

NOISE, DUST and WATER CONTROL PLAN

**For Statlu Pit
Harrison Mills, B.C.**



Mine No. 1610323

Mine Plan - Permit No. G-7-235

Statlu Resources Inc.

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1.0 INTRODUCTION

1.1 Purpose and Objectives

The purpose of the Statlu Pit Noise and Dust Control Plan is to identify, implement and monitor the application of Best Management Practices (BMPs) to help reduce the fugitive noise and small particle dust related to the industrial activities at Statlu Pit of Harrison Mills, B.C. and the potential impacts on the neighbouring residential areas. 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 Energy, Mines & Petroleum Resources (EMPR) - Mines Act Permit, Ministry of Transportation & Infrastructure (MoTI) - Road Use Permit, Ministry of Forest, Lands and Natural Resources & Rural Development (FLNRORD) - Land Tenure.

The plan includes activity-specific dust control criteria and noise/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

Statlu Pit is an aggregate (sand and gravel) extraction operation located in near Harrison Mills, BC. The site is located on a Crown Licence of Occupation for sand and gravel purposes held by Statlu Resources Inc. The pit is located along the Chehalis Forest Service Road approximately 11km from the intersection with Morris Valley Road near Harrison Mills.

Mine Name: Statlu Pit

Mine Number: 1610323 **Permit Number:** G-7-235

Type of Operation: Sand & Gravel

Property Location: From Agassiz travel west on Highway 7 for 15 kilometers and then turn right on Chehalis FSR. Travel north on Chehalis FSR for 12 kilometers and the entrance to the pit will be on your left

Legal Description: THAT PARCEL OR TRACT OF LAND IN THE VICINITY OF CHEHALIS RIVER, GROUP 1, NEW WESTMINSTER DISTRICT CONTAINING 83.61 HECTARES, MORE OR LESS

Site Map Location: Lat: 49.33272 Long: -121.99564

Mine Manager: Mr. Earl Wilder

Email Address: [REDACTED]

Contact Phone #: [REDACTED]

of Employees on site: 4 to 6

2.2 Description of Operations at Statlu Pit

The development plan will consist of mining operations including pit run excavation, screening, crushing, washing and loading for transport that would be typical for any small sized (aggregate) sand and gravel operation in BC.

The pit will be developed in two areas (lower and upper pit) concurrently both consisting of dozer operations and front end loader movement of material and necessary sloping as required for proper development. To maintain compliance with **Part 6.23.4** of the HSRC, the company will utilize a dozer to push down material to a maximum face height of five (5) to seven (7) meters, using the on-site mining equipment.

As indicated previously, the operation will be in compliance with the HSRC, and will utilize the following equipment – loaders, excavators, tandem dump trucks, crushing and screening plants (when required) for the excavation of pit run, crushing & mechanical screening operations and gravel washing equipment. The operation currently uses typical

equipment similar to the John Deere 644K - Front End Loader, Cat D9 - dozer, Cat 320C – excavator, tandem dump trucks, 300 TPH crusher/screening units and 150 TPH wash plant.

The mining operations will be year round with activities driven by demand for the final products. The mine will usually operate between 7:00 am to 7:00 pm during Monday to Saturday on a 10 hr day, when crushing & screening and/or washing activities are required for upgrading of the materials for commercial use. As note, there will continue to be washing of aggregate materials on-site during the tenure timeframe for production of concrete aggregate.

There will not be a requirement for an *Environmental Management Act* – Effluent Permit given that the project is not anticipated to have any effluent discharge. The control of any TSS and turbidity of any contact surface waters (if required) will be achieved through use of erosion and sediment control measures such as the existing (sediment) control pond, silt fencing and straw (hay) bales.

In regards to groundwater protection, on-site there are no indications of any shallow groundwater flows. To help protect groundwater quantity and quality from potential impacts of the proposed mining activity, no fuel storage will occur on-site during normal mining activities. If and when a large project is to be undertaken, then fuel storage will include double walled fuel tanks with appropriate additional protection. As well, there will be adequate training for on-site personnel with the emergency response equipment and supplies (spill kits) that are available for use when and if required during fueling.

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 far from any residential development. 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 pit boundaries are surrounded by mixed treed, upland vegetation that is dense in nature. There is some treed vegetation present in the areas close to Chehalis FSR that act as a visual buffer as well as the natural slopes and elevations of the pit. As the pit floor is lowered, berms will continue to be maintained along the perimeter of the excavation to shield noise, dust and visual impacts.

