



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

REPORT

Ministry of Environment and Climate Change Strategy Completion Report for Davies Creek



FEBRUARY 2024



Platinum
member

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Figure 1-1 Davies Creek Overview

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1 INTRODUCTION

1.1 Purpose of Report

This report documents the completion of emergency construction and sediment removal works on Davies Creek, located on the east side of Hatzic Lake, Hatzic Valley, just east of Mission, B.C.

Associated Engineering (B.C.) Ltd., (Associated) was retained by the BC Ministry of Environment and Climate Change Strategy (ENV) to lead the technical aspects of this project, with PWC acting as ENV's client representative.

Note that the works are located on private property.

1.2 Background

Bank erosion and sediment deposition occurred within Davies Creek, adjacent to Sylvester Road, during the November 2021 regional flood event, resulting from multiple atmospheric rivers through southwest BC. Rainfall within the mountainous upper watershed of Davies Creek mobilized large volumes of rock debris and sediment. Two debris jams occurred along the steep portion of Davies Creek. The debris jams consisted of large woody debris as well as sediment ranging from boulders to sands and gravels.

The two debris jams presented a public safety concern as the material continue moving down the mountain slope and impact users of Sylvester Road as well as buildings immediately downstream.

ENV/PwC commissioned QP assessments and tech memos (**Appendix A**) that outlined the need for emergency sediment removal and flood repair work. This work was subsequently approved and completed under the technical direction of Associated with oversight from PwC. The intent of this work was to restore conditions to "pre-flood conditions" by repairing damaged banks and removing sediment.

1.3 Location

Davies Creek is located in the Hatzic Valley, in the southern portion of the Fraser Valley Regional District, British Columbia. The project location is within the property of 9480 Sylvester Road, approximately 2.5 kilometres north of Highway 7 (Lougheed Highway). The approximate coordinates are 49°10'33" N and 122°13'36" W.

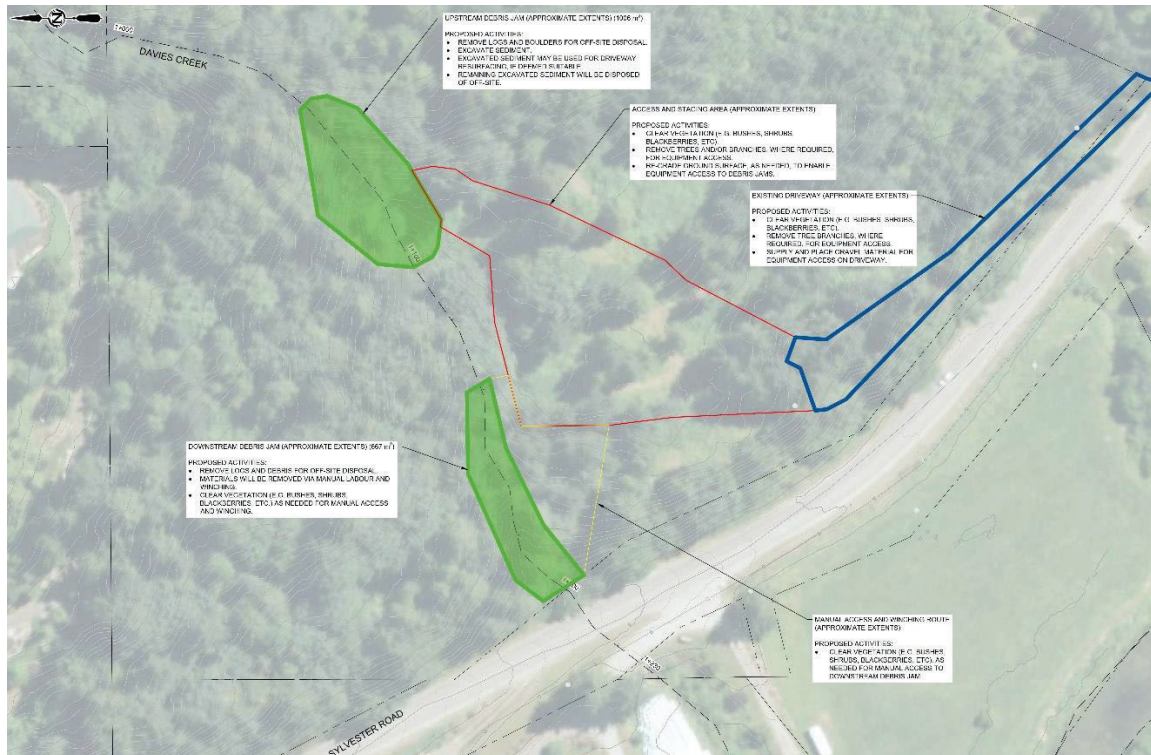
1.4 Scope

The scope of work for this recovery project is generally described as follows:

- Construction of access routes as well as post-construction repairs
- Sediment and debris removal as well as off-site disposal
- Bank repairs
- Erosion protection

Sediment removal works were performed throughout nearly 200 metres of channel immediately downstream (south) of Pattison bridge on Sylvester Road. The upstream extent of sediment removal works terminated at the underside of the bridge; refer to **Figure 1-1** below for a site overview.

Figure 1-1 Davies Creek Overview



1.5 Project Team

The Associated project team included:

- Project Manager – Paul Hague, RPF
- Design Lead – Lisbeth Medina P.Eng. (AB)
- Engineer of Record – Andrew Wiens P.Eng. (BC)
- Project Coordinator – Dianna Christopoulos
- Contract Administrator – Howard Lin, EIT
- Site Inspector – Jack Dai Tang
- Environmental Auditor – Jayden Gross

Subconsultant support was provided by Leq'á:mel First Nation, from Deroche, B.C. for Archaeological/Cultural Resource Management with the following staff:

- Rick McKamey – Environmental & Cultural Lead
- Jason Thompson – Environmental & Cultural Monitor
- Tina Pederson - Environmental & Cultural Monitoring Coordinator

The general contractor for the work was Summit Earthworks Inc., with the following key staff:

- Ed Jones – VP Operations
- Kevin Coris – Project Manager
- Geoff Ratcliff – Site Superintendent
- Matthew Joyce – Sartori Environmental Inc.

On behalf of the client, project direction was provided by the following:

- ENV – BC Ministry of Environmental and Climate Change Strategy, Victoria – Thyren Jacobs

2 DESIGN

2.1 Site Condition

The existing site conditions at Davies Creek present two concerns as there are two debris jams located approximately 10 m and 100 m upstream of the culvert at Sylvester Road. The first location exhibits a debris accumulation, compromising logs and boulders necessitating removal along the channel. The second location features a large and unstable debris jam, consisting of logs, boulders, and sediment. Both sites lack direct access from the road and private driveway, requiring selective vegetation removal and tree trimming and post-construction repairs.

2.2 Design Objective

The general design objective was to restore the site/location/works to pre-flood conditions as nearly as practical, while also ensuring protections of private properties were in place.

Given the site conditions mentioned above, the key design objectives were:

- Repair the channel capacity by removing sediment.
- Repair damaged channel banks.

{Refer to design documents and drawings located in appendices}

3 PERMITTING & APPROVALS

3.1 First Nations Consultation

The project is located within the traditional territory of the Leq'á:mel First Nation. Two First Nations Cultural Monitors (Jason & Tina) alternated on site from Monday, June 5, 2023, to final walk through on Friday, June 23, 2023.

Monitors were on site to observe and report the re-construction of the creek as per Associated drawings and field fits as per design engineer.

The First Nations Cultural monitors did not identify any archaeological items.

3.2 Environmental

The Fisheries Act is the main federal legislation for Canadian fisheries management through the conservation and protection of fish and fish habitat (RSBC 1985, c.F-14), and is administered by Fisheries and Oceans Canada (DFO). In

accordance with Sections 34.4(2)(c) and 35(2)(c) of the Act, an authorization is required for any activity that may result in death of fish and harmful alteration, disruption or destruction (HADD) of fish habitat. Davies Creek was assumed to be non-fish bearing primarily due to the high gradient crossing under Sylvester Road and low flow barriers. An emergency Fisheries Act Authorization was issued by DFO on October 27, 2022, for all 12 impacted sites in the Hatzic Valley (22-HPAC-01308; Appendix Xi), including Davies Creek.

The provincial Water Sustainability Act protects the quality of water, fish and wildlife habitat, and the rights of licensed water users (SBC 2014, c15) and is administered by Ministry of Forests (FOR). Under Section 11 of the Act, any activities that result in “changes in or about a stream” require notification or approval. A Change Approval for Changes in and About a Stream on Davies Creek was granted by FOR on April 24, 2023 (2010103; Appendix Xii).

All instream works were to be conducted under the oversight of a Qualified Professional and in accordance with regulatory authorizations and approvals, the Davies Creek – Sediment Removal and Bank Protection Environmental Management Plan (Associated Environmental, 2023), applicable DFO Codes of Practice, and provincial guidance in the “Requirements and Best Management Practices for Making Changes in and About a Stream in British Columbia” (2022).

The Construction Environmental Management Plan was prepared by Sartori Environmental in June 2023 under Fisheries Act Emergency Authorization #22-HPAC-01308, and Water Sustainability Act (Change Approval #2010395). Field work was done under best management practices and applicable environmental regulations.

3.3 Archeological

Leq’á:mel First Nation provided cultural, archeological, and environmental monitors to review the work daily, keeping records and submitting daily reports.

3.4 Other Approvals

Transportation Management Plan supplied by Centerline Traffic Management Ltd., Chilliwack, B.C. for the project.

4 CONSTRUCTION

4.1 Contract Award

The province set the following requirements for contractor selection. The contractors were to be qualified to undertake instream work, with preferences for:

- Local companies
- Indigenous companies and employees

Additionally, we identified the work as high priority and urgent due to the expected precipitation pattern changes with the seasonal shift to fall as well as the risk to the public.

For these reasons, we recommended a local contractor be awarded to complete the work, Summit Earthworks Inc. as they had immediate availability, relevant experience and a joint-venture arrangement with Leq’á:mel First Nation.

The contract was awarded under S23EPFLOOD0092 – Summit Earthworks, Mission, BC

Approach to Construction

Activities along Davies Creek occurred on both private land, for which permission from the landowner was obtained (Appendix Xiii), and crown land. A Permit over Crown Land was included in the provincial Change Approval application for instream works and access to the south extent of the project area.

The main goals of the project were to remove sediment of the upper and lower sections of Davies Creek.

Summit Earthworks retained Sartori Environmental Inc. out of North Vancouver to be their environmental monitor for the Davies Creek.

4.2 Quality Control

Associated Engineering

- Provided daily inspection and review of the engineering components of the work.
- Tracked construction activities to support progress payment development.
- Provided engineering input and decision-making support.
- Kept daily reports of construction activities and contractor forces.

Summit Earthworks

- Prime Contractor responsible for site management, safety, coordination, overall completion of the construction and subcontracted environmental monitoring to Sartori Environmental.

Sartori Environmental

- Developed and executed the Construction Environmental Management Plan.
- Provided Spill Response Plan.
- Designed and implemented environmental measures for protecting aquatic life, fish salvage, managing spills, providing erosion and sediment control, and monitoring of water quality parameters.
- Kept daily records of work completed and pertinent information.

Leq'á:mel First Nation

- Provided cultural and environmental monitors to review the work daily, keeping records and submitting daily reports.

Construction reports from Associated, Sartori, and Leq'á:mel are provided in the appendices.

4.3 Changes During Construction

In addition to the design changes implemented, the contractual changes implemented include:

- Change Order 1:
 - Addition of unit rates for some construction equipment (not originally included in the contract)
 - Addition of fuel adjustment rates for June 2023 (superseding the October 2022 rates originally included in the contract)
 - Addition of unit rates for green waste disposal (not originally included in the contract)
 - Addition of lump sum for professional arborist services (not originally included in the contract)

- Change Order 2:
 - Addition of unit rates for sediment control devices (not originally included in the contract)
 - Addition of lump sum for bypass pumping equipment (not originally included in the contract)
 - Addition of lump sum for riparian seed for site repairs (not originally included in the contract)
 - Addition of lump sum for professional arborist services (extra to amount originally added in Change Order 1, due to fees being higher than expected)
 - Addition of lump sum for environmental monitoring (extra to amount originally included in the contract, due to fees being higher than expected)
 - Addition of lump sum for as-built survey (not originally included in the contract)

4.4 Construction Monitoring

Environmental

Full time environmental monitoring was conducted by Sartori Environmental Inc. (Sartori) during instream works and audited by Associated Environmental. As the environmental monitor (EM), Sartori was responsible for working with the Contractor to develop measures to protect the environment and to respond to environmental incidents as they occurred. The responsibility of the auditor was to protect the interests of the owner by ensuring that the EM and the Contractor adhered to the requirements of the Construction Environmental Management Plan (CEMP) (prepared by Sartori and reviewed by Associated), environmental permit conditions and any applicable regulations.

Environmental Inspection Reports (EIR) were prepared by Sartori and submitted to Associated every day and were augmented by Daily Environmental Monitoring Reports submitted by Leq'á:mel First Nation.

A total of three audit inspections were completed during construction at Davies Creek, occurring on June 9th, 16th, and 23rd, 2023. There were no non-compliant issues identified during the audit inspections.

4.5 Project Completion

A final walkthrough was completed on June 23rd, 2023, by representatives of Summit Earthworks, Sartori Environmental, Leq'á:mel First Nation, and Associated Engineering. Substantial Performance of the contract occurred on June 30th, 2023. The Certificate of Completion was issued on July 31st, 2023, and the Notice of Certification of Completion was posted on site in accordance with the BC Builder's Lien Act on August 3rd, 2023. Record survey data was provided by Vector Geomatics and record drawings were produced (see Appendix ?).

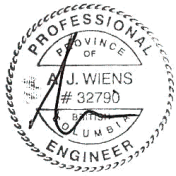
CERTIFICATION PAGE

This report presents our findings regarding the Ministry of Environment and Climate Change Strategy Hatzic Emergency Work Program Davies Creek.

Respectfully submitted,

Associated Engineering (B.C.) Ltd.

Engineers & Geoscientists BC Permit Number 1000163



Feb. 5 2024

Andrew Wiens, P.Eng.

Senior Water Resources Engineer

APPENDIX A - AIC SITE ASSESSMENT TECH MEMO

Initial site assessment reports for areas of immediate concern (AIC) to allow the Province of BC to review and consider risks, potential consequences, and to prioritize urgent mitigation measures, including removal of sediments introduced by the 2021 Atmospheric River event (and other potential mitigation measures).

Please see folder for further information.

APPENDIX B - DESIGN SKETCHES/DRAWINGS

Design drawings submitted as part of the regulatory applications.

Please see folder for further information.

APPENDIX C - ENVIRONMENTAL APPROVAL DOCUMENTS

All the required environmental permits for this work including DFO, WSA Section 11 ,etc. are contained in this appendix.

Please see folder for further information.

APPENDIX D - ARCHEOLOGICAL PERMITS

The Province of BC obtained a Heritage Investigation Permit for flood recovery activities.

This Multi-Assessment Permit (MAP) will support government's response to and recovery from the widespread damage caused by 2021's catastrophic rain events and resulting flooding and landslides in the south and coastal regions of British Columbia. Various Provincial Ministries and Local Governments are tasked with responding to emergency events, restoring infrastructure, cleaning up debris and environmental contamination, and maintaining public health.

Please see folder for further information.

APPENDIX E - CONTRACTOR ASSESSMENT

This letter summarizes the process selecting and recommending suitable contractors for the flood recovery work.

Please see folder for further information.

APPENDIX F - CONTRACT DOCUMENT

Major Works contract between the Contractor and The Ministry of Environment and Climate Change Strategy.

Please see folder for further information.

APPENDIX G - ACCESS AGREEMENT

Land access agreement between the landowners/homeowners and The Ministry of Environment and Climate Change Strategy.

Please see folder for further information.

APPENDIX H - FIELD REVIEW REPORTS

All construction field reports from the Contractor, AE, Cultural Monitor and Environmental Monitor.

Please see folder for further information.

APPENDIX I - SUBSTANTIAL PERFORMANCE

- Certificate of Substantial Performance
- Deficiencies Letter
- Builders Lien Act (BLA) Certificate of Completion
- Notice of BLA Certificate of Completion

Please see folder for further information.

APPENDIX J - FINAL PROGRESS PAYMENT AND CLOSEOUT DOCUMENTS

- Release of Builders' Lien holdback (final progress payment)
- Certificate of Total Performance

Please see folder for further information.

APPENDIX K - CONTRACTOR PAYMENT SUPPORT INFORMATION

Progress claims from the contractor to The Ministry of Environment and Climate Change Strategy. Progress payment certificates prepared by AE.

Please see folder for further information.

APPENDIX L - BEFORE AND AFTER CONSTRUCTION PHOTOGRAPHS & PARAGRAPH OF WORKS FOR ENV

Before and after photos of the construction works.

Please see folder for further information.

APPENDIX M - RECORD DRAWINGS

Final record drawings of the completed construction work.

Please see folder for further information.

APPENDIX N - ENVIRONMENTAL MONITORING REPORT

The project relied on a chance find procedure. Leqamel First Nation staff were engaged to monitor the site during construction and identified chance finds when found. This appendix contains their Inspection Reports.

Please see folder for further information.

APPENDIX O - ARCHEOLOGICAL MONITORING REPORT

Not applicable

Appendix A

June 23, 2022
AE File: 2022-2462-00

TEL: 604.293.1411
FAX: 604.291.6163
www.ae.ca

Fred Bjork, P.Eng.
Price Waterhouse Coopers
Submitted via email: fred.bjork@pwc.com

**Re: PRELIMINARY SITE ASSESSMENT OF POTENTIAL AREAS OF IMMEDIATE CONCERN
PWC SITE ID: S-CR-38 - DAVIES CREEK HATZIC, BC**

Dear Mr. Bjork:

The purpose of this high level and preliminary assessment of identified potential Areas of Immediate Concern is to allow the Province of BC to review and consider risks, potential consequences, and to prioritize urgent mitigation measures, including removal of sediments introduced by the 2021 Atmospheric River event (and other potential mitigation measures). The objective is to avoid hydraulic restrictions in the waterways and associated flooding due to the upcoming 2022 spring freshet, which may cause additional damage to riverbeds, banks, and infrastructure, and pose a significant threat to the safety of people, properties, infrastructure, and the environment.

1 SITE INFORMATION

Site ID: S-CR-38

Location: 49.175456°, -122.227440°

Site Description: Davies Creek, Hatzic, BC

Local Government Agency: Fraser Valley Regional District (FVRD)

Waterbody: Davies Creek

The site location is shown in **Figure 1** and **Figure 2** located at the end of the letter.

2 SITE HAZARD

2.1 HAZARD ASSESSMENT METHODOLOGY

The assessment, as summarised in this letter for the noted Area of Immediate Concern, follows the following general methodology and approach:

1. High level senior engineering level experience and judgement, review of available relevant reference information, site visits and visual inspections, and communication with relevant stakeholders;
2. Risk assessment; and
3. Identification and advice on prioritized and appropriate mitigation measures (if any), their required timing, and further work required to validate such advice.

Associated Engineering (AE) completed a site visit on May 30, 2022. Photos from our site visit are contained in **Enclosure B**. Subsequently, AE reviewed the background data noted in **Section 3**.

2.2 HAZARD ASSESSMENT SUMMARY

The November 2021 Atmospheric River resulted in significant flooding and widespread sediment deposition throughout the Hatzic Lake watershed. In the case of Davies Creek, sediment and large debris from the steeper upstream areas were mobilized and transported west towards Hatzic Lake. The existing culvert at Sylvester Road was blocked and the roadway was overtopped during the November 2021 storm event. Sediment and debris were washed through downstream private property and caused significant impact to the roadway embankment and side slopes. Based on a conversation with a landowner and a visual inspection, a significant debris jam, consisting of logs, rocks, and sediment, was created approximately 100 m upstream of the Sylvester Road culvert during the November 2021 storm event.

Based on previous assessments completed by Stirling Geoscience Ltd. (December 2021), deposition of sediment and debris occurred at the culvert inlet and within the downstream channel. Sediment deposition, along the east Sylvester Road ditch, and the debris jam upstream of the culvert was also noted in the Stirling Geoscience Ltd. report.

During our site assessment of Davies Creek at Sylvester Road, we noted the following:

1. Hydraulic capacity of the Davies Creek culvert appears to be insufficient;
2. The culvert inlet appears prone to blockages from large wood debris and sediment;
3. The roadside ditch on the east side of Sylvester Road is filled with sediment and requires maintenance. During the site assessment, a maintenance crew was on-site excavating and removing sediment within the ditch; however, further maintenance work to the ditch is still required;
4. Large debris were observed approximately 20 m upstream of the culvert;
5. A large log/sediment jam, located approximately 100 m upstream of the culvert, poses a significant risk to private property. A visual inspection suggests that the debris jam is not stable and that it could mobilize during a major rainfall event. If carried downstream to the culvert it would likely be blocked again, repeating the problems that occurred in November 2021; and
6. Erosion on the west side slope of Sylvester Road south of the Davies Creek culvert.

We anticipate significant damage to Sylvester Road, private property, and risk to residents and motorists if the log jam were to mobilize during a major rainfall event.

3 PRELIMINARY RISK EVALUATION

The Preliminary Risk Evaluation for the site is shown in **Table 3-1**. The risk key is included in **Enclosure A** for ease of reference.

Table 3-1
Preliminary Risk Evaluation

Category	Preliminary Risk Evaluation	Anticipated Consequence
Public Health and Safety	High	There is a significant risk to residents and motorists in the event that the upstream log jam was to release on Davies Creek.
River Capacity @ Debris Jam	High	There is a debris jam approximately 100 m upstream of the Davies Creek culvert at Sylvester Road. The debris jam has completely filled in the channel.
River Capacity @ Culvert	Medium	The capacity of the Davies Creek culvert at Sylvester Road appears insufficient. Wooden debris accumulating immediately upstream of the Sylvester Road culvert has the potential to block the culvert in a significant rainfall event.
Environmental	Medium	Upstream channel has been scoured to bedrock. In the event the log jam was to release there could be loss of trees and vegetation within Davies Creek for approximately 100 m upstream of Sylvester Road.
Infrastructure	High	There is a significant risk to Sylvester Road and downstream properties in the event that the upstream log jam was to release on Davies Creek.

Based on the preliminary risk evaluation noted above, we assess the risk to be **High**. On this basis, we confirm that the site rating should remain as an Area of Immediate Concern.

The Preliminary Risk Evaluation is based on the following currently available information:

- Background Reports:
 - Associated Engineering. (1992, August). *Hatzic Prairie Drainage Study Volume 1*.
 - Stirling Geoscience Ltd. (2021, December 16). *Hatzic Prairie Creek Assessment and Preliminary High-Level Mitigation Cost Estimate, Hatzic Prairie, BC – Draft*.
- Site Assessment completed on May 30, 2022;
- Google Satellite Imagery; and
- Discussions with the Landowner at 9549 Sylvester Road.

4 SITE OPINION AND ADVICE

Based on the hazard and risk assessment, it is our opinion that Site S-CR-38 is an Area of Immediate Concern (AIC), requiring further assessment, emergency work, and potential mitigation measures as noted below:

Emergency Works (ASAP)

1. Remove the debris jam on Davies Creek;
2. Remove debris accumulated at the culvert inlet and within the upstream channel; and
3. Complete a debris-flow risk assessment of the watercourse, including areas upstream of the existing debris jam, and determine appropriate risk mitigation measurements.

Long-Term Holistic Solutions (to current Codes and Standards)

1. Remove sediment and debris in the east ditch of Sylvester Road from Davies Creek to the downstream culvert at the sag in Sylvester Road;
2. Repair the western side slope of Sylvester Road where overtopping flows scoured the embankment;
3. Complete a hydraulic capacity assessment of the existing culvert and evaluate replacement options;
4. Restore the channel's capacity by:
 - a. Coordinating with MoTI, FVRD, and environmental regulators;
 - b. Sediment and vegetation removal upstream of Sylvester Road. Extents to be determined as part of the hydraulic assessment; and
 - c. Replacement and expansion (based on current Codes and Standards) of the existing culvert on Davies Creek.

5 CLOSURE

Please contact Andrew Wiens at 403-863-4009 if there are additional questions or concerns.

Yours truly,

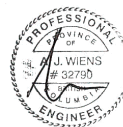
Prepared by:



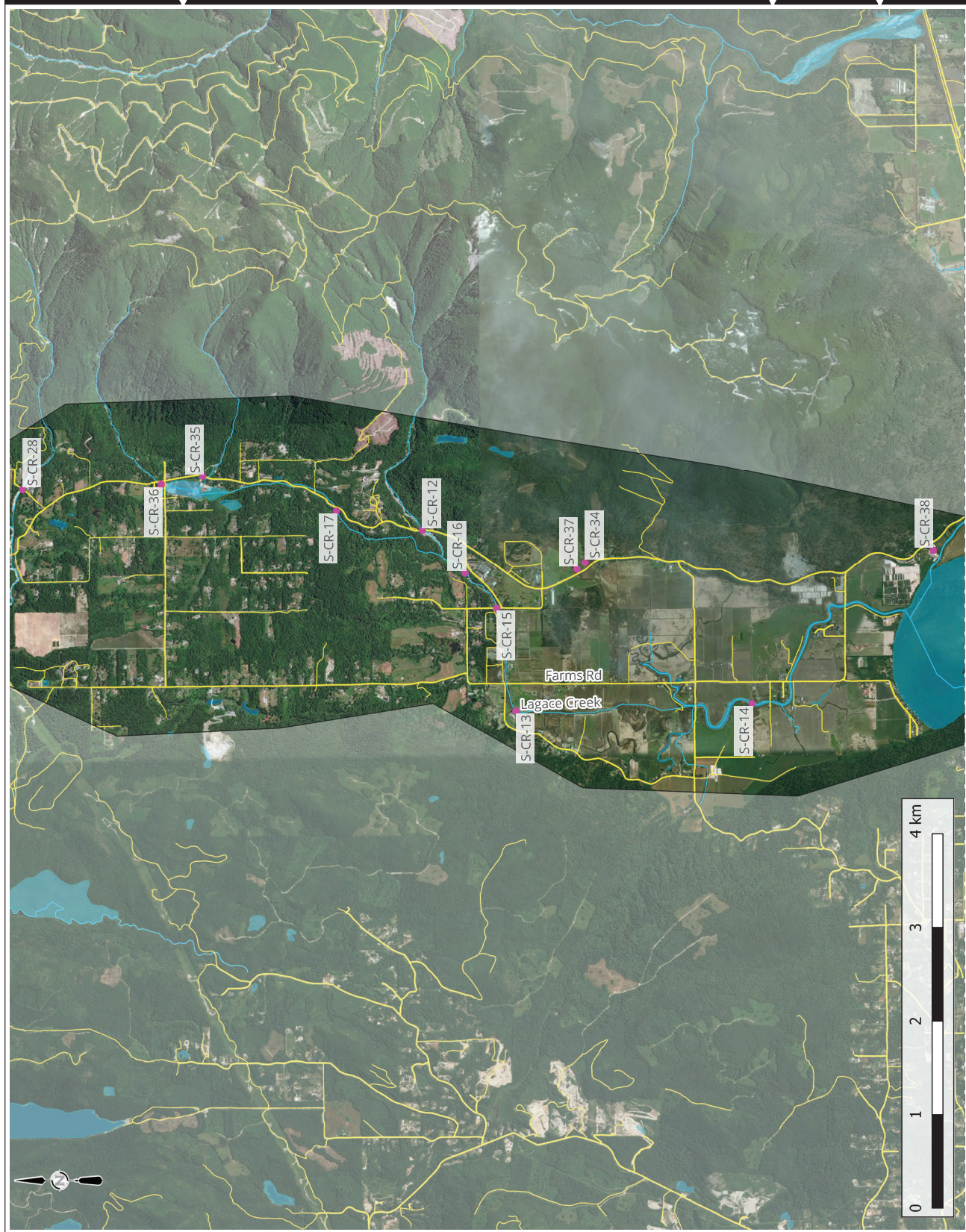
Andrew Rushworth, P.Eng. (Alberta)
Project Engineer

AR/AW/fd/jg

Reviewed by:



Jun. 24 2022
Andrew Wiens, P.Eng. (BC)
Senior Water Resources Engineer



Legend

Roads

— Watercourse

Waterbodies

Problem Location (Site)

NOTE: AERIAL IMAGERY PROVIDED BY BING
AERIAL MAY NOT REFLECT CURRENT CONDITIONS
DUE TO FLOOD EVENTS SINCE THE DATE OF
COLLECTION

PROJECT LOCATION



FIGURE 1

PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT

WATERWAY SEDIMENT ASSESSMENT
PWC HATZIC PRARIE SITE OVERVIEW

SCALE	APPROVED	DATE	REV	DESCRIPTION

20222462-00
AS SHOWN
A. WIENS
20220531
A
ISSUED FOR FINAL

Legend

- Problem Location (Site)
 — Roads
 ■ Waterbodies
 — Observed Watercourse Path
 — Existing Culvert
 ■ Sediment Deposition

NOTE: AERIAL IMAGERY PROVIDED BY BING
AERIAL MAY NOT REFLECT CURRENT CONDITIONS
DUE TO FLOOD EVENTS SINCE THE DATE OF
COLLECTION

PROJECT LOCATION



FIGURE 2

PRICEWATERHOUSE COOPERS 3C MINISTRY OF ENVIRONMENT	W/C SITE: S-CR-38 JANIES CREEK AT SYLVESTER RD	AE PROJECT No. AS SHOWIN A. WIENS 20220623 A ISSUED FOR FINAL	20222462-00
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Enclosure A – Risk Matrix

Risk Evaluation and Response						
	Consequence Rating	Very Low	Low	Medium	High	Very High
Indices	Public Health and Safety	Minor disruption to few.	Minor, short term disruption to local community or moderate disruption to few.	Moderate disruption to local community, or substantial disruption to few.	Moderate, long term disruption to local community.	Substantial, long term disruption to region.
	River Capacity	Flow contained within the channel	Flow temporarily floods adjacent land	Flow floods adjacent lands resulting in prolonged flooding	Partial avulsion of flow resulting in flooding, erosion and scour damage to adjacent land and infrastructure	Full avulsion of flow resulting in flooding, erosion and scour damage to adjacent land and infrastructure
	Environmental	No noticeable loss or deterioration of habitat, species, unique landscapes, or culturally valued sites.	Small, short term loss or deterioration of important, unique, rare, or endangered habitat, species, landscapes, or culturally valued sites. Moderate, recoverable loss or damage of less valued habitat, species, landscapes, or sites.	Moderate temporary or small permanent loss or deterioration of important, unique, rare, or endangered habitat, species, landscapes, or culturally valued sites. Moderate loss or damage of less valued habitat, species, landscapes, or sites.	Moderate permanent loss or deterioration of important, unique, rare, or endangered habitat, species, landscapes, or culturally valued sites.	Major permanent loss or deterioration of important, unique, rare, or endangered habitat, species, landscapes, or culturally valued sites.
	Infrastructure	No infrastructure impacted	Impacts to infrastructure (minor erosion or scour, some debris accumulation, partial infilling, etc.) are not expected to have an impact of the operation of the infrastructure.	Impacts to infrastructure (erosion or scour, debris accumulation, infilling, etc.) leave infrastructure vulnerable	Impacts to infrastructure (erosion or scour, debris accumulation, infilling, etc.) should be repaired post-freshet	Impacts to infrastructure (erosion or scour, debris accumulation, infilling, etc.) will likely result in failure or irreparable damage to the infrastructure - repairs should commence pre-freshet
	Annual Exceedance Probability	Very Low	Low	Medium	High	Very High
Very Likely	>0.2	M	H	H	VH	VH
Likely	0.2-0.1	L	M	H	H	VH
Moderate	0.1-0.02	L	L	M	H	H
Unlikely	0.02-0.005	VL	L	L	M	H
Very unlikely	<0.005	VL	VL	L	L	M
Risk Key		VH	Very High	Risk is unacceptable short-term (before next flood season); Risk reduction required		
		H	High	Risk is unacceptable medium-term; Risk reduction plan must be developed and implemented in a reasonable time frame		
		M	Medium	Risk may be tolerable; more detailed review required		
		L	Low	Risk is tolerable; monitor		
		VL	Very Low	Risk is broadly acceptable; no further review needed		

Enclosure B – AE Site Photos (May 30, 2022)



Davies Creek upstream of Sylvester Road



Davies Creek downstream of Sylvester Road



Sylvester Road – East Roadside Ditch (Not Davies Creek)



Sylvester Road – West Side Slope (Not Davies Creek)



Davies Creek – Upstream Log Jam (Side Profile)



Davies Creek – Upstream Log Jam (Looking Upstream)

Appendix B

DRAWING INDEX

SHEET	DRAWING NAME	REVISION	DRAWING TITLE	DRAWING DESCRIPTION
GENERAL	2632-12-G-3001	2	COVER SHEET	
CIVIL				
2	2632-12-C-3101	2	PLAN WITH AERIAL PHOTO	EMERGENCY WORKS
3	2632-12-C-3102	1	PLAN	EMERGENCY WORKS
4	2632-12-C-3501	2	DETAILS	EMERGENCY WORKS

WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK

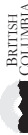
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Associated
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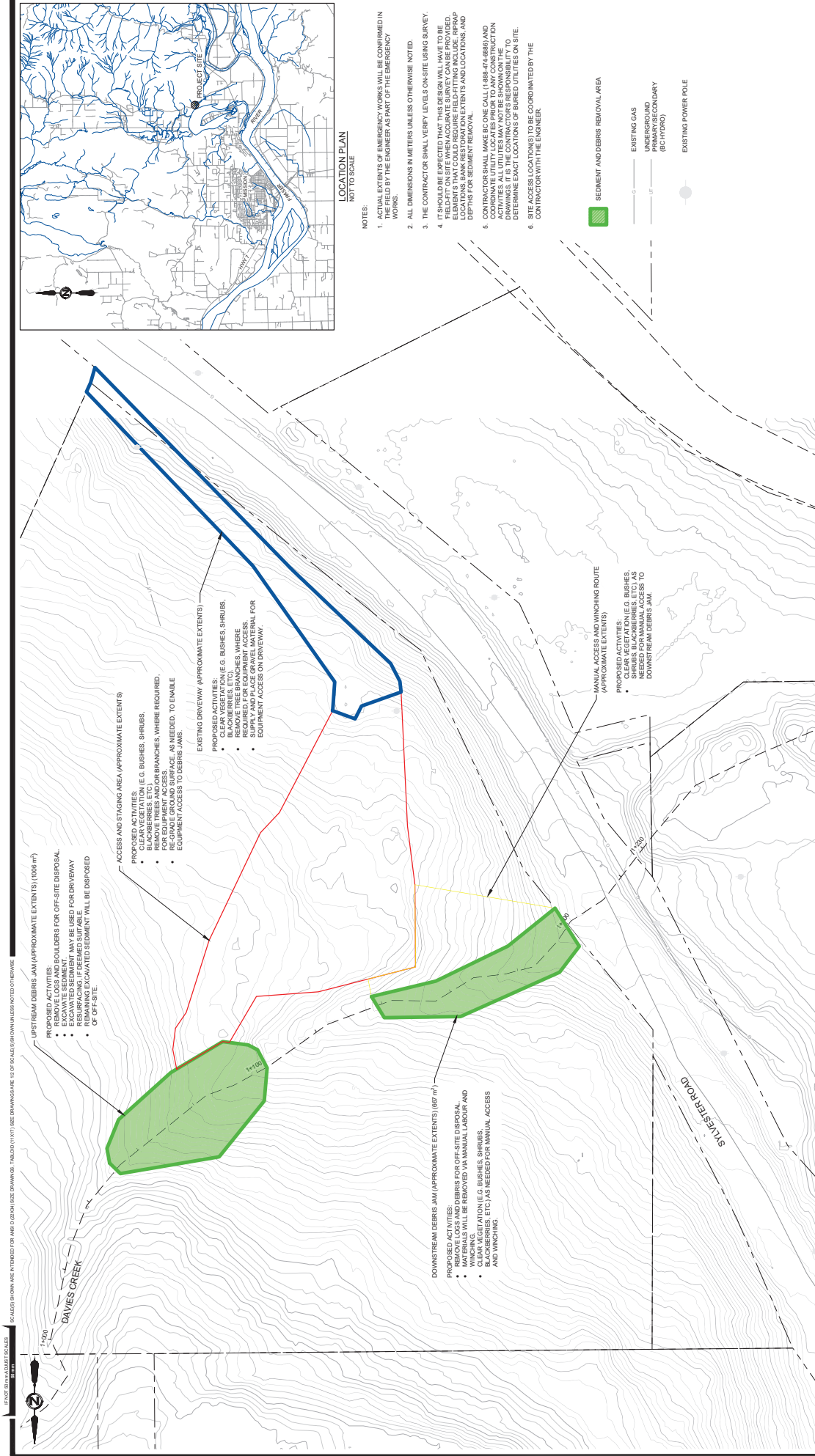
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BC MINISTRY OF ENVIRONMENT
WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12

PERMIT TO PRACTICE
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ASSOCIATION OF BC
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

2	2022-04-08	A. WHITE	N. LEZON	ISSUED FOR CONSTRUCTION
1	2022-01-26	A. WHITE	J. WHITE	ISSUED FOR CONSTRUCTION 11 APPROVALS
0	2022-04-08	N. LEZON	J. WHITE	ISSUED FOR PERMITTING
REV	DATE	DESIGN	DRAWN	DESCRIPTION
DRAWING				REVISION
2632-12-G-3001				2
				SHEET
				1





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pwc



BRITISH COLUMBIA

WATERWAY SEDIMENT ASSESSMENT
 PROPOSED EMERGENCY WORK
 S-CR-38 DAVIES CREEK
 2022-2632-12

PLAN
 EMERGENCY WORKS

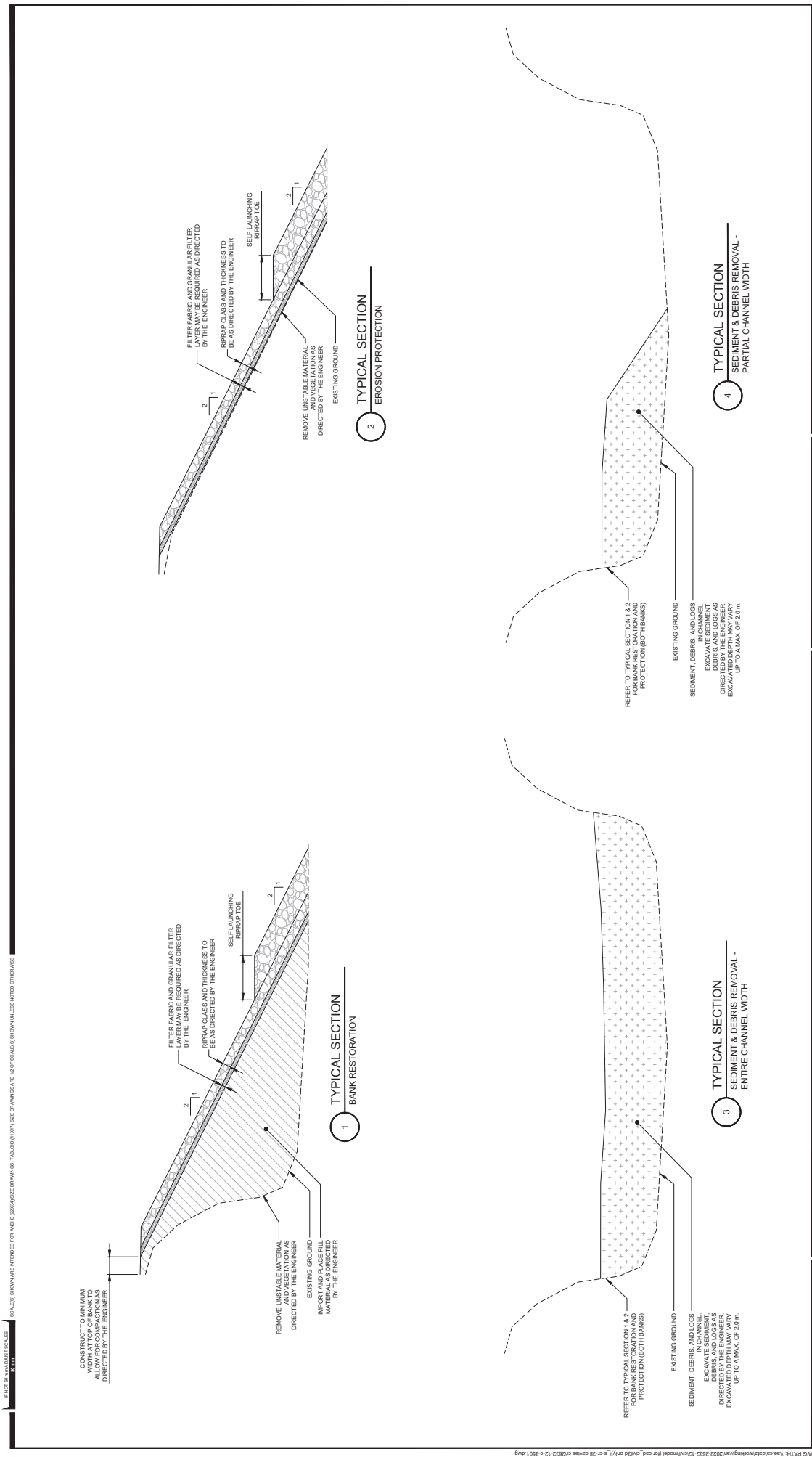
2632-12-C-3102

SCALE: 1:500

REVISION

SHEET

REV	DATE	DESIGN	DRAWN	DESCRIPTION
1	2024-04-08	A. WENGE	M. LEZON	DESIGNED FOR CONSTRUCTION
0	2024-01-25	A. WENGE	H. LEE	DESIGNED FOR SECTION 11 APPROVAL



IF NOT DIMENSIONED SCALES
0 mm

SCALES SHOWN ARE INTENDED FOR A6 AND C/D SIZE DRAWINGS. TALLIES (1:1) SIZE DRAWINGS ARE 1/2 OF SCALE. SHOWN VALUES NOTED OTHERWISE.



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BEST MANAGED CONTRACTORS

PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT

WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12

SCALE: AS SHOWN

REV	DATE	DESIGN	DRAWN	DESCRIPTION
0	2023-10-03	A. WHEAT	J. WHITE	PERMITTING
1	2023-10-03	A. WHEAT	J. WHITE	APPROVALS
2	2023-10-03	A. WHEAT	J. WHITE	CONSTRUCTION

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

DETAILS
EMERGENCY WORKS

DRAWING	REVISION	SHEET
2632-12-C-3501	2	4

Appendix C



April 24, 2023

File Number: 2010395

Ministry of Environment and Climate Change Strategy
PO BOX 9047 Stn Prov Govt
Victoria BC V8W 9E2

Sent via email to: Thyren Jacobs | Thyren.Jacobs@gov.bc.ca

Dear Thyren Jacobs,

Change Approval - Changes In and About a Stream on Davies Creek

A Change Approval for the above application has been granted and a *Water Sustainability Act* Section 11(1) Changes In and About a Stream Approval document verifying this is attached.

This Approval is to support urgent flood recovery works following the November 2021 Atmospheric River event which caused numerous issues including those within Davies Creek. The works authorized herein are to address further threats to property and public safety. Longer-term solutions recommended by Associated Engineering in the Preliminary Site Assessment letter dated June 23, 2022 are being reviewed by the Provincial Flood Recovery Task Force to minimize future risks to public safety.

This Change Approval does not authorize entry onto private or Crown owned land. Permission of the affected landowner must be obtained and should be in writing for your protection.

This Approval does not constitute authority of any other agency. The holder of this Approval shall have the necessary permits from other agencies concerned prior to the commencement of the works authorized herein. The permit holder is required to adhere to all other applicable Provincial and Federal Regulations.

A copy of this Approval (and associated plans/drawings listed on this Approval) must be available for inspection, upon request, at any location where the authorized changes in and about a stream are being undertaken.

The holder of this Approval must have permits or other written consent from any affected property holders before commencing work that could affect utilities or other structures within the property.

This Approval does not authorize the alteration or removal of any works held under a water license.

This Approval requires the oversight of an appropriately Qualified Professional. For the purposes of this authorization, that professional must be registered with one of the five professional regulatory bodies named under the *Professional Governance Act* of British Columbia. They must be in good standing and acting under that professional regulatory body's code of ethics and subject to disciplinary action by that professional regulatory body.

The holder of this Approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise of rights granted hereunder.

Prior to vegetation clearing, an appropriately Qualified Professional should search the area and, where applicable, obtain permits and conduct salvage of any species at risk including but not limited to the following that may occurring in the project area: Oregon Forestsnail, Grappletail, Northern Red-legged Frog, Pacific Watershrew.

Please ensure that machinery is free of invasive plant material that could potentially be transported throughout or between sites. In addition, ensure that invasive species removed from a site are disposed of appropriately.

The holder of this Approval shall ensure that any proposed development and/or changes do not impact traditional or special sites in accordance with the *Heritage Conservation Act* or the ability of First Nation community members to participate in traditional activities on the land and water.

Archaeological sites (both recorded and unrecorded) are protected under the *Heritage Conservation Act* and must not be altered or damaged without a permit from the Archaeology Branch. The holder of this Approval must advise everyone who will be involved in ground-disturbance and construction that if archaeological materials are encountered, activities must be halted, and the Archaeology Branch contacted at 250-953-3334 for direction.

Section 105 of the *Water Sustainability Act* gives the recipient of this notice the right to appeal my decision. You may file an appeal within 30 days of the date indicated on this letter. Information on filing an appeal can be found on the Environmental Appeal Board website at <http://www.eab.gov.bc.ca/>.

If you have any questions or concerns regarding the document issued or the content of this letter, please contact the South Coast Office at WaterActReferrals.LowerMainland@gov.bc.ca.

Sincerely,



Malissa Smith
Assistant Water Manager

Cc:

Naomi Sands | sandsn@ae.ca

Michael Currie | Ministry of Forests | Michael.Currie@gov.bc.ca

Semiahmoo

PRRO

Kwantlen

Matsqui

Peters

Leq'a:mel

Sumas

Halalt

Stz'uminus

Cowichan Tribes

Lyackson

Penelakut

Lake Cowichan



April 24, 2023

File Number: 2010395

APPROVAL

WATER SUSTAINABILITY ACT - Subsection 11(1) and 11(2)
(Changes in and about a stream)

MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY

are hereby authorized to make changes in and about a stream as follows:

- (a) The name of the stream is Davies Creek.
- (b) The changes to be made in and about the stream are:
 - 1. Removal of up to approximately 4320 m³ of debris over an area of approximately 1675 m², including, but not limited to, logs, boulders and sediment.
 - 2. Clearing of up to 5380 m² of riparian vegetation to facilitate access for debris removal.
 - 3. Placement of riprap within the excavated areas at the direction of an appropriately qualified professional.
 - 4. Restoration planting within the riparian zone.
- All works shall occur within Block G, Except; Part On Plan LMP4243, Section 31, Township 20, New Westminster District, Plan 21250.
- (c) The location of the works are at the following coordinates, as provided by the applicant:
49.175456°, -122.227440°.
- (d) The works authorized in this Approval shall be completed on or before December 31, 2023.
- (e) All works associated with the Effectiveness Monitoring Plan, as outlined in clause (x) below, shall be completed by December 31, 2026.
- (f) Work in the stream and stream channel shall occur only during the periods outlined below, so that the fisheries interests are protected:

1. Instream work during the reduced risk instream work window shall occur during the period of August 1 to September 15; or
 2. Based on project justification and risk, instream work outside of the reduced risk instream work window (as stated above) shall occur subject to the following:
 - i) An appropriately Qualified Professional shall provide advice to the holder of this Approval on the timing of the work based on: the nature of the works, environmental values (including fish, amphibians, wildlife, any listed species present), water quality, channel stability, weather conditions, water levels, and any other relevant factors);
 - ii) The Qualified Professional shall also provide additional construction mitigation advice to prevent adverse environmental impacts to the holder of this Approval, and daily or full-time supervision of all work in or near the stream;
 - iii) Work must be timed and planned appropriately, the stream must be completely dry or have marginal flows (naturally or achieved through appropriate isolation and diversion) for the duration of the construction activities; and
 - iv) The advice of the Qualified Professional on construction timing (as per (i) above) and mitigation measures (as per (ii) above), as well as the timing of work and the presence of the Qualified Professional, must be documented in writing. This documentation must be submitted as part of the post construction reporting for this project.
- (g) All works shall comply with the following documents and any minor changes hereafter. Any major changes to the design must be submitted to the Water Manager for written authorization.
1. Davies Creek – Sediment Removal and Bank Protection Environmental Management Plan, dated April 2023, prepared by Associated Environmental.
 2. Engineering Drawings: Waterway Sediment Assessment Proposed Emergency Work S-CR-38 Davies Creek 2022-2462-00, Plan with Aerial Photo, Emergency Works, Dwg. No 2462-00-C-3101, Revision 1, Sheet 2, dated 2023-01-25, prepared by Associated Engineering.
 3. Engineering Drawings: Waterway Sediment Assessment Proposed Emergency Work S-CR-38 Davies Creek 2022-2462-00, Plan with Aerial Photo, Emergency Works, Dwg. No 2462-00-C-3102, Revision 0, Sheet 3, dated 2023-01-25, prepared by Associated Engineering.
 4. Engineering Drawings: Waterway Sediment Assessment Proposed Emergency Work S-CR-38 Davies Creek 2022-2462-00, Plan with Aerial Photo, Emergency Works, Dwg. No 2462-00-C-3501, Revision 1, Sheet 3, dated 2023-01-25, prepared by Associated Engineering
- (h) All work shall be carried out in accordance with the Provincial "Requirements and Best Management Practices for Making Changes In and About a Stream in B.C." (2022). The Provincial guidance document can be found at the following link:

<https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/wsa-cias-requirements-bmps.pdf>.

- (i) The holder of this Approval must hire an appropriately Qualified Professional to conduct Environmental Monitoring on all in-stream works authorized under this Approval. The Qualified Professional is responsible for observing the methods of construction and preparing information and reports on the compliance of the construction activities. The Qualified Professional shall:
1. Ensure all best management practices and mitigation measures are in place to avoid and minimize environmental impact on the land and on fish and fish habitat of the stream.
 2. Implement a search and, where applicable, salvage for species at risk that may occur in the project area prior to the commencement of works.
 3. Where applicable, assist in the isolation of the stream prior to the commencement of works.
 4. Implement and ensure erosion and sediment control measures are constructed, installed, and maintained appropriately for the full duration of instream works.
 5. Supervise all instream works authorized under this Approval.
 6. When the works involve temporary diversions to isolate the work site,
 - i) Monitor all diversion works daily to ensure pumps and flow bypasses are in proper working condition;
 - ii) Ensure diversion works that include pump intakes be screened for fish and aquatic species in accordance with the “Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater” (Fisheries and Oceans Canada, 2020); and
 - iii) Ensure fish are prevented from entering the works.
 7. When the works involve dewatering or isolation of flow and the stream is known or suspected to contain fish and/or amphibians,
 - i) Attend the site prior to conducting any instream works to complete fish and wildlife search and salvage(s);
 - ii) Obtain any permits needed prior to undertaking the salvage(s); and
 - iii) Inspect the extraction area for fish stranding at least once after water levels have declined.
 8. Be granted authority to stop the work authorized under this Approval if deemed necessary to address risks to the environment. The Qualified Professional or their designate (specified in writing) must be on site during all phases of construction in and around the stream to ensure this component is upheld.
 9. Report any spills including detailed information such as time of day, staff involved, nature, cause, and degree of spill, recovery process deployed, and agencies notified.
 10. In the event of an environmental incident or non-compliance with any of the terms or conditions of this Approval, an appropriately Qualified Professional must immediately mitigate the situation. Within 48 hours, each incident must be reported to the Water Manager at SouthCoastWSAReporting@gov.bc.ca with the Approval number in the subject line. The incident report shall describe mitigation measures

employed and a rationale as to why works have resumed or the next steps required before works may resume. The holder of this Approval must follow the advice of the appropriately Qualified Professional.

- (j) All proposed works shall be completed in isolation of the stream flows.
- (k) Upon commencement of the project, the work shall be pursued to completion as quickly as possible.
- (l) All equipment and machinery used in or near the stream channel:
 - 1. Must be in good operating condition and free of leaks, excess oil and grease;
 - 2. Must have a spill containment kit readily accessible on-site; All staff must be trained in handling and applying a spill kit appropriately to any spills/incidents;
 - 3. Refuelling must occur a minimum of 30 metres away from all streams;
 - 4. Must use environmentally sensitive hydraulic fluids which are non-toxic to aquatic life and which are readily or inherently bio-degradable;
 - 5. Any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities must be reported to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-3456.
- (m) Sediment and Erosion Control measures to prevent the release of silt, sediment or sediment-laden water must be in place before starting works that may result in sediment mobilization. Care shall be exercised during all phases of the work to prevent the release of silt, sediment, sediment-laden water, raw concrete, concrete leachate or any deleterious substances. All control measures must meet or surpass the Provincial "Requirements and Best Management Practices for Making Changes In and About a Stream in B.C." (2022).
- (n) Discharge and runoff water from the site into any watercourse(s) must comply with the BC Approved Water Quality Guidelines for the Protection of Aquatic Life (<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines/approved-water-quality-guidelines>) and/or the applicable Local Government Bylaw(s).

Water quality monitoring must be conducted by an appropriately Qualified Professional or a designate (in writing) Environmental Monitor on every day in which instream works are being conducted. Measurements must be taken upstream of any works taking place and within the extent of the sedimentation downstream of where instream work is actively occurring. Measurements are to be taken immediately prior to works beginning, and then at regular intervals until the works are completed and may require additional frequency during wet weather conditions. Wet weather conditions will be defined as being equal to or greater than 25 millimetres of rainfall within a 24-hour period.

- (o) All excavated material and debris shall be removed from the site or placed in a stable area above the high-water mark of the stream. Mitigative measures must be applied to protect the excavated material and debris from erosion and reintroduction into the watercourse.
- (p) The holder of this Approval shall ensure that instream works are designed and installed so as not to restrict fish passage and/or lead to fish stranding. The works shall not result in depressions that have the ability to trap fish and other aquatic life.
- (q) All temporary works (including a ford, stream crossing, flow bypass, and erosion and sediment control measures) shall be removed on completion of the project, and the stream channel restored to its natural condition.
- (r) Vegetation along the banks of the stream shall be disturbed as little as possible. All disturbed areas must be restored using native vegetation that is suitable for site conditions. The holder of this approval shall retain an appropriately qualified professional to develop restoration planting plans, including monitoring as outlined in condition (x) of this Approval.
- (s) The holder of this Approval shall take reasonable care to avoid damaging any land, works, trees, or other property and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this Approval.
- (t) Rock used as riprap shall be clean of any substances deleterious to aquatic life and shall be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Any other engineering material required for the construction of the works shall be clean of any substances deleterious to aquatic life.
- (u) The following water licences may be impacted by the proposed works and must be advised as soon as practicable, prior to commencement of construction:
 - 1. License No. C110839
 - 2. Licence No. F017307
 - 3. License No. F007919
- (v) License holders listed in clause (u) are to be provided with an alternate supply of fresh water during periods when water quantity or quality will be adversely affected.
- (w) The holder of this Approval must provide a detailed post-construction report no later than December 1 of the year works were completed. The report must be submitted by email to SouthCoastWSAReporting@gov.bc.ca, with the Approval file number listed in the subject line of the email and the title of the report. The report shall include a signed statement from an appropriately Qualified Professional summarizing:

1. The in-stream works undertaken;
 2. The timing of those works;
 3. The total in-stream area directly affected;
 4. The volume of gravel or sediment removed (if applicable);
 5. The frequency of monitoring, including the name(s) of the designated monitor(s);
 6. The water quality reporting (e.g., turbidity, pH)
 7. Representative site photographs;
 8. Whether or not they observed or were otherwise aware of any non-compliance with the terms and conditions of this Approval; and
 9. A description of any environmental incidents, non-compliance or other difficulties, and how these were addressed and reported.
- (x) The holder of this Approval must retain an appropriately Qualified Professional to develop and implement a three year Effectiveness Monitoring Plan that includes:
1. Maintenance and monitoring of plantings (including watering);
 2. Replacement of plantings, where necessary, to ensure 100% tree survival and minimum 80% shrub and other vegetation survival rate;
 3. Invasive species management; and
 4. Monitoring water flow and function of created channels with proposed adaptive management strategies to address shortfalls.

Annual reports must be submitted by December 1 of each calendar year following completion of construction to SouthCoastWSAReporting@gov.bc.ca. The reports and subject line of the email must be labelled with this Approval file number.

Sincerely,



Malissa Smith
Assistant Water Manager

Appendix D



HERITAGE CONSERVATION ACT

APPLICATION FOR HERITAGE INVESTIGATION PERMIT

The undersigned hereby applies for a permit, under **Section 12.2** of the *Heritage Conservation Act*, to carry out a Heritage **Investigation** in accordance with the information requested on the reverse of this form.

Name: Sarah Fraser, A/Associate Deputy Minister	Company: Ministry of Forests, Lands and Natural Resource Operations and Rural Development (FLNRORD)
Address: 4th Floor, 545 Superior Capital Park, Victoria BC V8V 0C5	
Phone: 250-953-3334 (Archaeology Branch)	Email: Archpermitapp@gov.bc.ca

Permit expiry date:	May 31, 2023
Permit deliverables¹ due:	May 31, 2023

Financial responsibility for the assessment is assumed by the following proponent(s):

Name: Jeff Sheldrake, A/Assistant Deputy Minister, Coast Area	Company: FLNRORD
Address: 4th Floor - 2975 Jutland Road, Victoria, BC V8T 5J9	
Phone: (778) 974-5826	Email: Jeff.Sheldrake@gov.bc.ca

Name: Brent Persello, Environmental Services Manager	Company: Ministry of Transportation and Infrastructure (MoTI)
Address: 477 Columbia Street, Kamloops, BC V2C 2T3	
Phone: 778-362-4522	Email: Brent.Persello@gov.bc.ca

☒ Other Provincial Government or Local Government proponents with responsibilities for flood recovery activities may be added to this permit without an amendment, pending submission of a client certification and client endorsement, as appropriate, to the Archaeology Branch.

¹ Deliverables include: report(s), site records, shapefiles, repository acceptance as required – see Section 8

PERMIT APPLICANT'S CERTIFICATION

I certify that I am familiar with the provisions of the *Heritage Conservation Act* of British Columbia, and that I will abide by the terms and conditions listed herein, or any other conditions the Minister may impose, as empowered by said *Act*.

Permit Applicant's Certification

Date: December 14, 2021	Permit Applicant Name and title: Sarah Fraser A/Associate Deputy Minister, FLNRORD	Signature: 
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APPLICATION FOR HERITAGE INVESTIGATION PERMIT

Briefly summarize the project: This Multi-Assessment Permit (MAP) will support government's response to and recovery from the widespread damage caused by 2021's catastrophic rain events and resulting flooding and landslides in the south and coastal regions of British Columbia. Various Provincial Ministries and Local Governments are tasked with responding to emergency events, restoring infrastructure, cleaning up debris and environmental contamination, and maintaining public health.

The Associate Deputy Minister of the Ministry of Forests Lands and Natural Resource Operations (FLNRORD), South Area will hold the permit. Proponents will include representatives from FLNRORD and the Ministry of Transportation and Infrastructure (MoTI). Additional government proponents may be added to the permit without amendment. To expedite work, Ministries may undertake work for each other where that is more practicable (e.g., FLNRORD for MOTI projects).

The original permit study area is defined by the fifteen Natural Resource Districts affected by flooding (Figures 1-7):

Table 1. Natural Resource Regions and Districts included in permit

Area	Region	District	Figure(s)
North	Skeena	Coast Mountains	1
Coast	West Coast	North Island – Central Coast	1
		Campbell River	1
		South Island	1 & 2
	South Coast	Sunshine Coast	1
		Sea to Sky	1
		Chilliwack	1 & 3
South	Thompson-Okanagan	Cascades	1 & 4
		Okanagan-Shuswap	1 & 5
		Thompson Rivers	1

Area	Region	District	Figure(s)
South	Kootenay-Boundary	Selkirk	1 & 5
		Rocky Mountain	1 & 6
	Cariboo	100 Mile House	1
		Cariboo-Chilcotin	1 & 7
		Quesnel	1 & 7

As of November 26, 2021, the province has identified 14 landslides and 102 flood events (Figures 1-7) impacting MoTI infrastructure. While additional projects may be added to the permit by Notice of Intent by the Delegated Archaeologist, emergent situations with immediate threats to public or environment health and safety can be added to this permit by proponents without notice of intent, following approval by the Archaeology Branch.

The permit authorizes the investigation of archaeological sites, and areas suspected to contain archaeological sites, which may be impacted by ongoing weather-related impacts requiring emergency impact management, or by recovery work. Recovery work includes but is not limited to:

- relocation of debris and soil,
- slope and bank stabilization,
- removal of contaminated sediments and materials,
- cleaning and repair of infrastructure (i.e., fences, poles, ditches, culverts, road, bridges),
- clean-up of surface debris,
- geotechnical investigation,
- repair or construction of dykes or levees,
- construction of temporary structures, roads and facilities while repairs are completed,
- blasting, and
- gravel extraction.

Specifics about the nature and extent of works and affected infrastructure will be identified in the Notice of Intent, or, if in response to significantly emergent work, in the report summarizing the assessment.

The permit scope is broad, recognizing the nature of impacts and required work is not fully understood at the time of this application, but will unfold through the winter season. This is balanced with the need complete timely infrastructure repairs and clean up. The use of Archaeological Overview Assessments (AOAs) and Preliminary Field Reconnaissances (PFRs) to support and prioritize Archaeological Impact Assessment (AIA) efforts are encouraged in light of the volume of work that needs to be done. To support analysis of the impacts the 2021 floods had on archaeological sites, the final report will include the results of AOAs and PFRs. When appropriate, archaeologists have flexibility around the timing, nature and methods of the assessment (i.e., emergency, in advance, during

monitoring work, or on a post-impact basis) depending on the local conditions, type of site, safety, visibility and/or contamination. These considerations should be part of a workplan.

The permit structure is unique but considers the lessons and approaches of the Wildfire permits (2018-0375 and 2020-0034), to facilitate archaeological assessments following natural disasters on a provincial scale. This investigation permit, held by the Province, allows for assessments as and when-needed; government agencies who sign on as proponents may hire any number of eligible archaeologists to work under the permit. The archaeologist, referred to as a delegated archaeologist, is responsible for all of the permit's terms and conditions related to their contracted scope of work. Delegated archaeologists must meet eligibility requirements. Field Directors and Supervisors (per Bulletin 17) may be utilized by the delegated archaeologist, who is responsible for their work.

Where feasible, new land alterations will require assessment prior to construction/earth moving. If infeasible, a program of concurrent monitoring or post-impact assessment should be completed under this permit.

The Archaeology Branch must review and approve mitigation plans for all sites, including recommendations for systematic data recovery or additional HCA permits.

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1. FIELD PERSONNEL

The Archaeology Branch (the 'Branch') may approve the addition of Delegated Archaeologists without an amendment to the permit. Documentation of personnel roles by the Delegated Archaeologist will comply with [Bulletin 17](#) (e.g., roles and dates assumed).

Given the size and scope of the impacts, government agencies who sign onto the permit may contract a number of archaeologists to conduct assessments to work under permit to support the response to the 2021 fall floods. The archaeologists are referred to as delegated archaeologists because the responsibilities under the permit are delegated from the Province, who holds the Heritage Investigation Permit. Consequently, delegated archaeologists must be qualified and eligible to hold HCA permits in the project areas.

The proponents and delegated archaeologist(s) will consider comments from First Nations when making in-field decisions and management recommendations.

Additional comments: At the time of application, no Field Directors had been added to this permit.

Delegated archaeologists must be qualified and eligible to hold multiple permits in the culture area they are working in (i.e., not a novice permit holder; no overdue obligations).

2. PROPOSED PROJECT

This project is for:

☐

Research

☒

Resource Management

Maps that comply with Provincial [standards](#) are attached to this application. Attached maps include appropriate information (e.g., location of previous field studies, previously recorded archaeological sites, and/or modeled archaeological potential) as available.

Sector: Emergency Environmental Response

2.1 Location

Select land ownership type(s) and describe below.

Table 2. Location of Permit Area

Land Ownership	Description
☒ Other	<i>Locations affected by flooding and landslides under repair and remediation within the following Natural Resource Districts (Table 3; Figures 1-7), which may include private and Crown land</i>

Table 3. Natural Resource Districts of Permit

Area	Region	District	Figure(s)
North	Skeena	Coast Mountains	1
Coast	West Coast	North Island – Central Coast	1
		Campbell River	1
		South Island	1 & 2
	South Coast	Sunshine Coast	1
		Sea to Sky	1
		Chilliwack	1 & 3
South	Thompson-Okanagan	Cascades	1 & 4
		Okanagan-Shuswap	1 & 5
		Thompson Rivers	1
	Kootenay-Boundary	Selkirk	1 & 5
		Rocky Mountain	1 & 6
	Cariboo	100 Mile House	1
		Cariboo-Chilcotin	1 & 7
		Quesnel	1 & 7

2.2 Proposed Study Area

Describe project: Inventory and assessment of archaeological sites impacted by flooding and landslides as a result of 2021's catastrophic rainfall in southern and coastal British Columbia.

Are all locations to be assessed defined in this application?

☐ **Yes.** All spatial data (kml/kmz, shapefiles) submitted to the Branch via APTS.

☒ **No.** Explain how First Nations with an interest will be notified of proposed investigation areas:

The assessment locations are based on the extent of impacts from flooding, including areas adjacent required for repairs or clean up. At the time of application, additional "atmospheric rivers" are forecast, and further flooding events are anticipated in winter 2021/2022. As of November 26, 2021, the Province identified 15 landslides and 101 flood events, impacting MoTI infrastructure (Appendix 1; Figures 2-7), and more may be added as the extent of damage is identified.

Notifications will take the form of a "Notice of Intent" (NOI in accordance with the [Multi-Assessment Permit Policy](#)), with a minimum 30-day referral period, unless one of the following conditions occurs:

- 1) A project requires immediate action to support public or environmental health and safety,
- 2) A local consultation process with First Nations is established that waives or reduces the 30-day notification period

Note the following **additional requirements** for NOIs for this permit:

1. The NOI will clearly indicate the length of referral period.
 - Requests for expedited reviews will include a rationale.
2. NOIs will include a summary of recorded sites and related past archaeological studies. The summary will identify any concerns with the existing site record(s) for the project area.
3. NOIs will be sent to Indigenous Communities in the format they prefer, using their tracking numbers (when known), as well as via email to Archpermitapp@gov.bc.ca and archsiteform@gov.bc.ca, with the subject line “2021 Flood -NOI -**2021-0453**– Company - Project - <<Optional: unique identifier for company>>” to allow Branch staff to confirm the accuracy of the Provincial records in the vicinity of the project.
4. When AOAs or PFR studies have been conducted in response to these floods and landslides, a summary of those assessments will be included with the NOI, including mapping.
 - Non-permitted assessments relevant to the NOI (accessible by the delegated archaeologist) should also be included in NOIs.

☒ **Additional comments regarding permit area:** n/a

3. RELATED STUDIES

The following studies are known to exist within or near the proposed permit area: ☒

An Archaeological Overview Assessment (AOA):

- ☒ An archaeological predictive model

Details: Table 4 lists the GIS-based AOAs which can be accessed using the Remote Access to Archaeological Data (RAAD) by NRD. An AOA, developed for the Okanagan-Shuswap Natural Resource District, is under Provincial review, and an AOA for the Cariboo District, is under development and anticipated in 2023).

Table 4. AOAs within Permit Area

Area	Region	District	Archaeological Overview Assessment	Year
North	Skeena	Coast Mountains	An Archaeological Overview of the North Coast Timber Supply Area	2000
Coast	West Coast	North Island – Central Coast	AOA of Tree Farm License 25	2000
			Central Coast Land and Resource Management Plan AOA	1999
			GIS Modelling of Archaeological Potential for the TFL Forest Ltd. - Johnstone Strait Operation Area	2002
		Campbell River	Campbell River Forest District AOA	2007
		South Island	AOA Tree Farm License 44 Archaeological Potential Model	2009
			Archaeological Potential Modelling for the Capital Regional District	2008
			Checleset Bay and Outer Kyuquot Sound Cultural Heritage Resource Overview	2007
			City of Langford Archaeological Overview Assessment - Phase 1 Baseline Mapping	2007
			Archaeological Overview and Inventory of a Portion of Ditidaht First Nation	2001
			Hul'qumi'num Treaty Group AOA	2005
	South Coast	Sunshine Coast	n/a	n/a
		Sea to Sky	AOA of the Squamish Forest District	1997
		Chilliwack	Chilliwack Forest District AOA	1999
South	Thompson -Okanagan	Cascades	An AOA of Coldwater and Spius Landscape Units	2008
			Archaeological Overview Assessment Lillooet Forest District	1999
			Upper Similkameen Indian Band (USIMIL) AOA	2007
			AOA of a Portion of the Williams Lake Forest District	1998

Area	Region	District	Archaeological Overview Assessment	Year
South		Okanagan-Shuswap	Okanagan Timber Supply Area AOA (Salmon)	1997
			Okanagan Timber Supply Area AOA (Vernon)	1997
			Okanagan Timber Supply Area AOA (Penticton)	1997
		Thompson Rivers	AOA Northern Secwepemc Traditional Territory	1998
	Kootenay-Boundary	Selkirk	Archaeological Potential Mapping in Landscape Unit K11 Kootenay Lake Forest District	2009
			Arrow Timber Supply Area AOA	1996
			Boundary Timber Supply Area AOA	1997
			Columbia Forest District AOA	2008
			Columbia Forest District AOA	2007
			Columbia Forest District AOA	2008
			Columbia Forest District AOA	2006
			Landscape Unit K12 & K26 Meadow Creek AOA	2006
		Rocky Mountain	AOA of Landscape Units K12 and K26, K16-18 and K20-24, Kootenay Lake Forest District	2007
			AOA of Landscape Unit C20, Rocky Mountain Forest District	2008
			Cranbrook Timber Supply Area AOA	1997
			Moyie Lake AOA	2007
	Cariboo	100 Mile House	AOA Northern Secwepemc Traditional Territory	1998
		Cariboo-Chilcotin	Chilcotin Forest District AOA	1998
			AOA Northern Secwepemc Traditional Territory	1998
			AOA of a Portion of the Williams Lake Forest District	1998
		Quesnel	Quesnel Forest District GIS Model of Archaeological Potential	2009

☒ A desk-based assessment **Details:** See additional comments.

