall be maintained at the Minesite office and made available to an Inspector on request.
- A copy of the Blaster's log shall be maintained at the Minesite office.
- All blasts resulting in public complaints will be reported to the Inspector in accordance with the Mines Act permit.
- Suitable notification shall be given to all residents or businesses within 1 km of the quarry blast site at least 24 hours prior to the initiation of any blast. This notice will specify a blast window of 1.5 hours.
- All blasts shall be scheduled and designed to minimize effects on nearby residences.
- A sign will be posted at the Sylvester Road Quarry access indicating a scheduled blast.
- Blasing outside the blasting hour window will not be conducted without permission of an inspector.

The following is a list of Fraser Valley Regional District requirements, from Bylaw No. 1181, 2014, that Fraser Valley Aggregates Ltd. will comply with at the Sylvester Road Quarry:

- Between the hours of 7:00 a.m. and 7:00 p. m. Monday through Saturday, no person shall cause or permit noise related to aggregate removal or processing to exceed sixty (60) dBA Leq (1 hour) exclusive of ambient sound when measured at any point along the property line of a receiving parcel or at any point within a receiving parcel. This does not apply to the noise that may be generated by the movement of trucks entering or exiting the site.
- No person will cause or permit dust associated with aggregate removal or processing to escape the permit area so as to constitute a nuisance on any other lands.
- No person will cause or permit dust associated with aggregate removal or processing to result in:

- Dustfall over an average period of 2 weeks in excess of 1.7 mg/(dm^2-d) on any other lands, or;
- Total Suspended Particulate Matter over an average period of 24 hours in excess of 120 µg/m3 on any other lands.

4.0 Plan Implementation

4.1 Roles and Responsibilities

While not all site personnel will be directly involved in implementation of the plan, all site personnel should be aware that the plan exists and to contact the Mine Manager in the event that they observe a potential dust concern during the course of their regular activities. Training in this regard should occur to introduce new employees and contractors to the plan and to refresh all employees/contractors regularly.

The Mine Manager will delegate staff to be responsible for the monitoring and management of the dust control. The Mine Manager will determine the frequency of monitoring procedures to be put in place based on triggers for potential dust sources: such as seasonal (e.g. dry) or operational (e.g. crusher on site) conditions, and using BMPs as a guide.

The Mine Manager is responsible for reviewing this DCP on a seasonal basis for consistency and relevancy, if there is a significant operational change, or if reviews or inspections indicate that dust management practices do not meet requirements.

4.2 Monitoring

Monitoring will be on the onus of the Mine Manager and should include:

1. Visual inspection for dusty conditions shall occur at a minimum of twice daily;

2. Visual inspections shall be carried out hourly when overburden removal, berm construction or rehabilitation;
3. Inspection of dust controls functioning properly, such as watering and if chutes are effective;
4. Excavation and loading operations should be monitored hourly when the weather is dry and winds are anticipated to be blowing towards residential and recreational areas;
5. Site manager or delegate will be responsible for monitoring current conditions and weather forecasts from Environment Canada, to subsequently help plan for current and next day watering needs and other measures;
6. Records regarding when and how dust control measures are implemented must be kept on site. These records must include and not be limited to: watering on roads, visible dust observed, meteorological conditions for that day.

4.3 Triggers for Dust Management Mitigation

Visual cues will be the primary trigger for mitigation action to be taken. Typical triggers of employing dust control measures would be:

- If material handling activities are occurring that may impact air quality beyond the property boundary;
- If visible dust is being generated beyond the property boundary by material handling activities, and/or stockpiles;
- If the weather forecast indicates dry conditions and strong winds are likely.

In addition to specific site features which may generate fugitive dust, consideration should also be given to specific climatic conditions which cause dust. These conditions or unusual weather or dust events can include, but not be limited to:

- Temperatures over 30 degrees Celsius;

- Consistent wind speeds over 30 km/hour;
- Temperature inversions and/or cloud cover creating poor air quality.

4.4 Record Keeping

The following tables are to be used for record keeping and include a record of dust events and responses (Table 2), and a complaint tracking tool (Table 3).