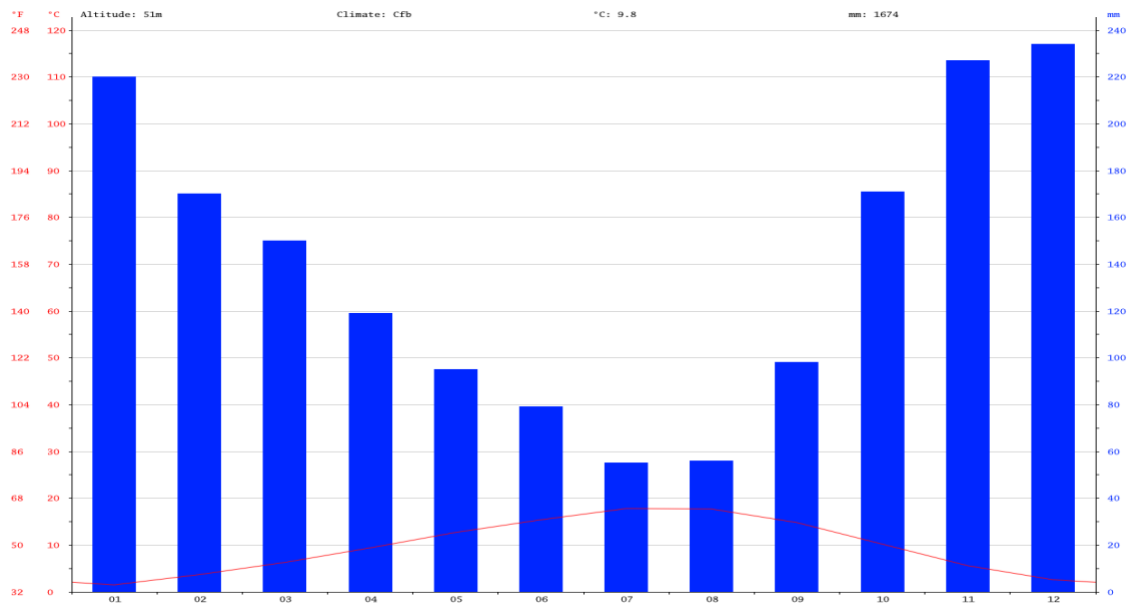
b. Atmospheric Considerations

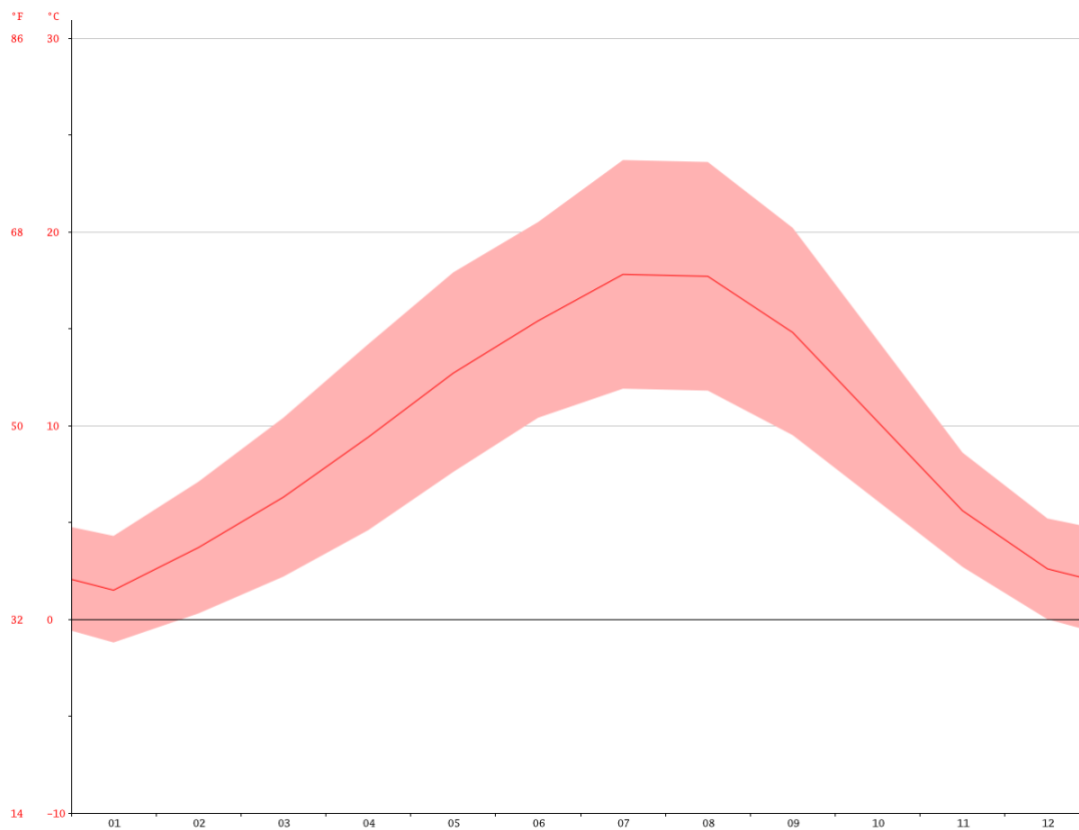
Climate

Harrison Mills lies 51m above sea level. The climate here is mild and generally warm and temperate. The rainfall in Harrison Mills is significant, with significant precipitation even during the driest month. The Köppen-Geiger climate classification is Cfb. The average annual temperature in Harrison Mills is 9.8 °C. The total rainfall here is around 1674 mm.

Precipitation is the lowest in July, with an average of 55 mm. In December, the precipitation reaches its peak, with an average of 234 mm.

As seen in the following graph of average temperature and average rainfall, the Statlu pit is in a very wet area. Dust considerations will be partially mitigated by the cool, wet atmospheric conditions for the most part. During the hotter months of summer when rainfall occurrences may be farther apart water can be added to road surfaces and at crushing and transfer points where appropriate to continue mitigating fugitive dust. Windy days may also contribute to dust movement and the manager must be vigilant during these potential conditions to ensure public and worker safety.





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 Statlu 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)*”.

http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/permitting/agg_bmp_hb_2002vol2.pdf

2.4 Location Map & Facility Site Map

Refer to Figures 1 - 3 in Appendix A.

3.0 Best Management Practices - Dust

Proactive controls will be instituted at Statlu Pit to reduce the amount of dust generation during any site activities. The following Statlu Pit processes, operations or equipment have the potential to emit dust (refer to Figure 3 for visual reference):

1. Haul roads (vehicle traffic)
2. Stockpile areas
3. Transfer points (drops)
4. Processing (crushing, screening, etc.)
5. Extraction (process)
6. 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 the Statlu Pit 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;
- 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;
- Vegetated 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 Statlu Pit.

3.1 Site Specific Mitigation and Control Methods - Dust