☒ Field studies. **Details:** Numerous studies have taken place within this area and will be considered in desktop assessments and field visits; see additional comments below.

AOAs and field studies which consider information from Indigenous Communities may contain more comprehensive information relevant to adequately assessing potential. Further, Indigenous Communities may have traditional knowledge and/or ethnographic studies [bookmark7](#) to share with archaeologists.

Additional comments:

Desk-based AOAs: It is expected that development-specific reviews will be used to evaluate and prioritize field visits and that those assessments will, at a minimum, check the Provincial Heritage Register (PHR), and regional AOAs by accessing RAAD, and previous permitted assessments (accessed via the Provincial Archaeological Report Library – PARL). Archaeologists are encouraged to contact the Branch's Inventory section (archsiteform@gov.bc.ca) for unprocessed site records. The results of previous assessments that overlap with the development should be incorporated into desk-based AOAs.

PFRs: AOAs may be informed by PFRs conducted by non-field directors who have appropriate archaeological training and experience. PFRs involve field survey of the project area to precisely map areas of archaeological sensitivity. Areas of archaeological sensitivity are defined by the observation of either:

- a) Archaeological sites (i.e., artifacts or features)
- b) Areas of Potential (AOPs), which likely to contain buried archaeological resources.

Archaeological sites and AOPs may be submitted to the Branch based on the results of a PFR². Archeological sites recorded as a result of the PFR must be reviewed by a field director to ensure that the appropriate information is collected to register the site

AOA/PFR Reporting: AOA or PFR reports used to identify recommend AIAs will be provided to the Branch and affected Indigenous Communities, and the results incorporated into the AIA report. For areas not assessed in the field due to a low potential assessment based on desktop and/or AOA model results, a rationale will be provided, for inclusion in the final report.

² Refer to the Branch's Site Form Guide (2021) and Mapping and Shapefile Requirements (2021) for additional details.

Table 5. Previous Field Studies Relevant to the Proposed Study

Type of Study	Direct Overlap with Development? (Y/N)	Distance, Direction from Proposed Development	Year Assessed	HCA Permit #	Comments Relevant to the Study
Investigation	Y	Various	2018-2020	2018-0275	Wildfire permits: adapting approach to support Province's responsibilities under HCA
Investigation	Y	Various	2020-Ongoing	2020-0034	

Additional comments: Numerous studies have taken place within this area and will be considered in desktop assessments and field visits.

Table 6. Previously Recorded Sites Relevant to Proposed Study

Proposed Development Component	Borden Number	Direct Overlap with Development? (Y/N)	Distance and Direction from Proposed Development ²	Site Type	Permit # of Previous Visits ¹⁰

Additional comments: As of November 26, at least 101 recorded sites are located within 1 km of MoTI infrastructure impacted by landslides and floods (Appendix 2: Archaeological Sites and MoTI infrastructure); while MoTI's projects do not presently overlap with any recorded sites, protected (unrecorded) resources may be present.

4. GOALS AND OBJECTIVES

4.1. Goals and Objectives

Specify proposed research goals:

This permit will support Provincial and Local Governments' response to manage and protect archaeological sites during remediation of lands affected by flooding and landslide events from 2021's catastrophic rainfall. Archaeological sites will be identified and assessed for significance and impacts, and management recommendations made. Emergency impact management response to ongoing impacts, or to support infrastructure, may be initiated without delay. The impacts of recovery from 2021's catastrophic flooding will be summarized in the final report. Archaeological assessments will be completed in advance of development or recovery activities where feasible. Given the post-impact environment, impacts to public and environmental health and safety, and challenges with worker safety and site visibility, the delegated archaeologist is authorized to implement the most effective

timing and methods for investigation.

4.2 Significance of Proposed Project

Describe significance of study: This permit approach is novel, by authorizing multiple proponents and archaeologists. This approach is intended to remove barriers associated with permitting for a project of unprecedented scope and urgency, allowing multiple government agencies to work together using several archaeological firms to mitigate impacts to archaeological sites. The final report will serve to summarize the impacts and consequences of the 2021 floods on archaeological sites.

4.3 Expected Outcomes:

Describe anticipated results: The assessments may result in the identification of new sites, as well as record the impacts to known sites. Management recommendations will be made for ongoing impacts, and the assessments will consider the impacts of future remediation actions. Salvage may be undertaken of sites under threat.

It is not expected that sites will be fully analyzed under this permit, unless flood clean-up efforts or infrastructure rehabilitation will result in permanent, unavoidable impacts to archaeological sites, and conditions allow for assessment.

5. METHODS

The delegated field director(s) will consider and document comments and concerns from Indigenous Communities when making in-field decisions and developing management recommendations under this permit.

Describe how areas will be selected for investigation:

All assessments are conducted at the request of the proponent(s), in accordance with a contracted scope of work, at locations impacted by flooding, landslides, or other events following the 2021 atmospheric rains.

Emergency response will be initiated to address ongoing, direct impacts to archaeological sites from flooding that must be undertaken to mitigate ongoing destruction. Projects may be prioritized based on public safety.

Other projects will be selected for assessment using a combination of GIS-based AOAs, desk-top AOAs, PFRs, advice from Indigenous Communities or archaeologists, or upon advice from the Branch. Ideally, areas identified to have high potential for archaeological sites will be surveyed in advance of remediation activities. If the PFR is completed by an experienced technician, any archaeological sites recorded as a result of the PFR should be reviewed by a field director to ensure that the appropriate information is collected to register the site. Similarly, under the direction of a field director, diagnostic

artifacts, formed tools, and other cultural material may be collected.

It is anticipated most assessments will be limited to a defined development footprint (e.g., bridge replacement, fenceline, salvage polygon) in areas of high archaeological potential.

The field director is responsible to determine, implement, and document the methods employed and timing of assessment. For emergency works, the field director will determine the most effective site mitigation measure in consultation with the Archaeology Branch.

For remediation works such as removing debris or mud, the field director will determine the appropriate timing and method of inspection based on existing field conditions, taking safety and site visibility into consideration. If the local conditions do not allow for pre-impact inspection, then it is appropriate to monitor or conduct a post-impact assessment once the material has been cleared. If debris is suspected to contain archaeological material, it should be sampled as practical. The report will include a rationale for the timing of the assessment, and evaluation of the methods. Examples of factors considered to affect site visibility and worker safety include previous disturbance, debris, danger trees, mud deposit, moisture conditions, or soil stability. Assessments may also be delayed for those infrastructure projects requiring immediate replacement or remediation (e.g., installation of temporary bridges) to support public safety.

5.1. Archaeological Potential

Is archaeological potential a consideration?

☒ **Yes**

The assessment locations will be driven by flood and landslide recovery activities in conflict with known archaeological sites and areas evaluated to contain high potential. All in-field decisions about archaeological potential will be documented. Areas with low potential for archaeological resources may also be examined.

Potential for archaeological resources will be consider the following criteria.:

- Geological, terrain, or microtopographical features
- Proximity to potable water
- Slope
- Aspect
- Elevation
- Forest cover
- Soil drainage
- Proximity to sheltered areas (from wind or rain)
- Proximity to areas of potential cultural significance
- Shore lines
- Proximity to cultural resources (e.g., trails; berry patches; fishing sites; travel corridors)
- Any of the above conditions that existed in the past that are not present today (e.g., paleo landscapes, landforms obscured by agricultural practices)
- Previously recorded archaeological or heritage sites
- Areas identified by First Nations or other interested parties
- Significant disturbance

- Timber with potential for CMT sites
- Other (e.g., GPR)

5.2. Field Recording

Field notes will record in-field observations. Survey coverage and points of interest will be recorded (e.g., with a GPS or total station). A camera will be used to document in-field observations. When sites are identified, they will be mapped per Branch [requirements](#)³.

Notes will document information provided by First Nations and observations to support the rationale behind in-field decisions regarding survey coverage, subsurface testing methods, and preliminary management recommendations for sites.

Polygons of negative subsurface test locations and areas of potential will be created for submission to the Branch. Notes will sufficiently describe sites to include necessary information to complete a site form⁴ to Provincial standards.

5.3. Survey Coverage

Does this study include survey coverage? ☒ **Yes**

The study area will be surveyed for archaeological features (e.g., cultural depressions, trees with modifications that may pre-date AD 1846), and areas exhibiting potential for archaeological resources (e.g., landforms and exposures). Surveyed terrain will be mapped in relation to the development footprint and described in the report.

Survey coverage will minimally address areas of anticipated archaeological potential identified by the AOA study (where they exist) and may be modified based on in-field observations. Areas of potential that are not surveyed will be mapped and rationale provided for why the area was not assessed and why it was evaluated to contain potential.

Select all that apply:

- ☒ Traverses or transects with crew members spaced at 10 m intervals or less in areas of high potential; at less than 25 m intervals in areas of moderate potential; at 10-40 m intervals in areas of low archaeological potential. **Additional details regarding approach:**
- ☒ The entire development will be surveyed with crew members spaced in less than 5 m intervals. **Additional details regarding approach:**
- ☒ Areas with high potential for surface artifacts will be surveyed with crew members spaced at 1-5 m intervals. **Additional details regarding approach:**
- ☒ Areas with terrain that has low potential for archaeological resources other than CMTs will be surveyed with crew members spaced at 5-50 m intervals. **Additional details regarding approach:**

³ Defining Archaeological Site Boundaries & Protection Status: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/archaeology/forms-publications/defining_archaeological_site_boundaries_protection_status.pdf

⁴ Notes and photos are required by repositories and may be recalled by the Branch

☒ Areas of low archaeological potential may not be surveyed or will be surveyed en route to areas of high archaeological potential. **Additional details regarding approach:**

☒ **Other (provide details and rationale):** Areas subject to mass wasting events may not be accessible for systematic survey and/or sediments containing archaeological material displaced. The field director will develop a survey sampling plan to address local conditions.

Additional comments: Safety and environmental conditions will influence appropriate survey strategies. The Field Director will explain why the survey coverage is appropriate, based on local conditions. It is understood that the project area may be loosely defined, based on the nature of the impacts (e.g., debris flow). The following guidance is intended to inform scope and level of effort:

- Where site material is found, inspection traverses and testing may be expanded up to 25 meters beyond the immediate permit area, except where impractical due to safety concerns or the limit of the permit authorization is reached (i.e., private or federal land), or where the level of assessment will extend the intent of this permit (e.g., 25 m along a linear development).
- If site material is observed to continue beyond the scope of the project area (e.g., 25 meters), detailed site mapping should stop and the boundary estimated, with recommendations for future work and appropriate AOP established.
- If site material is not observed in areas of adjacent potential, an AOP should be established.

It is recognized that pedestrian survey may not be feasible in flooded areas, and that surveys may require boats or other means to access or view project areas. Images from drone footage may be incorporated into PFRs.

Further to issues of access to subsurface deposits, the use of remote sensing technology such as ground penetrating radar may be considered in consultation with the Archaeology Branch.

5.4 Subsurface Testing

All AOPs and negative Subsurface Test Areas (STAs) will be mapped and shapefiles will be provided to the Branch, per the [Mapping and Shapefile Requirements](#) (i.e., shown as polygons with the number of tests, or each individual test shown).

Stratigraphic and subsurface descriptions will be recorded in the field and summarized in the report(s). Special attention will be paid to significant results, variations, and/or changes.

Reports will describe why the Field Director determined the sediments are culturally sterile. When the depth of culturally sterile deposits in the test was not determined, a rationale must be provided in the report.

The effectiveness of testing at each STA will be determined by a quantitative and/or qualitative evaluation of research. Assumptions about the type, size and artifact density of potential target sites will be described in this evaluation. Given the scope and intention of this permit, some STAs will not be fully assessed, but the full area should be reported as an AOP.

While the Branch generally recommends subsurface testing Areas of Potential (AOPs), they may be an appropriate approach under this permit. When not subjected to testing, reports will describe observations (e.g., microtopography, nearby drainages, vegetation); indicate how these characteristics affected the evaluation of potential; and provide management recommendations to avoid impacts to the AOPs until they can be fully assessed.

Select as appropriate:

- ☒ Tests will minimally measure 0.123 m² (e.g., 35 cm a side shovel test). Sediments will be screened through ¼" mesh or smaller. Tests will be excavated until culturally sterile sediments are confirmed (e.g., glacial till). **Additional details regarding approach:** none
- ☒ Soils believed to contain cultural materials will remain within the site boundary⁵ and described in the site form and report. **Additional details regarding approach:** none
- ☒ STAs will be tested at 5 m intervals or less, within the STA. The field director will provide a rationale in instances where a different interval of testing is employed. **Additional details regarding approach:** none
- ☒ Soil probes may be used to confirm the presence of cultural deposits (e.g., midden; stratigraphy within cultural depressions). However, only mechanical augers or shovel testing can be used to demonstrate cultural deposits are not present to support site boundary definition. **Additional details regarding approach:** none
- ☒ Mechanical augers may be employed. **Describe approach:** Augers will be up to 40 cm in diameter, all sediments will be screened.
- ☒ Other methods will be followed. **Describe:** Given the variety of impacts and settings anticipated by the permit, the Field Director will consult with the Archaeology Branch if alternate methods are proposed.

Additional comments: Where wet screening is appropriate (e.g., waterlogged sediments) all displaced sediments will be screened through an appropriate sized screen (e.g., 1/4" or smaller). Sediments will be placed in the screen and washed through using a hand-held hose with a variable control nozzle. Contextual information will be maintained to ensure that levels, layers, and features are separated within evaluative units or shovel tests and cultural material recovered in the screens will be bagged by level, layer, and unit/test. Care must be taken to avoid environmental degradation from siltation in the screening area.

⁵ Cultural deposits must be kept within site boundary and permit area

5.5 Wet Sites

Are wet sites anticipated?

- ☐ No. **Provide rationale:**
☒ Yes. **Describe specific methods:**

Additional comments: In the event a wet site is encountered, and safety conditions allow, the location will be stabilized and kept in a water-logged state in place until a research plan can be developed and appropriate stabilizing treatment of artifacts and repository confirmed (see Bernick 2019 for examples).

If the materials cannot be left in place due to risk of damage, they will be recovered and preserved by suitably qualified personnel with access to facilities for the recovery and passive conservation of materials pending permanent stabilization treatment. Wet site Specialists must be identified in advance. The Archaeology Branch will be contacted immediately to provide advice on procedures and consultation with First Nations when wet sites are found.

5.6 Machine-Assisted Investigations

Would you like to include provision for mechanical excavation (i.e., backhoes)?

- ☒ Yes (see below).

Machine-assisted inspection will comply with appropriate WorkSafe BC Requirements.

Machine-assisted inspections will be directed by a qualified archaeologist (i.e., field director).

In the event ancestral remains are identified, methods are described in Section 6.

Select as appropriate:

- ☒ Toothed buckets may be used to remove obstructions (pavement, boulders, etc.) prior to reaching potentially culture-bearing sediments. **Additional details regarding approach:** none
- ☒ Potentially culture-bearing sediments will be removed with a finishing bucket, in maximum 10 cm vertical lifts, to allow the archaeologist to observe any exposed features or intact deposits and collect artifact provenience in the most precise manner possible. The horizontal extent of lifts will not exceed 3 m. **Additional details regarding approach:** Field Director will document the extent of lifts, and describe circumstances where these increments are exceeded.
- ☒ The Field Director may use discretion to determine the amount of material to be processed; the report will include a summary of methods and the rationale behind in-field decisions. **Additional details regarding approach:** Processing will be limited to post-glacial deposits, where discernable. It is expected that at least 25% of material will be processed, unless required for immediate return to the location.

- ☒ In the event intact archaeological deposits or features are identified, mechanical excavation will cease, and excavation will proceed by hand or other methods in consultation with the Branch. **Additional details regarding approach:** Manual excavation will only proceed where safe and practical to do so. Site avoidance or other methods of investigation should be considered to make the area accessible.
- ☒ When non-intact archaeological deposits are identified, up to 3m³ sediments will be excavated by hand. **Additional details regarding approach:** Where deposits are in excess of 3 m³, manual excavation should be conducted on a sampling basis with 100% of excess mechanically excavated site material screened or raked.
- ☒ When greater than 3 m³ of archaeological deposits are identified, the Branch and First Nations will be contacted. Work may not proceed without Branch approval. **Rationale and additional details regarding approach:** Given the variety of site types that may be encountered, it is expected that methods and approach will be vetted by the Archaeology Branch prior to implementation.
- ☒ Mechanically-displaced deposits will be inspected for cultural material (e.g., screening). **Describe methods:** Sediments suspected to contain archaeological material will be screened or raked on a sampling basis not to exceed 25% of post-glacial sediments. Sediments known to contain archaeological material will be 100% screened, except where midden deposits and/or human remains are encountered. Stockpiling Archaeological sites is not an ideal long term management option. It is expected that stockpile sites will not be created except in circumstances such as ancestral remains, or where First Nations support the use of a stockpile, or in emergency situations to support project feasibility.
- ☒ Alternate methods. **Provide detail:** Drill and auger flights will be 100% manually inspected. Geotechnical testing, such as mechanical test pitting, will be monitored and sample screened up to 25% of post-glacial sediments
- ☒ This section requires further discussion not outlined elsewhere in this section of the application. **Describe:** While standard methods may be followed, due to the nature of disturbed sediments resulting from floods and landslides, the Field Director is authorized to modify methods as deemed appropriate and provide a rationale in reports.

The preferred option for machinery type depends on local conditions. Rubber-tire mounted machinery is typically of lower impact than tracked machines but may be less effective for rutting in wetted areas, slopes or loose soils. Track-mounted machinery may be equally effective where vegetation is present, and conditions are dry, or may be necessary for safety. The archaeologist will consider local conditions and proposed machine works when designing the assessment plan.

5.7 Winter Assessments

Will winter assessment be employed?

☐ No (delete rest of the text in this section and proceed to next subsection)

☒ Yes. **Choose as appropriate:**

☒ Where test locations were initially visited under snow and frost-free conditions and evaluated to contain archaeological potential for subsurface archaeological resources. Methods may include evaluative units and systematic data recovery using artificial heating or other methods approved by the Branch to create snow and frost-free conditions.

☒ Winter survey may occur in areas evaluated to contain low potential for all archaeological resources, except culturally modified trees.

☐ This project is located within the Fort Nelson and/or Peace Natural Resource Districts (i.e., the Northeast Natural Resource Region).

☒ **Other:** Winter assessments may be authorized for the purpose of geotechnical testing. Tests will be monitored, and excavated post-glacial sediments warmed and screened or raked.

Testing strategies (and confidence in testing) will consider the degree in which microtopography was discernable.

Select as Appropriate:

☒ Snow will be removed as necessary, exposing the ground.

☒ Tools (e.g., concrete saws) may be employed to cut frozen ground.

☒ Subsurface tests will be excavated by shovel and/or pick-axe, etc.

☐ Subsurface test soils will be collected and bagged individually by test unit.

☐ Subsurface tests will be numbered and mapped; soils will be kept separate.

☐ Provisions will be made to transport the soils to facilities for screening.

☒ Sediments will be thawed and screened through ¼" mesh.

☒ Remaining cleaned clasts from the collection screen will be removed and visually inspected.

☒ Evaluative units may be excavated when the ground is heated, using excavation methods as discussed elsewhere in this application.

☒ If topography is difficult to discern, systematic testing will be employed and the methods employed will be outlined in the interim reports. Testing at smaller intervals may be required.

☐ Other. **Describe:**

Additional comments: Situations not covered by the application should be discussed with the Archaeology Branch to determine appropriate assessment strategy (e.g., frozen mud and debris flows).

5.8 Site Recording

Sites will be mapped using measuring tape, compass, GPS, total station, or similar. Archaeological features (e.g., cultural depressions) will be measured, mapped, and photographed. Sites and significant artifacts will be photographed in the field and detailed in a photo log.

Recognizing that conditions may not be ideal for site recording, these standard methods may be modified in consultation with the Archaeology Branch.

5.8.1. **Boundary Definition**

☒ **Standard methods will be followed regarding the definition of site boundaries:**

Site boundaries may be defined by subsurface testing, the extent of the landform, or administrative boundaries (e.g., development boundary), per the [Defining Archaeological Site Boundaries](#) document.

When site boundaries are defined by subsurface testing, tests may be spaced 1-5 m apart on a grid, as appropriate. Additional testing may occur at the Field Director's discretion. Testing will continue until three negative tests are reached in each direction (e.g., cardinal or ordinal), unless the site boundary is defined by the landform and/or administrative boundary.

For larger sites, "back testing" may be applied. The specific methods will be described in the report.

Where the site is comprised of one positive test, a minimum of four additional subsurface tests will be placed 1 m around the test.

5.8.2. **Collection of Archaeological Material**

All recovered archaeological materials including human remains, faunal remains, other fragile artifacts (e.g., wet site materials), will be handled with sufficient care during excavation, recording, transport, cleaning, analysis and storage to ensure no additional damage or negative impacts occur to the collections during these processes per [Bulletin 26](#).

☒ Standard methods will be followed:

All archaeological materials from an archaeological context (e.g., artifacts, fauna) will be collected. Samples (e.g., radiocarbon, ethnobotanical) may be collected, as appropriate.

Exceptions:

- Large lithic scatters (>100 artifacts) may be sampled in consultation with the Branch; diagnostic artifacts will be collected, as well as artifacts at risk from proposed development or unauthorized collection.
- In midden contexts, all vertebrates and a representative sample of invertebrates will be collected;

- Fire Altered Rock (FAR) will be counted and weighed to the nearest 100 g in the field, but otherwise discarded. The location and distribution of FAR will be described, including by layer/level if appropriate.

Additional comments: It is anticipated that volumes of mixed material may be encountered. Stockpiling may be considered in exceptional circumstances based on the volume or nature of the material, such as ancestral remains. Stockpiling may be used as a temporary measure for project feasibility. The curation of stockpiles of site material is subject to approval of a management plan by the Archaeology Branch, and may require additional permitting.

5.8.3. **Flagging**

Will boundaries be flagged?

☐ No. **Provide rationale:**

☒ Yes. **Describe approach:** Sites will only be demarked in the field when required for impact avoidance during construction. All markings (e.g., snow fence, flagging) are considered temporary and specific to this project. No paint is to be applied to surface features for the purpose of site recording.

Additional comments: Given the variable ground conditions and potential for existing sites to be expanded or merged with new sites, it may be necessary to determine site boundaries after fieldwork is completed, in discussion with the Archaeology Branch.

5.9 CMT Survey

Are CMTs anticipated?

☐ No. **Provide rationale:**

☒ Yes. Following [Bulletin 27](#)⁶, CMT sites will be recorded and samples will be analyzed in accordance with Branch standards⁷. Rationale and details regarding a sampling strategy⁸ will be discussed in reports. CMTs presumed to post-date AD 1846 will be fully recorded and may be provided to the Archaeology Branch for addition for the Informed Contributor's Layer (ICL).

Additional comments: CMTs exposed landslides may be damaged or destroyed, but may be recognizable.

⁶ https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/archaeology/forms-publications/bulletin_27_cmt_guidelines.pdf

⁷ Defining Archaeological Site Boundaries; CMT Handbook

⁸ I.e., Muir and Moon 2000

5.10 Evaluative Units

5.10.1. **Systematic Data Recovery**

Will methods include systematic data recovery?

☐ No

☒ Yes

Describe under what circumstances evaluative units will be excavated: Up to 5 evaluative units may be excavated to assess the nature and extent of the site, where remediation plans do not allow for 100% site avoidance. If more than 5 evaluative units are considered necessary, the Archaeology Branch will be contacted prior to implementation to determine next steps: additional units may be authorized by the Archaeology Branch as part of an emergency response, or, if time allows, the excavation may be subject to discussion with affected Indigenous communities.

☒ **Standard methods will be followed:**

Evaluative units may be excavated in stratigraphic layers or arbitrary levels (5-10 cm). Features will be excavated by stratigraphic layer. Within thicker layers, 5-10 cm arbitrary levels will be excavated as appropriate.

3D provenience for features and artifacts found in situ will be recorded and cultural materials collected. For each unit, an illustrative representation to scale for two adjacent walls and floor plans will be prepared and labelled as appropriate. Photographs will be taken at the completion of each layer. Stratigraphy will be recorded.

Where wet screening is appropriate (e.g., waterlogged sediments) all displaced sediments will be screened through an appropriate sized screen (e.g., 1/4" or smaller). Sediments will be placed in the screen and washed through using a hand-held hose with a variable control nozzle. Contextual information will be maintained to ensure that levels, layers, and features are separated within evaluative units or shovel tests and cultural material recovered in the screens will be bagged by level, layer, and unit/test.

Additional comments: The site setting may need to be stabilized prior to undertaking controlled systematic excavation using measures such as caissons, tents or retaining structures.

5.10.2. **Sampling**

☒ **Standard methods will be followed:**

If intact deposits are encountered, appropriate samples (e.g., radiocarbon, column, bulk samples) will be taken. Description of methods and analysis will be provided in the report.

The provenience of all samples will be recorded. Samples will be labeled appropriately.

When column samples are taken, the volume from each stratigraphic component should be 1 L unless otherwise specified in the report. The samples will be dried and screened through nested geologic screens. The contents of the screens will be sorted and weighed to the nearest 0.01 g.

Samples will be processed by a qualified individual before the report deliverables are due. Samples will be analyzed in the lab using methods appropriate for geological, palaeobotanical, zooarchaeological, or micro debitage analysis, which will be described in the final report.

When samples are not processed, they will be stabilized for long-term storage, and their lack of analysis rationalized in the associated report(s).

Additional comments:

5.11 Ancestral Remains and Burial Features

In the event partial or complete human remains or burial features (e.g., cairns and mounds) are identified in the field, nearby ground disturbance will cease. Ancestral remains and/or burial features will be protected in place. First Nations, the Branch, and other concerned parties will be immediately informed.

Where human remains of suspected forensic interest are encountered, local law enforcement and/or the Coroners Service will be notified.

☒ **Standard methods will be followed:**

Where suspected burial features are identified, the Field Director will record the rationale describing the basis for their identification. In addition to standard archaeological site recording human remains and burial features will be recorded to include, at minimum: horizontal and vertical extent, orientation and position, inventory of skeletal remains and grave inclusions, and integrity.

Where possible, basic osteological data will be recorded (e.g., minimum number of individuals, sex, age, stature, and any evidence of trauma, disease and cultural modification).

Fragmentary or isolated human remains identified during post-field analysis will be kept in secure storage pending final disposition.

In consultation with all concerned parties, efforts will be made to rebury the remains in an appropriate area within the archaeological site boundary, in an area unlikely to be disturbed in the future. If the reburial location is within or near the original archaeological site, it will be mapped and recorded on the site form under that Borden number.

If the proposed reburial location is not in the vicinity of the original archaeological site, consultation will occur with the Branch to discuss what records are required.

In its description of the site, the report will cite the appropriate classification scheme(s) (e.g., Mathews 2006).

5.12 Rock Art

If rock art is identified, it will be fully recorded (e.g., multiple overlapping photographs, sketches), whilst minimising damage, per [Bulletin 26](#)⁹. Rock art will not be subject to any procedure that involves physical contact with the image to make a recording of the image.

Additional comments: The location of rock art and its associated images are often considered sacred and confidential by First Nation communities; caution must be exercised accordingly to ensure the respectful collection and distribution of information. Photographs of features may be withheld from the interim and final report if requested by Indigenous Communities. Photographs are required for site records.

5.13 Significance Evaluation Scheme

Site significance will be evaluated following Section 3.5.2.2 and Appendix D of the [AIA Guidelines](#). Archaeologists are encouraged to consider additional information that First Nations may have that will inform the significance evaluation.

5.14 Assessing Impacts

Assessing impacts to archaeological sites will follow 3.5.2.3 and Appendix F of the [AIA Guidelines](#).

Mitigating Impacts

In order to determine the most appropriate mitigation plan, Field Directors will assign a low or high interpretive value to sites and compare that to the level of expected impact. While avoidance is always the preferred option, Table 7 summarizes the approach to be followed:

⁹ <https://www2.gov.bc.ca/gov/content/industry/natural-resource-use/archaeology/bulletins-policies>

Table 7. Mitigating Impacts to Sites

Proposed Disturbance ¹⁰	Low Interpretive Value ¹¹	High Interpretive Value
Light	Options include: no further work or, if warranted, monitoring or a post-impact assessment of the damaged portion of the site.	Monitoring or, if warranted, a post-impact assessment of the damaged portion of the site.
Heavy	Options include: no further work or, if warranted, monitoring or a post-impact assessment of the damaged portion of the site.	Any combination of systematic data recovery (SDR), additional subsurface inspection and/or monitoring, site protection measures.

Impacts may be mitigated through the use of geotextile fabric and overburden (e.g., clean fill), to temporarily protect archaeological sites from disturbance, under the direction of a Field Director.

A combination of recommendations (e.g., no further work; monitoring) can be proposed for sites with both low and high areas of interpretive value. Sites with high interpretive value, or activities not considered “urgent” may be subject to additional HCA permitting.

Any combination of emergency SDR, construction monitoring, site protection or post-impact assessment may be appropriate for sites (regardless of value) under immediate threat from a development that is required to mitigate further flooding or landslides.

6. METHODS AND TECHNIQUES FOR DATA ANALYSIS

Analysts must be qualified and named in report(s).

Select as appropriate:

- ☒ Ancestral remains will not be subjected to destructive testing nor out-of-Province analysis without approval from the Branch, following engagement with Indigenous Communities.

6.1. Artifact and Faunal Analysis

☒ Standard methods will be followed:

Artifacts will be sent out of the Province (even to other offices within the archaeological

¹⁰ Light impacts include activities like removal of surface materials with minimal land alterations; heavy impacts include road and bridge construction, and land clearing activities.

¹¹ Interpretive value will consider artifact density, presence of exotic materials, presence of faunal materials, formed tools, diagnostic artifacts, and archaeological features.

firm) only with the permission of the Branch; the archaeologist will also contact Indigenous Communities with an interest in the site. The request to send artifacts out of the Province will include an artifact catalogue, photographs of tools and/or diagnostics, the reason for export, the destination and the length of time they will be out of Province.

All artifact assemblages will be analyzed with the intent of defining site function, activity areas and cultural chronology if possible (see Clark 2010, Mitchell 1971, and others).

Lithic analysis will use an established system (e.g., Andrefsky 1998; Magne 1983). Interpretation of the assemblage will provide insight into technologies represented at the site (e.g., core reduction, pressure flaking, heat treatment, etc.).

Tools will be measured and illustrated or photographed, with technological attributes noted.

Raw material sourcing analysis will be completed, where appropriate.

Faunal remains will be analyzed to the most specific taxa possible by a trained individual with access to an appropriate comparative collection or reference materials. Faunal elements will be identified by taxa, element, and side if possible, and any relevant cultural modifications or natural taphonomic processes noted, **with the aim of answering questions on site formation processes, subsistence strategies, environment, season of occupation, etc.**

Additional comments:

6.2. Sample Analysis

☒ **Standard methods will be followed:**

Samples may be sent out of the province for analysis.

Where wet sites are encountered, monolith and/or specialist samples may be taken and processed.

Collected CMT samples (*i.e.*, stem rounds) will be analyzed. Per [Bulletin 27](#), magnification will be used to improve the confidence of the results of tree-ring counting. Comparative collections will be used as appropriate for dendrochronology analysis.

The lab results from radiocarbon analysis will be appended to the report and site form(s). The report will present calibrated and conventional/standard dates.

Unprocessed samples will be stabilized for long-term storage.

Additional comments: none

7. DISPOSITION OF CULTURAL MATERIALS

Collected materials from archaeological sites (e.g., wet site materials), will be handled with sufficient care during excavation, recording, transport, cleaning, analysis and storage to ensure no additional damage or negative impacts occur to the collections during these processes per [Bulletin 26: Treatment of Archaeological Materials](#).

The permit report and site form(s) will identify the repository. Additional repositories may be added to the permit **upon completion of the study**, when it is known where materials originated, and if special curation measures are required. Additional repositories will require an amendment to the permit, subject to referral with affected Indigenous Communities.

Table 8. Permit Repository

Contact Name: Dr Genevieve Hill	Repository: Royal British Columbia Museum
Address: 675 Belleville Street, Victoria, BC V8W 9W2	
Phone: 250-893-8019	Fax or Email: GHill@royalbcmuseum.bc.ca

All artifacts recovered under permit must be labeled with a provincial catalogue number; the Province must be advised of the final catalogue number under this permit when cataloguing is complete.

Sediments believed to contain cultural materials will remain within the site boundary and a location specified in the site form and report. Samples may be collected for off-site analysis.

CMT samples will be analyzed and retained in-office for one year after the expiration of the permit and discarded.

Once the project is complete, all cultural materials and supporting documentation must be transferred to the designated repository prior to the permit expiry date, per their standards for packing and transport. Confirmation of acceptance of artifacts, samples, and record submission by the repository must be provided to the Branch prior to the expiration of the reporting period.

Materials to accompany the archaeological collection include:

- submission letter with box inventory
- artifacts and digital catalogue
- field notes (original and digital copies, including maps and sketches)
- photographs and photo log (copies of prints, if any, and digital), and
- interim report and specialized analysis appended (hardcopy and digital copy).

Additional comments: In the case of ancestral remains, collection and handling will be under the direction of and in consultation with Indigenous Communities. Human remains and suspected human remains are to be respectfully left in situ until recovery and disposition plans are made and confirmed by the affected parties. In emergency situations, in consultation with the Archaeology Branch, human remains, including ancestral remains, may be recovered or location stabilized to prevent ongoing direct impacts. Recovered ancestral remains will be held respectfully, in the territory, until direction can be received.

8. REPORTING

Reports, maps, and site records will comply with Branch standards. Electronic versions of reports will be provided to Indigenous Communities with an interest in the study area unless other arrangements are in place. Reports will include a distribution list to identify which Indigenous Communities were provided a copy of the report.

The Reference section will include relevant HCA permit number of previous studies. The titles of reports generated under this assessment will clearly identify the HCA permit number.

8.1. Site Records

Site forms and all related documentation (e.g., maps, artifact catalogues) will comply with Branch requirements. Site forms will be submitted within 6 weeks of the completion of site investigations.

Additional comments: Archaeologists will provide the Archaeology Branch with a British Columbia Archaeological Site Inventory Form for all sites revisited or investigated under authority of this permit. To fulfill this condition, the site form, mapping, and related documentation must comply with Archaeology Branch directives for site record submission.

