

# Technical Memorandum



**To:** Tyler Lambert  
Capilano Highway Services  
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October 24, 2023  
File No. 22.0059

**From:** Jason Barsanti, R.P.Bio.  
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**Re: Post-Construction EM Review of Instream Works on Flume Creek**

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Barsanti Environmental Services Ltd. (Barsanti Environmental) is retained by Capilano Highway Services (the Client) to conduct environmental monitoring (EM) of their project site on Flume Creek in Roberts Creek, Sunshine Coast Regional District (SCRD; the Site).

The subject works entailed removing a gravel bar and realigning the thalweg of Flume Creek to align with the center of the culvert crossings and restoring the creek bed upon completion.

## Background

The role of the EM is to provide guidance and recommendations to the Client to help ensure they, and their sub-contractors, are in compliance with the Terms and Conditions (TC) agreed to in the Project's Approvals and Permitting.

The purpose of this memo is to inform the Client of notable conditions and outcomes observed on site during works remove the obstruction.

## Observations

### Contractors at Work:

- Capilano Highway Services (Capilano) conducted supervision and general labour support.
- Nicole Gemmel, Dakota Creek Construction (Dakota) was the primary machine operator.

## Description of Instream Works

September 11, 2023. I attended a preliminary site review with Andrew McKay and Brad Jakes (Capilano).

September 12, 2023. I attended the site to install equipment and netting for a fish salvage from the construction zone.

September 13, 2023. The fish salvage continued, trapped fish were removed from the construction zone and relocated approximately 50 m upstream. Capilano commenced work by dewatering the works zone. As the works zone was slowly dewatered more fish were recovered and relocated upstream. Once all fish were captured Capilano fully dewatered the works zone and commenced working with equipment to modify the channel. Earthworks were completed on the same day. Materials that were required for revetment of the culvert inlet (bentonite fabric sheets) were not available from the supplier. The fish barrier net remained in place to keep the fish isolated from the works zone until the materials were available.

October 12, 2023. Works were completed and the barrier nets were removed from the stream.

## Site Photos

September 11, 2023



**Photo 1. Viewing the work zone behind the fish barrier net.**

September 12, 2023



**Photo 2. Works occurring in the dry channel with the dewatering hose pumping water through the culvert.**

October 12, 2023



**Photo 3. Channel conditions post-construction.**

## General Notes and Recommendations

Capilano conducted this project in accordance with best management practices for instream works in a fish bearing stream.

1. The works occurred in the specified timing window.
2. A fish salvage was conducted to remove fish from the work zone. Twelve cutthroat trout and two coho salmon were salvaged, plus two sculpins.
3. Instream flow was maintained outside of the dried work zone and the work zone area was limited to the minimum area necessary to complete the works.
4. No siltation occurred in the stream downstream of the site.
5. All equipment was operated from TOB, equipment was clean and free of deleterious substances, and not leaking. No refueling was required.
6. Disturbance of natural materials and vegetation was kept to the minimum necessary to complete the works, no trees were removed. At the completion of work the channel was graded to meet the specifications in the project requirements.

## Closing

We trust that the information supplied in this document meets your needs. Should more information or clarification on any part of this memo be required please do not hesitate to contact us.

### **BARSANTI ENVIRONMENTAL SERVICES LTD.**

**Jason Barsanti. R.P.Bio.**  
**Principal Biologist**