In order to achieve an effective operational dust control plan at Statlu Pit, 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 Statlu Pit)	Visual inspection for dusty conditions shall occur at a minimum of twice daily.	<ul style="list-style-type: none"> • 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 30 km/hr. • Post km/hr signage indicating dust control. • Limit work on windy days. 	<ul style="list-style-type: none"> • Water truck. • Calcium Chloride. • Signage.
Stockpile areas (aggregate, topsoil/overburden)	Visual inspections shall be carried out hourly.	<ul style="list-style-type: none"> • 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 cover and immediate re-vegetation or cover. • Minimized stockpiling. 	<ul style="list-style-type: none"> • Dust suppressant spray. • Local native grass seed mix.
Drops (at transfer stations)	Should be monitored hourly when there is dry weather and winds are anticipated to be blowing	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Chutes

	towards residential areas (east).	<ul style="list-style-type: none"> Enclosing transfer points along conveying circuits where dust may be created and apply sprays. 	
Processing (feeds and discharges for conveyors, crushers, screens, etc.)	Should be monitored hourly when there is dry weather and winds are anticipated to be blowing towards residential areas (east).	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Spray bars
Excavation (working pit face, berm construction, rehabilitation)	Should be monitored hourly when there is dry weather and winds are anticipated to be blowing towards residential areas (east).	<ul style="list-style-type: none"> Avoid overburden removal and berm construction during dry months. Passive dust suppression - no operations on hot, windy days. 	<ul style="list-style-type: none"> Weather forecast. Visual monitoring.
Weather and dust events	Refer to text below [^] . The site is located in a wilderness area, so it will be surrounded by remaining forest which 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.

3.2 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.

3.3 Site Specific Mitigation and Control Methods – Noise

Statlu is 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

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.