Archaeologists authorized to conduct assessments under this permit who fail to provide satisfactory site forms will be considered to have outstanding obligations, thereby affecting their ability to hold additional permits issued by the Archaeology Branch

For the purpose of this permit, all site forms submitted to the Archaeology Branch will be via email to archsiteform@gov.bc.ca, citing permit **2021-0453** in the subject line.

8.2. Reports

As appropriate, management summaries and recommendations will clearly articulate responsibilities under the *Heritage Conservation Act*.

Delegated archaeologists will submit interim reports to describe their assessments and the results under this permit.

Interim reports shall contain detailed descriptions of every part of each investigation area, in terms of the criteria used to evaluate archaeological potential. This includes all areas subjected to field inspection, as well as those areas reviewed solely through map and document review if the permit would have authorized field inspection of those developments.

Interim reports will provide a tabular description of shovel test areas (STA) in terms of size, stratigraphy, setting, and number of tests placed.

Interim reports will provide a tabular description of each area of archaeological potential (AOP) in terms of size, setting and recommended number of shovel tests.

Spatial data will be submitted to the Branch for STAs and AOPs.

All specialized analyses will be appended to the report.

Low potential areas, including areas assessed by desktop, will be described to support model development.

Unless otherwise discussed with Indigenous Communities or the Branch, all photographs of diagnostic artifacts, formed tools, and rock art will be included in the permit report.

Other details:

All deliverables must be submitted to the Archaeology Branch by email at archpermitapp@gov.bc.ca, citing permit **2021-0453** in the subject.

Proponents may require that non-permitted assessments are summarized and provided to the Archaeology Branch for inclusion in this report.

Archaeologists authorized to conduct assessments under this permit who fail to provide satisfactory interim reports will be considered to have outstanding obligations, thereby affecting their ability to hold additional permits issued by the Archaeology Branch.

Project tracking reports are required under this permit. See Appendix for the format of the report, which must be submitted in excel format.

Deliverables include:

- Project tracking report of field assessment and results
- Notice(s) of Intent
- Site records, including site forms, artifact catalogues, and other documentation
- PDF of finalized interim report(s). Appendices will include:
 - Specialized analyses (e.g., radiocarbon dating)
 - Summary of notices of intent (as applicable).
- Shapefiles (as polygons):
 - study areas
 - shovel test locations
 - areas of potential not subjected to subsurface testing.

8.3. Schedule of deliverables

Is the report due within two years of the anticipated permit issuance?

☐ **Yes** (delete rest of text below and proceed to the next section).

☒ **No** (refer to Table 9409)

As the inability to access information from long-term projects impacts the efficiency and effectiveness of recourse management decisions for the project and archaeological activities in the general area of these studies, the following submissions will be due throughout the course of the permit:

Table 9. Schedule of Deliverables

Deliverable	Timelines (Choose as appropriate)	
	Standard	Other (Specify)
Project Tracking Report	☒ Monthly or Project completion	
Non-permitted PFR reports, including spatial data of survey coverage	☒ Project completion	
Interim reports	☒ For all developments assessed under the permit.	
Shapefiles	☐ Annually, on the anniversary of permit issuance	☒ Annually, on March 31
Summary reports		☒ Annually, on March 31

Site forms will be submitted within six weeks of the completion of site investigations.

A summary report is a status update of all projects by NOI, Interim Report and Site Inventory Records, and a forecast of outstanding work to be completed in the next year if possible, in a tabular format

Additional comments: The interim and summary report should utilize a tabular format.

9. APPLICANT

The applicant is an employee of the Province of British Columbia, Ministry of FLNRORD with the authority to sign on behalf of FLNRORD. This is his first permit.

Additional comments: Delegated Archaeologists will be added to the permit subject to review and authorization by the Archaeology Branch.

10. NOTICES

NOTICE REGARDING COPYRIGHT

At the time of report production, the owner(s) of the report copyright will be asked to grant a non-exclusive license to the Province of British Columbia for the purpose of copying and distributable ing the report. The original copyright owner will retain copyright ownership. The granting of this license will facilitate access to the archaeological data contained within the report and will therefore contribute to the protection of heritage resources throughout the Province. Copyright owners who refuse to grant a license to the Province, and anyone carrying out research on behalf of those copyright owners, will not be granted access to the Archaeology Branch's online library and will not be permitted to photocopy reports within the Branch office.

The following will be added to the first page of reports:

The copyright owner may be the corporate employer of the report author, the client for whom the report was written, the actual author, or the Province of British Columbia if written while employed by the Province. The Grant of License reads:

I _____ confirm that I am the copyright owner (or a copyright owner) of this permit report, and for good and valuable consideration I irrevocably grant a non-exclusive license to the Province of British Columbia, for a term equal to the life of the copyright commencing on the date of execution below, to make copies of the reports, including all appendices and photos, and to provide such copies to anyone, at the discretion of the Province, either at no charge or at the cost incurred by the Province in making and distributing the copies. All parties, except the party for whom the report was prepared, acknowledge that any use or interpretation of this report is at the sole risk and liability of the subsequent user(s).

Executed this ____ day of _____, 20XX, by

Signature of Copyright Owner

Affiliation

2020-0453
Permit Number

NOTICE REGARDING OTHER PERMITS

No permits or approvals, other than a *Heritage Conservation Act* permit, are required to carry out the inspections or investigations described in the permit application. However, licensees and property owners or developers may also require other approvals such as forestry cutting permits and municipal development permits.

11. REFERENCES

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Archaeology Branch

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GENERAL TERMS AND CONDITIONS OF PERMIT

1. Permits shall be valid for the term stipulated on the front of the permit unless otherwise suspended or cancelled. Extensions to the term of the permit, or other amendments, will be considered upon submission of an application to the Archaeology Branch at least 60 days prior to the expiry date of the permit.
2. The permit-holder or delegated archaeologist(s) shall provide the Archaeology Branch with one (1) bound copy and one (1) electronic copy in PDF format of a written report, in accordance with the standards required by the Minister, outlining the work carried out under the terms of the permit.
3. The delegated archaeologist(s) shall provide the Archaeology Branch with Project Tracking reports at the completion of each project.
4. The title page of all reports must indicate the name(s) of the copyright owner(s) and, where agreed to, a Grant of License statement completed and signed by the copyright owner(s).
5. A person appointed by the Archaeology Branch may at any time inspect any aspect of a project conducted under the terms of this permit. To further their inspection, the appointee may request field data, or conduct excavations within the study area. Unless other arrangements are made, data must be made available to the Archaeology Branch within five (5) days of their request. Notwithstanding the expiration or earlier termination of the term of the permit this provision will remain and continue in full force and effect.
6. Upon completion of any inspection or investigation involving excavations, the permit holder or delegated archaeologist(s) shall make reasonable efforts to ensure all sites are restored as nearly as possible to their former condition.
7. The permit holder or delegated archaeologist(s) shall arrange for a secure repository to curate any materials recovered under authority of the permit.
8. Heritage objects and associated materials recovered under authority of the permit may not be sold or exchanged for financial gain. Any other transfer of heritage objects, materials and records, or changes to the conditions identified under the "Disposition of materials collected..." section of the permit may only be carried out with prior consent of the Minister.
9. The permit holder or delegated archaeologist(s) shall conform to all requirements that may be imposed by the institution or organization named in the "Disposition of materials collected..." section of the permit.
10. Notwithstanding expiration or earlier termination of the term of the permit, provisions with respect to the "Disposition of materials collected ..." section shall remain and continue in full force and effect.
11. The permit holder or delegated archaeologist(s) shall utilize any site recording forms, formats or systems required by the minister. To fulfill this condition, the site form, mapping, and related documentation must comply with Archaeology Branch directives for site record submission. Failure to submit satisfactory site records will be considered an outstanding obligation, thereby affecting the archaeologists' ability to hold additional permits.
12. A Heritage Investigation permit issued under the HCA does not authorize entry onto land or into a building without the permission of the owner or occupier.
13. The permit holder or delegated archaeologist(s) shall submit spatial information (as a shapefile in accordance with the standards required by the Minister) of all study areas that were the subject of in-field inspections.
14. Where known, First Nation file numbers will be referenced in permit-related correspondence.
15. Unless other arrangements are made, First Nations will be provided electronic copies of reports for work conducted in their area of interest under the permit.

16. In the event ancestral remains are encountered, all work must cease in the vicinity of the remains and the Archaeology Branch must be contacted for direction, unless otherwise provided for in the permit application
17. Archaeologists qualified as a Permit Holders in the appropriate cultural area will be retained by the applicant, and act as a co-permittee, known as the delegated archaeologists.
18. The delegated archaeologist is responsible for all of the terms and conditions of the permit (e.g., site records, management recommendations, and interim reporting) for fieldwork conducted under the permit. The delegated archaeologist must be an eligible permit holder, having no outstanding obligations with the Archaeology Branch and sufficiently experienced to hold permits without conditions (i.e., not a novice permit holder).
19. The delegated archaeologist may utilize Field Directors per Bulletin 17.
20. All impact management recommendations must be reviewed and signed by the Delegated Archaeologist or similarly qualified Eligible Permit Holder, though emergent situations may be approved by Archaeology Branch staff.
21. Any ground-altering activities within known archaeological sites must be conducted under the direction of the archaeologist.
22. The permit holder shall conduct the inspection as described in the permit application, unless otherwise specified in the permit.
23. Any other conditions that may be specified in the permit.

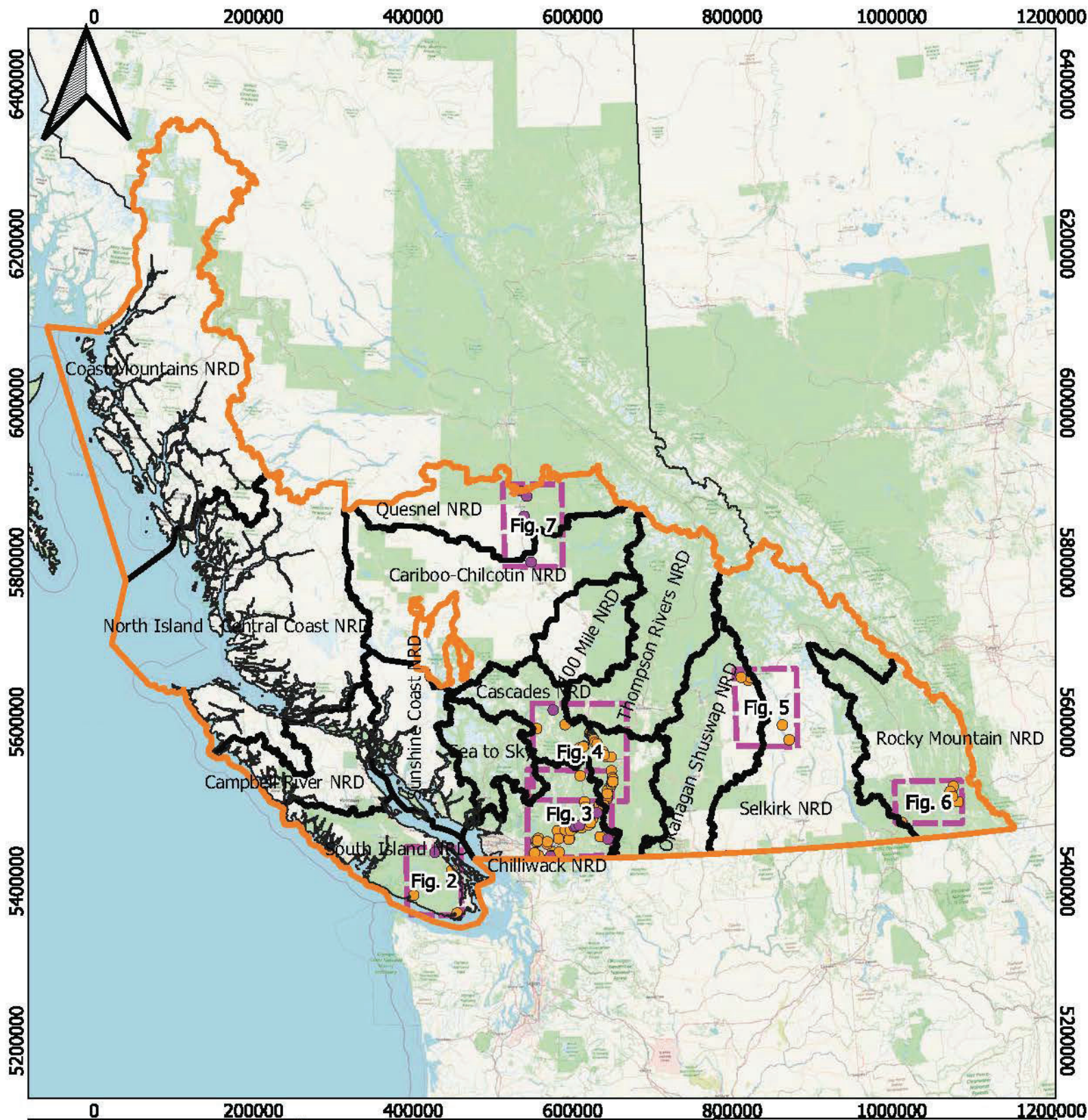


Fig. 1 - Permit Area Overview

0 100 200 km

HCA Application: 21A0694

Scale: 1: 6,500,000

Datum: UTM 10 N

Date: 2021-12-03

Author:

Corey Cookson (Arch Branch)

Legend

● Flood Events (Recorded as of 2021-11-26)

● Landslides (Recorded as of 2021-11-2021)

NRDs

Permit Area

Midrange maps

Base Data: Open Street Map
Flood Data: Ministry of Transportation and Infrastructure
Landslides: GeoBc



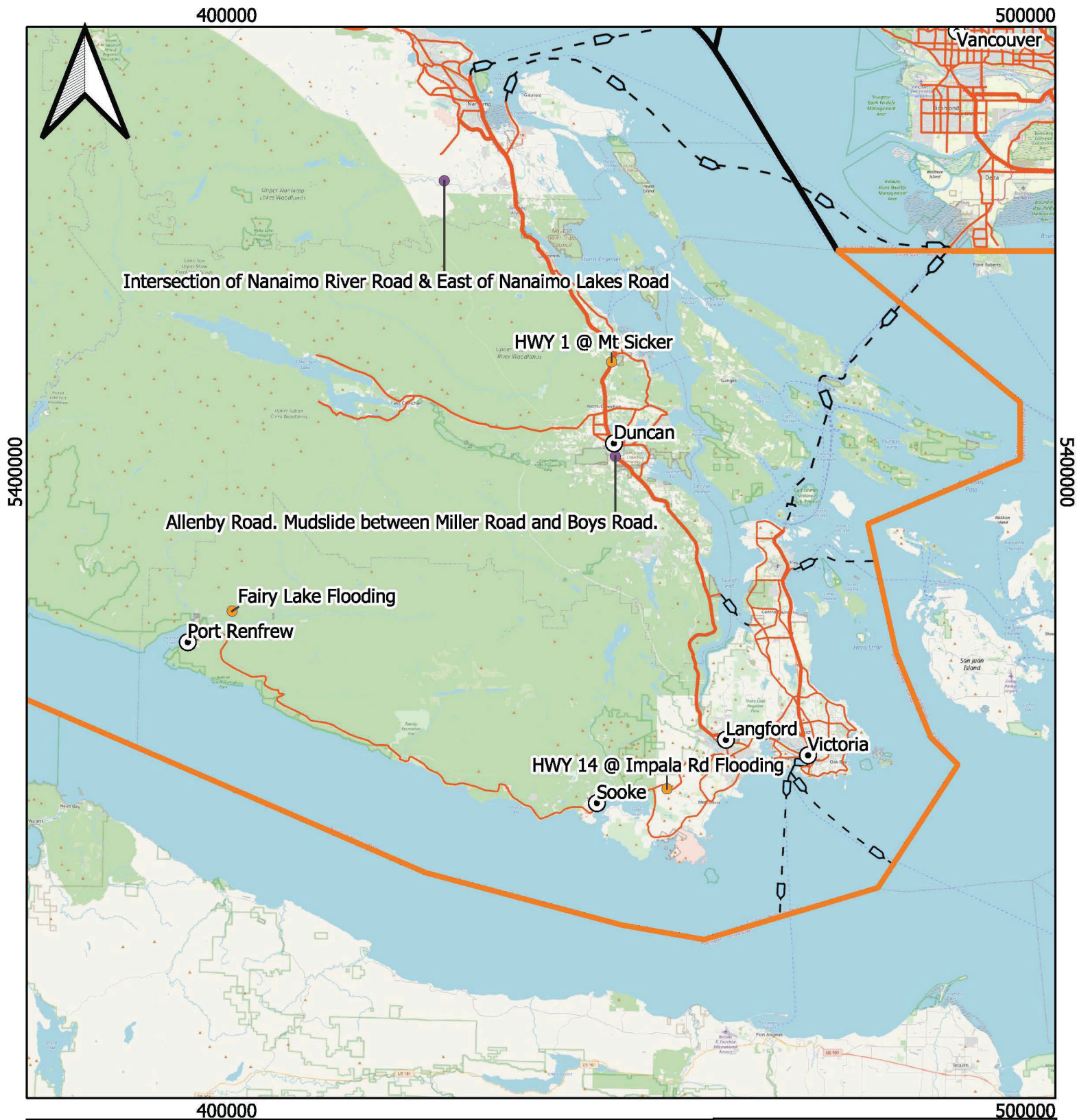


Fig. 2 Midrange - South Island

0 10 20 km

HCA Application: 21A0694

Scale: 1: 650,000

Datum: UTM 10 N

Date: 2021-11-26

Author:

Corey Cookson (Arch Branch)

Legend

Permit Area

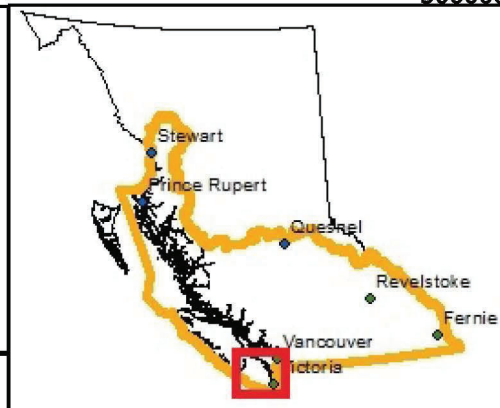
● Cities

Highway

● Landslides (Recorded as of 2021-11-26)

● Flood Events (Recorded as of 2021-11-26)

Base Data: Open Street Map
Flood Events: Ministry of Transportation and Infrastructure
Landslides: GeoBC



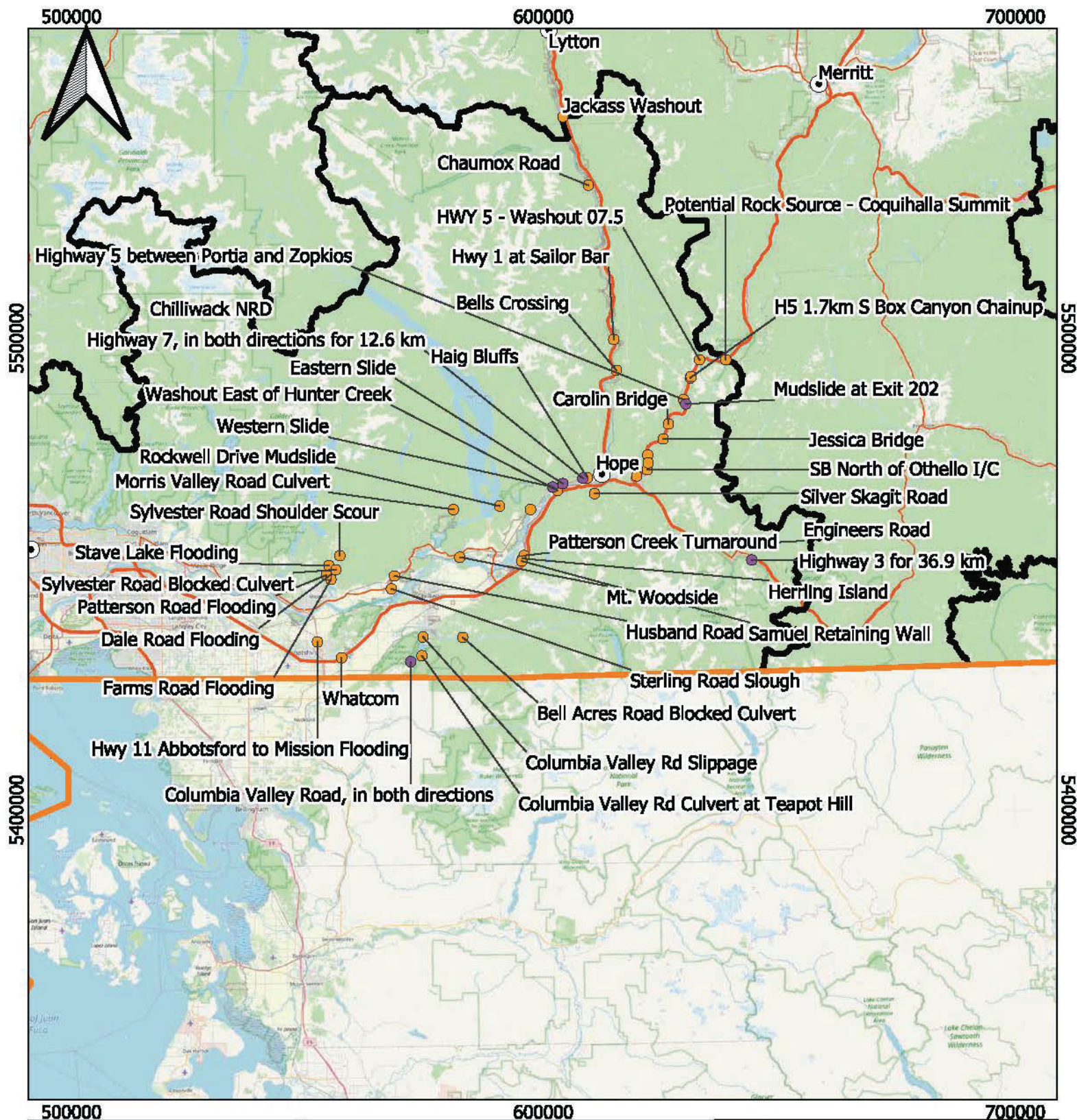


Fig. 3 Midrange - Chilliwack

0 10 20 km

HCA Application: 21A0694

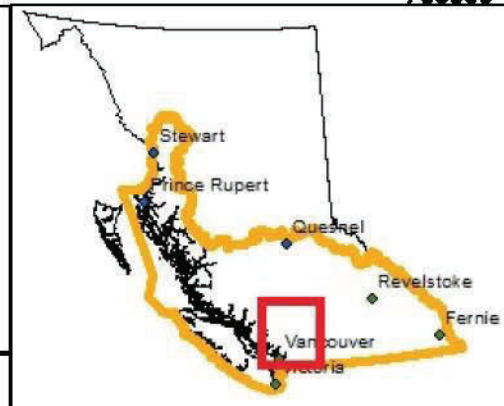
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Datum: UTM 10 N

Date: 2021-11-26

Author:

Corey Cookson (Arch Branch)



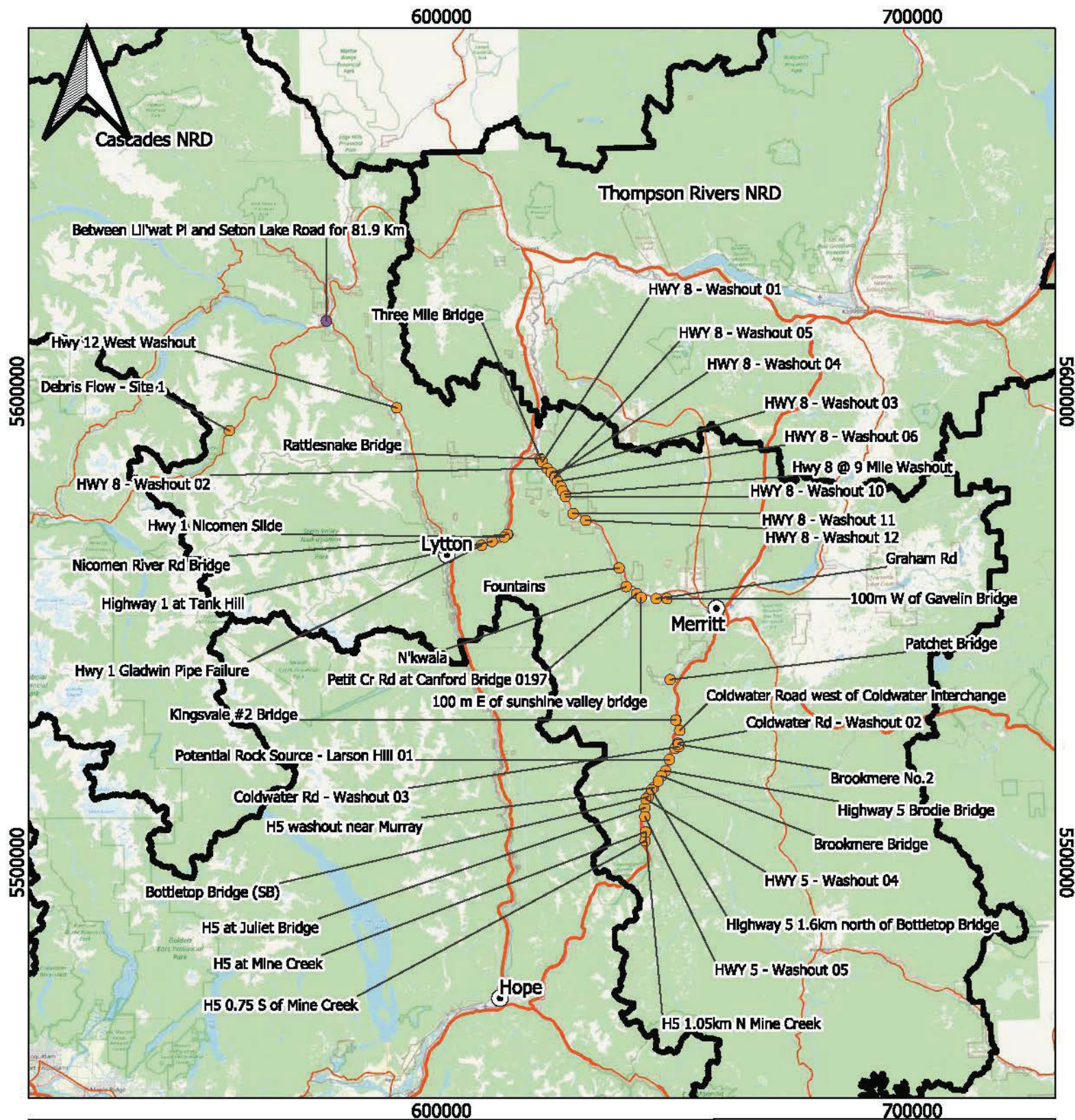


Fig. 4 Midrange - Cascades

0 10 20 km

HCA Application: 21A0694

Scale: 1:1,100,000

Datum: UTM 10 N

Date: 2021-11-26

Author:

Corey Cookson (Arch Branch)

Legend

Permit Area

Cities

Highway

Landslides (Recorded as of 2021-11-26)

Flood Events (Recorded as of 2021-11-26)

Base Data: Open Street Map
Flood Events: Ministry of Transportation and Infrastructure
Landslides: GeoBC



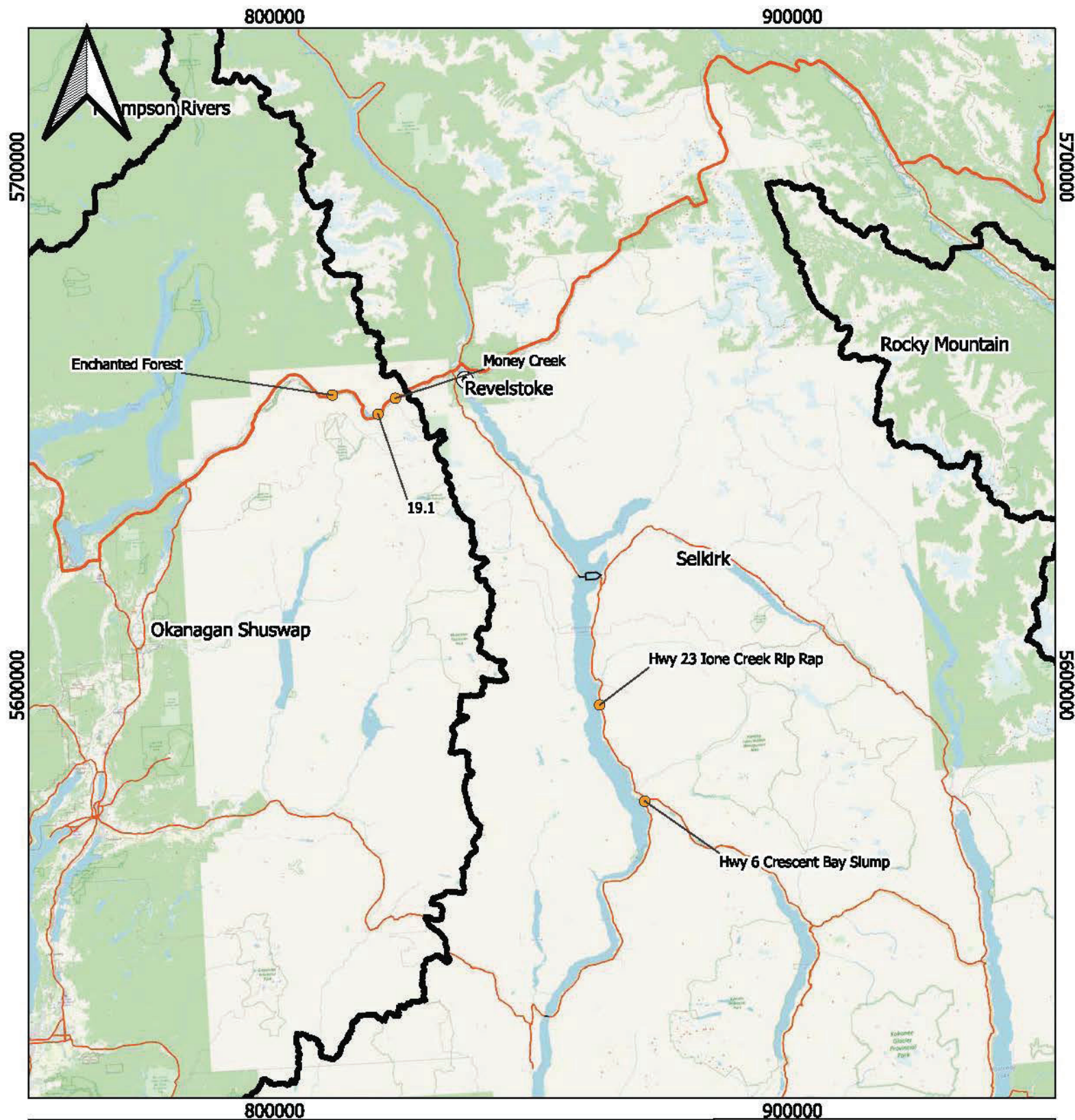


Fig. 5 Midrange - Okanagan Shuswap & Selkirk

0 10 20 km

HCA Application: 21A0694

Scale: 1: 1,000,000

Datum: UTM 10 N

Date: 2021-11-24

Author:

Corey Cookson (Arch Branch)

Legend

Permit Area

Cities

Highway

● Flood Events (As of Nov 23, 2021)

Natural Resource Districts

Base Data: Open Street Map
Flood Events: Ministry of Transportation and Infrastructure



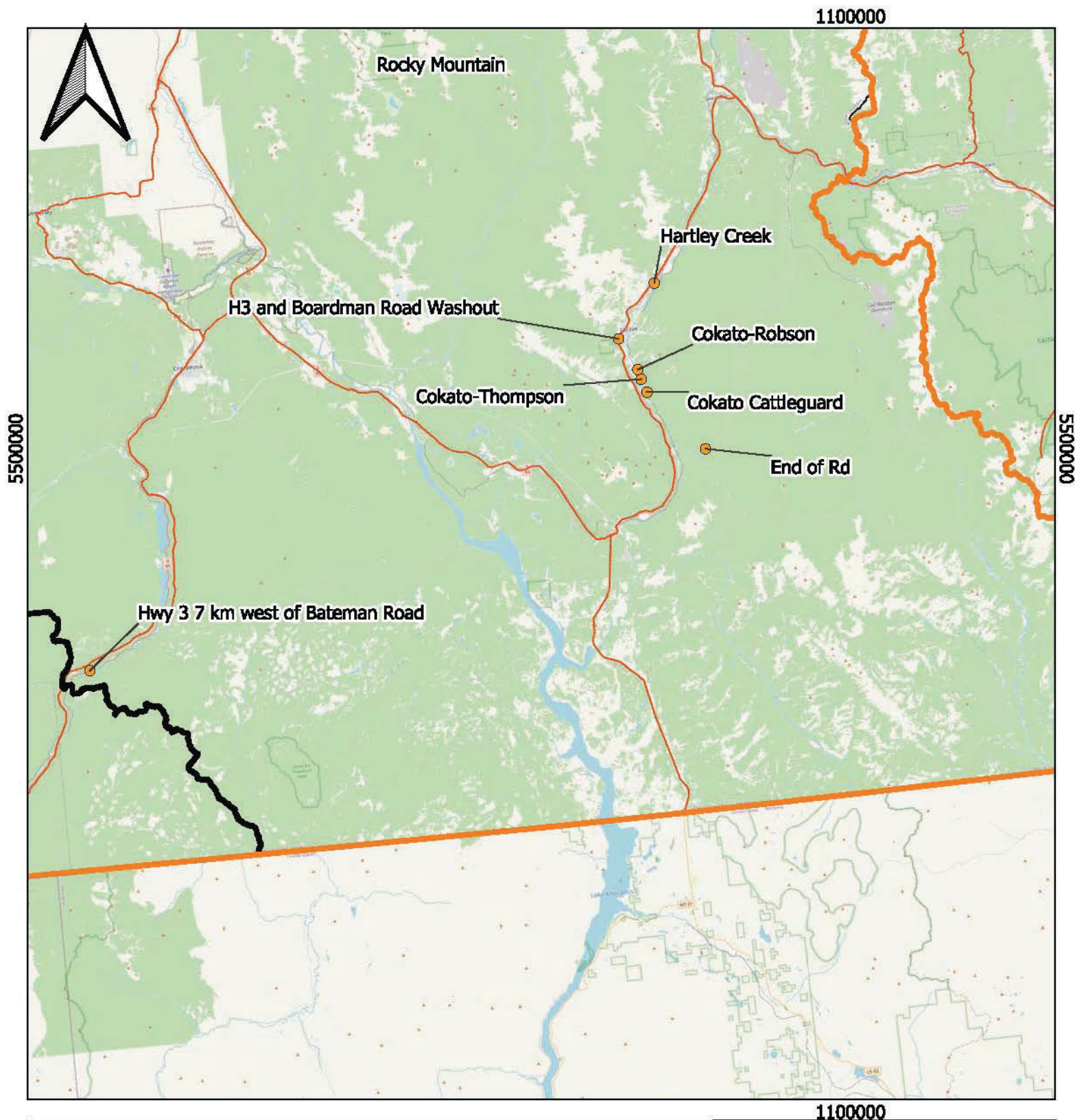


Fig. 6 Midrange - Rocky Mountain

0 10 20 km

HCA Application: 21A0694

Scale: 1: 600,000

Datum: UTM 10 N

Date: 2021-11-24

Author:

Corey Cookson (Arch Branch)

Legend

Permit Area

● Flood Events (As of Nov 24, 2021)

● Cities

NRDs

Highway

Base Data: Open Street Map

Flood Events: Ministry of Transportation and Infrastructure



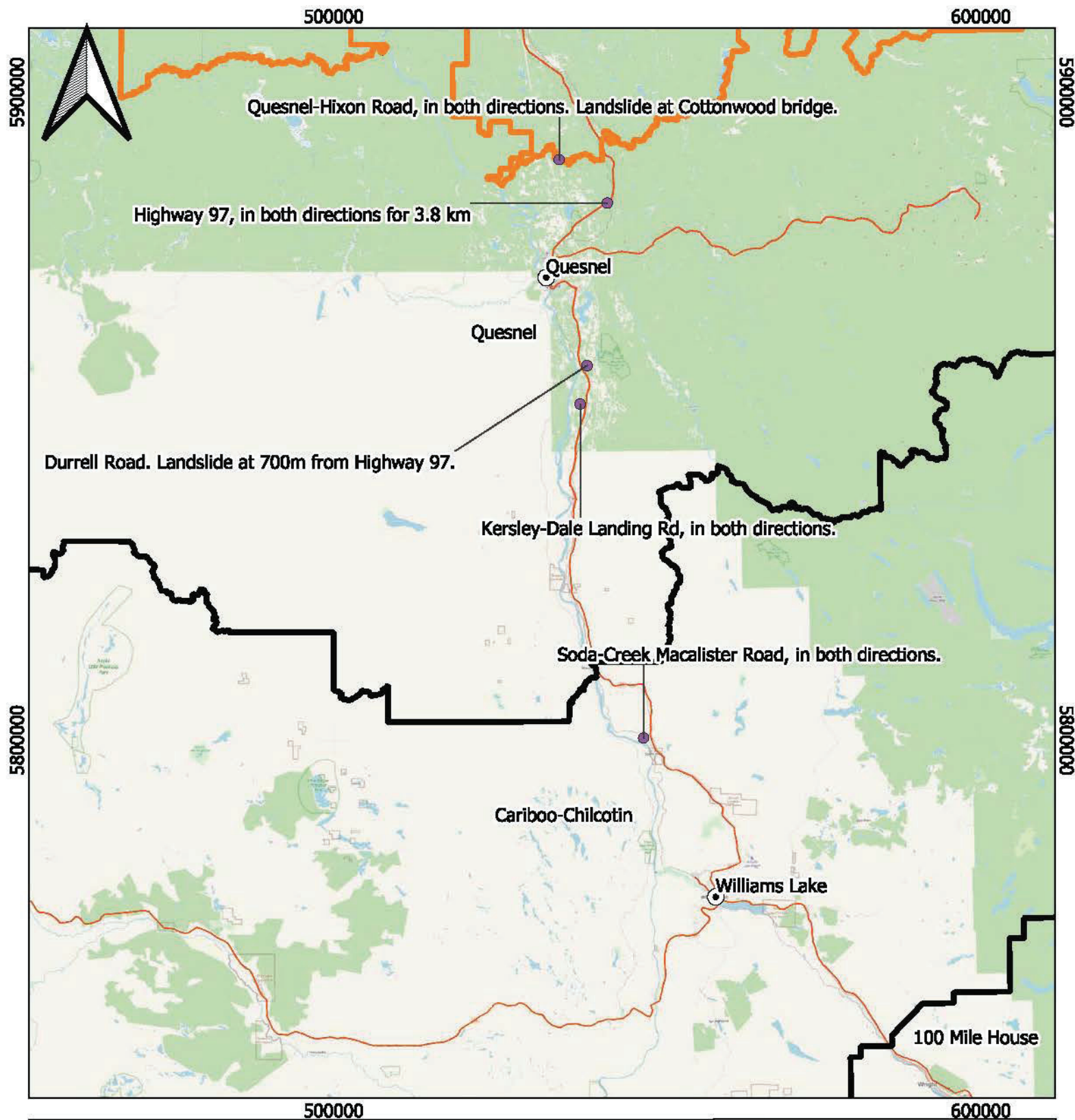


Fig. 7 Midrange - Quesnel & Cariboo-Chilcotin

0 10 20 km



HCA Application: 21A0694

Scale: 1: 800,000

Datum: UTM 10 N

Date: 2021-11-26

Author:

Corey Cookson (Arch Branch)

Legend

Permit Area

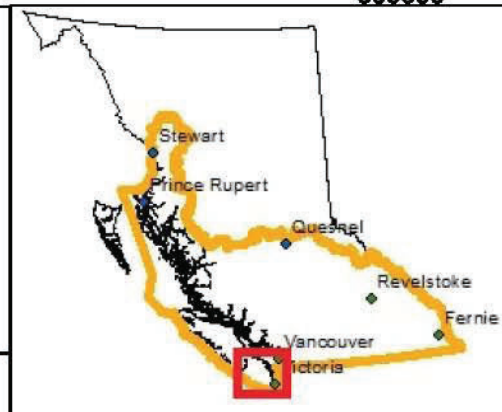
Cities

Highway

Landslides (Recorded as of 2021-11-26)

Flood Events (Recorded as of 2021-11-26)

Base Data: Open Street Map
Flood Events: Ministry of Transportation and Infrastructure
Landslides: GeoBC



Appendix 1: Landslides and Floods impacting MoTI infrastructure

Data in the following tables is current to November 26, 2021

Table 10 MoTI Infrastructure impacted by Landslides and Flood Events

Area	Region	District	Event	Location
North	Skeena	Coast Mountains	N/A	
Coast	West Coast	North Island – Central Coast	N/A	
		Campbell River	N/A	
		South Island	Flood	Fairy Lake Flooding
			Flood	Hwy 1 @ Mt Sicker
			Landslide	Allenby Road. Mudslide between Miller Road and Boys Road.
			Landslide	Intersection of Nanaimo River Road & East of Nanaimo Lakes Road
			Flood	Hwy 14 @ Impala Rd Flooding
	South Coast	Sunshine Coast	N/A	
		Sea to Sky	N/A	
		Chilliwack	Flood	Bell Acres Road Blocked Culvert
			Flood	Bells Crossing
			Flood	Carolyn Bridge
			Flood	Chaumox Road
			Flood	Columbia Valley Rd Culvert at Teapot Hill
			Flood	Columbia Valley Rd Slippage
			Landslide	Columbia Valley Road, in both directions
			Flood	Dale Road Flooding
			Landslide	Eastern Slide
			Flood	Engineers Road
			Flood	Farms Road Flooding
			Flood	Hwy 5 1.3km S Box Canyon Chainup
			Flood	Hwy 5 1.7km S Box Canyon Chainup
			Flood	Haig Bluffs
			Flood	Herrling Island
			Landslide	Highway 3, in both directions for 36.9 km
			Flood	Highway 5 between Portia and Zopkios
			Flood	Highway 5 - Washout 07.5
			Flood	Highway 5 - Washout 11
			Flood	Highway 5 - Debris 04
			Flood	Highway 5 - Debris 05
			Landslide	Highway 7, in both directions for 12.6 km
			Flood	Husband Road
			Flood	Hwy 1 at Sailor Bar
			Flood	Hwy 11 Abbotsford to Mission Flooding
			Flood	Jessica Bridge
			Flood	Morris Valley Road Culvert
			Flood	Mt. Woodside
			Landslide	Mudslide at Exit 202
			Flood	Patterson Creek Turnaround
			Flood	Patterson Road Flooding
			Flood	Potential Rock Source - Coquihalla Summit

Area	Region	District	Event	Location
Coast	South Coast	Chilliwack	Flood	Rockwell Drive Mudslide
			Flood	Samuel Retaining Wall
			Flood	SB North of Othello I/C
			Flood	Seabird Bluffs
			Flood	Silver Skagit Road
			Flood	Stave Lake Flooding
			Flood	Sterling Road Slough
			Flood	Sylvester Road Blocked Culvert
			Flood	Sylvester Road Shoulder Scour
			Flood	Washout East of Hunter Creek
			Landslide	Western Slide
			Flood	Whatcom
South	Thompson-Okanagan	Cascades	Flood	100 m E of sunshine valley bridge
			Flood	100 m W Gavelin Bridge
			Flood	Bottletop Bridge (SB)
			Flood	Brookmere Bridge
			Flood	Brookmere No.2
			Flood	Coldwater Road west of Coldwater interchange
			Flood	Coldwater Rd - Washout 02
			Flood	Coldwater Rd - Washout 03
			Flood	Debris Flow - Site 1
			Landslide	Eastern extent of mudslide between Lil'wat PI and Seton Lake Road for 81.9 Km
			Flood	Fountains
			Flood	Graham Rd
			Flood	Hwy 1 at Nicomen Bridge
			Flood	Hwy 5 0.75 S of Mine Creek
			Flood	Hwy 5 1.05km N Mine Creek
			Flood	Hwy 5 at Juliet Bridge
			Flood	Hwy 5 at Mine Creek
			Flood	Hwy 5 washout near Murray
			Flood	HWY 5 - Washout 04
			Flood	HWY 5 - Washout 05
			Flood	HWY 8 - Washout 01
			Flood	HWY 8 - Washout 02
			Flood	HWY 8 - Washout 03
			Flood	HWY 8 - Washout 04
			Flood	HWY 8 - Washout 05
			Flood	HWY 8 - Washout 06
			Flood	HWY 8 - Washout 07
			Flood	HWY 8 - Washout 08
			Flood	HWY 8 - Washout 10
			Flood	HWY 8 - Washout 11
			Flood	HWY 8 - Washout 12
			Flood	Highway 1 at Tank Hill
			Flood	Highway 12 washout 2 Mud Slide
			Flood	Highway 5 1.6km north of Bottletop Bridge
			Flood	Highway 5 Brodie Bridge
			Flood	Hwy 1 Gladwin Pipe Failure
			Flood	Hwy 1 Nicomen Slide

Area	Region	District	Event	Location
South	Thompson-Okanagan	Cascades	Flood	Hwy 12 West Washout
			Flood	Hwy 8 @ 9 Mile Washout
			Flood	Jackass Washout
			Flood	Kingsvale #2 Bridge
			Flood	Murray Bridge
			Flood	N'kwala
			Flood	Nicomen River Rd Bridge
			Flood	Patchet Bridge
			Flood	Petit Cr Rd at Canford Bridge 0197
			Flood	Potential Rock Source - Larson Hill 01
			Flood	Potential Rock Source - Larson Hill 02
			Flood	Rattlesnake Bridge
			Flood	Three Mile Bridge
		Okanagan-Shuswap	Flood	19.1
			Flood	Enchanted Forest
			Flood	Money Creek
		Thompson Rivers	N/A	
	Kootenay-Boundary	Selkirk	Flood	Hwy 23 Lone Creek Rip Rap
			Flood	Hwy 6 Crescent Bay Slump
		Rocky Mountain	Flood	Cokato Cattleguard
			Flood	Cokato-Robson
			Flood	Cokato-Thompson
			Flood	End of Rd
			Flood	Hwy 3 and Boardman Road Washout
			Flood	Hartley Creek
			Flood	Hwy 3 7 km west of Bateman Road
	Cariboo	100 Mile House	N/A	
		Cariboo-Chilcotin		
			Landslide	Soda-Creek Macalister Road, in both directions.
		Quesnel	Landslide	Kersley-Dale Landing Rd, in both directions.
			Landslide	Durrell Road. Landslide at 700m from Highway 97.
			Landslide	Quesnel-Hixon Road, in both directions.
			Landslide	Landslide at Cottonwood bridge.
			Landslide	Highway 97, in both directions for 3.8 km

Appendix 2: Archaeological Sites and MoTI infrastructure

Data in the following tables is current to November 26, 2021

Table 11. Summary of recorded archaeological sites within 1 km of impacted MoTI infrastructure by Natural Resource District

Area	Region	District	Table
North	Skeena	Coast Mountains	N/A
Coast	West Coast	North Island-Central Coast	N/A
		Campbell River	N/A
		South Island	Table
	South Coast	Sunshine Coast	N/A
		Sea to Sky	N/A
		Chilliwack	Table
South	Thompson-Okanagan	Cascades	Table
		Okanagan-Shuswap	N/A
		Thompson Rivers	N/A
	Kootenay-Boundary	Selkirk	Table
		Rocky Mountain	Table
	Cariboo	100 Mile House	N/A
		Cariboo-Chilcotin	N/A
		Quesnel	N/A

Table 12. Recorded sites within 1 km - South Island Natural Resource District

Impact	Location	Site	Site Type	Distance/Direction
Flood	Highway 1 @ Mt Sticker	DfRw-7	Subsurface, Shell midden; Surface lithics	460 m N
Flood	Highway 14 Impala Road	DcRv-45	Cultural Material, Surface	200 m S
Flood		DcRv-83	Cultural Material, Surface, Lithics	460 m E/SE

Table 13. Recorded sites within 1 km - Chilliwack Natural Resource District

Impact	Location	Site	Site Type	Distance/Direction
Flood	Bells Crossing	DjRi-12	Rock art, pictograph; Habitation, Rock Shelter; Subsurface and Surface Lithics	380 m SE
Flood		DjRi-16	Habitation, Rock Shelter	110 m SE
Flood		DjRi-2	Human Remains; Subsurface Lithics; Cultural Depression, Housepit	150 m N
Flood		DjRi-3	Human Remains; Subsurface Lithics	560 m N
Flood		DjRi-32	Cultural Material, Surface	600 m S
Flood		DjRi-53	Cultural Depression, Cache Pit; Cultural Material, Surface	380 m SE
Flood		DjRi-57	Cultural Material, Surface, Fire broken Rock; Habitation, Rock Shelter	380 m E
Flood		DjRi-63	Subsurface Lithics; Habitation, Rock Shelter	620 m SE
Flood		DjRi-65	Subsurface Lithics; Habitation, Rock Shelter	380 m SE
Flood		DjRi-79	Post Contact Human Remains	250 m NE
Flood		DjRi-87	Cultural Material, Surface, Lithics	500 m S/SE
Flood	Carolyn Bridge	DiRh-9	Subsurface Lithics	200 m SE
Flood		DiRh-6	Subsurface Lithics	700 m NE
Flood		DiRh-3	Culturally Modified Tree	950 m NW
Flood	Highway 1 @ Sailor Bar	DjRi-25	Surface Lithics	440 m NE
Flood		DjRi-28	Surface Lithics	330 m NE
Flood		DjRi-66	Cultural Depressions, Cache Pit and Unassigned	580 m N/NE
Flood		DjRi-81	Cultural Depression, Cache Pit; Cultural Material, Surface	380 m NE
Flood		DjRi-83	Surface Lithics	700 m N/NE
Flood		DjRi-84	Surface Lithics	400 m N/NE
Flood	Jessica Bridge	DiRh-4	Cultural Depression, Undefined	980 m SW
Flood	Morris Valley Road Culvert	DhRI-53	Culturally Modified Tree	530 m N

Impact	Location	Site	Site Type	Distance/Direction
Flood	Washout East of Hunter Creek	DiRj-18	Surface Lithics	290 m N
Flood		DiRj-28	Cultural Depression, Cache Pit	480 m NE
Flood		DiRj-34	Subsurface Lithics and Faunal; Habitation, Rock Shelter	520 m E/NE
Flood		DiRj-5	Surface Lithics	260 m NE
Flood	Chaumoux Road	DIRi-11	Cultural Depression, Cache Pit	625 m NE
Flood		DIRi-14	Cultural Depression, undefined; Historic Building	625 m NE
Flood		DIRi-15	Cultural Depression, Cache Pit	625 m NE
Flood		DIRi-32	Historic Building	Direct overlap
Flood		DIRi-33	Cultural Depression, Cache Pit	600 m N
Flood	Haig Bluffs	DiRi-18	Post Contact Human Remains	730 m E
Flood		DiRi-38	Culturally Modified Tree	360 m SE
Flood	Highway 11 Abbotsford	DgRn-30	Surface Lithics	930 m E/SE
Flood	Silver Skagit Road	DiRi-105	Culturally Modified Tree	780 m SE
Flood		DiRi-123	Subsurface Lithics; Habitation, Rock Shelter	630 m N
Flood		DiRi-99	Subsurface Lithics; Habitation, Rock Shelter	930 m E
Landslide	Eastern Slide	DiRj-21	Lithics, cairn	Direct overlap
Landslide	Western Slide	DiRj-32	Rock Shelter	Direct overlap
Landslide	Highway 7, in both directions	DiRj-1	Cultural Depression, Housepit; Rock art, Petroglyph	Direct overlap
Flood	Sterling Road Slough	DhRm-2	Cultural Depression, undefined; Surface Lithics	760 m NW

Table 14. Recorded sites within 1 km - Cascades Natural Resource District

Impact	Location	Site	Site Type	Distance/Direction
Flood	100 m E of Sunshine Valley Bridge	EaRf-17	Surface Lithics	890 m E
Flood		EaRf-18	Surface Lithics	730 m NE
Flood		EaRf-7	Human Remains	650 m E
Landslide	Eastern extent of mudslide between Lil'wat PI and Seton Lake Road for 81.9 Km	EeRI-120	Cultural Depression, Housepit; Surface, lithics	Direct overlap
Landslide		EeRI-217	Subsurface and Surface Lithics	Direct overlap
Flood	Fountains	EbRg-1	Cultural Depression, Housepit	290 m N/NW
Flood		EbRg-32	Cultural Depression, Housepit	350 m SW
Flood	Highway 1 @ Tank Hill	EbRi-37	Cultural Depression, Cache pit; Surface Lithics	900 m NE
Flood		EbRi-38	Cultural Depression, Cache pit; Surface Lithics	220 m N
Flood	Highway 1 Gladwin Pipe Failure	EbRi-44	Cultural Depression, undefined; Surface Lithics	700 m N
Flood	Highway 1 Nicomen Slide	EbRi-3	Cultural Depression, undefined; Surface Lithics	360 m NW
Flood		EbRi-49	Rock art, petroglyph	680 m NE
Flood	Highway 8 @ 9 mile washout	EcRh-1	Cultural Depression, Housepit and Cache pits; Human Remains	240 m NW
Flood		EcRh-26	Surface Lithics	260 m S
Flood		EcRh-3	Cultural Depression, Cache Pit; Habitation, Rock Shelter; Surface Lithics; Human Remains	645 m NW
Flood	Highway 8 Washout 01	EcRh-98	Surface Lithics	100 m NW
Flood		EcRh-92	Surface Lithics; Subsurface Lithics	300 m NW
Flood	Highway 8 Washout 03	EcRh-87	Surface Lithics	150 m W
Flood	Highway 8 Washout 04	EcRh-9	Rock art, pictograph	590 m SE
Flood	Highway 8 Washout 05	EcRh-9	Rock art, pictograph	270 m E/SE

Impact	Location	Site	Site Type	Distance/Direction
Flood	Highway 8 Washout 07	EcRh-2	Surface Lithics; Rock art, pictograph; Cultural Depression, Cache Pit	700 m SE
Flood	Highway 8 Washout 08	EcRh-1	Cultural Depression, Housepit and Cache pits; Human Remains	50 m S
Flood		EcRh-2&5	Surface Lithics; Rock art, pictograph; Cultural Depression, Cache Pit	110 m NW
Flood		EcRh-3	Cultural Depression, Cache Pit; Habitation, Rock Shelter; Surface Lithics; Human Remains	250 m E
Flood	Highway 8 Washout 09	EcRh-9	Rock art, pictograph	700 m N/NW
Flood	Highway 8 Washout 10	EcRh-26	Surface Lithics	220 m N
Flood		EcRh-1	Cultural Depression, Housepit and Cache pits; Human Remains	720 m N/NW
Flood	Highway 8 Washout 11	EbRh-24	Surface Lithics; Subsurface Lithics	180 m W (on Federal Reserve)
Flood		EbRh-4	Cultural Depression, Cache Pit and House pit; Subsurface, Faunal; Subsurface, Lithics	300 m SW
Flood		EbRh-23	Surface Lithics; Subsurface Lithics	420 m SE
Flood	Highway 8 Washout 12	EbRg-7	Cultural Depression, Cache Pit	160 m E/SE
Flood		EbRg-6	Cultural Depression, Cache pits; Human Remains	320 m SE
Flood		EbRg-26	Surface Lithics	360 m W
Flood		EbRg-8	Culturally Modified Tree	530 m W
Flood		EbRg-27&31	Surface Lithics; Subsurface Lithics	750 m SE
Flood		EbRg-25&27	Surface Lithics; Subsurface Lithics	650 m SW
Flood		EbRh-1	Cultural Depression, House Pit	620 m NW
Flood	Jackass	EaRj-49	Cultural Depression, Cache Pit	840 m NW
Flood		EaRj-63	Historic Log Cabin	890 m W/NW
Flood		EaRj-57	Historic Building; Surface Lithics	750 m S
Flood	Nicomen River Rd	EbRi-49	Rock art, petroglyph	240 m SW

Impact	Location	Site	Site Type	Distance/Direction
Flood		EbRi-7	Human Remains	100 m N
Flood	N'Kwala	EaRg-3	Cultural Material, Surface; Human Remains	1 km SE
Flood	Patchet Bridge	DIRf-1	Subsurface Lithics	950 m N
Flood	Petit Cr Road Canford Bridge	EaRg-4	Rock art, pictograph	925 m W/SW
Flood	Rattlesnake Bridge	EcRh-94	Subsurface Lithics	300 m W/NW
Flood		EcRh-92	Surface Lithics; Subsurface Lithics	670 m SE
Flood	Three Mile Bridge	EcRh-92	Surface Lithics; Subsurface Lithics	350 m S
Flood		EcRh-98	Surface Lithics	500 m S
Flood		EcRh-94	Subsurface Lithics	600 m NW

Table 15. Recorded sites within 1 km - Selkirk Natural Resource District

Impact	Location	Site	Site Type	Distance/Direction
Flood	Highway 6 Crescent Bay Slump	EbQk-1	Human Remains; Cultural Material, surface	650 m N
Flood		EbQk-2	Cultural Depression, sweat lodge	960 m S

Table 16. Recorded sites within 1 km - Rocky Mountain Natural Resource District

Impact	Location	Site	Site Type	Distance/Direction
Flood	Highway 3, 7 km west of Bateman Road	DhPx-1	Historic Transportation Trail; Subsurface Lithics	675 m NW
Flood		DhPx-3	Historic Transportation Trail; Subsurface Lithics	545 m SW

Appendix 3: Project Tracking

A project tracking log (in Excel) must be maintained and provided to the Archaeology Branch on a monthly basis during active project work. Forms should be submitted by email to ArchPermitApp@gov.bc.ca citing permit **2021-0453** in the subject line.

The log must minimally contain the following columns:

1. Firm Name
2. Delegated Archaeologist Name
3. Interim Report Number
4. Interim Report Name
5. Proponent
6. Proponent Contact person
7. Component Names
8. Notice of Intent Date
9. Date(s) of fieldwork
10. Number of assessment hours (field days x crew members)
11. Automatically Protected Sites found (yes/no)
12. Other cultural sites found (yes/no)
13. Temp site Number
14. Borden Number
15. Revisit (yes/no)

For each site:

16. Site Type
17. Significance Rating
18. Ongoing impacts?
19. Mitigation type(s): avoidance, protection, systematic data recovery
20. Archaeology Branch Approved Mitigation: Date
21. Mitigation approval by: Archaeology Branch Project Officer name



Additional Client Certification for Permits Issued under Section 12.2 of the Heritage Conservation Act

Select as appropriate:

- ☒ An application for a Heritage Investigation Permit **21A0694** has been submitted to the Branch by: **Sarah Fraser, A/Associate Deputy Minister, Ministry of Forests, Land, Natural Resource Operations and Rural Development (FLNRORD)**. It is currently described as: *Archaeological investigation of recovery activities undertaken in response to 2021's catastrophic rain resulting in widespread flooding and landslide events in British Columbia by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), the Ministry of Transportation and Infrastructure (MOTI) and other Provincial and/or Local Government proponents responsible to restore infrastructure in the affected areas*

Financial responsibility for assessments is assumed by the following proponent:

Name: Jeff Sheldrake, Assistant Deputy Minister, Coast Area	Company: Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)
Address: 4th Floor - 2975 Jutland Road, Victoria, BC V8T 5J9	
Phone: (778) 974-5826	Fax or Email: Jeff.Sheldrake@gov.bc.ca

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application, any amendments submitted to the Branch, and any other conditions the Minister may impose, as empowered by said Act.

Client Certification

Date: December 8, 2021	Client Name: Jeff Sheldrake, Assistant Deputy Minister, Coast Area	Client Affiliation: Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)	Client Signature: 
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CERTIFICATION AND CONSENT

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application.

Client Certification.

Client Endorsement

For applications where there are no recorded archaeological sites, or where assessment is not required by another agency or under a Heritage Conservation Act Ministerial Order:

I acknowledge I have not been ordered to conduct a heritage inspection under S.12.3 of the Heritage Conservation Act and that I have commissioned an archaeological impact assessment on my own accord to facilitate my proposal to undertake the developments described herein.

Name: Jeff Sheldrake, Assistant Deputy Minister, Coast Area	Company: Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)
Address: 4th Floor - 2975 Jutland Road, Victoria, BC V8T 5J9	
Phone: (778) 974-5826	Fax or Email: Jeff.Sheldrake@gov.bc.ca
Date: December 7, 2021	Client Signature: 



Additional Client Certification for Permits Issued under Section 12.2 of the Heritage Conservation Act

Select as appropriate:

☒ An application for a Heritage Investigation Permit **21A0694** has been submitted to the Branch by: **Sarah Fraser, A/Associate Deputy Minister, Ministry of Forests, Land, Natural Resource Operations and Rural Development (FLNRORD)**. It is currently described as:
Archaeological investigation of recovery activities undertaken in response to 2021's catastrophic rain resulting in widespread flooding and landslide events in British Columbia by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), the Ministry of Transportation and Infrastructure (MOTI) and other Provincial and/or Local Government proponents responsible to restore infrastructure in the affected areas

Financial responsibility for assessments is assumed by the following proponent:

Name: Gerry MacDougall A/Assistant Deputy Minister, South Area	Company: Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)
Address: 441 Columbia Street, Kamloops, BC V2C 2T3	
Phone: 250-267-8999	Fax or Email: Gerry.MacDougall@gov.bc.ca

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application, any amendments submitted to the Branch, and any other conditions the Minister may impose, as empowered by said Act.

Client Certification

Date: December 10, 2021	Client Name: Gerry MacDougall A/Assistant Deputy Minister, South Area	Client Affiliation: Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)	Client Signature:
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CERTIFICATION AND CONSENT

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application.

Client Certification.

Client Endorsement

For applications where there are no recorded archaeological sites, or where assessment is not required by another agency or under a Heritage Conservation Act Ministerial Order:

I acknowledge I have not been ordered to conduct a heritage inspection under S.12.3 of the Heritage Conservation Act and that I have commissioned an archaeological impact assessment on my own accord to facilitate my proposal to undertake the developments described herein.

Name: Gerry MacDougall		Company: Forests, Lands, Natural Resource	
A/Assistant Deputy Minister, South Area		Operations and Rural Development (FLNRORD)	
Address: 441 Columbia Street, Kamloops, BC V2C 2T3			
Phone: 250-267-8999		Fax or Email: Gerry.MacDougall@gov.bc.ca	
Date: December 10, 2021	Client Signature: 		



Additional Client Certification for Permits Issued under Section 12.2 of the Heritage Conservation Act

Select as appropriate:

☒ An application for a Heritage Investigation Permit **21A0694** has been submitted to the Branch by: **Sarah Fraser, A/Associate Deputy Minister, Ministry of Forests, Land, Natural Resource Operations and Rural Development (FLNRORD)**. It is currently described as:
Archaeological investigation of recovery activities undertaken in response to 2021's catastrophic rain resulting in widespread flooding and landslide events in British Columbia by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), the Ministry of Transportation and Infrastructure (MoTI) and other Provincial and/or Local Government proponents responsible to restore infrastructure in the affected areas

Financial responsibility for assessments is assumed by the following proponent:

Name: Brent Persello, Environmental Services Manager	Company: Ministry of Transportation and Infrastructure (MoTI)
Address: 477 Columbia Street, Kamloops, BC V2C 2T3	
Phone: 778-362-4522	Fax or Email: Brent.Persello@gov.bc.ca

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application, any amendments submitted to the Branch, and any other conditions the Minister may impose, as empowered by said Act.

Client Certification

Date: December 8, 2021	Client Name: Brent Persello, Environmental Services Manager	Client Affiliation: Ministry of Transportation and Infrastructure (MoTI)	Client Signature:
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Appendix E

CERTIFICATION AND CONSENT

CLIENT'S CERTIFICATION

I certify that I have read and concur with the content of this permit application.

Client Certification.

Client Endorsement

For applications where there are no recorded archaeological sites, or where assessment is not required by another agency or under a Heritage Conservation Act Ministerial Order:

I acknowledge I have not been ordered to conduct a heritage inspection under S.12.3 of the Heritage Conservation Act and that I have commissioned an archaeological impact assessment on my own accord to facilitate my proposal to undertake the developments described herein.

Name: Brent Persello, Environmental Services Manager		Company: Ministry of Transportation and Infrastructure (MoTI)
Address: 477 Columbia Street, Kamloops, BC V2C 2T3		
Phone: 778-362-4522		Fax or Email: <u>Brent.Persello@gov.bc.ca</u>
Date: December 8, 2021	Client Signature: 	

Appendix H



DAILY CONSTRUCTION REPORT

Owner:	Ministry of Environment & Natural Resources (MoE)	Report No.:	1
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 5, 2023
Contract No.:		Temperature:	High: 23°C Low: 10°C
Weather:	Sunny all day		

Labour Force: Summit: Kyle Hargrove (KH) (Foreman) and Mac Palmer (MP)

Contractor's Equipment: One pickup truck with Spill kit
One Liebherr 918 excavator

1.0 Report:

- Arrived on site: 7:00 AM.
- Jack Dai Tang (JDT) – AE departed site at 4:00 PM.
- Jeffrey Kim (JK) and Thibult Doix (TD) – Sartori Environmental
- Jason Thompson (JT) – Leq'a:mel First Nation

1.1 Visitors:

- BC MOE (footages were taken)
Thyren, Matt, Steven, Ralph

1.2 Summit Earthworks:

- Summit cleared majority of the overgrown plants
- KH mentioned that excavator attachments will be brought in later in the day for work on the next day.

1.3 Environmental Monitoring

- TD, JK were on site to do initial assessments (including snail survey monitoring and bird nests).

1.4 Archaeology / First Nations

- JT on site to do initial assessment

1.5 Property Owners

- The property owner across the access road has indicated that the trees in the vicinity have already led to issues during the winter months. These trees, inclining towards the road's center, have previously inflicted damage on both poles and power lines. The owner is now requesting assistance to remove these trees to prevent future complications.
- The owner of the property where the access road is located has asked that the road be closed off once the day's work is complete, to deter unauthorized access. KH stated that he will have the excavator blocking access

2.0 Site Photographs



Figure 1
Excavator at the Entrance of Access Road

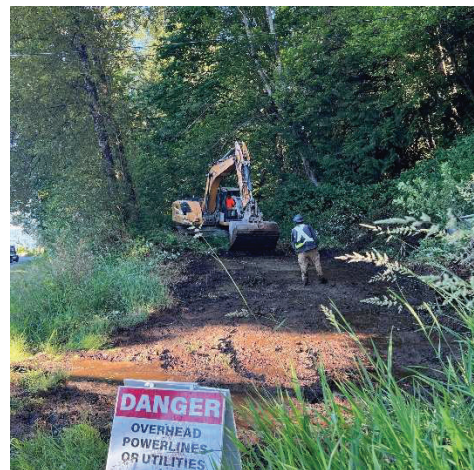


Figure 2
Overgrown Plants Clearing



Figure 3
Excavator Clearing at the Open Area



Figure -4
Looking Down the Entrance of Access Road



Owner:	Ministry of Environment & Natural Resources (MoE)	Report No.:	2
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 6, 2023
Contract No.:		Temperature:	High: 30°C Low: 11°C
Weather:	Sunny all day		

Labour Force: Summit: Kyle Hargrove (KH) (Foreman) and Mac Palmer (MP)
Center Line: Allison (Flagger) – On site from 11:30 AM

Contractor's Equipment: One pickup truck
One Liebherr 918 excavator

1.0 Report:

- Arrived on site: 6:45 AM.
- Jack Dai Tang (JDT) – AE departed site at 4:06 PM.
- Jeffrey Kim (JK) – Sartori Environmental – On site from 7:00 AM to 9:00 AM

1.1 Visitors:

- Ed Jones (VP - Summit Earthworks) at 11:00 AM
- Kevin Coris (PM – Summit Earthworks) at 11:00 AM

1.2 Summit Earthworks:

- Improved access road drivability
- Exposed both inlet and outlet of existing culvert under the entrance of access road
- Spill trays and silt fences brought to site – 12:13 PM
- Installed job board, silt fences
- Portable toilets and Trash cans/bags will arrive next day morning

1.3 Environmental Monitoring

- JK performed environmental assessment (bird surveying, etc)

- Small snake identified on site, roughly 50 cm in length with black and yellow stripes. Its appearance aligns closely with Eastern Ribbon snake and Eastern Garter snake species. No photo of the snake available but sighting location (circled in red) is provided in Figure 4.

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs



Figure 1
Davies Creek



Figure 2
Open Area Looking Towards Access Road



Figure 3
Silt Fences on the Ditch



Figure 4
Looking Up from the Entrance of Access Road



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	3
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 7, 2023
Contract No.:		Temperature:	High: 31°C Low: 14°C
Weather:	Poor air quality with wildfire smoke		

Labour Force: Summit (Contractor):
 Kyle Hargrove (KH) – Foreman – 7:00 AM to 3:00 PM
 Mac Palmer (MP) – Labourer – 7:00 AM to 3:00 PM

Center Line (Traffic Management):
 Allison - Flagger – 7:10 AM to 3:00 PM
 Marina - Flagger – 7:10 AM to 3:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One Tandem truck

1.0 Report:

- Jack Dai Tang (AE) – 6:40 AM to 3:00 PM
- Jeffrey Kim (Sartori) – 7:25 AM to 2:40 PM
- Jason Thompson (Le'qá:mel First Nation) – 8:43 AM to 2:30 PM

1.1 Visitors:

- Julie Rose (Health & Safety Supervisor – Summit Earthworks) – 9:35 AM to 10:00 AM
- COR Auditor of Summit Earthworks – 9:35 AM to 10:00 AM

1.2 Summit Earthworks:

- 1 – 55 Gallon trash can/trash bags and 1 portable toilet placed on site in the morning
- Contractor was warned and reminded to have spill trays in place when the machinery is not in use.
- Spread gravel base to lower access road.
- Continued clearing up debris at the upper access road.
- Six (6) loads of gravel were transported to site. 1st load arrived at 8:03 AM – 6th load arrived at 1:47 PM
- One (1) load of non-invasive organics was departed from site at 2:25 PM
- Contractor mentioned that pumps will be brought to site on the next day.