Table 2 - Dust Events and Response:

Date	**Name** (staff member responsible)	**Dust Event** (details; time, source, weather, etc.)	**Mitigation and Response** (details)

Table 3 - Complaint Tracking Tool:

Date	**Source of complaint** (name, organization, contact details, etc.)	**Complaint specifics** (who took the complaint, what was the issue, what was done, follow up, etc.)

5.0 Closure

We trust that the information contained in this report meets your requirements. Should you have any questions, or require further information, please do not hesitate to contact the undersigned.

Holmes Mining Consultants Ltd.

Andrew Field

Andrew Field, B.ASc., MBA
andrew@holmesmining.ca

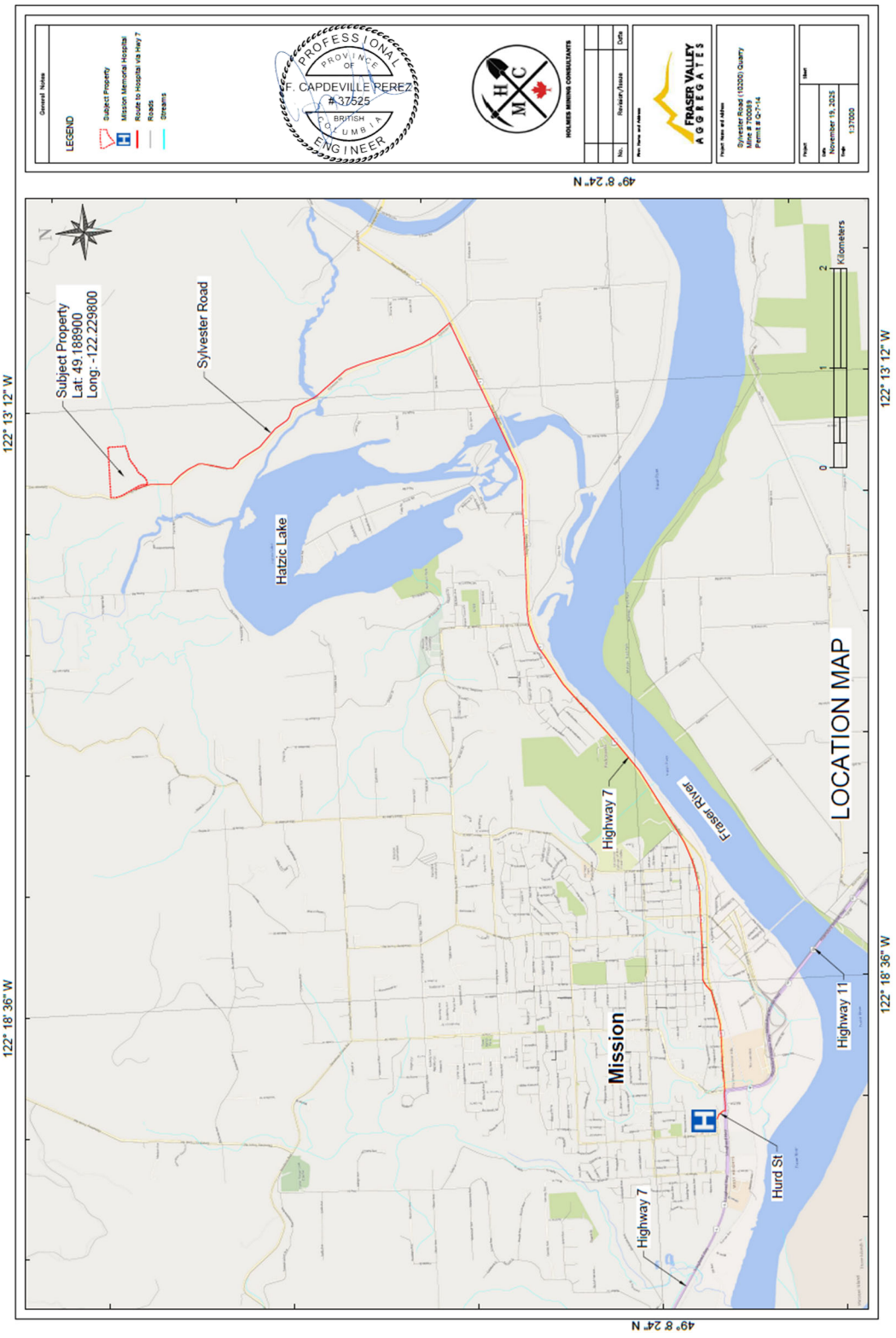
Reviewed and approved by:

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
F. CAPDEVILLE PEREZ
#37525

Felipe Capdeville Pérez, P.Eng. (BC)

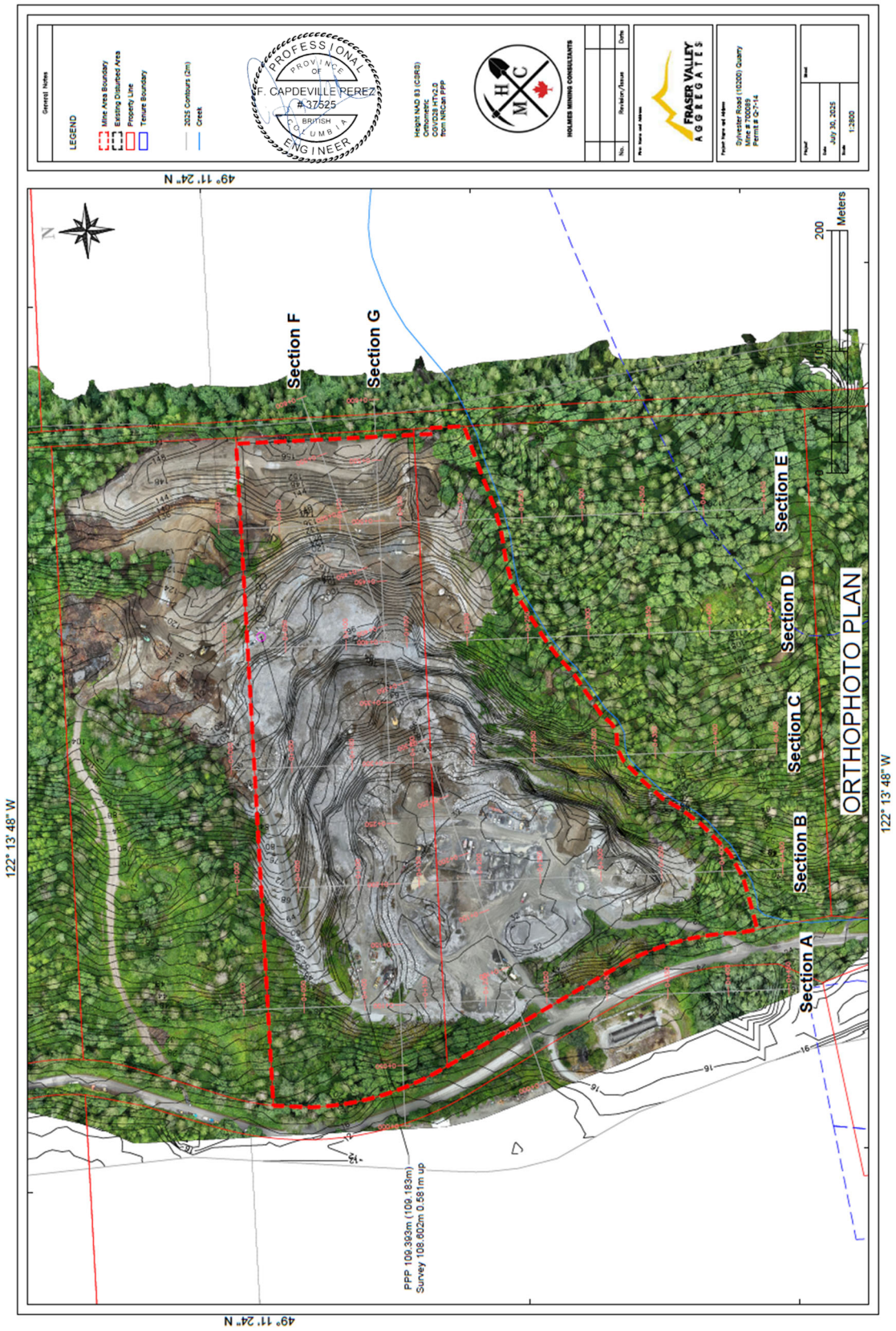
6.0 Figures

Figure 3: Site Location Map



HOLMES MINING CONSULTANTS

Figure 4: Orthophoto Plan



HOLMES MINING CONSULTANTS