It will be through a planned site layout (containment & dampening), operational controls (prevention) and interception (ambient reduction), were the company is confident it can manage and mitigate the generated noises. Statlu will continue to 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 treed buffers, soil stockpiles and development of pit walls that will dampen noises;
- Examine noise mitigation strategies at other aggregate operations, which have similar requirements for noise reduction;
- Maintain a maximum 30 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;
- 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;

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 or noise 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 and noise 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 Dust and Noise Control Plan on an seasonal basis for consistency and relevancy, if there is a significant operational change, or if reviews or inspections indicate that dust and noise management practices do not meet requirements.

4.2 Monitoring

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

- Visual inspection for dusty conditions shall occur at a minimum of twice daily;
- Visual inspections shall be carried out hourly when overburden removal, berm construction or rehabilitation;
- Inspection of dust controls functioning properly, such as watering and if chutes are effective;
- Excavation and loading operations should be monitored hourly when there is dry weather and winds are anticipated to be blowing towards residential areas (east);
- 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;
- 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.
- Checking whether excessive noise is noted at the property lines
- Ensuring equipment mufflers and hoods are installed and working properly
- Monitoring equipment for worn chute liners or excessive drop heights
- Smooth road surfaces
- Berms maintained around new working areas

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.)

Appendix A - Figures
Figure 1

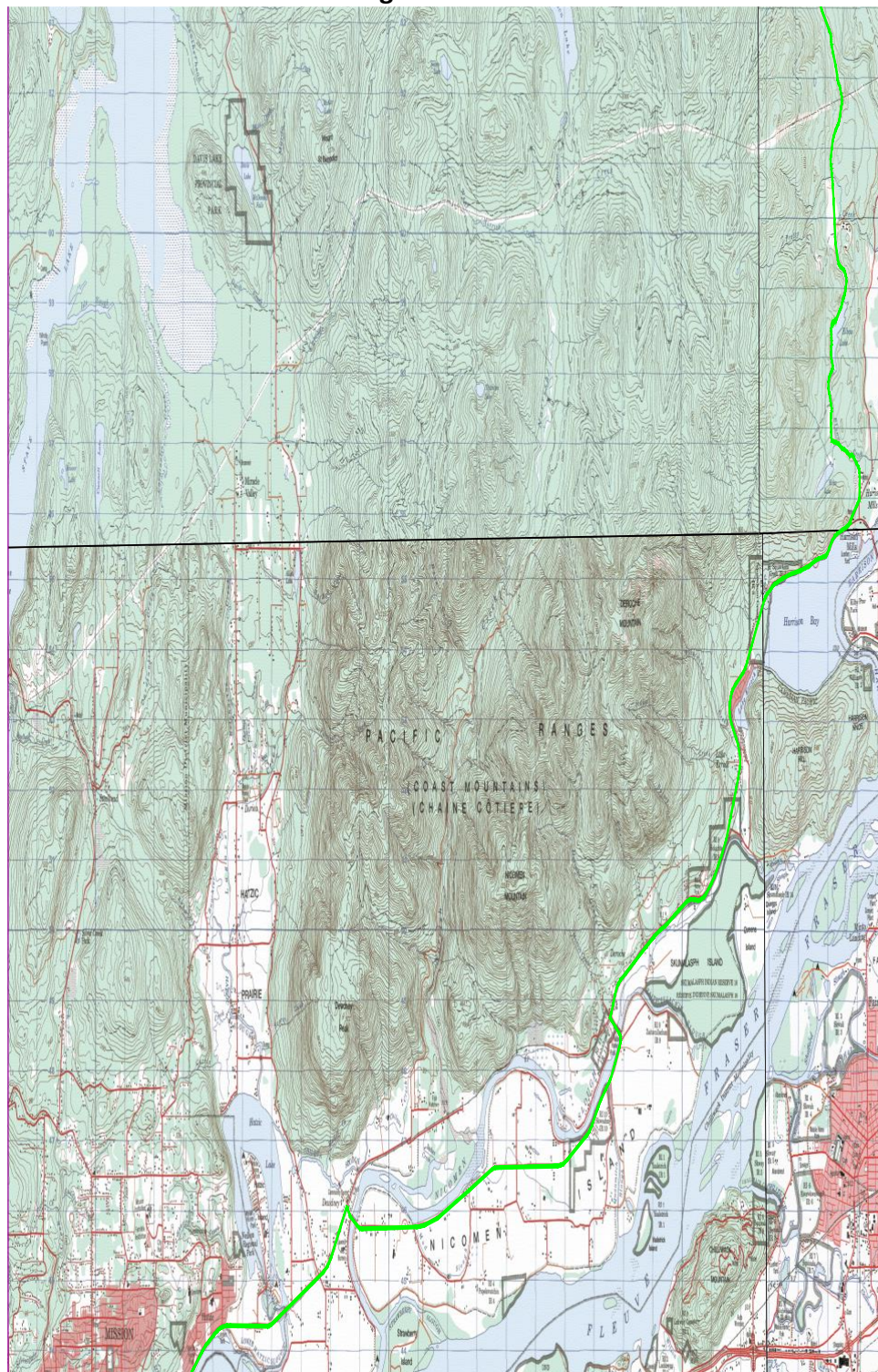


Figure 2

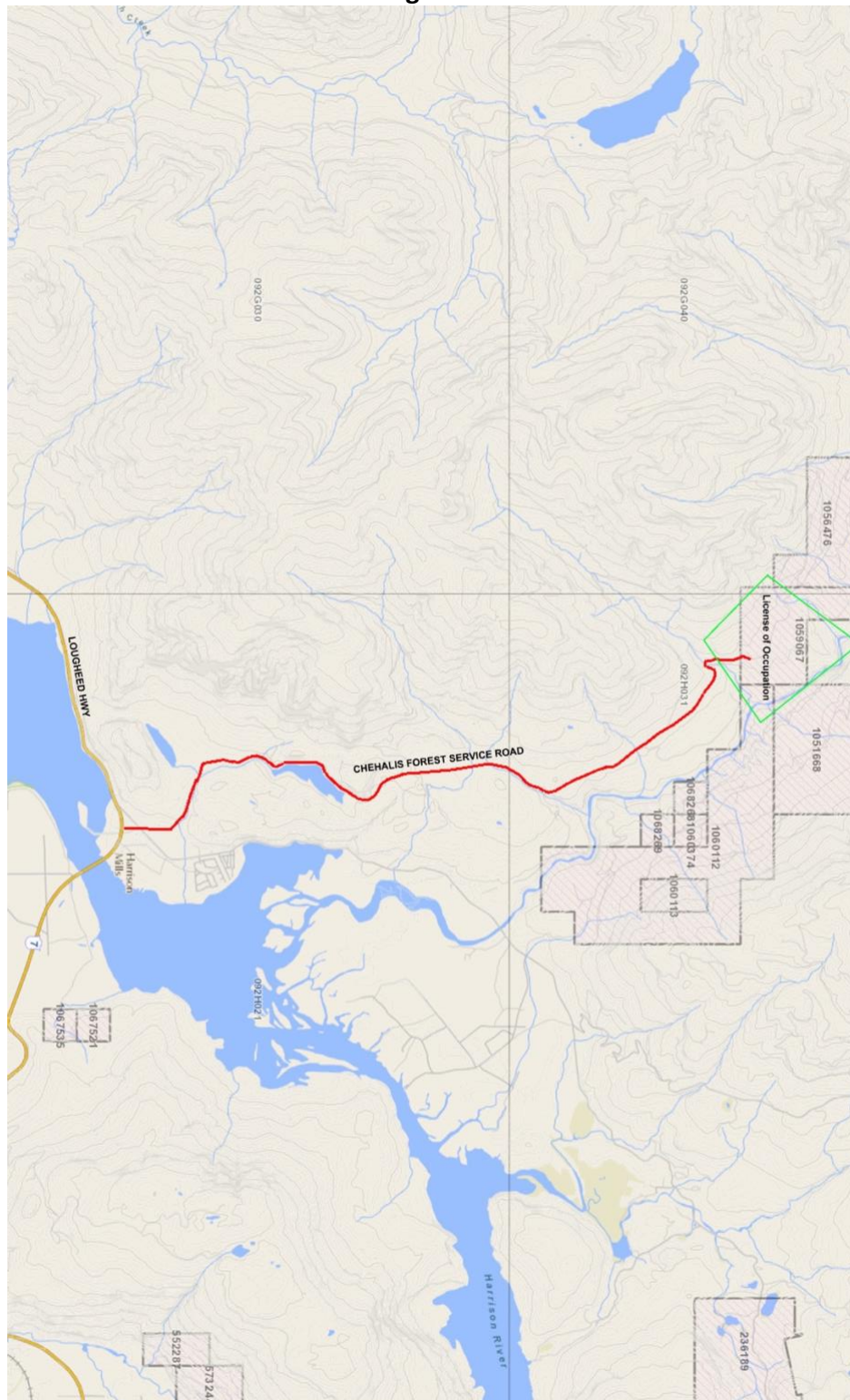


Figure 3