1.3 Environmental Monitoring

- JK performed environmental assessment (bird surveying, etc)
- Pegasus Tree Service – Two (2) Fallers – 8:03 AM to 12:30 PM
- Six (6) trees were taken down.

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs



Figure 1

Gravel Partially Spread on Road and Portable Toilet Delivery



Figure 2

Looking Down to the Access Road with Gravel Base

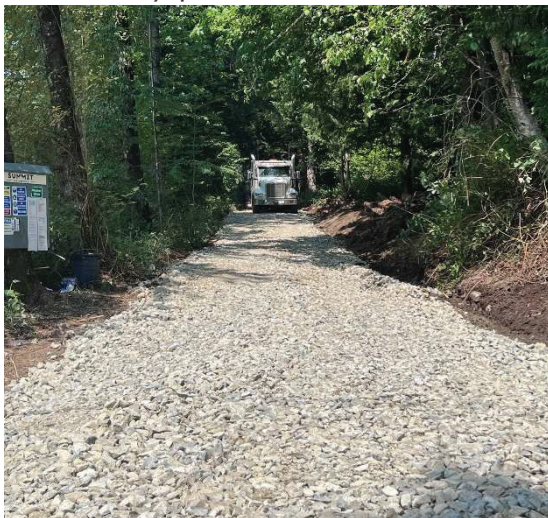


Figure 3

Tantom Truck Unloading Gravel and Trash Can on Left



Figure 4

Clearing Up after Tree Removal



**Associated
Engineering**

*GLOBAL PERSPECTIVE.
LOCAL FOCUS.*



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	4
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 8, 2023
Contract No.:		Temperature:	High: 25°C Low: 13°C
Weather:	Partly cloudy but overall sunny		

Labour Force: Summit (Contractor):
 Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:30 PM
 Mac Palmer (MP) – Labourer – 7:00 AM to 4:30 PM

Center Line (Traffic Management):
 Allison - Flagger – 7:00 AM to 4:30 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One Tandem truck with Midland SLX2 dump gravel trailer

1.0 Report:

- Jack Dai Tang (AE) – 6:45 AM to 4:30 PM
- Jeffrey Kim (Sartori) – 7:10 AM to 2:40 PM
- Jason Thompson (Le'qá:mel First Nation) – 7:28 AM

1.1 Visitors:

- N/A

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Stripped topsoils for upper access road near the creek.
- Stockpiled the logs from tree fall.
- Three (3) loads of non-invasive organics were transported off site.

1.3 Environmental Monitoring

- JK performed environmental assessment (bird surveying, etc).
- Consulted JK regarding fish salvage permit and in-stream work.

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs



Figure 1
Stockpiling Logs and Stripping Topsoils



Figure 2
Excavator Pulling Organics Out of the Creek

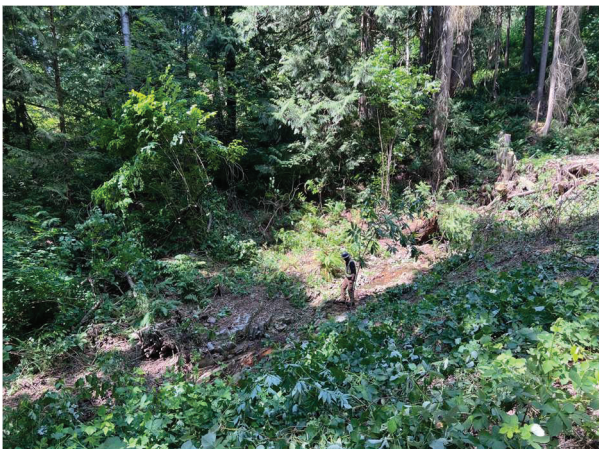


Figure 3
Creek Vista After Clearing Some Organics



Figure 4
Loading Organic Materials to Dump Truck



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	5
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 9, 2023
Contract No.:		Temperature:	High: 14°C Low: 11°C
Weather:	Cloudy in the morning and raining began at noon		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:00 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 4:00 PM

Center Line (Traffic Management):
Stephanie - Flagger – 7:00 AM to 4:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One pickup truck with dump trailer

1.0 Report:

- Jack Dai Tang (AE) – 6:45 AM to 4:00 PM
- Jeffrey Kim (Sartori) – 7:30 AM
- Jason Thompson (Le'qá:mel First Nation) – 7:37 AM

1.1 Visitors:

- Jayden Cross (AE) – Environmental Auditor – 9:22 AM to 10:00 AM
- Clay Jones (Summit Earthworks) – 10:15 AM to 11:00 AM
- Phil Vanlaar (Summit Earthworks) – 11:22 AM to 11:54 AM
- Kevin Coris (Summit Earthworks) – 11:22 AM to 11:54 AM
- Ed Jones (Summit Earthworks) – 11:22 AM to 11:54 AM

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Stripped topsoils for upper access road near the creek.
- One (1) load of logs loaded into the truck and transported off site.
- Installed silt fences along the upper access road.
- Regraded the upper access road.

- Set up a pool using sandbags to prepare diversion of creek.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).
- Jayden visited to perform environmental audit.
- Summit confirmed that organics from previous workday and today were transported to their own facility.

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs



Figure 1
Loading Logs into the Dump Trailer



Figure 2
Sandbags Placed on Creek



Figure 3
Upper Access Road with Silt Fences



Figure 4
Stockpiling Topsoil



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	6
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 12, 2023
Contract No.:		Temperature:	High: 27°C Low: 13°C
Weather:	Partly sunny in the morning, becoming mainly sunny with cloudy periods in the afternoon		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 3:30 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 3:30 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 3:30 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator
One tandem truck

1.0 Report:

- Jack Dai Tang (AE) – 6:36 AM to 3:30 PM
- Jeffrey Kim (Sartori) – 7:04 AM
- Jason Thompson (Le'qá:mel First Nation) – 7:38 AM

1.1 Visitors:

- N/A

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Diverted creek's flow using sump pump.
- One (1) load of gravels was transported to site.
- One (1) load of non-invasive organics was transported off site.
- Installed more silt fences along the upper access road.
- Began clearing on the creek.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).
- Eagle spotted on site – See Figure 1

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs

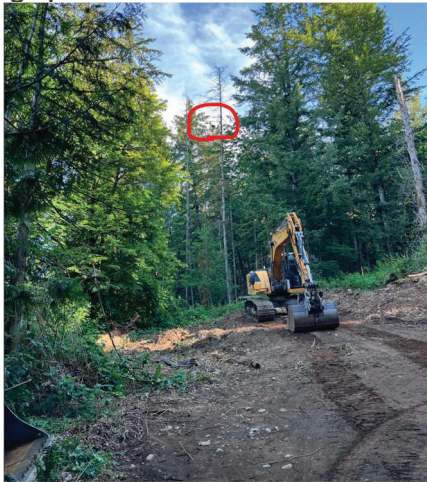


Figure 1
Location of Eagle Landing

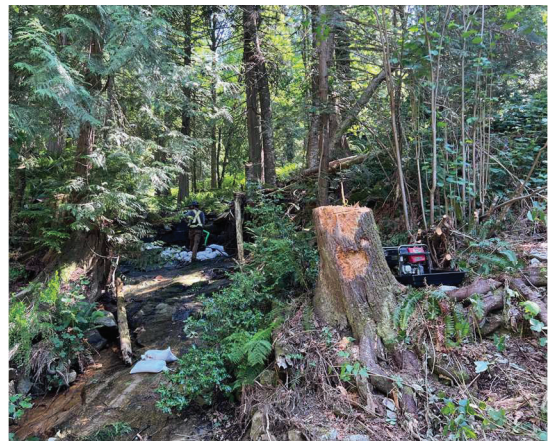


Figure 2
Diverting Creek's Flow



Figure 3
Tandem Truck Unloading Gravels



Figure 4
Clearing on the Creek



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	7
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 13, 2023
Contract No.:		Temperature:	High: 19°C Low: 12°C
Weather:	Mainly cloudy in the morning with showers developing in the afternoon		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:30 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 4:30 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 4:30 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator

1.0 Report:

- Jack Dai Tang (AE) – 6:36 AM to 4:30 PM
- Jeffrey Kim (Sartori) – 7:33 AM
- Jason Thompson (Le'qá:mel First Nation) – 7:33 AM

1.1 Visitors:

- Clay Jones (Summit Earthworks) – 1:10 PM to 1:39 PM

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Diverted creek's flow using sump pump.
- Installed more silt fences along the upper access road.
- Removed sediment materials from the creek and stockpile.
- Covered stockpile with poly sheeting.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).

1.4 Archaeology / First Nations

- N/A

2.0 Site Photographs



Figure 1
Installing Silt Fences Along Upper Access Road



Figure 2
Stockpile Covered with Poly Sheeting



Figure 3
Removing Sediment from the Creek



Figure 4
Clear Crush Gravel In-Stream



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	8
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 14, 2023
Contract No.:		Temperature:	High: 17°C Low: 10°C
Weather:	Cloudy with showers ending in the morning, partly sunny in the afternoon		

Labour Force: Summit (Contractor):
 Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:00 PM
 Mac Palmer (MP) – Labourer – 7:00 AM to 4:00 PM

Center Line (Traffic Management):
 Allison - Flagger – 7:00 AM to 4:30 PM

Pegasus Tree Service:
 Trish - Faller – 7:00 AM to 11:00 AM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator
One tandem truck

1.0 Report:

- Jack Dai Tang (AE) – 6:36 AM to 4:00 PM
- Jeffrey Kim (Sartori) – 7:20 AM
- Jason Thompson (Le'qá:mel First Nation) – 7:45 AM

1.1 Visitors:

- Doug Wilson (Ministry of Transportation) – 3:00 PM

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Diverted creek's flow using sump pump.
- Removed sediment deposit and stockpile.
- Transported ten (10) loads of mixed non-invasive organics (soil) and inorganic (rocks) materials off site.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).
- Pegasus Tree Service performed tree felling to allow access to lower portion of the creek.
- Abandoned materials, such as metal waterwheel and containers filled with fossil fuels, were found near the project site. Jeffrey mentioned that it is up to the contractor to decide whether to remove them.

1.4 Others

- Doug inquired about the long-term accessibility of the access road once the project is completed and expressed his concern regarding the existing buried culvert at the entrance of the access road.

2.0 Site Photographs



Figure 1

Loading Mix Materials to Tandem Truck



Figure 2

Faller Trimming Trees into Smaller Pieces



Figure 3

Trimmed Wood Logs Stockpiled



Figure 4

Metal Waterwheel and Containers with Fuels



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	9
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 15, 2023
Contract No.:		Temperature:	High: 21°C Low: 11°C
Weather:	Sunny and partly cloudy		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:00 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 4:00 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 4:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator
One tandem truck

1.0 Report:

- Jack Dai Tang (AE) – 6:36 AM to 4:00 PM
- Jeffrey Kim (Sartori) – 7:31 AM
- Jason Thompson (Le'qá:mel First Nation) – 7:40 AM

1.1 Visitors:

- Lucas and Kevin (Summit Earthworks) – 11:47 AM to 12:13 PM

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Diverted creek's flow using sump pump.
- Removed sediment deposit and stockpile.
- Transported eleven (11) loads of mixed non-invasive organics (soil) and inorganic (rocks) materials off site.
- Placed boulders along edge of bank.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).

1.4 First Nations/ Archaeology

- N/A

2.0 Site Photographs



Figure 1
Loading Mix Materials to Tandem Truck



Figure 2
Looking Upstream from Sylvester Road



Figure 3
Lower Debris Jam Looking Upstream



Figure 4
Excavator Placing Boulders to Creek's Bank



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	10
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 16, 2023
Contract No.:		Temperature:	High: 18°C Low: 13°C
Weather:	Cloudy in the morning with showers developing at noon		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:00 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 4:00 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 4:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator – on site but not operated
One tandem truck
One pick-up truck with dump trailer

1.0 Report:

- Jack Dai Tang (AE) – 6:41 AM to 4:00 PM
- Jeffrey Kim (Sartori) – 7:36 AM
- Jason Thompson (Le'qá:mel First Nations) – 7:25 AM

1.1 Visitors:

- Jayden (AE) – Environmental Audit – 10:13 AM
- Tina (Le'qá:mel First Nations) – 12:56 PM to 1:15 PM

1.2 Summit Earthworks:

- KH held a daily site meeting going through the tasks of the day.
- Cleared up woody debris for access to lower sediment deposit.
- Tandem truck - Transported three (3) loads of mixed non-invasive organics (soil) and inorganic (rocks) materials and four (4) loads of non-invasive organics (woody debris) off site.
- Pick-up truck - Transported one (1) load of mixed non-invasive organics (wood logs) and inorganic (scrap metals) materials and one (1) load of non-invasive organics (wood logs) off site.
- Placed boulders along edge of bank.

1.3 Environmental Monitoring

- Jeffrey performed environmental assessment (bird surveying, etc).
- Materials were transferred to Summit Earthworks' fill site beside RCMP station at 7171 Oliver St, Mission, BC V2V 6H2.

1.4 First Nations/ Archaeology

- N/A

2.0 Site Photographs



Figure 1
Loading Woody Debris to Tandem Truck



Figure 2
Loading Wood Logs to Pick-up Truck

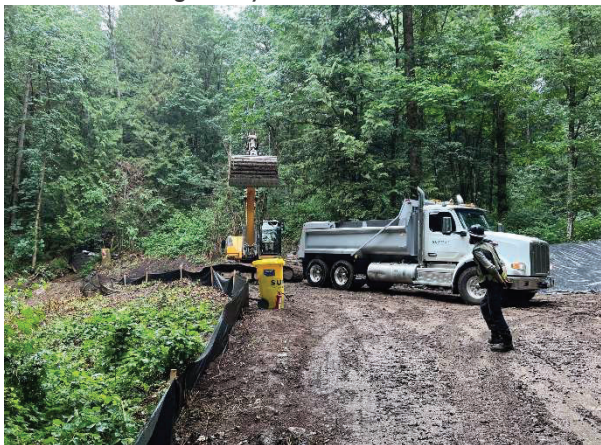


Figure 3
Loading Mixed Materials to Tandem Truck at Upper Sediment Deposit



Figure 4
Gravel Spread on Steep Slope



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	11
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 19, 2023
Contract No.:		Temperature:	High: 13°C Low: 7°C
Weather:	Cloudy in the morning, moderate rain at noon		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 2:00 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 2:00 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 2:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One sump pump with Honda EM2500C generator – operated in the morning
One tandem truck

1.0 Report:

- Jack Dai Tang (AE) – 6:40 AM to 2:00 PM
- Jeffrey Kim (Sartori) – 7:34 AM
- Erik Still (Le'qá:mel First Nations) – 7:48 AM

1.1 Visitors:

- N/A

1.2 Summit Earthworks:

- Finished placing boulders along the creek's bank
- Cleared up woody debris in lower jam.
- Tandem truck – transported the following loads offsite:
 - Three (3) – Non-invasive organics (wood debris and logs)
 - One (1) – Inorganics (boulders)
 - Two (2) – Mixed non-invasive organics (soil) and inorganics (rocks)
- Removed sump pump and hoses from the creek

1.3 Environmental Monitoring

- N/A

1.4 First Nations/ Archaeology

- N/A

2.0 Site Photographs



Figure 1
Loading Woody Debris to Tandem Truck

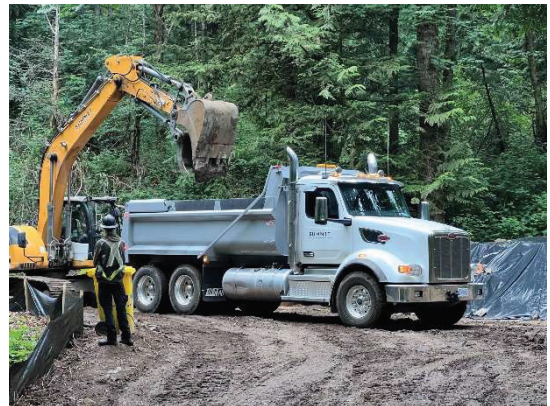


Figure 2
Loading Boulders to Tandem Truck

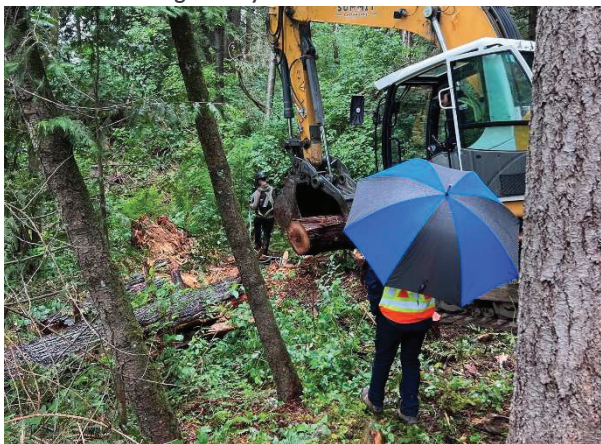


Figure 3
Excavator Clearing Logs in Lower Jam



Figure 4
Sump Pump and Hoses Removed from Site



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	12
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 22, 2023
Contract No.:		Temperature:	High: 26°C Low: 13°C
Weather:	Mostly sunny and warmer		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 2:00 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 2:00 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 2:00 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day

1.0 Report:

- Jack Dai Tang (AE) – 6:45 AM to 2:00 PM
- Jeffrey Kim (Sartori) – 7:25 AM
- Jason Thompson (Le'qá:mel First Nations) – 7:38 AM

1.1 Visitors:

- Andrew and Diana (AE) – 10:47 AM to 11:09 AM
- Kevin (Summit Earthworks) – 10:10 AM to 11:09 AM

1.2 Summit Earthworks:

- Arranged sewerage truck to collect sewage from porta potty.
- Removed silt fences along the upper access road.
- Discussed site restoration plan and culvert cleaning with all parties.
- Spread soil stockpile to ground as part of site restoration.

1.3 Environmental Monitoring

- Removed check dam and sediment control structure under Jeffrey's (EM) supervision. Then the temporarily pool (used to place the sump pump to divert the water during in-stream work) was dismantled to wash the stream bed with the cumulated stream water.

1.4 First Nations/ Archaeology

- N/A

2.0 Site Photographs



Figure 1
Removing Check Dam and Sediment Control Structure



Figure 2
Temporarily Pool Removed



Figure 3
Spreading Soil Stockpile to Ground and Removal of Silt Fences



Figure 4
Looking Downstream After Removal of Check Dam



Owner:	Ministry of Environment and Climate Change Strategy	Report No.:	12
Project:	Davies Creek Emergency Works	Page:	1 of 2
Location:	Sylvester Road, Fraser Valley, BC 49°10'27.5"N 122°13'33.2"W	Project No.:	S-CR-28 2022-2632-12
Contractor:	Summit Earthworks	File No.:	
Contract:		Date:	June 23, 2023
Contract No.:		Temperature:	High: 28°C Low: 13°C
Weather:	Mostly sunny and warmer		

Labour Force: Summit (Contractor):
Kyle Hargrove (KH) – Foreman – 7:00 AM to 4:30 PM
Mac Palmer (MP) – Labourer – 7:00 AM to 4:30 PM

Center Line (Traffic Management):
Allison - Flagger – 7:00 AM to 4:30 PM

Contractor's Equipment: One Liebherr 918 excavator – on site all day
One tandem truck – 7:30 AM to 9:58 AM

1.0 Report:

- Jack Dai Tang (AE) – 6:50 AM to 4:30 PM
- Jeffrey Kim (Sartori) – 7:30 AM
- Jason Thompson (Le'qá:mel First Nations) – 7:30 AM

1.1 Visitors:

- Andrew (AE) – 9:58 AM to 10:15 AM
- Jayden (AE) – 9:50 AM to 11:20 AM
- Black-tailed Deer (Nature)

1.2 Summit Earthworks:

- Completed site restoration and removal of site equipment (spill trays, spill kits, job board, etc)
- Removed silt fences along the lower access road.
- Transferred six (6) loads of non-invasive organics (soil) from lower access road to upper access road and spread on ground as part of site restoration.
- Spread soil stockpile to ground as part of site restoration.

- Water re-entered the culvert through the outlet after contractor attempted to clean the culvert by running a tire through the culvert. Culvert is clean but not ideal as existing gradient can lead to sediment accumulation in the future.

1.3 Environmental Monitoring

- N/A

1.4 First Nations/ Archaeology

- N/A

2.0 Site Photographs



Figure 1
Loading Non-invasive Organics (Soil) to Tandem Truck and
Transported to Upper Access Road



Figure 2
Black-Tailed Deer On-Site

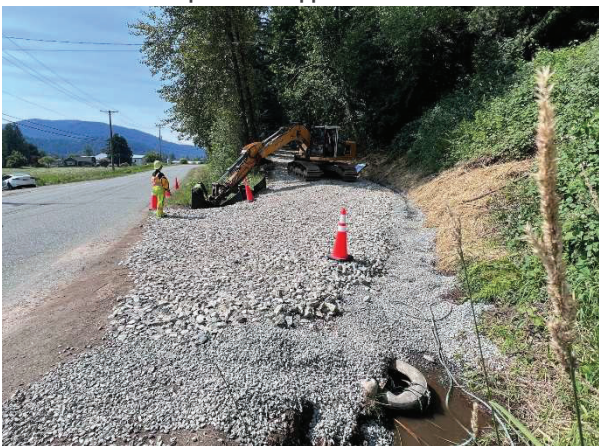


Figure 3
Excavator Getting Ready to Pull the Tire



Figure 4
Soil Spread Amongst the Site



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Natural Resource Department:
Daily Environmental Monitoring Report

Report Number:001		Location (Or Closest Address):			
Date:2023-06-05	Time: 0730-1430 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Associated Engineering Sartori		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 24°/13°; Sunny w/clear skies					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☒					
Completed Construction Activities (Since Last Visit): First day of construction; no construction works took place prior to time and date of this report					
Construction Activities: Site access road extended into creek side area			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit)			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction			X	No traffic signs along site; high traffic area	
Riparian Zone(s)			X		
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity			X		
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other				No in-stream works took place on this date	

Natural Resource Department: Daily Environmental Monitoring Report

[illegible]

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG – 2023/06/05

PHOTO #1 – Initial prep for site access to Davies Creek, off of Sylvester Road

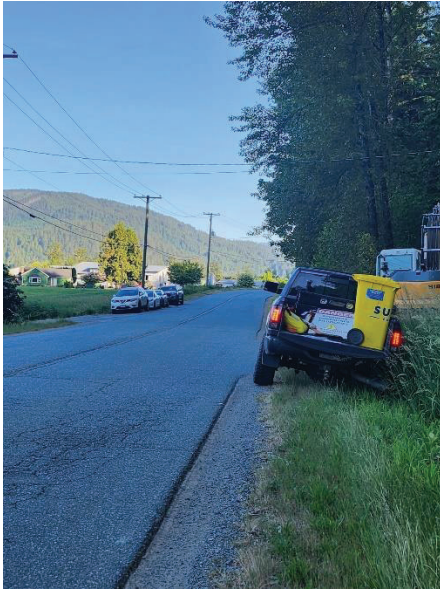


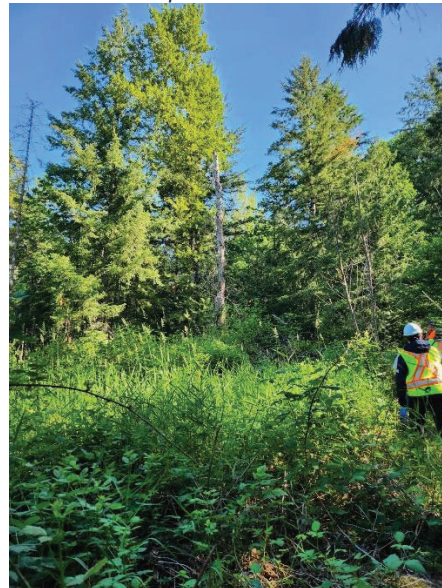
PHOTO #2 - Visible pooling of ground water and stockpiling of vegetation/debris



PHOTO #3 – Spill kits on-site



PHOTO #4 – Deadstanding habitat tree/Flicker nest identified to excavator operator





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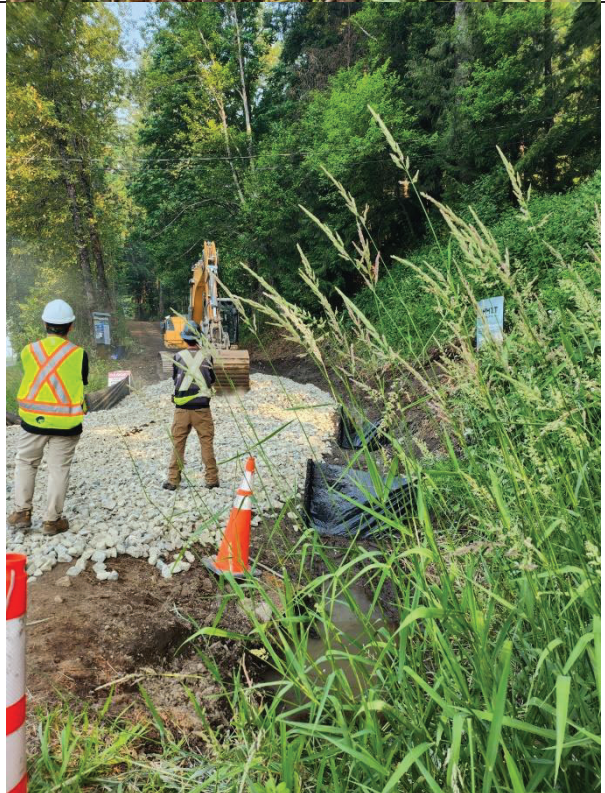
Report Number:003		Location (Or Closest Address):			
Date:2023-06-07	Time: 0730-1500 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental Pegasus Tree Service A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 31°/13°; Poor air quality and visibility due to significant smoke					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☒					
Completed Construction Activities (Since Last Visit): Third day of construction, continued prep on access road and clearing of danger trees					
Construction Activities: Site access road extended into creek side area			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Dump truck(Summit)			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)					
Env. Sensitive Features					
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity			X		
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works took place on this date	

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Silt fencing installed along ditch entrances	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Woody debris stockpiled for future removal	
Drainage & Diversions	X			No concerns	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use	
Fuel Storage	X			No concerns	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Porto-potties installed on-site; no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other					
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Pegasus Tree Service removed 6 standing danger trees; 6 loads of gravel unloaded to site to serve as road base along access road; Cont'd clearing of access road up to sediment deposit ESC: Silt fencing installed along ditch line to catch sediment run-off as result of exposed water spring Waste Management: Porto-potties delivered on this day; Waste/Trash container onsite and in-use Fuel/Oil Management: Spill trays and spill kits located throughout upper access road; No visible fuel/oil leaks or sheens visible throughout access road or near proposed stream work area					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit					Photos:
Upcoming Construction Events: <i>Cont'd minor brush clearing/stockpiling; Cont'd laydown of gravel along access road</i>					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-07





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**Natural Resource Department:
 Daily Environmental Monitoring Report**

Report Number:004		Location (Or Closest Address):			
Date:2023-06-08	Time: 0715-1500 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 26°/16°; Light visible smoke/haze, with Air Quality Advisory in effect					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☒					
Completed Construction Activities (Since Last Visit): fourth day of construction, continued prep on access road, clearing of blackberries/woody debris and stockpiling for removal					
Construction Activities: Site access road extended into creek side area			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Dump truck(Summit)			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			Water downstream of activity is clear of visible turbidity	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works took place on this date	

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Silt fencing installed along ditch entrances	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Debris stockpiles condensed for removal today	
Drainage & Diversions	X			No concerns	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other					
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: <i>Cont'd stripping of top soil along access road to sediment deposit for prep of gravel base to be laid down for better access as work progresses; foot path created to downstream portion of creek for turbidity monitoring; brush/wood stockpiles consolidated for removal today.</i> ESC: Installed silt fencing continues to function as intended; turbidity has visibly settled out; Summit removed a small boulder blocking a culvert, preventing proper drainage from site, no concerns. Waste Management: Porto-potties and Waste/Trash containers onsite and in-use Fuel/Oil Management: Spill trays/kits located throughout upper access road; Spill trays are clean of leaks and cracks, good working condition; No visible leaks/drops throughout work area					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit					Photos:
Upcoming Construction Events: <i>Cont'd minor brush clearing/stockpiling</i>					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-08

Organic stockpiles loaded for removal



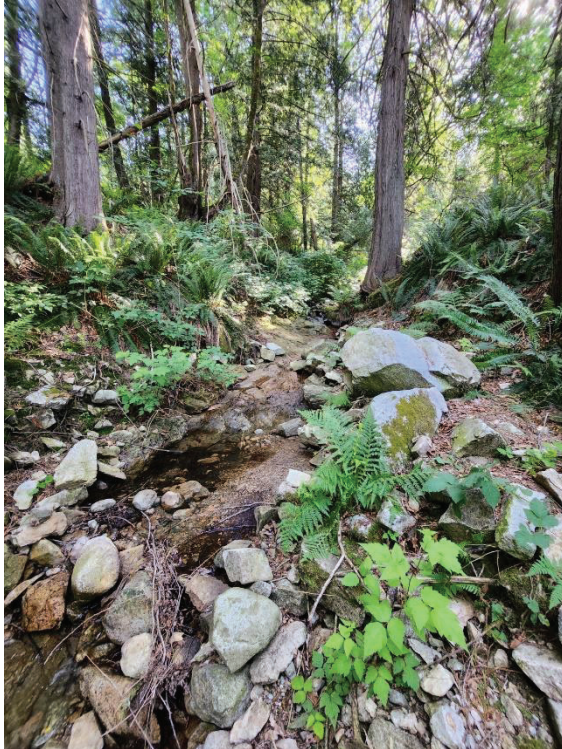
Silt fences functioning well, turbidity settling out



Access cleared to sediment deposit at creek



Creek below work activity, clear of turbidity





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Report Number:005		Location (Or Closest Address):			
Date:2023-06-08	Time: 0715-1500 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 16°/11°; Light cloud w/ light rain					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐					
Completed Construction Activities (Since Last Visit): 5th day of construction, continued prep on access road and stripping top soil for lay down of gravel road base, continued stockpiling of woody debris; no in-stream works occurred today					
Construction Activities: Site access road extended into creek side area			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Dump truck(Summit)			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			Cont'd clear turbidity in-stream below work activity	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works took place on this date	

Natural Resource Department: Daily Environmental Monitoring Report

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Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-09

Cont'd stripping of top soil upper access road



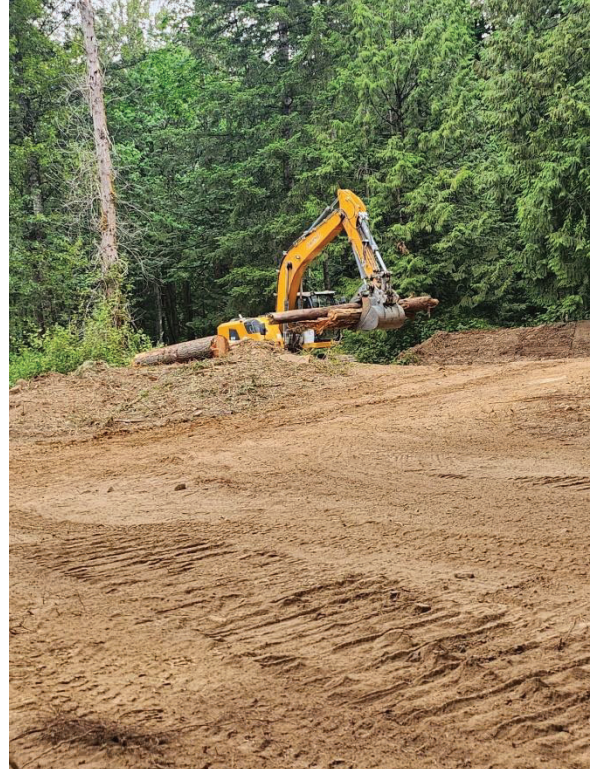
Over-hanging brush removed



Pool dug for sump-pump preparation



Cont'd stockpiling of woody debris





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Natural Resource Department:
Daily Environmental Monitoring Report

Report Number:006		Location (Or Closest Address):	
Date:2023-06-12	Time: 0715-1500 Hrs	Davies Creek - Sylvester Road, Hatzic	
Monitor Name: <i>Jason Thompson</i>		Signature:	
Meetings:			
Meeting Participants:			
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:	
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): <i>29°/17°; Light cloud w/ sunny</i>			
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐			
Completed Construction Activities (Since Last Visit): No work throughout the weekend			
Construction Activities: 6th day of construction; last of creek side prep; install sump pump to dewater sediment deposit in preparation for initial sediment removal on following day (Tuesday, June 13 th 2023)			Photos:
Construction Equipment Being Used: 918 Excavator (Summit), Dump truck(Summit)			Photos:
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)			
Boundary Flagging	OK	NC	NA
General Construction	X		
Riparian Zone(s)	X		
Env. Sensitive Features			X
Other			
Water Quality	OK	NC	NA
Turbidity	X		
Temperature			X
DO			X
pH			X
Conductivity			X
Other			X
No in-stream works took place on this date			

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Installed below sediment deposit upstream	
Bank Stabilization	X			No visible sluffing or erosion; straw bales used	
Soil Stockpiles	X			Some woody debris pulled from sediment deposit	
Drainage & Diversions	X			No concerns	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Sump pump installed to dewater excavation area in preparation for sediment removal, some minor upkick of turbidity at outflow but settled out quickly, no concerns; (1) load of clean crush gravel brought to site, woody debris from sediment deposit loaded out and removed from site ESC: Silt fence installed along upper access road, and in-stream below sediment deposit; straw bales brought to site to absorb saturation along lower access road drainage Waste Management: No concerns of human waste/trash during this site visit Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: (1) Immature bald eagle perched onsite for approximately two-hours this morning					Photos:
Upcoming Construction Events: Begin initial excavation at sediment deposit					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-12

Immature bald eagle perched behind Excavator



Spill-tray in use for sump pump generator



Pulling out woody debris from sediment deposit



Woody debris from sediment deposit loaded out





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Natural Resource Department:
Daily Environmental Monitoring Report

Report Number:007		Location (Or Closest Address):	
Date:2023-06-13	Time: 0715-1400 Hrs	Davies Creek - Sylvester Road, Hatzic	
Monitor Name: Jason Thompson		Signature:	
Meetings:			
Meeting Participants:			
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:	
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 17°/10°; Light cloud w/chance of rain in afternoon			
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐			
Completed Construction Activities (Since Last Visit): Last of creek side prep; install sump pump to dewater sediment deposit in preparation for initial sediment removal			
Construction Activities: 7th day of construction – begin excavation on sediment deposit; apply poly sheeting to stockpiles; install more silt fence below sediment deposit along access road; place clear crush gravel in low laying areas for bank stabilization and sediment transfer downstream			Photos:
Construction Equipment Being Used: 918 Excavator (Summit)			Photos:
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)			
Boundary Flagging	OK	NC	NA
General Construction	X		
Riparian Zone(s)	X		
Env. Sensitive Features			X
Other			
Water Quality	OK	NC	NA
Turbidity	X		
Temperature			X
DO			X
pH			X
Conductivity			X
Other			X
No in-stream works took place on this date			

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Installed below sediment deposit upstream	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Cont'd sorting of rock and wood debris	
Drainage & Diversions	X			Crush gravel placed instream below deposit	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Small pulses of turbidity during initial excavation on sediment deposit, Summit used clean gravel instream as a check-dam between sediment deposit and instream silt fence to capture sediment transfer; Woody debris and boulders pulled from sediment deposit were sorted and stockpiled. ESC: Sartori Environmental noted no concerns during small pulses of turbidity; Sediment from deposit was quickly settled out in small pools downstream; no signs of erosion issues during this site visit. Waste Management: Cont'd no concerns of human waste/trash during this site visit Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use; Spill kit was relocated to upper end of access road to be better accessible during sediment excavation.					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: No visible signs of wildlife during this site visit.					Photos:
Upcoming Construction Events: <i>*Weather dependant</i>					
Incident Report Required? Yes ☐ No ☐					

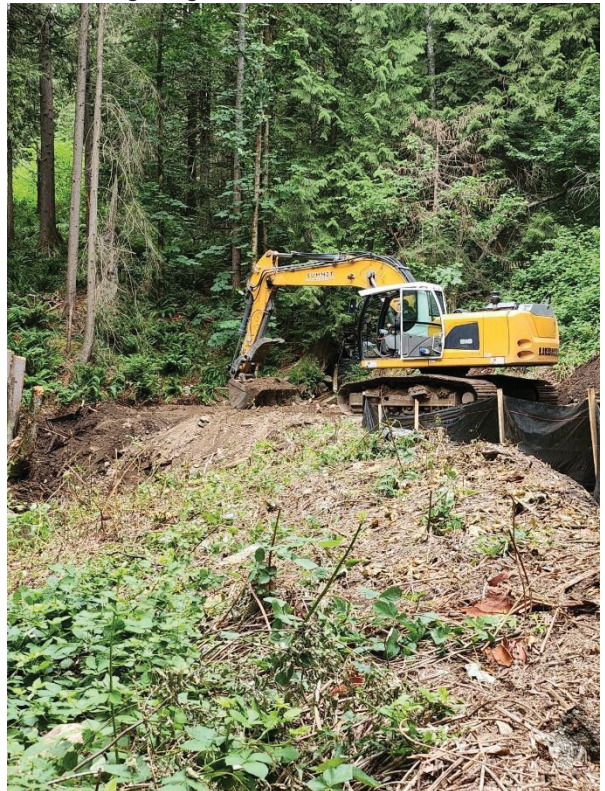
Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-13

Spill kit relocated closer to excavation work



Beginning of sediment deposit excavation



Visible pulse of turbid water downstream from excavation



Stockpile covered with poly-sheeting





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**Natural Resource Department:
 Daily Environmental Monitoring Report**

Report Number:008		Location (Or Closest Address):			
Date:2023-06-14	Time: 0715-1430 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 18°/10°; Light cloud w/chance of rain in afternoon					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐					
Completed Construction Activities (Since Last Visit): Excavation on sediment deposit; apply poly sheeting to stockpiles; install more silt fence below sediment deposit along access road; place clear crush gravel in low laying areas for bank stabilization and sediment transfer downstream					
Construction Activities: 8th day of construction – tree falling along proposed path for excavator to retrieve woody debris/downfall; 9 loads of sediment material from in-stream deposit loaded out and transported off-site			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit)			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			No visible pulses of turbidity during this site visit	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other					

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Installed below sediment deposit upstream	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Stockpiles covered with poly sheeting	
Drainage & Diversions	X			Crush gravel placed instream below deposit	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Tree falling along pathway from lower access road to lower reach of Davies creek for excavator to access downfall/woody debris; (9) loads of excavated sediment material loaded and transported off-site in Summit dump truck ESC: No concerns for erosion sediment control during this site visit Waste Management: Cont'd no concerns of human waste/trash during this site visit; site remains clean, no attractants for wildlife Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: Woodpecker seen feeding on insects on felled trees from excavator pathway.					Photos:
Upcoming Construction Events: <i>*Weather dependant</i>					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-14

Excavator path from lower reach of Davies Creek



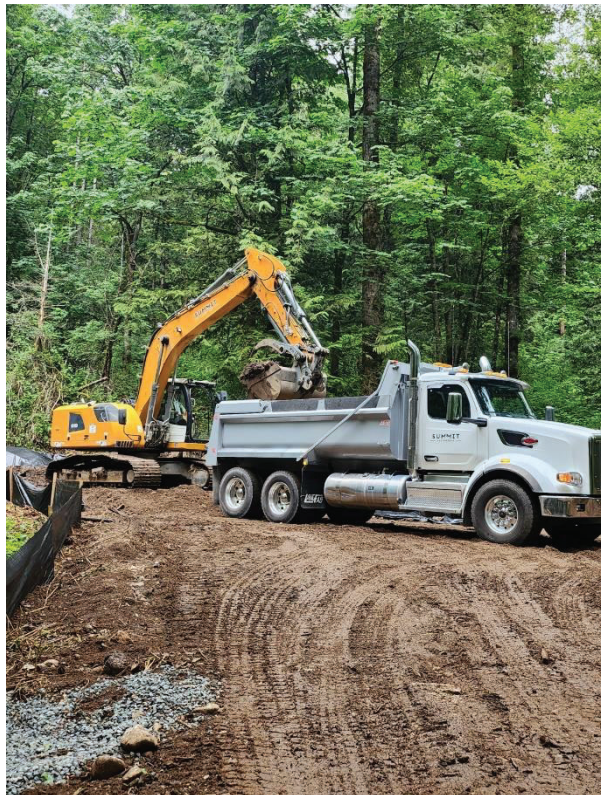
Excavator path to lower reach of Davies Creek



Woodpecker feeding on insects on felled trees



Excavated creek sediment loaded out in Summit truck





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Natural Resource Department:
Daily Environmental Monitoring Report

Report Number:009		Location (Or Closest Address):			
Date:2023-06-15	Time: 0715-1500 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: <i>Jason Thompson</i>		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): <i>22°/12°; Light cloud w/ sun</i>					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐					
Completed Construction Activities (Since Last Visit): <i>Tree felling and stockpiling for access to lower sediment deposit; excavation and load/transport from upper sediment deposit material</i>					
Construction Activities: <i>9th day of construction – excavation of upper sediment deposit down to the creek bed/bedrock and placement of boulders for bank protection; clean-up of small woody debris in and around lower sediment deposit</i>			Photos:		
Construction Equipment Being Used: <i>918 Excavator (Summit), Summit Dump Truck</i>			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			Small pulses of turbidity under the threshold, no concerns	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works took place on this date	

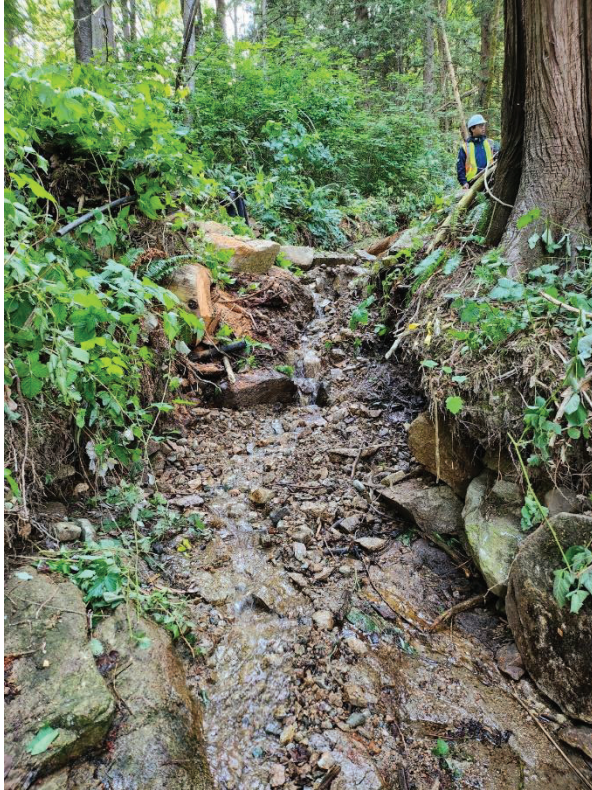
**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Operating as intended	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Covered with poly-sheeting	
Drainage & Diversions	X			Operating as intended	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: (9) truck loads of sediment material from upper reach excavated, loaded and transported out to off-site stockpile site; small woody debris dislodged from smaller sediment deposit in lower reach of Davies creek ESC: No signs of erosion issues during this site visit; Small pulses of turbidity were observed but under the allowable threshold, no concerns Waste Management: Cont'd no concerns of human waste/trash during this site visit Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use and continue to remain in clean/working condition					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: No visible signs of wildlife during this site visit.					Photos:
Upcoming Construction Events: *Weather dependant					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-15

Small sediment deposit downstream(Facing upstream)



Spill trays in-use as intended



Upper reach stream sediment excavated and loaded out



Boulder placement along North edge of bank





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**Natural Resource Department:
 Daily Environmental Monitoring Report**

Report Number:010		Location (Or Closest Address):			
Date:2023-06-16	Time: 0715-1500 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 16°/10°; Cloudy and light rain					
Ground Conditions: Dry ☐ Wet ☒ Saturated ☐					
Completed Construction Activities (Since Last Visit): excavation of upper sediment deposit down to the creek bed/bedrock and placement of boulders for bank protection; clean-up of small woody debris in and around lower sediment deposit					
Construction Activities: 10th day of construction – Cont'd placement of boulders for bank protection; clean-up of small woody debris in and around lower sediment deposit; Cont'd stockpile and load out of woody debris; (9) truck loads were observed to be transported off-site			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Summit Dump Truck			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			No visible turbidity pulses this day, no concerns	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works took place on this date	

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Operating as intended	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Covered with poly-sheeting	
Drainage & Diversions	X			Operating as intended	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Cont'd clean-up of woody debris/felled trees along path to lower sediment deposit; Woody debris/felled trees bucked, stockpiled and loaded out on dump truck, (9) loads were observed transported off-site; Cont'd placement of boulders along banks at upper reach ESC: No signs of erosion issues during this site visit; Waste Management: Cont'd no concerns of human waste/trash during this site visit Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use and continue to remain in clean/working condition					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: No visible signs of wildlife during this site visit.					Photos:
Upcoming Construction Events: 					
Incident Report Required? Yes ☐ No ☐					

Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-16

Woody debris stockpiles loaded out in Summit truck



Boulder placement, looking up stream



Boulder placement along north bank, looking up-stream



Boulder placement along north bank, downstream





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Natural Resource Department:
Daily Environmental Monitoring Report

Report Number:011		Location (Or Closest Address):			
Date:2023-06-22	Time: 0715-1400 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: <i>Jason Thompson</i>		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): <i>22°/14°; Sunny w/light clouhg</i>					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐					
Completed Construction Activities (Since Last Visit):					
Construction Activities: <i>In-stream ESC measures were pulled; silt-fencing along upper access road was removed; top-soil stockpiles were taken apart and spread out amongst the upper access road for planting attempts for the following work-day</i>			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Summit Dump Truck			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity	X			Small turbidity pulse after in-stream ESC removals	
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	Sediment removals completed	

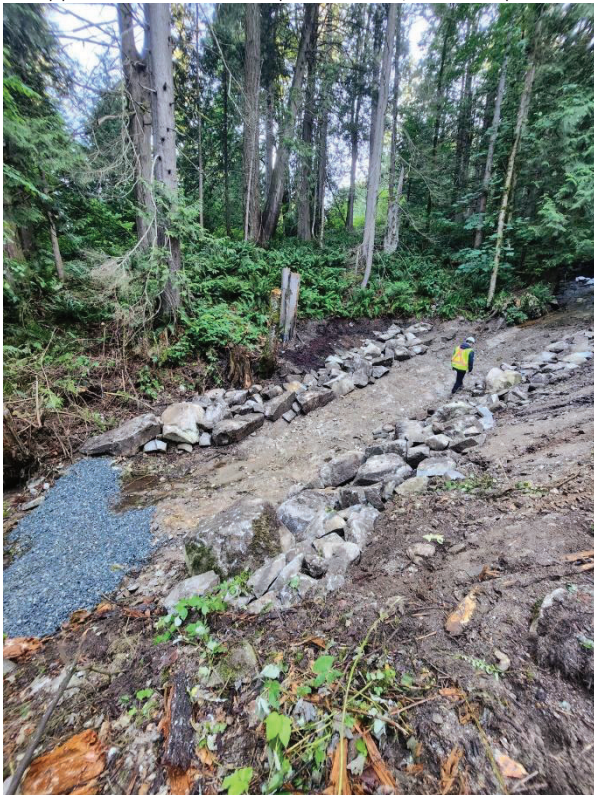
**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Removed from in-stream and along access road	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Disbursed and spread among site for re-planting	
Drainage & Diversions	X			Operating as intended	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays on-site & in use; good condition	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers on-site and in use; no concerns	
Special Waste & Hazardous Materials			X		
Other	X			Site continues to remain clean of spills and waste	
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: <i>In-stream sediment removals have been completed; top soil stockpiles ripped down and spread out along upper access road for re-planting efforts for following work-day; Silt-fencing removed</i> ESC: <i>No signs of erosion issues during this site visit;</i> Waste Management: <i>Cont'd no concerns of human waste/trash during this site visit</i> Fuel/Oil Management: <i>No visible leaks/spills during this site visit; Spill trays in-use and continue to remain in clean/working condition</i>					Photos:
Other Comments: Cultural Monitoring: <i>No visible signs of cultural/archeological evidence during today's site visit</i> Wildlife: <i>No visible signs of wildlife during this site visit.</i>					Photos:
Upcoming Construction Events: <i>Final clean-up and finish date for tomorrow, Friday June 23rd 2023</i>					
Incident Report Required? Yes ☐ No ☐					

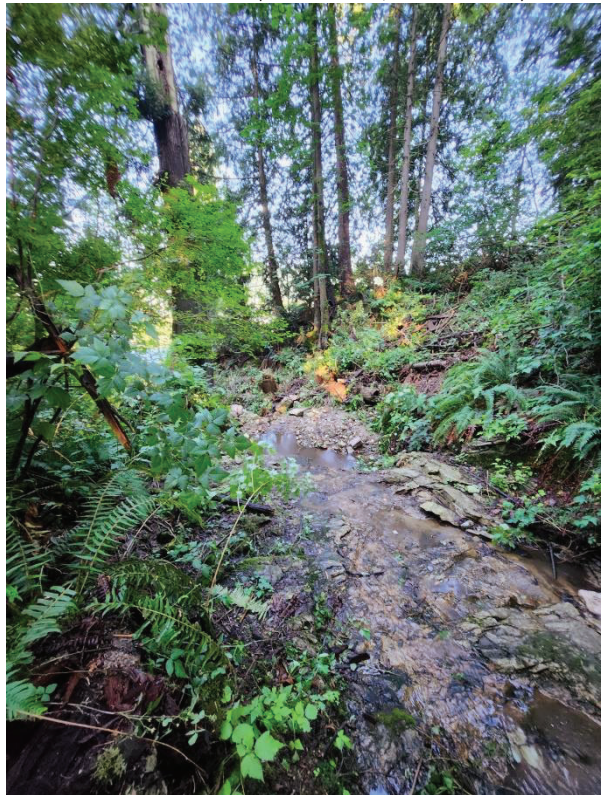
Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-22

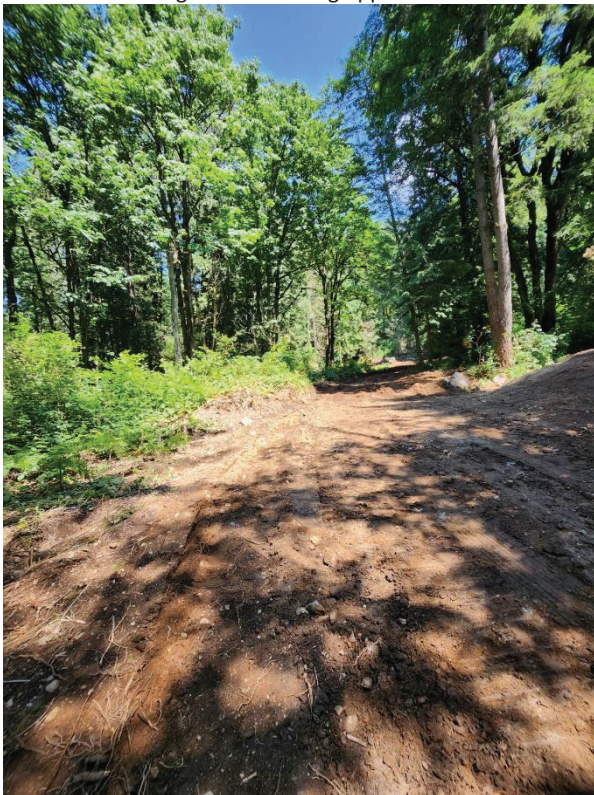
Upper reach sediment deposit cleared; boulders placed



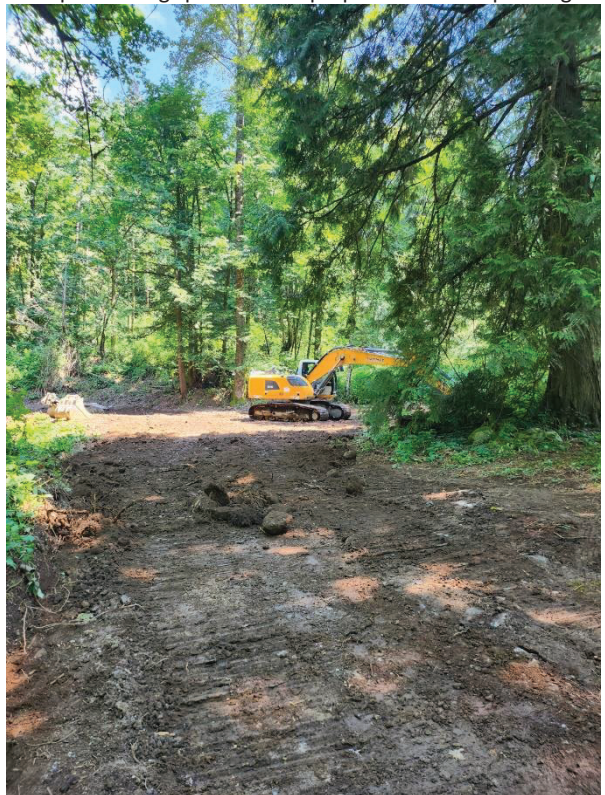
Lower reach sediment deposit cleared; free of woody debris



Silt-fencing removed along upper access road



Top soil being spread out in preparation for re-planting





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**Natural Resource Department:
 Daily Environmental Monitoring Report**

Report Number:012		Location (Or Closest Address):			
Date:2023-06-22	Time: 0715-1615 Hrs	Davies Creek - Sylvester Road, Hatzic			
Monitor Name: Jason Thompson		Signature:			
Meetings:					
Meeting Participants:					
Contractor(s) On Site: Summit Earthworks Sartori Environmental A.E		Name of Construction Representative Present:			
Weather Conditions (Cloud Cover, Wind, Precipitation, Temperature, etc.): 27°/16°; Sunny w/light cloud					
Ground Conditions: Dry ☒ Wet ☐ Saturated ☐					
Completed Construction Activities (Since Last Visit): In-stream ESC measures were pulled; silt-fencing along upper access road was removed; top-soil stockpiles were taken apart and spread out amongst the upper access road for planting attempt for a later time					
Construction Activities: Final spreading of top-soil stockpiles and scattering of bits of woody debris; Summit signs removed; Spill-kits and remainder of unused silt-fencing loaded out in Summit vehicle; Attempt to clean out culvert at access road entry			Photos:		
Construction Equipment Being Used: 918 Excavator (Summit), Summit Dump Truck			Photos:		
Environmental Site Conditions (NC = Non-Compliant, NA = Not Applicable)					
Boundary Flagging	OK	NC	NA	Comments & Mitigation	Photos:
General Construction	X			Traffic Signage and control present on-site	
Riparian Zone(s)	X				
Env. Sensitive Features			X		
Other					
Water Quality	OK	NC	NA	Comments & Mitigation	Photos:
Turbidity			X		
Temperature			X		
DO			X		
pH			X		
Conductivity			X		
Other			X	No in-stream works on this day	

**Natural Resource Department:
Daily Environmental Monitoring Report**

Erosion & Sediment Control	OK	NC	NA	Comments & Mitigation	Photos:
Silt Fencing	X			Removed from in-stream and along access road	
Bank Stabilization	X			No visible sluffing or erosion	
Soil Stockpiles	X			Disbursed and spread among site for re-planting	
Drainage & Diversions	X			Operating as intended	
Detention Facilities			X		
Other					
Fuel & Oil Management	OK	NC	NA	Comments & Mitigation	Photos:
Spill Kits/SPER Plan	X			Spill Kits/trays packed & loaded out	
Fuel Storage	X			No concerns during refueling	
Other	X			No visible fuel/oil spills or sheens on-site	
Equipment	OK	NC	NA	Comments & Mitigation	Photos:
Condition (leaks, etc.)	X			Clean; no concerns	
Initial Cleaning (Mud, Seeds)	X			Summit excavator not removed from site; no concerns	
Other					
Waste Management	OK	NC	NA	Comments & Mitigation	Photos:
Sanitary Facilities	X			Onsite, clean and no concerns	
Solid Waste & Recycling	X			Waste containers packed up & loaded out	
Special Waste & Hazardous Materials			X		
Other					
Atmosphere	OK	NC	NA	Comments & Mitigation	Photos:
Dust			X		
Air Quality			X		
Other			X		
Vegetation Management	OK	NC	NA	Comments & Mitigation	Photos:
Invasive Plants	X			No concerns of invasive plants during site visit	
Other					
General Observations & Comments (Wildlife, New Sensitive Features, etc.): Construction works: Final spreading of top-soil stockpiles throughout rest of worksite for preparation of re-seeding/re-planting efforts; Spill-trays, spill-kits and remainder of ESC measures packed & loaded out ESC: No signs of erosion issues during this site visit; Attempt was made to clean clogged culvert of sediment build up to allow for standing-water drainage Waste Management: Cont'd no concerns of human waste/trash during this site visit Fuel/Oil Management: No visible leaks/spills during this site visit; Spill trays in-use and continue to remain in clean/working condition					Photos:
Other Comments: Cultural Monitoring: No visible signs of cultural/archeological evidence during today's site visit Wildlife: Blacktailed Deer(doe) observed walking throughout worksite at approximately 0930.					Photos:
Upcoming Construction Events: 					
Incident Report Required? Yes ☐ No ☐					

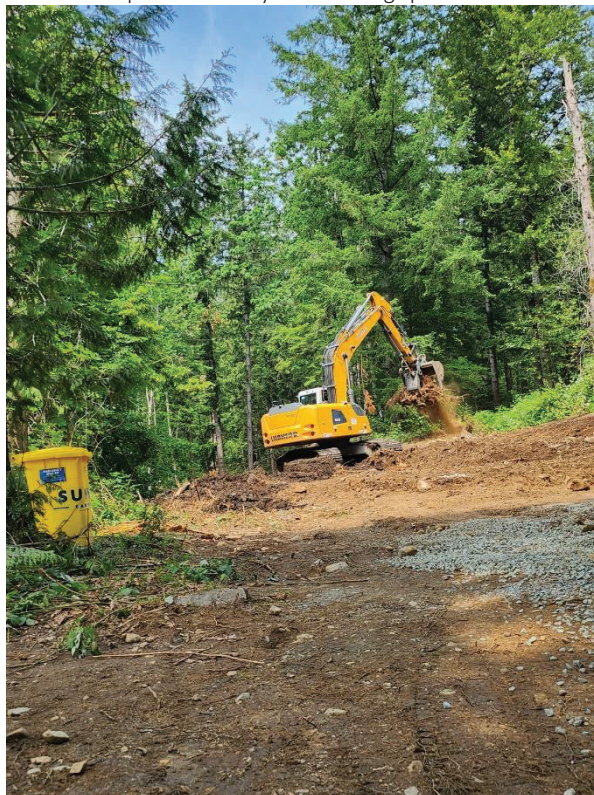
Natural Resource Department:
Daily Environmental Monitoring Report

PHOTO LOG: 2023-06-23

Loading top-soil for spreading throughout worksite



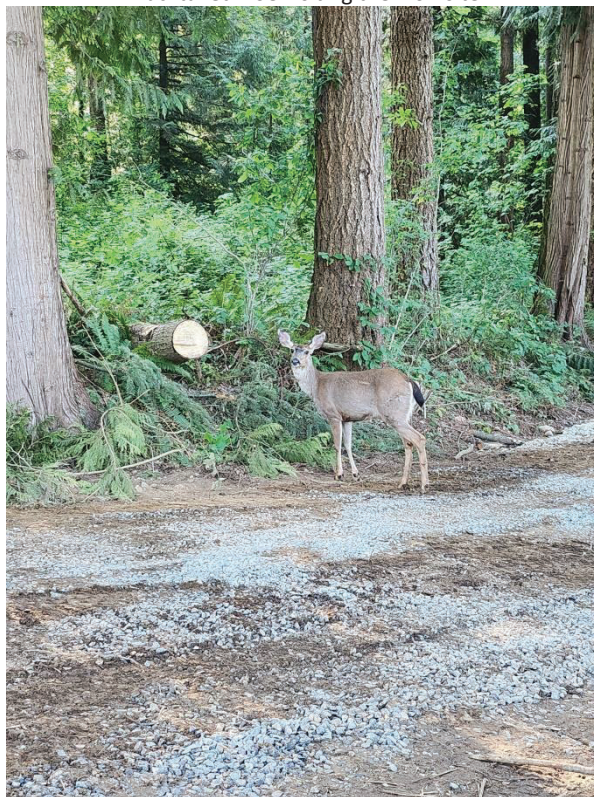
Top-soil & woody debris being spread out



Spill-kits and ESC measures loaded up



Blacktailed Doe visiting the worksite





sartori

ASSESSMENT | PLANNING | COMPLIANCE

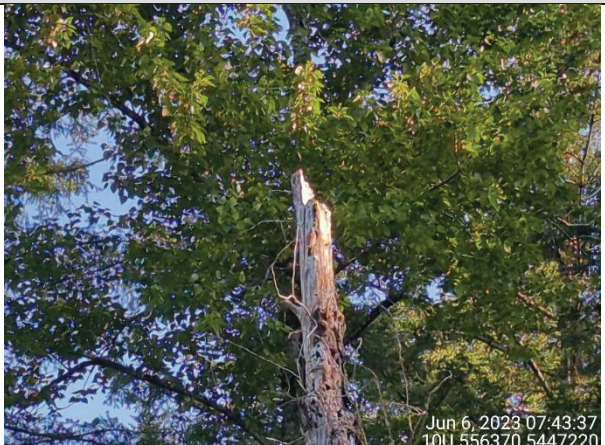
Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 06, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	NA	-
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	NA	-
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Photo 1. North-facing view, prior to works. Summit will clear vegetation and trees for access road (Jun. 06, 2023).	 Photo 2. View of Northern flicker nest. Pair returned to nest after road clearing. (Jun. 06, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 07, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys and turbidity measurements.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Tree falling was done near Davies Creek. No effect on turbidity of creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 7, 2023 09:23:11 100 556445 5447108 Photo 1. North-facing view of clear crush gravel being placed on cleared access road. (Jun. 07, 2023).	 Jun 7, 2023 12:43:40 Photo 2. View of Davies Creek after tree falling. Excavator removing fallen logs and vegetation. (Jun. 07, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 08, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori monitored instream work and turbidity measurements.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. No work was done within Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 8, 2023 07:44:22 10U 556363 5447165 Photo 1. South-facing view of clear crush gravel access road. (Jun. 08, 2023).	 Jun 8, 2023 08:48:16 10U 556349 5447259 Photo 2. View of Davies Creek during removal of fallen logs and vegetation within the creek. (Jun. 08, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	8:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 08, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori monitored instream work.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Poly sheeting will be brought to site to cover soil stockpiles in preparation for rain events.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. No work was done within Davies Creek. Davies Creek was observed to be flowing clear.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
		

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of silt fence installed along the edge of the access road nearby Davies Creek. (Jun. 09, 2023).

Photo 2. View of soil stockpile placed along the cleared road. Poly sheeting will be placed in preparation of rain. (Jun. 09, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 12, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Poly sheeting will be brought to site to cover soil stockpiles in preparation for rain events.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment and woody debris was removed from the east most section of Davies Creek.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. Woody debris and sediment were removed along the east section of Davies Creek. Turbidity was within provincial guidelines.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
		

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of removal of sediment and woody debris in the east portion of Davies Creek. (Jun. 12, 2023).

Photo 2. View of pump output in Davies Creek. (Jun. 12, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.



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Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 13, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 1mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment and woody debris was removed from the east most section of Davies Creek.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. Woody debris and sediment were removed along the east section of Davies Creek. Turbidity was within provincial guidelines.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 13, 2023 11:29:47 100-656407 5447299		 Jun 13, 2023 13:08:55



Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of check dams installed and excavated portion of Davies Creek. (Jun. 13, 2023).

Photo 2. View of soil stockpiles protected and secured. (Jun. 13, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 14, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	N	
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	Logs, branches, and other vegetation was removed around the cleared road area.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 14, 2023 13:01:57 10U 556345 5447283 Jun 14, 2023 11:02:42 10U 556224 5447248		



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Photo 1. View Davies Creek directly upstream of the pump output. (Jun. 14, 2023).

Photo 2. View of cleared area northeast of the access road. (Jun. 14, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 15, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road. Sartori stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 15, 2023 07:30:05 10U 555995 5445739 Photo 1. View extra gravel on site and protected stockpile. (Jun. 15, 2023).	 Jun 15, 2023 14:56:34 10U 556405 5447290 Photo 2. View of armoring of the northern bank of Davies Creek. (Jun. 15, 2023).	



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ASSESSMENT | PLANNING | COMPLIANCE

Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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ASSESSMENT | PLANNING | COMPLIANCE

Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 16, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 0.5mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

PHOTODOCUMENTATION



Photo 1. View of woody debris from road clearing being removed and sent to Summit's dump site. (Jun. 16, 2023).



Photo 2. View of armoring of the southern bank of Davies Creek. (Jun. 16, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS

Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
July 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 19, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 8.3mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

PHOTODOCUMENTATION



Photo 1. View of gravel, straw , and silt fence check dams set up at the top of Davies Creek. (Jun. 19, 2023).



Photo 2. View of Davies Creek after armouring works have completed. (Jun. 19, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS

Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
July 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
July 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Date:	June 22, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Blake Aleksich (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road and conducted reclamation works. Sartori monitored active construction.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	-
Observations?	N	Soil stockpiles used as top soil to spread around site. Silt fence along the bank of Davies Creek being taken down.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetated material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works conducted in isolation of streamflow?	N	-
Were instream works conducted during appropriate flow conditions?	N	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life?	Y	-
Observations	N/A	Summit removed check dams at the top of Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site was in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Environmental Monitoring Activity	Y/N/NA	Comments
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray noted underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Photo 1. View of gravel, straw, and silt fence check dams set up at the top of Davies Creek. (Jun. 22, 2023).	 Photo 2. View of top soil being spread out on site. (Jun. 22, 2023).	

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
June 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
June 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
June 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site
June 22, 2023			
22-06-2023	07:25	0.00	Background
22-06-2023	07:35	398	Downstream site; check dams being removed
22-06-2023	07:45	19.12	Downstream site
22-06-2023	08:00	6.53	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Date:	June 23, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Blake Aleksich (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road and conducted reclamation works. Sartori monitored active construction.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	-
Observations?	N	Soil stockpiles used as topsoil to spread around site. Silt fence along the bank of Davies Creek being taken down.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetated material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works conducted in isolation of streamflow?	N	-
Were instream works conducted during appropriate flow conditions?	N	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	Summit removed check dams at the top of Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site was good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Environmental Monitoring Activity	Y/N/NA	Comments
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray noted underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 23, 2023 08:15:53 10U 556419 5447283	 Jun 23, 2023 11:11:39 10U 556367 5447208	
Photo 1. View of top soil spread out at the top of Davies Creek. (Jun. 23, 2023).	Photo 2. View of gravel being placed on top of access road. (Jun. 23, 2023).	

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
June 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
June 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
June 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site
June 22, 2023			
22-06-2023	07:25	0.00	Background
22-06-2023	07:35	398	Downstream site; check dams being removed
22-06-2023	07:45	19.12	Downstream site
22-06-2023	08:00	6.53	Downstream site
June 23, 2023			
-	-	-	-



Weekly Environmental Monitor Inspection Form Davies Creek Sediment Removal and Bank Protection

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 05, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys, Oregon forest snail surveys, and fish/amphibian surveys.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	NA	-
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	NA	-
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 5, 2023 08:03:12 10U 556427 5447130 Photo 1. South-facing view, prior to works. Summit will clear base of access road (Jun. 05, 2023).	 Jun 5, 2023 14:02:50 10U 556424 5447141 Photo 2. North-facing view of turn-around area cleared north of the base of access road (Jun. 05, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-

DRAWING INDEX

SHEET	DRAWING NAME	REVISION	DRAWING TITLE	DRAWING DESCRIPTION
GENERAL	2632-12-G-3001	2	COVER SHEET	
CIVIL				
2	2632-12-C-3101	2	PLAN WITH AERIAL PHOTO	EMERGENCY WORKS
3	2632-12-C-3102	1	PLAN	EMERGENCY WORKS
4	2632-12-C-3501	2	DETAILS	EMERGENCY WORKS

WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK

PLOT DATE: 2022-09-01 09:01:57 AM
SAVE DATE: 2022-09-01 09:01:57 AM
SAVED BY: LEZONK
FILE PATH: \\na\ukd\ukd\working\2632-12-G-3001.dwg



Associated
Engineering



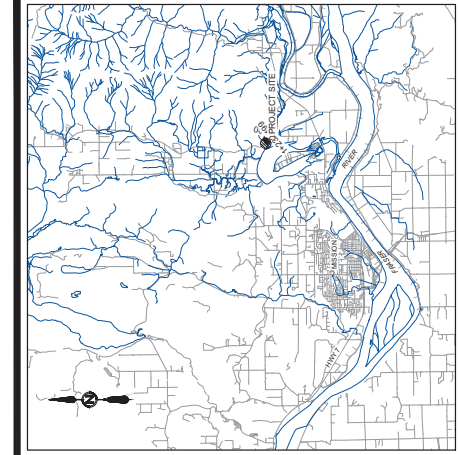
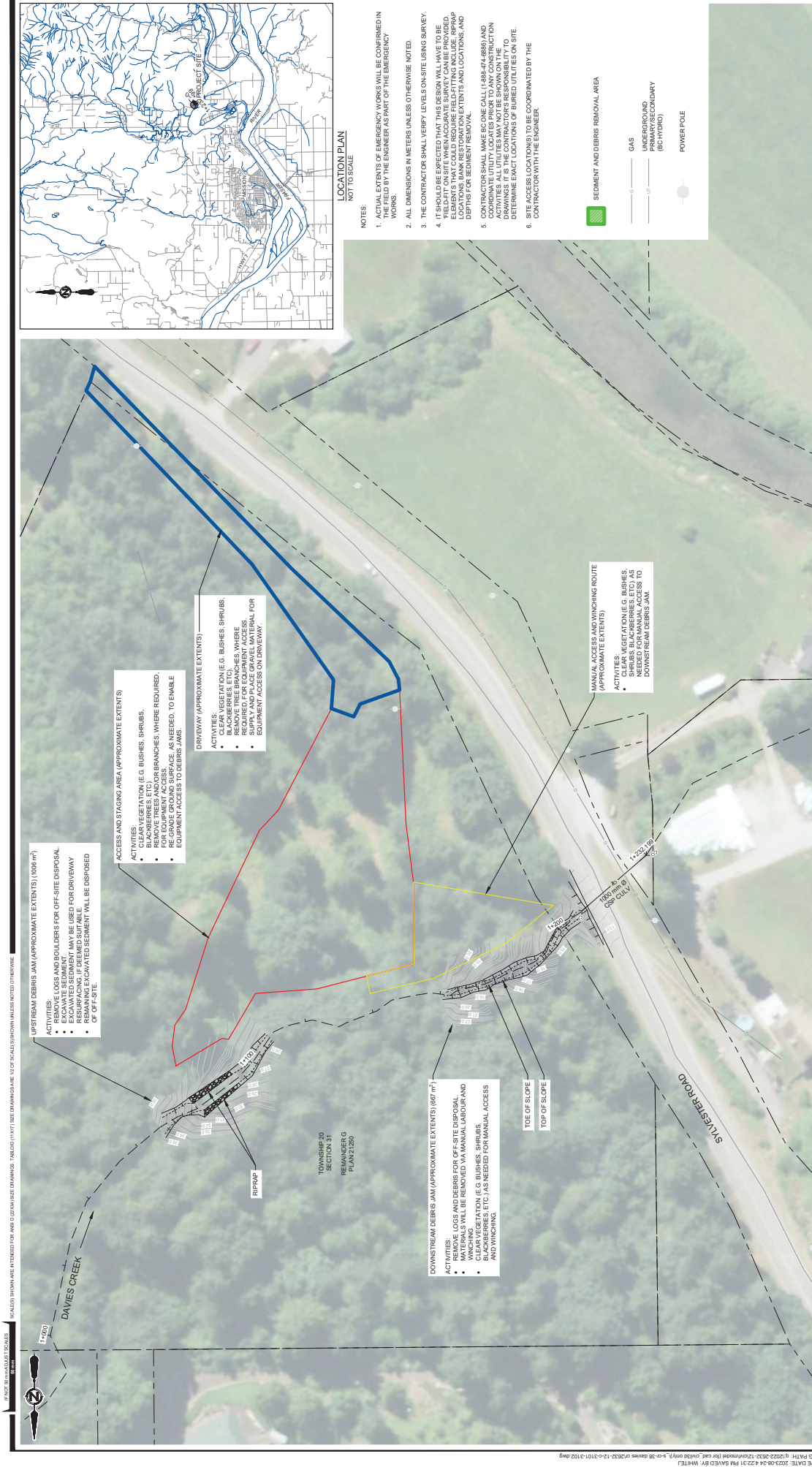
Platinum member



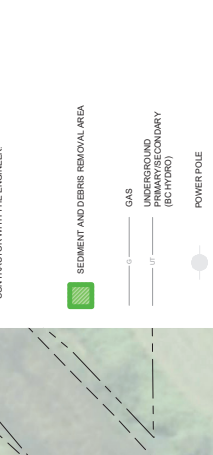
PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT
WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12

PERMIT TO PRACTICE
ENGINEERING
ASSOCIATION OF BC
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

2	2022-09-01	A. WINE	N. LEZON	ISSUED FOR CONSTRUCTION
1	2022-01-26	A. WINE	J. WHITE	ISSUED FOR CONSTRUCTION APPROVALS
0	2022-05-03	N. WILSON	J. WHITE	ISSUED FOR PERMITTING
REV	DATE	DESIGN	DRAWN	DESCRIPTION
DRAWING				REVISION
2632-12-G-3001				2
				SHEET
				1



- NOTES:
1. ACTUAL EXTENTS OF EMERGENCY WORKS WILL BE CONFIRMED IN THE FIELD BY THE ENGINEER AS PART OF THE EMERGENCY WORKS.
 2. ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.
 3. THE CONTRACTOR SHALL VERIFY LEVELS ON-SITE USING SURVEY.
 4. IT SHOULD BE EXPECTED THAT THIS DESIGN WILL HAVE TO BE FIELD ADJUSTED ON-SITE WHEN ACCURATE SURVEY CAN BE PROVIDED.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR THE WORK, INCLUDING BANK RESTORATION EXTENTS AND LOCATIONS, AND DEPT'S FOR SEDIMENT REMOVAL.
 6. CONTRACTOR SHALL MAKE BC ONE CALL (1-888-474-8866) AND OBTAIN ALL NECESSARY UTILITY INFORMATION PRIOR TO ANY CONSTRUCTION ACTIVITIES. ALL UTILITIES MAY NOT BE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATIONS OF BURIED UTILITIES ON-SITE.
 7. SITE ACCESS LOCATIONS TO BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER.



PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT

WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12

SCALE: 1:500

RECORD DRAWING	A. WHITE	A. WHITE	A. WHITE	A. WHITE	A. WHITE
2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09
2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09
2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09	2023-03-09

BRITISH COLUMBIA
pwc
PLAN WITH AERIAL PHOTO
EMERGENCY WORKS

2632-12-C-3101 3 2

REV	DATE	DESIGN	DRAWN	DESCRIPTION
1	2023-03-09	A. WHITE	A. WHITE	PROPOSED FOR SECTION 31
2	2023-03-09	A. WHITE	A. WHITE	PROPOSED FOR SECTION 31
3	2023-03-09	A. WHITE	A. WHITE	PROPOSED FOR SECTION 31
4	2023-03-09	A. WHITE	A. WHITE	PROPOSED FOR SECTION 31
5	2023-03-09	A. WHITE	A. WHITE	PROPOSED FOR SECTION 31

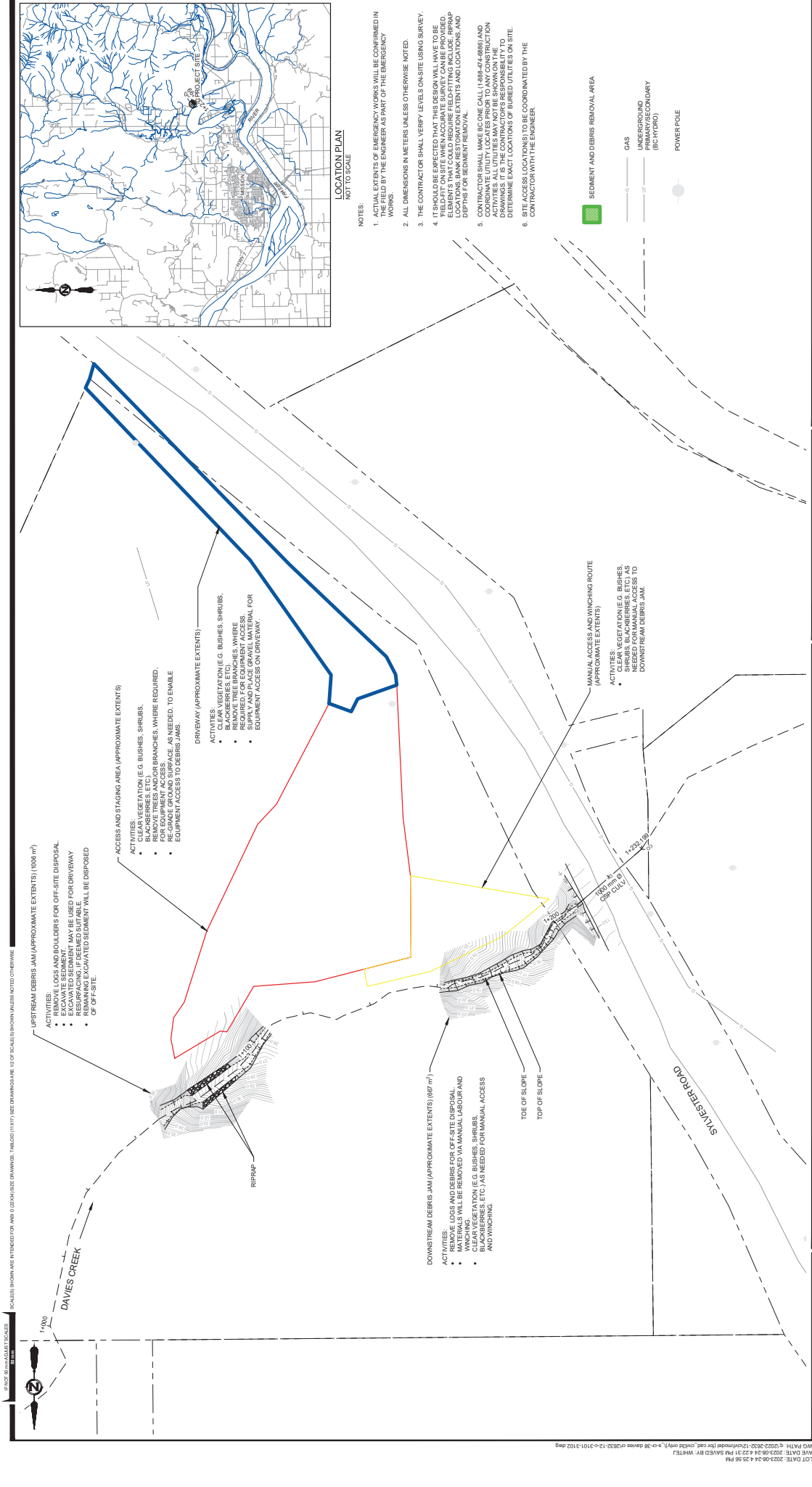
THE INFORMATION CONTAINED ON THESE DRAWINGS ORIGINATED FROM THE PROJECT AND IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE ASSOCIATED ENGINEERING (B.C. LTD.) DOES NOT WARRANT OR GUARANTEE THE ACCURACY OF THE INFORMATION CONTAINED ON THESE DRAWINGS. THE ORIGINAL DESIGN IS CONTAINED IN THE CONTRACT DOCUMENTS.

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

Associated Engineering

BEST MANAGED CONTRACTORS

AE



IF NOT DIMENSIONAL SCALES
0 1000
1:1000
DAVIES CREEK
STAVERT ROAD
PROJECT SITE
UPSTREAM DEBRIS JAM (APPROXIMATE EXTENTS) (1000 m²)
DOWNSTREAM DEBRIS JAM (APPROXIMATE EXTENTS) (600 m²)
ACCESS AND STAGING AREA (APPROXIMATE EXTENTS)
DAVIES CREEK
STAVERT ROAD
PROJECT SITE

- ACTIVITIES:
- LOGS AND BOLLERS FOR OFF-SITE DISPOSAL
 - EXCAVATE SEDIMENT
 - EXCAVATE SEDIMENT
 - REMAINING EXCAVATED SEDIMENT WILL BE DISPOSED OF OFF-SITE

- ACTIVITIES:
- REMOVE TREES AND/OR BRANCHES WHERE REQUIRED
 - RE-SURFACE AND RE-GRASS
 - RE-SURFACE GROUND SURFACE, AS NEEDED, TO ENABLE EQUIPMENT ACCESS TO DEBRIS JAMS

- ACTIVITIES:
- CLEAR VEGETATION (E.G. BUSHES, SHRUBS, BLACKBERRIES, ETC.)
 - REMOVE TREE BRANCHES WHERE REQUIRED
 - SUPPLY AND PLACE GRAVEL MATERIAL FOR EQUIPMENT ACCESS ON DRIVEWAY

- ACTIVITIES:
- LOGS AND DEBRIS FOR OFF-SITE DISPOSAL
 - WINCHING
 - CLEAR VEGETATION (E.G. BUSHES, SHRUBS, BLACKBERRIES, ETC.) AS NEEDED FOR MANUAL ACCESS AND WINCHING

- ACTIVITIES:
- CLEAR VEGETATION (E.G. BUSHES, SHRUBS, BLACKBERRIES, ETC.) AS NEEDED FOR MANUAL ACCESS TO DOWNSTREAM DEBRIS JAM

LOCATION PLAN NOT TO SCALE

- NOTES:
1. ACTUAL EXTENTS OF EMERGENCY WORKS WILL BE CONFIRMED IN THE FIELD BY THE ENGINEER AS PART OF THE EMERGENCY WORKS.
 2. ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.
 3. THE CONTRACTOR SHALL VERIFY LEVELS ON-SITE USING SURVEY.
 4. IT SHOULD BE EXPECTED THAT THIS DESIGN WILL HAVE TO BE FIELD ADJUSTED WHEN ACCURATE SURVEY CAN BE PROVIDED.
 5. CONTRACTOR SHALL MAKE BC ONE CALL (1-888-474-8886) AND DETERMINE EXACT LOCATIONS OF BURIED UTILITIES ON SITE. DETERMINE EXACT LOCATIONS OF BURIED UTILITIES ON SITE. COORDINATE WITH THE ENGINEER.
 6. SITE ACCESS LOCATIONS TO BE COORDINATED BY THE CONTRACTOR WITH THE ENGINEER.

- LEGEND:
- SEGMENT AND DEBRIS REMOVAL AREA
 - GAS
 - UNDERGROUND (BC HYDRO)
 - POWER POLE

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PERMIT NUMBER: 1000163
Engineers & Geoscientists BC

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BEST MANAGED CONTRACTORS
FUTURE TRUST

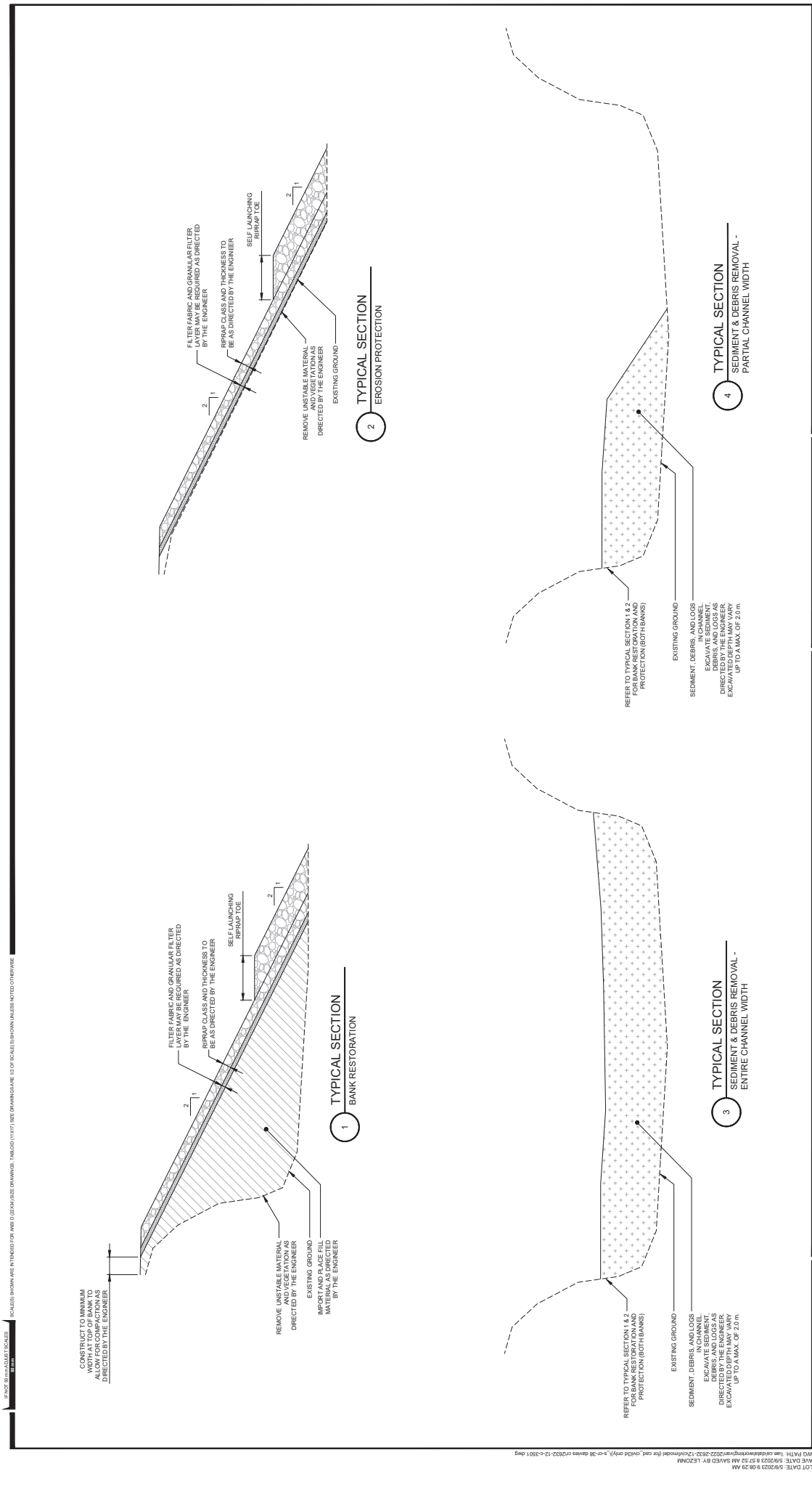
PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT
WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12
SCALE: 1:500

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REV	DATE	DESIGN	DRAWN	DESCRIPTION
1	2023-03-09	A. WENB	H. LEON	REVISION FOR APPROVALS
0	2023-01-03	A. WENB	H. LEE	ISSUED FOR APPROVALS

DRAWING	REVISION	SHEET
PLAN EMERGENCY WORKS	2	3

BRITISH COLUMBIA
pwc



IF NOT DIMENSIONED SCALES
0 mm
SCALES SHOWN ARE INTENDED FOR AND USE THESE DIMENSIONS. TOLERANCE (1:10) USE DIMENSIONS 10 OF SCALE, SHOWN VALUES NOTED OTHERWISE.



Associated Engineering

BEST MANAGED CONTRACTORS

PERMIT TO PRACTICE
ASSOCIATED ENGINEERING (B.C.) LTD.
PERMIT NUMBER: 1000163
Engineers & Geoscientists BC



PRICEWATERHOUSE COOPERS
BC MINISTRY OF ENVIRONMENT

WATERWAY SEDIMENT ASSESSMENT
PROPOSED EMERGENCY WORK
S-CR-38 DAVIES CREEK
2022-2632-12

SCALE: AS SHOWN

REV	DATE	DESIGN	DRAWN	DESCRIPTION
0	2023-10-03	MARK	J. WHITE	PERMITTING
1	2023-10-03	A. WHITE	J. WHITE	APPROVALS
2	2023-10-03	A. WHITE	M. LEON	CONSTRUCTION

REVISED FOR SECTION 11

DETAILS
EMERGENCY WORKS

2632-12-C-3501

REVISION

2

SHEET

4

May 10 2023

Appendix N



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ASSESSMENT | PLANNING | COMPLIANCE

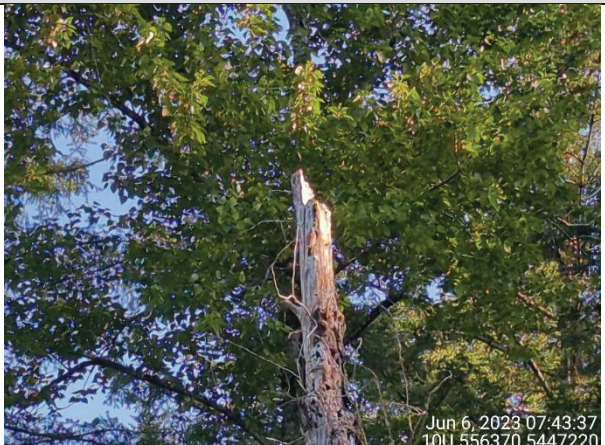
Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 06, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	NA	-
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	NA	-
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 6, 2023 07:34:37 Photo 1. North-facing view, prior to works. Summit will clear vegetation and trees for access road (Jun. 06, 2023).	 Jun 6, 2023 07:43:37 10U 556370 5447220 Photo 2. View of Northern flicker nest. Pair returned to nest after road clearing. (Jun. 06, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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ASSESSMENT | PLANNING | COMPLIANCE

Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 07, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys and turbidity measurements.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Tree falling was done near Davies Creek. No effect on turbidity of creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Photo 1. North-facing view of clear crush gravel being placed on cleared access road. (Jun. 07, 2023).	 Photo 2. View of Davies Creek after tree falling. Excavator removing fallen logs and vegetation. (Jun. 07, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 08, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori monitored instream work and turbidity measurements.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. No work was done within Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 8, 2023 07:44:22 10U 556363 5447165 Photo 1. South-facing view of clear crush gravel access road. (Jun. 08, 2023).	 Jun 8, 2023 08:48:16 10U 556349 5447259 Photo 2. View of Davies Creek during removal of fallen logs and vegetation within the creek. (Jun. 08, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	8:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Date:	June 08, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori monitored instream work.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Poly sheeting will be brought to site to cover soil stockpiles in preparation for rain events.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. No work was done within Davies Creek. Davies Creek was observed to be flowing clear.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
		

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of silt fence installed along the edge of the access road nearby Davies Creek. (Jun. 09, 2023).

Photo 2. View of soil stockpile placed along the cleared road. Poly sheeting will be placed in preparation of rain. (Jun. 09, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 12, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Poly sheeting will be brought to site to cover soil stockpiles in preparation for rain events.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment and woody debris was removed from the east most section of Davies Creek.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. Woody debris and sediment were removed along the east section of Davies Creek. Turbidity was within provincial guidelines.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



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ASSESSMENT | PLANNING | COMPLIANCE

Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 		

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of removal of sediment and woody debris in the east portion of Davies Creek. (Jun. 12, 2023).

Photo 2. View of pump output in Davies Creek. (Jun. 12, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.



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Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 13, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 1mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment and woody debris was removed from the east most section of Davies Creek.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N	Logs, branches, and other vegetation was removed around Davies Creek. Woody debris and sediment were removed along the east section of Davies Creek. Turbidity was within provincial guidelines.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Soils stockpiled on site will not be removed from site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 		



Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Photo 1. View of check dams installed and excavated portion of Davies Creek. (Jun. 13, 2023).

Photo 2. View of soil stockpiles protected and secured. (Jun. 13, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Date:	June 14, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted bird surveys, stranding surveys, and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	N	
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	Logs, branches, and other vegetation was removed around the cleared road area.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 14, 2023 13:01:57 10U 556345 5447283 Jun 14, 2023 11:02:42 10U 556224 5447248		



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Photo 1. View Davies Creek directly upstream of the pump output. (Jun. 14, 2023).

Photo 2. View of cleared area northeast of the access road. (Jun. 14, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 15, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road. Sartori stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 15, 2023 07:30:05 10U 555995 5445739 Photo 1. View extra gravel on site and protected stockpile. (Jun. 15, 2023).	 Jun 15, 2023 14:56:34 10U 556405 5447290 Photo 2. View of armoring of the northern bank of Davies Creek. (Jun. 15, 2023).	



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Date:	June 16, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 0.5mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form
Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

PHOTODOCUMENTATION



Photo 1. View of woody debris from road clearing being removed and sent to Summit's dump site. (Jun. 16, 2023).



Photo 2. View of armoring of the southern bank of Davies Creek. (Jun. 16, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
July 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Date:	June 19, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Overcast, light rain, estimated 8.3mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori conducted stranding surveys and monitored instream works.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	Soil stockpiles were protected with polyethylene sheeting and secured with rocks.
Observations?	N	-
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	Y	Sediment removal and armoring of the northern bank of Davies Creek was done.
Were instream works were conducted during appropriate flow conditions?	Y	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed during stranding survey.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-



Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray placed underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

PHOTODOCUMENTATION



Photo 1. View of gravel, straw , and silt fence check dams set up at the top of Davies Creek. (Jun. 19, 2023).



Photo 2. View of Davies Creek after armouring works have completed. (Jun. 19, 2023).

Table 1. IN SITU WATER QUALITY MONITORING RESULTS

Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts



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Weekly Environmental Monitor Inspection Form Pattison Creek Sediment Removal and Bank Protection

12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
July 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
July 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
July 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Date:	June 22, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Blake Aleksich (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road and conducted reclamation works. Sartori monitored active construction.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	-
Observations?	N	Soil stockpiles used as top soil to spread around site. Silt fence along the bank of Davies Creek being taken down.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetated material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works conducted in isolation of streamflow?	N	-
Were instream works conducted during appropriate flow conditions?	N	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life?	Y	-
Observations	N/A	Summit removed check dams at the top of Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site was in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Environmental Monitoring Activity	Y/N/NA	Comments
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray noted underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Photo 1. View of gravel, straw, and silt fence check dams set up at the top of Davies Creek. (Jun. 22, 2023).	 Photo 2. View of top soil being spread out on site. (Jun. 22, 2023).	

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
June 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
June 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
June 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site
June 22, 2023			
22-06-2023	07:25	0.00	Background
22-06-2023	07:35	398	Downstream site; check dams being removed
22-06-2023	07:45	19.12	Downstream site
22-06-2023	08:00	6.53	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Date:	June 23, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Blake Aleksich (R.B.Tech)	Weather conditions:	Clear
Description of Work Activities performed:	Summit grubbed access road and conducted reclamation works. Sartori monitored active construction.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	Y	Extra silt fencing, polyethylene, and gravel on-site.
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	Y	Drainage ditch installed along the base of the access road. Straw applied to erodible hills.
Were stockpiles secured (covered or surrounded in sediment fence)?	N/A	-
Observations?	N	Soil stockpiles used as topsoil to spread around site. Silt fence along the bank of Davies Creek being taken down.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetated material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works conducted in isolation of streamflow?	N	-
Were instream works conducted during appropriate flow conditions?	N	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	N	No fish or amphibians were observed.
Was the SEI EM present during instream works?	Y	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	Y	-
Observations	N/A	Summit removed check dams at the top of Davies Creek.
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site was good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.
Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	Any woody debris or soils removed on site will be sent to Summit's dump site.

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Environmental Monitoring Activity	Y/N/NA	Comments
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use. Spill tray noted underneath gasoline generator.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Jun 23, 2023 08:15:53 10U 556419 5447283 Photo 1. View of top soil spread out at the top of Davies Creek. (Jun. 23, 2023).		
 Jun 23, 2023 11:11:39 10U 556367 5447208 Photo 2. View of gravel being placed on top of access road. (Jun. 23, 2023).		

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
June 05, 2023			
-	-	-	-
June 06, 2023			
-	-	-	-
June 07, 2023			
07-06-23	08:02	1.66	Background
07-06-23	12:49	0.89	Downstream site after tree falling completed
June 08, 2023			
08-06-23	07:54	0.00	Background

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
08-06-23	08:20	1.20	Downstream site during log removal in creek
08-06-23	08:45	0.89	Downstream site during log removal in creek
June 09, 2023			
-	-	-	-
June 12, 2023			
12-06-2023	10:20	0.00	Background before work starts
12-06-2023	11:00	2.40	Downstream site ~25 feet from the pump output
12-06-2023	11:30	0.00	Downstream site
12-06-2023	12:00	2.22	Downstream site
12-06-2023	12:30	0.14	Downstream site
12-06-2023	13:00	0.00	Downstream site
12-06-2023	14:00	0.00	Downstream site
12-06-2023	15:00	0.00	Downstream site
12-06-2023	15:30	2.21	Downstream site, pump turned off
June 13, 2023			
13-06-2023	07:15	0.02	Background
13-06-2023	09:15	14.45	Downstream site ~25 feet from pump output
13-06-2023	09:20	4.64	Downstream site; pump output moved and additional rock check dams installed
13-06-2023	09:35	1.79	Downstream site
13-06-2023	10:00	1.98	Downstream site
13-06-2023	10:30	0.15	Downstream site
13-06-2023	11:00	1.19	Downstream site
13-06-2023	11:30	17.06	Downstream site; works paused
13-06-2023	11:45	6.54	Downstream site
13-06-2023	12:00	2.04	Downstream site
13-06-2023	14:00	0.00	Downstream site; works resumed
13-06-2023	14:30	5.55	Downstream site
13-06-2023	14:45	4.74	Downstream site; works finished and pump turned off
June 14, 2023			
-	-	-	-
June 15, 2023			
15-06-2023	07:15	0.54	Background
15-06-2023	08:30	0.00	Downstream site ~25 feet from pump output; instream works begin
15-06-2023	09:00	0.01	Downstream site
15-06-2023	09:15	0.31	Downstream site
15-06-2023	09:45	0.36	Downstream site
15-06-2023	10:15	0.32	Downstream site

Weekly Environmental Monitor Inspection Form

Davies Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
Date [DD-MON-YY]	Time (24:00hr)	Turbidity (NTU)	Sample location & observations
15-06-2023	10:45	0.00	Downstream site; works paused at 11:00
15-06-2023	11:07	0.00	Downstream site
15-06-2023	11:45	7.29	Downstream site; works resumed
15-06-2023	12:15	1.81	Downstream site; works paused
15-06-2023	14:07	0.02	Downstream site; works resumed
15-06-2023	14:45	0.00	Downstream site
15-06-2023	15:15	0.12	Downstream site; pump turned off
15-06-2023	16:05	2.58	Downstream site
15-06-2023	16:30	47.68	Downstream site; creek washing down sediment
15-06-2023	16:45	23.90	Downstream site
15-06-2023	17:00	6.92	Downstream site
June 16, 2023			
16-06-2023	07:30	0.01	Background
16-06-2023	07:32	0.00	Downstream site; works not started
16-06-2023	13:00	6.22	Downstream site; works started
16-06-2023	13:30	0.00	Downstream site
16-06-2023	14:00	1.70	Downstream site
16-06-2023	14:30	0.19	Downstream site; works paused
16-06-2023	15:30	1.72	Downstream site; works resumed
16-06-2023	16:20	326	Downstream site; pump turned off
16-06-2023	16:55	36.66	Downstream site
16-06-2023	17:05	16.43	Downstream site
16-06-2023	17:25	7.01	Downstream site
June 19, 2023			
19-06-2023	07:45	0.00	Background
19-06-2023	10:00	0.01	Downstream site; works started
19-06-2023	12:20	-	Pump off; works finished
19-06-2023	12:30	7.44	Downstream site
19-06-2023	12:50	4.66	Downstream site
June 22, 2023			
22-06-2023	07:25	0.00	Background
22-06-2023	07:35	398	Downstream site; check dams being removed
22-06-2023	07:45	19.12	Downstream site
22-06-2023	08:00	6.53	Downstream site
June 23, 2023			
-	-	-	-



Weekly Environmental Monitor Inspection Form Davies Creek Sediment Removal and Bank Protection

TABLE 2. ENVIRONMENTAL ISSUE, NON-CONFORMANCE, INCIDENT AND CORRECTIVE ACTION SUMMARY TABLE

No ongoing environmental issues, non-conformance or incidents were identified. See table below for past issue tracking.

Issue No.	Environmental Issue / Non-Conformance and Location	Date Identified [DD-MON-YY]	Description of Environmental Issue and Corrective Action Plan	Due Date [DD-MON-YY]	Date Completed [DD-MON-YY]
-	-	-	-	-	-



Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Date:	June 05, 2023	Environmental Monitor(s):	Jeffrey Kim
Supervising QEP:	Matthew Joyce (R.B.Tech)	Weather conditions:	Clear, 0mm precipitation
Description of Work Activities performed:	Summit grubbed access road. Sartori performed bird nest surveys, Oregon forest snail surveys, and fish/amphibian surveys.		

Environmental Monitoring Activity	Y/N/NA	Comments
Erosion and Sediment Control		
Were ESC supplies onsite?	NA	-
Were disturbed areas protected from wind/water erosion?	NA	-
Were ESC mitigation measures employed (e.g., for drainage)?	NA	-
Were stockpiles secured (covered or surrounded in sediment fence)?	NA	-
Observations?	N	No other notable observations.
Vegetation/clearing Management		
Was equipment clean and free of weeds?	Y	Equipment appeared clean and free of vegetation material.
Was invasive plant species handling, and disposal methodology implemented?	N/A	-
Was site restoration activity implemented?	N/A	-
Were wildlife observations reported?	N	No wildlife was observed or reported to the EM.
Were waste containers for food, fuels, oils, sanitary waste in use?	N	-
Observations?	N	No other notable observations.
Site Isolation and Fish Salvage		
Were instream works were conducted in isolation of streamflow?	NA	No instream works were conducted today.
Were instream works were conducted during appropriate flow conditions?	NA	-
Instream works were preceded by a fish salvage by SEI.	NA	-
Was fish mortality/injury observed?	NA	-
Was the SEI EM present during instream works?	NA	-
Did induced water quality remain within BC Working Water Quality Guidelines for Aquatic Life.	NA	-
Observations	N	-
Solid Waste Management		
Waste bins labeled?	N/A	-
Were portable toilets >30m from waterbodies?	Y	-
Housekeeping; was site clean?	Y	The site appeared to be in good, clean condition. Summit picked up local garbage and recycling seen outside of works areas.

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Contaminated Soils Management		
Potentially contaminated soils found?	N	No contaminated soils were observed
Potentially contaminated soils found are stockpiled separately (detected by odour, sheen, buried debris)	N/A	-
Contaminated soils are stockpiled appropriately and tracked for original location	N/A	-
Observations?	N/A	-
Hazardous Materials and Spill Response		
Materials and fuels in secondary containment & protected from weather?	NA	-
Materials labeled per WHMIS/TDG requirements?	NA	-
Spill response procedures, spill kit, and fire extinguisher present/accessible?	Y	Spill kit (x2) observed on site by muster area. Each machine spill kits inside.
Spill trays in use (small immobile or mobile equipment)?	Y	Spill trays placed under machines when not in use.
Refueling procedures followed (no smoking, monitor pumps, automatic shutoffs etc.)?	Y	Refueling was observed with spill cloth to capture any drip.
Did refueling occur >30m from water?	Y	-
MSDS available?	N/A	-
Observations	N	No other notable observations.
First Nations/Heritage Resources		
Did the Leq'a:mel First Nation representative identify any environmental concerns?	N	-
Archaeological chance finds reported?	N	No chance finds were reported to EM.
PHOTODOCUMENTATION		
 Photo 1. South-facing view, prior to works. Summit will clear base of access road (Jun. 05, 2023).	 Photo 2. North-facing view of turn-around area cleared north of the base of access road (Jun. 05, 2023).	

Weekly Environmental Monitor Inspection Form

Pattison Creek Sediment Removal and Bank Protection

Table 1. IN SITU WATER QUALITY MONITORING RESULTS			
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-	-	-	-

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-	-	-	-	-	-